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1 **DISCUSSION DRAFT NOT FOR QUOTATION WITHOUT PERMISSION**

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STATE RETAIL SALES TAX PRODUCTIVITY: IDENTIFYING ECONOMIC, LEGAL, AND ADMINISTRATIVE INFLUENCES ON C-EFFICIENCY RATIOS ACROSS THE AMERICAN STATES*

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ABSTRACT

State general sales taxes represent the American approach to taxation of household consumption expenditures and make a substantial contribution to state government finances However, these taxes significantly deviate from the general tax on personal consumption idealized by economists because they tax many business purchases and exclude many household consumption purchases. No state levies the same general sales tax base as any other, causing wide variation in the extent to which tax coverage will approach that personal consumption ideal. There are wide differences across the states in the gap between the actual and the potential sales tax base, sometimes from differences in state economies, sometimes from differences in tax structures, and sometimes from differences in enforcement. The evidence identifies both the extent of base disparity and the importance of the structural variations in sacrificing revenue from the ideal. It estimates a considerable impact from stronger enforcement on collection efficiency.

1.1. INTRODUCTION

This paper examines the collection gap between state retail sales taxes and a uniform tax on general consumption. It employs analytical measures and methods regularly used in investigation of national value added taxes, but not

∗ Justin Ross and Denvil Duncan provided helpful comments on this paper.

commonly used for retail sales taxes to examine the influences on the gap. The approach considers how administration influences the gap, holding constant differences from the nature of state economies and the structure of state sales taxes. It is particularly focused on how enforcement rigor impacts the gap. However, before developing the analysis, some background about retail sales taxes and their place in state revenue systems is appropriate.

State revenue systems are significantly more diversified than are those of the federal government or of local governments. While the federal system is dominated by reliance on the income base through taxes on individual income, corporate income, and payroll (96.6% of total federal tax receipts in 2012 came from those taxes) and the local revenue system is dominated by reliance on the property base (74.2% of local tax revenue in 2011 came from that tax), state systems overall are driven by two bases: individual income and retail sales. Overall, 65.5% of total state tax revenue collected in 2012 came from the sum of these two taxes (35.1% from individual income and 30.4 % from retail sales) and that balance between the two taxes, not the contribution of other narrower taxes, produces the diversity that characterizes state revenues. Of course, there are exceptions to this pattern of reliance, as some localities, particularly large cities, rely heavily on local income or sales taxes and not all states rely on a combination of retail sales and an individual income taxes (five states levy no retail sales tax and nine states levy no broad individual income tax), but these exceptions are notable because of their rarity.

The retail sales tax is a particularly important contributor to the finances of state governments. The taxes yield more than 40% of tax revenue in ten states and average 32% of tax revenue across the forty-five states levying such a tax. It would be difficult to replace -- the income base is already heavily relied upon and the property tax is anathema in most parts of the country. Moreover, several states have, in recent years, explored the possibility of entirely replacing their income tax with a much increased retail sales tax. Although many international tax experts would agree with Richard Bird (1999, p. 16) that the retail sales tax "is now an aberration in the world perspective," it is an American aberration that seems to be firm in its position in state revenue systems.

The tax is the closest approximation to a general consumption tax in the American system. As a general tax on consumption, it would avoid the disincentive to saving that is characteristic of income taxes. Further, it would have the fundamental fairness advantage of basing payment for government services according to self-assessment of ability to purchase services from the private sector. As Kaldor (1955, p. 47) put it some years ago, "…each individual performs this operation [identifying their capacity] for himself when, in light of all his present circumstances and future prospects, he decides on the scale of his personal living expenses. Thus a tax based on actual spending rates each individual's spending capacity according to the yardstick which he applies to

himself." While that would represent a powerful argument for the retail sales tax, it is incorrect to think that it is such a tax. Sullivan (2013, p. 789) observes that the problem with the retail sales taxes is "how far they stray from true consumption taxation," in particular by taxing transactions that are not consumption (they are purchases made by businesses) and by excluding from tax transactions that are consumption (they are final purchases by households). Generalizations are complicated by the fact that, although states do copy from their neighbors somewhat, each state adopts its own sales tax without any national template that might serve as a guide for uniformity and without any comparable federal tax that they might copy, in the manner that state income taxes tend to start from the federal structure, even though they have absolutely no requirement to do so. Each state levies a retail sales tax on its own, structured by the particular preferences and interests of its lawmakers and the interest groups that influence them. Hence, with these taxes, particular attention must be devoted explicitly to the structure of each tax in trying to identify general patterns. Just as the retail sales taxes generally stray from being general consumption taxes, the particular structure in each state strays both from the consumption standard and from other state taxes. In light of structural diversity of the tax and its importance to state finances, it is appropriate to examine how important structural features contribute to divergence from the consumption standard, making allowances for differences in administration and state economies.

1.2. TRENDS IN STATE RETAIL SALES TAXATION

State retail sales taxes have survived well since their initial adoptions by Mississippi and West Virginia during the depths of the Great Depression (1932 – 33). The taxes, collected in little bits with each purchase, generated revenue for the states when their other important taxes, notably motor fuel and property taxes, failed to yield sufficient revenue to meet service requirements. A number of states quickly adopted some form of the tax with twenty-two states levying the tax in 1940 (Due and Mikesell 1994, p. 3). By 1947, the tax was the largest single tax source for state governments. The most recent retail sales tax adoption was by Vermont in 1969. Therefore, the examination of sales tax trends in this section that begins with 1970 data works with a constant group of forty-five states.

Standardized Retail Sales Tax Collections. Retail sales tax data used in this investigation with the annual general sales tax collection reports from the Governments Division of the U. S. Bureau of Census, a tabulation of data provided by the individual states on the taxes levied by each state. These data by themselves do not present a standard basis for comparisons of retail sales taxes across states because of Governments Division reporting conventions (e.g., collections of some retail sales taxes that do not apply throughout the state are sometimes included with state tax collections), because of some statutory pe-

culiarities in states (e.g, some states exempt motor vehicle sales from the general sales tax but tax them in a virtually equivalent motor vehicle excise tax collected by the Department of Motor Vehicles), and because some data included in the Census general sales and gross receipts tax category are for taxes that are not retail sales taxes (e. g., the old Indiana gross income tax). Some adjustments are large. For instance, motor vehicle purchases are usually a substantial component of any state retail sales tax. To fail to adjust for their special treatment would give misleading data for cross state comparisons.

These are the adjustments required to provide a standard retail sales tax for comparison across states. Collections are added for the Kentucky motor vehicle usage tax, the Minnesota motor vehicle excise tax and motor vehicle rental tax, the North Dakota motor vehicle excise tax, the Vermont motor vehicle purchase and use tax, the South Carolina casual sales tax, the Maryland motor vehicle excise tax, the West Virginia motor vehicle title privilege tax, the New Mexico boat excise tax, motor vehicle excise tax, and leased vehicle gross receipts tax, the Illinois vehicle use tax, automobile renting occupation and use tax, and hotel operators tax, the Oklahoma aircraft excise tax, the Virginia motor vehicle sales and use tax, the aircraft sales tax, the watercraft sales tax, and the vending machine tax, the Texas motor vehicle sale, rental, and use tax, the South Dakota contractors excise tax, and the Alabama lodging tax and rental of tangible personal property tax.

Collections subtracted include the New York metropolitan commuter transportation district tax, portions of the Hawaii general excise tax with rates less than 4%, the Nebraska local sales tax collection fee, the Arizona Maricopa County Transportation tax, severance tax components in the Arizona transaction privilege tax, and the Washington business and occupation tax. In earlier years, the Indiana gross income tax and West Virginia business and occupation tax were subtracted.

Data for these adjustments came from unpublished data graciously provided by Census, department of revenue annual reports, state comprehensive annual financial reports, state budget documents, and direct inquiries to state officials. Sources do not always match perfectly with Census general sales and gross receipts data but collections data with the adjustments, even with their imperfections, provide a better basis for comparisons across all the states than would the raw Census data. These adjustments do make a difference. Over the period examined, while Census report and adjusted collections are the same for many states, adjusted data ranges from 70 to 170% of reported data for years in some states. To fail to make these adjustments to standardize interstate comparisons would give a misleading view of retail sales tax performance.

Figure 1.1 (p. 18) shows how the combined state sales tax bases, total state retail sales tax collections, and national personal consumption expenditure (the hypothetical consumption tax base) have grown from 1970 to 2012. In order to put all data in the same graph (there are considerable differences in order of magnitude), all are presented in terms of ratios to the 1970 level. The tax data are for all forty-five retail sales tax states through all the years while the consumption data are for the entire nation. There has been considerable growth of both base and collections. Personal consumption expenditure grew at a rate of 6.77% over those years, while the national combined sales tax base grew at an annual rate of 5.54%.[1] Collections grew faster than both: 6.86%, a reflection of higher statutory tax rates over the years. The average statutory rate increased from 3.528% at the start of 1970 to 5.548% at the start of 2012. The sales tax base did not grow as rapidly as did personal consumption expenditure, but total sales tax collections did, the result of applying higher statutory rates to the defined sales tax base.

The figure also shows the impact of the recent recessions, a slight dip in the upward trend in the recession in 2001 for base and collections and a much more pronounced decline in the Great Recession. The dip in personal consumption expenditure is much less pronounced that for base and collections in the Great Recession and there is no discernable change in personal consumption expenditure growth for the 2001 recession. The evidence clearly shows that, while the sales tax base may provide some greater stability in recession than experienced with income or profits taxes, it certainly is not immune from the effects of reduced economic activity. A tax that more closely matches personal consumption expenditure might further improve stability.

The data show the growth of retail sales tax revenue and sales tax base, the increases in statutory tax rates, and some divergence between sales tax behavior and that of personal consumption expenditure. These data encompass actual tax operations. They do not afford direct insights into missed potential sales tax revenue, that is, the difference between actual tax productivity and what would have been produced from a fully implemented tax applied uniformly to household consumption expenditure. The next section presents a measurement of the gap between actual and potential collections as a prelude to examining the forces that create that gap.

1.3. ANALYSIS WITH C-EFFICIENCY

A measure frequently used for analysis of coverage of the value-added tax, the primary alternative to the retail sales tax for taxation of consumption, is C-efficiency. Keen (2013, p. 427) explains that the measure "implicitly compar[es] the revenue that some VAT actually raise with that which would

1. Rates of growth are calculated by fitting a logarithmic trend to the annual data.

be raised if it were perfectly enforced and levied at a uniform rate, equal to the standard rate, on consumption, with no exemptions…" The measure captures the effects of non-compliance, that is, the extent to which entities do not pay the value-added tax owed on their transactions. It also includes the effects of governmental choices about structuring the value-tax: preferential rates for certain consumption classes, exemption of certain transactions from coverage of the tax, and so on. It is, thus, an encompassing indicator of the extent to which the actual coverage of the tax coincides with fully-enforced application of the tax to the consumption base. It is an indicator of the gap between actual tax collections and collections from a fully collected, fully general, uniform tax on consumption or actual collections against theoretical potential collections.

The Measure: The C-efficiency ratio (CE) equals

$$CE = (V/C) / t$$

where V = total collections from the state retail sales tax, C = household consumption expenditure for the state, and t = the standard statutory retail sales tax rate for the state.

Operationally, CE is the effective tax rate on the ideal tax base divided by the statutory or legally intended tax rate. A higher CE means that less of the potential tax base has escaped the tax and, accordingly, that yield from the standard statutory rate will be higher. Less of the potential base has escaped through legal preferences or illegal evasion and, thus, potential distortions and horizontal inequities are less.

Previously it has been possible only to estimate retail sales tax C-efficiency in the United States at the national aggregate level. The U. S. average "… equals the ratio of total state sales tax collections in the nation divided by national household consumption expenditure, and the result divided by a weighted average of state sales tax rates (adjusted RST collections divided by the national total of sales tax bases)." (Mikesell 2012, p. 179) It has not been possible to compute C-efficiency for individual states because there were no data for personal consumption expenditure on a state-by-state basis and that is unfortunate because state sales tax systems and state economies do differ. An average from the national aggregates conceals many variations and may not be particularly reflective of the experience of any state, let alone the system of all the states. However, the Bureau of Economic Analysis has now developed state level personal consumption expenditure data and this paper uses these data to estimate C-efficiency ratios (the ratio of revenue actually raised from the tax to revenue that would be raised from a perfectly uniform, perfectly administered tax) for each state from 1998 through 2007 (Awuku-Budu et al. 2013). Because the estimates are for each state, it is possible to then identify trends at the state level and to identify how details of tax structure (exclusions,

exemptions, rate variations), differences in state economies, and state enforcement vigor shape those patterns. In this analysis, the adjusted retail sales tax collections data for each state as discussed in an earlier section are combined with these BEA consumption data to compute individual state C-efficiency or tax gap estimates for each state.

1.4. C-EFFICIENCY ACROSS STATES

Table 1.1 (p. 17) presents C-efficiency measures across sales tax states from 1998 to 2007.[2] The evidence shows the median C-efficiency to be 0.50 or below for most of the years, meaning that the effective rate is half or less the statutory general rate applied to consumption. The sales taxes in practice fall far below the standard of a uniform tax on all consumption expenditure. The median for all states has been falling through all the years examined, leaving the 2007 level around 15% below its 1998 level. The mean has fallen as well, but only by around 10%. Unquestionably, the coverage of the retail sales tax has declined considerably over those years.

The general pattern of decline also shows in the individual state measures. However, there is substantial variation across the states. The coefficient of variation is around 0.30 for most years and it has been increasing, from 0.277 in 1998 to 0.380 in 2007. In 2007, the mean C-efficiency in the highest decile of states (0.964) is almost three times greater than the mean C-efficiency in the lowest decile of states (0.342). There is substantial difference in retail sales tax structure and performance across the states. Some of the variation can be attributed to differences in state economies (Hawaii and Wyoming measures are particularly high and both have considerable opportunity to capture collections from outside the resident state economy, the one from tourists and the other from mineral extraction), but much would come from different sales tax structures and from differences in administrative vigor. The remaining sections will seek to identify how these influences impact C-efficiency in order to better understand collection gaps.

The C-Efficiency Literature. State retail sales taxes have experienced base erosion for many years (Mikesell 2012). However, there has been little analytic attention to the forces driving dynamic erosion across states, certainly not the attention given to value-added tax erosion across nations. Thus, the literature most relevant to the present project comes from work done regarding the other approach to general indirect consumption taxation, the value-added tax. In many respects, the transition between taxes is not difficult.

2. Personal consumption expenditure data for calendar years were adjusted to approximate fiscal years. In other words, for a state reporting retail sales tax data for a fiscal year starting July 1, the associated personal consumption data will come half from one calendar year and half from another.

The concern in value-added tax gap analysis has been with the gap between the effective tax rate and the standard tax rate, an indication of the degree of uniform coverage of the tax on an intended broad base. A large gap represents evidence of base erosion from either tax preferences (failure to tax some components of the potential base or reduced rates on some taxed components) or imperfect enforcement of the tax. The value-added tax investigations have sought to identify the sources of the gap in studies that cross nations levying the tax.

Embrill et al (2001) investigated the influences on C-efficiency across 99 value-added tax countries on data from the late 1990s (missing data reduced the number of countries in some model specifications). Among the important influences were the statutory tax rate (higher rates were associated with narrower bases), a more open economy (collection of the tax on import facilitates collection success), the age of the tax (administration improves with experience), and literacy of the population (yields are less when literacy is low). Variables that sought to capture the impact of differences in national value-added tax structure were not consistently significant.

Aizenman and Jinjarak (2008) study value-added tax C-efficiency for a collection of 44 countries over the 1970 – 1999 period.[3] C-efficiency ranges broadly, from 2.4% in Belarus to 45.2% in Finland. They find these influences to be significant: real GDP per capita (a higher level of development improved C-efficiency), higher agricultural share of GDP (the tax is more difficult to collect when agriculture is more important in the economy), trade openness (the tax is easier to enforce on transactions crossing national borders), urbanized population (a more rural population makes collection more difficult), durability of the political régime (less political stability increases the compliance gap), and political polarization (greater polarization increases the gap). The analysis does not, however, consider the impact of structural features of the value-added tax on the gap. Given the considerable differences among the national taxes examined, this would seem to be an important missed opportunity.

De Mello (2009) examines evidence of value-added tax avoidance in a cross-section of Organisation for Economic Co-operation and Development (OECD) and non-OECD countries in 2003 (a total of 42 countries), using the C-efficiency index to gauge the tax gap. He finds that C-efficiency is higher when the statutory rate is lower, when the share of administrative cost in tax

3. In calculating C-efficiency, they strangely use the standard value-added tax rate for each country in 2003 and assume that this rate applied throughout the 1970 – 1999 period. Therefore, C-efficiency – the dependent variable in their models – is mismeasured for many countries in many years and their conclusion should be viewed with some caution. Also, some of the countries in their collection were part of the Soviet Union and taxes they levied in early years bear little similarity to the standard conception of a value-added tax, in addition to the fact that they were not independent nations until after 1991.

revenue is lower (a proxy for administrative efficiency), when the country has a pro-competition regulatory framework (a proxy for non-tax incentives for non-compliance), and when the country has better governance indicators. The model makes no allowances for differences in national economies or in national value added tax structures that may impact the size of the tax base outside of avoidance activities.

An older study by Silvani and Brondolo (1993) examines value added tax compliance across twenty unidentified countries by examining the compliance coefficient computed by national tax authorities. This measure equaled the ratio of actual value added tax revenue to estimated potential value added tax revenue.[4] After dealing with some multi-collinearity problems, they concluded that the higher levels of economic development (measured by national per capita income in dollars) and a smaller share of economic activity in agriculture improved compliance. Elements associated with tax structure (average rate, number of rates, size of potential base, number of years the tax had been in operation) did not have a influence. One of their conclusions was "that a well-designed VAT is not always a sufficient condition to ensure compliance" (p. 243) because many countries in their study with desirable administrative features suffered from low levels of compliance. They argue that development and more production in easier to measure economic sectors were critical for high compliance.

1.5. A SALES TAX GAP MODEL AND ITS ESTIMATION

The intent of the sales tax gap model is to understand the forces that create the mismatch between coverage of state retail sales taxes and household consumption expenditure. It follows in the path of the value-added tax efficiency models by exploring the causes of low collection efficiency.

The model has to account for the difference previously noted between the retail sales taxes and a general consumption tax. That is, it excludes important elements of household consumption and taxes some business purchases. In other words, retail sales tax revenue (R) equals

$$R = t(aC + bS + cK)$$

Where t = statutory retail sales tax rate, C = household consumption expenditures of goods, S = household consumption of services, K = business input purchases, and a, b, and c are the fractions of each subject to sales tax in a state. In a retail sales tax that applies uniformly to consumption expenditure, a tax matching the Kaldor standard, a and b would equal one and c would equal zero. That would make a comparison of C-efficiency across states to identify

4. Their compliance coefficient is algebraically equivalent to C-efficiency.

collection gaps immediately possible. Because that is not the case, tax structure must be considered in the sales tax gap model.

The collection gap C as measured by C-efficiency is postulated to be determined in the following function:

$$C_{it} = f(S_{it}, A_{it,} E_{it})$$

Where C_{it} equals the measured collection gap in state i in year t, S_{it} equals a vector of sales tax structural features that define sales tax base, A_{it} equals a vector of features of tax administration determined by the individual state, and E_{it} equals a vector of state economic and other features not under direct state control that may shape the measured collection gap. Some variables are included because they have been found to be important in examinations of value-added tax C-efficiency in the suspicion that they would be important for understanding retail sales tax collection efficiency. However, some are unique to the operating environment of the American retail sales tax and to structural features common to retail sales taxes.

The S Vector: Sales Tax Statutory Structure.

A number of statutory provisions may have a direct impact on the collection gap. These variables include the following:

(a) The statutory tax rate, RTE. Although some would argue that higher rates are more likely to encourage avoidance or evasion, at a more pragmatic level, statutory rates are associated with statutorily-narrower tax bases. Higher rates would be associated with a larger collection gap.

(b) Taxation of state and local government purchases, SLT. This categorical dummy variable equals one for states which provide no exemption and zero for those who do. When these purchases are taxed, the measured collection gap would be smaller.

(c) Taxation of business purchases of capital and equipment, RELCAP. This variable equals the ratio of the tax applied on these business purchases to the general sales tax rate. Exemption is important to prevent development distortions and pyramiding but the observed collection gap would be lower if the purchases are not exempt.

(d) Taxation of food for at home consumption, FD. This variable equals the ratio of the tax applied to food purchases relative to the general sales tax rate and equals one when food is taxed at the standard rate, equals zero when food is fully exempt, and some fraction when food is taxed at a reduced rate. Exemption would make the observed collection gap larger.

(e) Taxation of clothing, CLTH. This variable equals one when clothing purchases are fully taxed and zero if there is a year-round clothing exemption. Exemption would make the observed collection gap larger.

(f) Taxation of non-profit organization purchases, NP. Some states provide general exemption of purchases by non-profit organizations, while others offer only limited exemption to a narrow list of groups. This variable is one if there is no general non-profit organization exemption.

(g) Taxation of services, GENS and NARS. Two dummy variables are used to identify the extent to which states include purchases of services in their sales tax base. The variable GENS identifies the small number of states which tax services purchases generally, roughly with the same coverage logic as applies to purchases of goods. The variable NARS identifies the somewhat larger number of states which narrowly limit their tax to purchases of goods with only minimal and minor coverage of services. GENS would be expected to be associated with higher collection results and NARS would be expected to be associated with lower.

The E Vector: State Economic Structure and Non-tax Structure Influences.

Differences in the state economy can create differences in the linkage between measured household consumption expenditure and the sales tax base that gets captured by the state revenue system. The BEA data are for consumption by the resident population, so that somewhat complicates the measurement issues. These variables capturing economic differences include the following:

(a) Real gross domestic product per capita, RLGDP. The VAT literature suggests that higher levels of economic development would be associated with greater collection efficiency.

(b) The share of state gross domestic product from the agricultural sector, AG. The VAT literature suggests that collection is more difficult when agriculture is a more important part of the economy. While agricultural operators in the United States probably are more sophisticated than are their counterparts in some countries levying VATs, the idea does create a useful test across sales tax states. Furthermore, the Internal Revenue Service has estimated the net misreporting percentage for farm income to be 72% for the individual income tax, substantially higher than for many other income types, so it is not unreasonable to examine the extent to which tax gap problems might extend to the retail sales tax.

(c) The share of the mining sector in state gross domestic product, MINE. When the state economy has a substantial sector that exploits natural resources, there is a strong opportunity for a larger portion of sales tax burden to be exported out of the state. That would mean increased collections

relative to personal consumption expenditure of the state's resident population and would increase measured collection efficiency. Because there is considerable difference across the states in the importance of the mining sector, it is important to allow for this influence in the analysis.

(d) The share of accommodations in state gross domestic product, ACC. A state with a relatively large tourist economy is likely to generate higher sales tax collections relative to observed consumption expenditures by the resident population. In this analysis, this impact is accounted for by the importance of accommodations in the total economy.

(e) The age of the state retail sales tax, AGE. There is evidence from the value-added tax literature that tax administrations improve with experience and, hence, that collection efficiency improves with age. There are no new state retail sales taxes in the years of the panel (the most recent adoption was in1969), but the hypothesis is worth testing.

The A Vector: State Tax Administration and Enforcement

States differ in the extent to which they employ administrative and enforcement tools and opportunities to reduce the collection gap. States employ a variety of tools in collecting their retail sales tax and many of them are not readily measurable across time. As a result, some proxy variables – along with one direct variable -- will be used here to identify the impact of administration and enforcement on observed collection efficiency:

(a) Retail sales tax reliance, REL. States differ in the extent to which the retail sales tax is a critical element in their revenue portfolio, with reliance ranging from under 20% to over sixty 60%. It is reasonable to expect that those relying heavily on the tax will give the tax greater enforcement and administrative attention. The reliance measure used in the analysis is the sales tax share of total tax revenue lagged three years.

(b) Multistate Tax Commission membership, MTC. It is hypothesized that states with full membership in the Multistate Tax Commission are more fervent about collection of all tax revenues due the state. This variable is a dummy equal to one if the state is a full member in the year and equal to zero if it is not.

(c) Tax collectors in state relative to state gross domestic product, EMPGDP.[5] Collection efficiency is likely to improve if there are many tax collectors relative to the size of the state economy. The Bureau of Labor Statistics data on tax collectors does not distinguish level of government or type of tax but it is presumed that there will be compliance spillovers, regardless

5. The collector employment data are for BLS Code 13-2081 Tax Examiners and Collectors and Revenue Agents.

of employer of the tax collector. Birskyte (2008) has found a spillover impact of federal individual income tax audits on state income tax compliance and it is reasonable to anticipate that similar spillover effects would work across taxes collected by any entity in a state.

These several influences provide an approach to identifying the causes of variation in retail sales tax collection efficiency across states. Some of the influences are largely out of the control of both lawmakers and tax administrators, at least in the short run. However, others are subject to manipulation by states to improve collection efficiency.

1.6. EMPIRICAL RESULTS AND THEIR IMPLICATIONS

The sales tax gap model outlined above is examined with C-efficiency data for all retail sales tax states across the fiscal years from 1998 to 2007 (1999 to 2007 in some analysis). The panel is long enough to encompass periods of economic expansion and contraction, although does not include the Great Recession era. Table 1.2 (p. 19) provides the basic descriptive statistics for the variables used in the model. All show considerable variation around their means, with least variation in C-efficiency. The range of observations is high for most of the variables. Table 1.3 (p. 20) provides the results from an ordinary least squares regression test of the sales tax collection efficiency model previously outlined. Most of the results are consistent with the hypothesized relationships.

The table presents three alternative specifications of the basic model. The first includes all explanatory variables postulated previously. The second excludes two variables whose standard errors were greater than their coefficients in the first specification, the agricultural share of the state economy and the dummy indicating full taxability of clothing. The signs of both coefficients were as hypothesized but the variables were not contributing to the explanatory power of the model. The third specification excludes the relative number of tax collectors in the state. Data on this variable are not available for 1998, so excluding the variable permits adding an extra year of observation. Excluding the variable had no impact on the results in comparison with the other specifications.

The results are consistent with those previously hypothesized. The regression coefficient in all specifications exceeded 0.75, supporting the overall quality of the model. The signs of the coefficients for each of the independent variables are consistent with prior expectations. The coefficients for agriculture share and for taxability of clothing purchases have particularly low significance, but the coefficients for all the other variables is greater than their standard error and, with the exception of age of the sales tax in the state, are statistically different from zero at at least the 5% level of confidence and usu-

ally at the 1% level. No sales taxes are particularly new – the newest is 30 years old – so, in contrast with the work done on national value-added taxes, there would be no unfamiliarity issues complicating state administration. Indeed, taxes tend to pick up exemptions as they age and as interest groups develop lobbying clout, so any administrative advantage from age is likely to be counterbalanced by the growth of exemptions gnawing at the legal base.

The findings from the model are these. In terms of statutory structure, collection efficiency declines as the statutory rate is higher, it increases as state – local purchases are taxed, it increases as capital is taxed at a higher rate relative to the standard rate, it increases as food is taxed at a higher rate relative to the standard rate, it increases as non-profit purchases are taxed, it increases when services are taxed generally, and it decreases when services are taxed narrowly if at all.

In terms of the impact from structure of the state economy, collection efficiency increases when mining is a larger component of the state economy, it increases when accommodations are a larger component of the state economy, and it increases when development of the state economy is greater (higher real gross domestic product).

In terms of the impact from state administration and enforcement, collection efficiency is higher when the state has relied more heavily on revenues from its retail sales tax, it is higher when the state is a member of the Multistate Tax Commission, and it is higher when the state has more tax collectors relative to the size of the state. All this suggests the significance of more determined tax administration and enforcement on increasing collection efficiency.

The results from the sales tax gap model created here can be used to identify the contribution that stronger state tax administration and enforcement can yield to collection efficiency. The approach is to postulate high versus low levels of administration and enforcement and to compare their impact on results from the collection efficiency model. The results of this experiment are presented in Table 1.4 (p. 21). Non-enforcement variables are set at their means or, for tax structure variables, at their most common value. The variables associated with enforcement and administration (Multistate Tax Commission membership, retail sales tax reliance, and collection coverage) are varied between low enforcement and high enforcement values. High enforcement is defined to be Multistate Tax Commission membership, reliance one standard deviation above the mean, and collector coverage one standard deviation above the mean. Low enforcement is defined to be non-Multistate Tax Commission membership, reliance one standard deviation below the mean, and collector coverage one standard deviation below the mean. The table presents the estimates when those values are applied in collection efficiency model (2).

The evidence is clear. A higher level of enforcement as defined in this analysis improves retail sales tax collection efficiency by around 50% when compared with a lower level of enforcement, from 0.378 to 0.563. That represents a considerable improvement in closing the compliance gap and would improve the equity of sales tax enforcement and would improve collection results.

1.7. CONCLUSION

The C-efficiency measure of tax collection efficiency developed for analysis of value-added taxes can be applied to state retail sales taxes. The measure varies substantially across the states. A sales tax gap model shows that this variation is the product of the nature of state economies, the structure of the enacted state sales taxes, and the rigor with which the taxes are administered. More enforcement effort creates considerable improvement in sales tax collection efficiency.

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Table 1.1.	C-Efficiency by State, 1998 to 2007									
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
ALABAMA	0.53	0.52	0.51	0.49	0.47	0.46	0.46	0.47	0.49	0.48
ARIZONA	0.57	0.57	0.58	0.57	0.55	0.52	0.53	0.52	0.57	0.55
ARKANSAS	0.76	0.75	0.74	0.67	0.69	0.66	0.70	0.68	0.69	0.68
CALIFORNIA	0.49	0.49	0.46	0.45	0.44	0.42	0.42	0.44	0.43	0.41
COLORADO	0.55	0.54	0.54	0.53	0.49	0.47	0.48	0.48	0.48	0.48
CONNECTICUT	0.59	0.59	0.59	0.52	0.47	0.46	0.44	0.44	0.39	0.37
FLORIDA	0.64	0.65	0.65	0.60	0.55	0.55	0.58	0.59	0.64	0.61
GEORGIA	0.62	0.63	0.62	0.62	0.58	0.55	0.54	0.55	0.55	0.54
HAWAII	1.27	1.25	1.25	1.27	1.21	1.29	1.28	1.33	1.36	1.52
IDAHO	0.59	0.59	0.58	0.57	0.55	0.55	0.53	0.53	0.45	0.50
ILLINOIS	0.35	0.36	0.36	0.33	0.34	0.33	0.33	0.33	0.33	0.32
INDIANA	0.54	0.53	0.54	0.51	0.52	0.46	0.50	0.50	0.51	0.50
IOWA	0.56	0.56	0.55	0.54	0.52	0.46	0.45	0.45	0.45	0.43
KANSAS	0.64	0.63	0.61	0.59	0.58	0.54	0.53	0.53	0.54	0.54
KENTUCKY	0.54	0.53	0.51	0.50	0.50	0.49	0.48	0.48	0.48	0.47
LOUISANIA	0.63	0.60	0.59	0.66	0.61	0.62	0.63	0.65	0.74	0.70
MAINE	0.54	0.54	0.52	0.52	0.50	0.48	0.49	0.47	0.50	0.49
MARYLAND	0.61	0.60	0.60	0.58	0.57	0.55	0.52	0.54	0.55	0.53
MASSACHUSETTS	0.38	0.39	0.39	0.39	0.36	0.35	0.33	0.33	0.32	0.32
MICHIGAN	0.55	0.54	0.54	0.53	0.52	0.50	0.49	0.49	0.48	0.46
MINNESOTA	0.53	0.52	0.52	0.49	0.48	0.47	0.47	0.46	0.46	0.44
MISSISSIPPI	0.66	0.67	0.66	0.62	0.60	0.60	0.57	0.56	0.62	0.60
MISSOURI	0.56	0.54	0.53	0.50	0.48	0.46	0.46	0.45	0.44	0.45
NEBRASKA	0.57	0.55	0.55	0.52	0.51	0.60	0.61	0.57	0.51	0.51
NEVADA	0.66	0.67	0.65	0.63	0.60	0.60	0.55	0.63	0.62	0.59
NEW JERSEY	0.39	0.39	0.40	0.39	0.39	0.36	0.36	0.36	0.36	0.37
NEW MEXICO	0.95	0.90	0.88	0.89	0.71	0.68	0.68	0.68	0.70	0.73
NEW YORK	0.46	0.45	0.46	0.44	0.41	0.41	0.39	0.40	0.43	0.39
NORTH CAROLINA	0.53	0.51	0.47	0.45	0.42	0.43	0.45	0.45	0.46	0.47
NORTH DAKOTA	0.59	0.59	0.57	0.55	0.52	0.52	0.51	0.54	0.52	0.56
OHIO	0.48	0.48	0.48	0.46	0.45	0.46	0.43	0.43	0.43	0.42
OKLAHOMA	0.51	0.49	0.48	0.49	0.47	0.44	0.44	0.44	0.44	0.45
PENNSYLVANIA	0.42	0.42	0.41	0.40	0.39	0.39	0.38	0.37	0.37	0.37
RHODE ISLAND	0.35	0.36	0.36	0.38	0.38	0.36	0.36	0.36	0.36	0.36
SOUTH CAROLINA	0.59	0.60	0.58	0.56	0.50	0.53	0.53	0.53	0.55	0.52
SOUTH DAKOTA	0.86	0.84	0.84	0.84	0.81	0.79	0.81	0.82	0.86	0.85
TENNESSEE	0.61	0.60	0.59	0.59	0.57	0.55	0.56	0.55	0.55	0.55
TEXAS	0.59	0.58	0.58	0.58	0.55	0.52	0.53	0.52	0.54	0.56
UTAH	0.70	0.69	0.66	0.64	0.62	0.59	0.59	0.60	0.61	0.57
VERMONT	0.40	0.40	0.41	0.38	0.37	0.36	0.32	0.35	0.34	0.34
VIRGINIA	0.51	0.51	0.50	0.49	0.50	0.45	0.47	0.39	0.39	0.40
WASHINGTON	0.62	0.61	0.61	0.60	0.57	0.56	0.55	0.56	0.58	0.58
WEST VIRGINIA	0.52	0.52	0.50	0.47	0.48	0.47	0.47	0.41	0.46	0.44
WISCONSIN	0.58	0.58	0.58	0.57	0.56	0.54	0.53	0.53	0.51	0.49
WYOMING	0.88	0.85	0.85	0.88	0.90	0.79	0.82	0.89	0.99	1.02
Mean	0.588	0.582	0.575	0.561	0.539	0.525	0.524	0.526	0.535	0.532
Median	0.567	0.563	0.553	0.531	0.516	0.496	0.501	0.502	0.502	0.492
Coefficient of Variation	0.277	0.267	0.268	0.285	0.278	0.296	0.302	0.320	0.341	0.380
Highest	1.27	1.25	1.25	1.27	1.21	1.29	1.28	1.33	1.36	1.52
Lowest	0.35	0.36	0.36	0.33	0.34	0.33	0.32	0.33	0.32	0.32

Figure 1.1. Aggregate Retail Sales Tax Base, Total Retail Slaes Tax Collections, and Personal Consumption Expenditure, 1970 - 2012 (Relative to 1970)

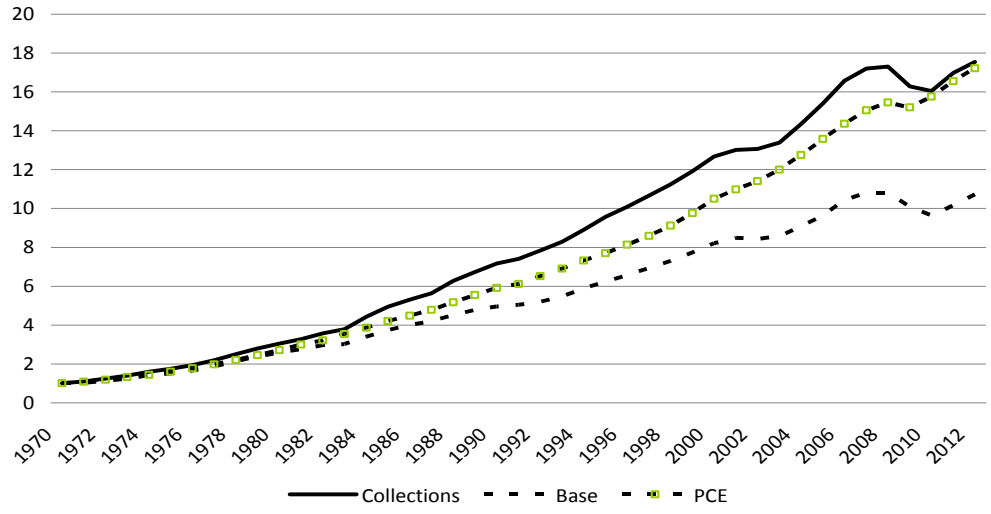

Table 1.2. Descriptive Statistics

	Mean	Standard Deviation	Minimum	Maximum
C-efficiency	0.5442	0.1656	0.3170	1.5196
Statutory Rate	0.0525	0.0098	0.29	0.07
Age of Tax	57	13.3848	30	75
State-Local Taxed	0.1556	0.3629	0	1
Relative Rate on Capital	0.2230	0.4022	0	1
Relative Rate on Food	0.3367	0.4572	0	1
Mining Share	0.0223	0.0494	0.0001	0.3626
Agriculture Share	0.0178	0.0183	0.0017	0.1010
Accommodation Share	0.0140	0.0226	0.0039	0.1588
Real GDP/Capital (thousands)	39.1294	6.2186	26.644	59.211
Reliance (t-3)	0.3590	0.0990	0.1849	0.6145
MTC membership	0.4642	0.4993	0	1
Clothing Taxed	0.8370	0.3698	0	1
Non-Profit Taxed	0.4173	0.4937	0	1
General Services Taxed	0.1111	0.3147	0	1
Narrow Services	0.3111	0.4637	0	1
Tax Collector Coverage	6.2665	3.7307	1.7224	25.9996

Table 1.3. RST Collection Efficiency

Dependent Variable: State C- efficiency

Explanatory Variables	(1)	(2)	(3)
Statutory Rate	-5.0459***	-5.2040***	-4.8998***
	(015891)	(0.5335)	(0.5612)
Age of Tax	-0.0005	-0.0004	-0.0003
	(0.0004)	(0.0004)	(0.0004)
State-Local Taxed	0.0805***	0.0824***	0.0709***
	(0.0147)	(0.0141)	(0.0136)
Relative Rate on Capital	0.03362***	0.0335***	0.0391***
	(0.0123)	(0.0120)	(0.01135)
Relative Rate on Food	0.0442***	0.0433***	0.0529**
	(0.0123)	(0.0122)	(0.01120)
Mining Share	0.3674***	0.3822***	0.3406***
	(0.1008)	(0.0988)	(0.0964)
Agriculture Share	-0.1731	--	-0.2017
	(0.3050)		(0.2810)
Accommodations Share	1.6350***	1.6743***	1.5667***
	(0.2299)	(0.2210)	(0.2172)
Real GDP per capita	0.0029***	0.0026***	0.0024***
(Thousands)	(0.0010)	(0.00009)	(0.00009)
Reliance (t-3)	0.5791***	0.5899***	0.5668***
	(0.0628)	(0.0561)	(0.0600)
MTC	0.0492***	0.0473***	0.0554***
	(0.0103)	(0.0099)	(0.0095)
Clothing Taxed	0.0107	--	0.0042
	(0.0179)		(0.0167)
Non-Profit Taxed	0.0477***	0.0454***	0.0439***
	(0.0123)	(0.0107)	(0.0115)
General Services	0.1379***	0.1334***	0.1308***
	(0.0171)	(0.0160)	(0.0156)
Narrow Services	-0.0289*	-0.0278*	-
	(0.0117)	(0.0110)	0.0321***
			(0.0110)
Collector Coverage	0.0029*	0.0028*	--
	(0.0014)	(0.0014)	
Intercept	0.3706***	0.3862***	0.4575***
	(0.0696)	(0.0603)	(0.0591)
R-squared	0.7701	0.7697	0.7696
Observations	405	405	450
Period	1999-2007	1999-2007	1998-2007

Note: Regression includes year dummies.
Statistical significance at the 1 and 5% levels is denoted by *** and ** respectively.

Table 1.4. State Enforcement Impact Estimates

LOW ENFORCEMENT		
	No MTC membership	(0)
	Reliance one standard deviation below mean	(.26)
	Collector Coverage one standard deviation below mean	(2.5358)
HIGH ENFORCEMENT		
	MTC membership	(1)
	Reliance one standard deviation above mean	(.458)
	Collector coverage one standard deviation above mean	(9.9972)
NON-ENFORCEMENT VARIABLES		
	Statutory rate at mean	(5.25%)
	Age of tax at mean	(57 years)
	State-Local Purchases exempt	(0)
	Relative rate on capital	(0)
	Relative rate on food	(0)
	Mining share at mean	(0.0223)
	Accommodation share at mean	(0.0140)
	Real GDP/capita at mean	(39.1294)
	Non-profit purchases exempt	(0)
	Services not taxed generally	(0)
	Services not fully exempt	(0)

Estimated High Enforcement C-efficiency = 0.563
Estimated Low Enforcement C-efficiency = 0.378

2 UNSTABLE CONVERGENCE OR REGIONAL CONVERGENCE CLUBS? NEW EVIDENCE FROM PANEL DATA[1]

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ABSTRACT

This study goes beyond the standard approach in testing the hypothesis of the existence of real income-level convergence. While many authors raise doubts whether the ceteris paribus rate of relative β convergence should be believed to be constant across countries or regions, most of them assume that it is approximately stable over time. This, however, seems doubtful especially in the years of global economic crisis. We propose a dynamic panel data approach in which the convergence parameter is allowed to vary over time. To be robust to the chosen sample of countries, time stability is analyzed for various groups of countries forming the expected convergence clubs (EU28, EU15, OECD, post-socialist countries, Latin America, South-East Asia, and Africa). The study shows that the process of real economic convergence is undoubtedly variable over time. Regardless of the group of countries (or a convergence club), it is not appropriate to claim about a stable pace of income-level convergence. For example, the EU28 countries revealed an accelerating pace of income-level convergence over the last 20 years. Instabilities in the pace of income-level convergence were also evidenced in the other studied groups.

2.1. INTRODUCTION

The analysis goes beyond the standard approach in testing the hypothesis of the existence of real income-level convergence. A load of macroeconomic literature is devoted to the problem of β convergence which means that less developed countries grow faster than more developed ones. While many authors raise doubts whether the *ceteris paribus* rate of relative β convergence should be believed to be constant across countries or regions, most of them assume that it is approximately stable over time. This, however, seems doubtful especially in the years of global economic crisis. In this study, we propose a dynamic panel data approach in which the convergence parameter $\beta + x(t)$ is allowed to vary over time. Obtaining the estimates of $x(t)$ allows for identification of the path of β convergence parameter over time with an emphasis on the problem of its stability in the years of global economic crises.

To be robust to the chosen sample of countries, time stability is analyzed

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for various groups of countries forming the expected convergence clubs (EU28, EU15, OECD, post-socialist countries, Latin America, South-East Asia, and Africa). The comparison of various country groups shows the nature of the convergence process under various institutional environments prevailing in different samples of countries and allows us to check whether there is a phenomenon of club convergence. The application of moving panel data with overlapping observations is another way of checking the robustness of the results against the standard approach.

In the literature, there are some studies that analyze the time stability of the catching-up process, but they appear quite rarely and they incorporate a slightly different methodology than applied here. For example, Cunado (2011) examined the real convergence hypothesis in 14 OPEC countries over 1950 to 2006 using time series techniques and allowing for structural breaks. Di Vaio and Enflo (2011) examined 64 countries over 1870-2003 based on cross-sectional data and found that the process of convergence was not constant over time; they found a different behavior of the path of convergence during the three distinguished subperiods: 1870-1913, 1913-1950, and 1950-2003. Le Pen (2011) introduced structural breaks in the dynamics of per capita output differential in the analysis of 195 regions of the EU15 for the 1980-2006 period (structural breaks were modelled by dummies or as smooth structural breaks). Serranito (2013) analyzed the convergence process of 8 MENA (Middle East and North Africa) countries over 1960-2008 using panel unit root with endogenous breaks; his analysis showed that the process of β-convergence was not constant over time and that periods of divergence outnumbered periods of convergence.

The idea of club convergence that is applied here has become most popular in the last years as there have emerged some studies showing that the countries or regions can be grouped into various forms of convergence clubs. For example, Di Vaio and Enflo (2011) suggest that rather than analyzing all the world countries in one growth model it is better to test for the number of convergence clubs and split the time period of the sample so as to recognize the formation of clusters. Battisti and Parmeter (2013) in their study of 74 countries from 1960 to 2000 point to the importance of dividing world countries into clusters. Monfort, Cuestas, and Ordóñez (2013) observe two convergence clubs within the EU14 member states, which are not related to the fact that some countries belong to the euro area; furthermore, Eastern European countries are also divided in two clubs.

The idea of club convergence is also frequently analyzed on the regional level (e.g. Bartkowska and Riedl (2012) carry out an analysis of regional club convergence for Europe; Papalia and Bertarelli (2013) for Italy; Goletsis and Chletsos (2011) for Greece; Herrerias and Ordoñez (2012) for China; Ghosh, Ghoshray, and Malki (2013) for India).

The paper is composed as follows. Section 2.2 describes the econometric methodology. Section 3 presents the data used. Section 2.4 includes the presentation and interpretation of empirical results. Section 2.5 concludes.

2.2. METHODOLOGY

A wide variety of panel data-based research on GDP convergence implies a large number of different methods of the analysis although these can basically be divided into a few main categories. Most authors as a starting point make use of Barro regression:

$$\Delta lnGDP_{it} = \beta_0 + \beta_1 lnGDP_{i,t-1} + x'_{it}\gamma + \alpha_i + \varepsilon_{it}, \quad (1)$$

where $\Delta lnGDP_{it}$ is the change of log GDP for *i*-th country over *t*-th period, β_0 is the constant, $lnGDP_{i,t-1}$ is the one period lagged log GDP, x_{it} is a vector of the considered growth factors for *i*-th country over *t*-th period (β is the associated coefficient), α_i is the individual effect of the *i*-th country and ε_{it} is the error term. Convergence exists if β_1 is statistically significantly negative. In such a case, it is possible to calculate the β -coefficient, that measures the speed of convergence, from the equation:

$$\beta = -\frac{1}{T}\ln(1+\beta_1 T) \quad (2)$$

where T is the length of a single period in (1).[2]

In very old research some authors would estimate (1) with the use of OLS – a solution which might be useful in the case where cross-sectional rather than panel data are available (but linear regression models are still used and are being expanded – see e.g. Bernardelli (2012)). Slightly later a one-way fixed or random effects approach used to be popular: while random effects estimator is never recommended here due to its inconsistency in the context of the dynamics of the model, the fixed effects approach is acceptable as long as the length of the considered time series is very high and the independent variables in x_{it} can be treated as strictly exogeneous. The latter is highly questionable (and it also is required to perform consistent OLS estimation with the use of cross-section). The GMM approach is the one that most researchers would use nowadays: initially in the 1990's the Arellano and Bond (1991) ap-

2. Barro and Sala-i-Martin (2003, p. 467) analyze β convergence based on the neoclassical model and they derive the equation showing the relationship between the average annual GDP growth rate and the initial income level: $(1/T)\ln(y_{iT}/y_{i0}) = a - \left[\left(1-e^{-\beta T}\right)/T\right]\ln(y_{i0}) + w_{i0,T}$, where *yiT* and *yi*0 – GDP per capita of country *i* in the final and initial year, *T* – the length of period, β – the convergence parameter, *a* – a constant term, *wi*0,*T* – a random factor. The coefficient on initial income, i.e. –[(1 – *e*–β*T*)/*T*], equals β1 in equation (1). Thus, from β1 = –[(1 – *e*–β*T*)/*T*] we get (2). For a small *T* the regression coefficient β1 is very similar to the convergence parameter β, because if *T* tends to zero the expression (1 – *e*–β*T*)/*T* approaches β.

proach (AB hereafter) was dominating, but ever since the paper of Blundell and Bond (1998) (BB hereafter) their system-GMM estimator is certainly the most popular tool. This is due to its relatively high efficiency and ability to avoid such pitfalls as massive small sample bias, which was one of the properties of the AB estimator. Indeed, high downward bias of AB resulted in a number of papers with the conclusion of surprisingly high rate of convergence published in the 1990's, which – as it is known now – was due to the downward bias of the AB estimator in small samples while the true value of autoregressive parameter was close to one.[3]

The data shortage is always a serious problem when GMM is applied: that is because at least the first two waves of observations are lost since they are used only as instruments and the requirements that regard the number of observations needed for the GMM estimator to have any of its good properties are difficult to fulfill. Additionally, in the context of growth empirics, one cannot use high frequency data. That is because the phenomenon of growth should – macroeconomically – be observed in longer time horizon. Economic cycles as well as coincidental shocks bring about serious distortions of short term observations. Most authors divide the time series they use into 5-year-long periods of subsequent years. That means that a period of 20 years provides just 4 observations, whereas there are no good solutions in such a case: very short series make the use of GMM questionable while there are not too many countries in the sample, classical random or fixed effects approaches cannot be applied either (the former being inconsistent in the autoregressive environment, while the latter only asymptotically unbiased, which certainly is not the case), finally the Kiviet's least squares dummy variables corrected approach excludes the use of endogeneous regressors, while most growth drivers actually *are* endogeneous. We propose a different strategy, already described in Próchniak and Witkowski (2013) which allows to increase the number of observations in particular time series: one can divide the set of yearly panel data on different countries into 5-year-long *overlapping* observations, such that the first "period" covers, say, years 1991-1995, the second – years 1992-1996, etc. At first it seems that the same data are used many times and no additional information is thus obtained, but that is not true: each value of GDP in year t is used only twice: once as the dependent variable (in the role of GDP_t) and once as the independent variable (in the role of GDP_{t-1}). One important issue here is the problem of autocorrelation. An essential condition of consistency of the applied GMM is that there should be no form of the autocorrelation of the error term while this way of using the data makes the risk of autocorrelation very high. It must thus be checked for very carefully before proceeding anywhere further with the model.

In order to use the AB or BB estimator, (1) requires to be transformed to:

3. Econometric methods in economic growth models are described by Goczek (2012).

$$lnGDP_{it} = \beta_0 + [(\beta]_1 + 1)lnGDP_{i,t-1} + x'_{it}\gamma + \alpha_i + \varepsilon_{it} \quad (3)$$

which enables finding proper instruments based on lags of the variables in the model. In most research, authors do not consider the fact that the rate of convergence can change over time: the proposed model structures usually assume stability in this respect, although, as it was mentioned in introduction, there are papers in which that is taken into account. We suggest the following approach: at first, a set of time dummies should be included in the model:

$$lnGDP_{it} = \beta_0 + [(\beta]_1 + 1)lnGDP_{i,t-1} + x'_{it}\gamma + \theta_t + \alpha_i + \varepsilon_{it}, \quad (4)$$

where $\theta_t, t = 1, \dots T$ are the time dummies – constant for all the countries in period *t* while different over time. The estimates of time effects shall reflect the time-varying but constant for all the countries deviation of the rate of convergence in the given period as compared to the overall rate of convergence. On the operational level, one solution is not to include one of the time dummies for a selected period (say, for *t*=1) and treat it as a reference period so that the estimates of all the other time dummies should reflect the differences between the given period and the period for which the dummy was skipped.

Each of the $\theta_t, t = 1, \dots T$, reflects the *ceteris paribus* difference between the average growth in period *t* (understood as *t*-th 5-year-long time period in the data set) in all countries in the considered sample and the estimated overall rate of growth for all the countries throughout the analyzed period. The estimated rate of beta convergence in period *t* can be derived from the sum of convergence parameter β_1 and its temporary deviation θ_t on the basis of the equation (2). However, they are not only the shocks in the economy but also any sort of distortions in the dataset (including errors of data collection or handling) might thus have a serious influence on θ_t. Thus we suggest computing the values of the $\{\beta_1 1 + \theta_1 t\}, t = 1, \dots, T$ series, converting those into the β -convergence parameters and then smoothing them with the use of one of the algorithms in step two – in this paper we apply double exponential smoothing for this purpose. The smoothing is suggested in order to avoid the high influence of single outliers or short term shocks on the estimated rate of convergence. Step three is optional and consists in finding a function of time that could be used to describe the smoothed β -convergence rate over time and replacing the set of time dummies with that function in (4). The concept behind it is both saving the degrees of freedom of the model and allowing for forecasting, which otherwise requires *assuming* the value of θ_t for future periods. The appropriate function supposedly shall be cyclical, reflecting the nature of the economy, however, might be difficult or even impossible to find due to both smaller and larger shocks in the market that change the behavior of most economies and make the shape of the function difficult to predict, as well as due to the changing nature of the convergence process – in this paper the shape of the final rate of convergence curve is so untypical that we do not fit any particular curve to it.

2.3. DATA

The study refers to the analysis of club convergence as suggested among others by Di Vaio and Enflo (2011). The club convergence hypothesis states that world countries are divided into a number of groups for which one may expect the assumption about a relative homogeneity of members to hold, however at the same countries from different groups are believed to be (conditionally) too heterogeneous to believe that their *ceteris paribus* steady states are indeed the same and so are the relative convergence processes. It is obvious that each country is specific and there are no two exactly same countries. However, an approximate homogeneity of the growth processes may be found in the set of the countries that belong to the same political or economic organization, or the countries that have similar geographical location, religion, or history. In this analysis seven groups of countries are considered: EU28, EU15, OECD, post-socialist countries, Latin America, South-East Asia, and Africa. Some of the distinguished groups have partly the same coverage (e.g. EU15 is a part of EU28) and some of them are unique (European Union, Latin America, South-East Asia, and Africa), which reflects subjective decision as regards country groupings should be made, however these are a result of quite common economic beliefs shared by most applied researchers. Table 2.1 lists the individual countries included in each group as well as the number of observations used to estimate the models for particular groups.

Table 2.1. The number of countries and observations

Group	5-year overlapping panel data		3-year non-overlapping panel data	
	Number of countries	Number of observations	Number of countries	Number of observations
EU28	28	606	28	207
EU15	15	375	15	132
OECD	34	835	34	292
Post-socialist	19	261	19	83
Latin America	21	535	21	192
South-East Asia	16	392	16	139
Africa	31	729	31	256

List of countries:
EU15: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, UK. EU28: EU15 plus Bulgaria, Croatia, Cyprus, Czech Rep., Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia. OECD: EU15 plus Australia, Canada, Chile, Czech Rep., Estonia, Hungary, Iceland, Israel, Japan, Korea (South), Mexico, New Zealand, Norway, Poland, Slovakia, Slovenia, Switzerland, Turkey, United States. Post-socialist: Albania, Armenia, Bulgaria, Croatia, Czech Rep., Estonia, Hungary, Kazakhstan, Kyrgyz Rep., Latvia, Lithuania, Moldova, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Ukraine. Latin America: Argentina, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Rep., Ecuador, Salvador, Guatemala, Honduras, Jamaica, Mexico, Panama, Paraguay, Peru, Trinidad and Tobago, Uru-

guay, Venezuela. South-East Asia: Bangladesh, China, India, Indonesia, Iran, Japan, Korea (South), Malaysia, Mongolia, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, Vietnam. Africa: Benin, Botswana, Burundi, Cameroon, Central African Republic, Cote d'Ivoire, Dem. Rep. of Congo, Egypt, Gabon, Ghana, Kenya, Lesotho, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Rep. of Congo, Rwanda, Senegal, Sierra Leone, South Africa, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe.
Source: Own elaboration.

The analysis is based on two types of time series: 5-year overlapping subperiods (discussed in the previous section) and 3-year non-overlapping subperiods (as most authors do). Regardless of the way of data transformation, the set of countries included in each group is the same, but the number of observations is naturally different. The models based on overlapping panel data cover the period 1992-2012 while the calculations carried out on the basis of non-overlapping panel data cover the period 1993-2010.

Table 2.2. List of control variables

Variable name	Variable description	Unit (scale)
Endogenous variables		
inv	Investment rate	% of GDP
human_cap	Index of human capital[a]	From 1=lowest to 4=highest
edu_exp	Expenditure on education	% of GNI
gov_cons	General government consumption expenditure	% of GDP
infl	Inflation rate (annual)	%
cred	Annual change of the domestic credit provided by banking sector to GDP ratio	% points
econfree_fi	Fraser Institute index of economic freedom	From 0=lowest to 10=highest
dem_fh	Index of democracy (average of civil liberties and political rights according to Freedom House)	From 1=lowest to 7=highest (inverted scale)
Exogenous variables		
life	Log of life expectancy at birth	Years
fert	Log of fertility rate	Births per woman
pop_15_64	Population ages 15-64	% of total
pop_den	Log of population density	People/km^2
pop_gr	Population growth (annual)	%
pop	Log of total population	Persons

[a] Index of human capital per person, based on years of schooling and returns to education, taken from Penn World Table 8.0 (Feenstra, Inklaar, Timmer (2013)).
Source: Feenstra, Inklaar, Timmer (2013); World Bank (2014); IMF (2014); Fraser Institute (2014); Freedom House (2014).

In the model of conditional convergence (1), control variables that are typical growth factors are included. The theory of economics is highly inconclusive here and there are a lot of variables that – from the theoretical point of view – affect the GDP growth from both the demand and supply-side perspective. Hence, for practical reasons, in any macroeconomic research the set of control variables must be reduced to a reasonable size, constrained inter alia by data availability (even if that set gets reduced afterwards with the use of some selection mechanism such as frequentist variation of the Bayesian averaging or a simple stepwise regression). In this study, 14 variables listed in Table 2.2 are included as growth factors. These include the growth factors frequently used in other studies on economic growth and convergence (Barro, Sala-i-Martin, 2003; Mello, Perrelli, 2003; Giudici, Mollick, 2008; Sum, 2012; Andreano, Laureti, Postiglione, 2013) and for which sufficient data are available.

Applying the GMM approach requires the variables to be divided into endogenous, predetermined, and strictly exogenous ones. Based on the literature review (see e.g. Hall, Jones, 1999; Acemoglu, Johnson, Robinson, 2001; Dawson, 2003; Eicher, García-Peñalosa, Teksoz, 2006), institutional variables are treated as endogenous. The same applies to macroeconomic variables, while demographic variables are treated as exogenous.

Table 2.3. Summary statistics of control variables

Variable	5-year overlapping panel data			3-year non-overlapping panel data		
	Mean	5th percentile	95th percentile	Mean	5th percentile	95th percentile
inv	22.1	12.3	33.5	22.1	12.2	34.2
human_cap	2.4	1.4	3.3	2.4	1.4	3.3
edu_exp	4.1	1.7	6.9	4.1	1.7	6.9
gov_cons	18.4	8.7	32.5	18.5	8.6	32.5
infl	39.8	1.1	62.4	39.9	1.0	58.6
cred	1.2	–4.8	8.8	1.3	–6.1	9.8
econfree_fi	6.3	4.4	8.1	6.3	4.3	8.1
dem_fh	5.0	1.9	7.0	5.0	1.8	7.0
life[a]	66.5	46.6	79.8	66.3	46.5	79.7
fert[a]	2.8	1.3	6.8	2.8	1.3	6.9
pop_15_64	61.1	50.5	70.0	60.9	50.4	69.9
pop_den[a]	59.4	3.5	500.1	58.7	3.5	499.0
pop_gr	1.5	–0.2	3.3	1.5	–0.2	3.3
pop[a,b]	12.3	0.8	151.4	12.1	1.0	149.4

[a] Nonlogarithmized data are reported. [b] Data reported are in million.
The statistics are calculated for the whole dataset encompassing the countries that are included in all of the groups.
Source: Own calculations.

Table 2.3 shows the main descriptive statistics of the control variables applied in this study. For the sake of conciseness, the statistics are listed at the aggregate level throughout the full sample of countries (they are not divided into particular groups).

2.4. THE EMPIRICAL RESULTS

The results of the analysis are shown in Tables 2.4–2.17.

Table 2.4. GMM estimates of the convergence model for the EU28 countries (overlapping panel data)

Variable	Period	Coefficient[a]	*p*-value[b]	Total $\beta_1 + \theta_t$ (untransformed)[a.c]	Smoothed β convergence[d]
$lnGDP_{i,t-1}$	92-96	0.6853	0.000	–0.0629	5.68%
dummies for the respective periods θ_t	93-97	0.0379	0.000	–0.0554	5.75%
	94-98	0.0506	0.000	–0.0528	5.71%
	95-99	0.0414	0.000	–0.0547	5.68%
	96-00	0.0371	0.000	–0.0555	5.68%
	97-01	0.0325	0.000	–0.0564	5.70%
	98-02	0.0046	0.365	–0.0620	5.85%
	99-03	–0.0110	0.035	–0.0651	6.07%
	00-04	–0.0158	0.003	–0.0661	6.29%
	01-05	–0.0318	0.000	–0.0693	6.53%
	02-06	–0.0216	0.000	–0.0673	6.69%
	03-07	–0.0172	0.003	–0.0664	6.77%
	04-08	–0.0352	0.000	–0.0700	6.90%
	05-09	–0.1263	0.000	–0.0882	7.39%
	06-10	–0.1382	0.000	–0.0906	7.96%
	07-11	–0.1531	0.000	–0.0935	8.50%
	08-12	–0.1798	0.000	–0.0989	9.04%
inv		0.0037	0.000	Average beta	6.60%
human_cap		0.1298	0.000		
edu_exp		–0.0123	0.000		
gov_cons		0.0001	0.865		
infl		–0.0005	0.000		
cred		0.0015	0.000		
econfree_fi		0.0911	0.000		
dem_fh		0.0470	0.000		
life		1.4679	0.000		
fert		0.0751	0.000		
pop_15_64		–0.0008	0.420		
pop_den		–0.0038	0.011		
pop_gr		–0.0284	0.000		
pop		–0.0096	0.000		
Constant		–4.2465	0.000		

[a] The 1992-1996 is treated as the reference period, hence the respective θ_t for that period is treated as equal to zero; [b] for the initial period the *p*-value refers to the $lnGDP_{i,t-1}$, while for the other periods – to the respective θ_t; [c] calculated as [the coefficient for $lnGDP_{i,t-1}$ plus the respective θ_t given in the 3rd column minus 1] divided by 5; [d] obtained by replacing the β_1 with the estimate of $\beta_1 + \theta_t$ in equation (2), computing the β in (2) with $T = 1$ (to be in accordance with equation (2) and the corresponding footnote), and smoothing it with double exponential algorithm; AB test of autocorrelation of order 2: *p*-value = 0.02.
Source: Own calculations.

Table 2.5. GMM estimates of the convergence model for the EU28 countries (non-overlapping panel data)

Variable	Period	Coefficient[a]	*p*-value[b]	Total $\beta_1 + \theta_t$ (untransformed)[a.c]	Smoothed β convergence[d]
$lnGDP_{i,t-1}$	93-95	0.7738	0.000	–0.0754	7.79%
dummies for the respective periods θ_t	96-98	0.0083	0.453	–0.0726	7.70%
	99-01	0.0004	0.972	–0.0752	7.73%
	02-04	–0.0277	0.070	–0.0846	8.14%
	05-07	–0.0240	0.165	–0.0834	8.41%
	08-10	–0.1476	0.000	–0.1246	10.22%
inv		0.0058	0.000	Average beta	8.33%
human_cap		0.0865	0.001		
edu_exp		–0.0036	0.499		
gov_cons		–0.0014	0.435		
infl		–0.0001	0.520		
cred		0.0014	0.020		
econfree_fi		0.0623	0.000		
dem_fh		0.0107	0.473		
life		1.3108	0.000		
fert		0.0113	0.824		
pop_15_64		–0.0047	0.219		
pop_den		0.0053	0.483		
pop_gr		–0.0244	0.020		
pop		–0.0109	0.019		
Constant		–3.7050	0.010		

[a] The 1993-1995 is treated as the reference period, hence the respective θ_t for that period is treated as equal to zero; [b] for the initial period the *p*-value refers to the $lnGDP_{i,t-1}$, while for the other periods – to the respective θ_t; [c] calculated as [the coefficient for $lnGDP_{i,t-1}$ plus the respective θ_t given in the 3rd column minus 1] divided by 3; [d] obtained by replacing the β_1 with the estimate of $\beta_1 + \theta_t$ in equation (2), computing the β in (2) with $T = 1$ (to be in accordance with equation (2) and the corresponding footnote), and smoothing it with double exponential algorithm; AB test of autocorrelation of order 2: *p*-value = 0.01.
Source: Own calculations.

The respective tables concern the following groups of countries: EU28, EU15, OECD, post-socialist economies, Latin American countries, South-Eastern Asian countries, and African countries. The estimates for each group are shown in two tables. Even-numbered tables cover the results of the analyses with overlapping observations (5-year-long periods) while odd-numbered

tables cover the results of the analyses based on the non-overlapping 3-year-long non-overlapping panel data.

The results for the enlarged European Union, presented in Tables 2.4 and 2.5, demonstrate that the EU28 countries grew in line with the conditional convergence hypothesis. For the 1992-2012 period as a whole and overlapping panel data, the average convergence coefficient amounted to 6.60%. Similarly, for the 1993-2010 period and non-overlapping data, β-coefficient amounted to 8.33% on average. These results point to a more rapid pace of income level equalization observed in the enlarged European Union as compared to a 2% rate, widely-cited in the literature. This effect comes from two basic reasons. First, from the economic point of view, a more rapid pace of catching-up process is a consequence of the institutional framework of the EU28 group. Economic policy performed by the EU aims at reducing income disparities between countries and regions of the enlarged EU. Structural and market-oriented reforms in the Central and Eastern European (CEE) countries (including privatization of state-owned enterprises, price liberalization, enterprise restructuring, liberalization of foreign trade and exchange rates), the liquidation of barriers in the flows of inputs (labor and capital) between countries, as well as the large amount of EU funds, all were important factors that led to a more rapid growth of initially less developed regions and counties. As a result, a reduction in development differences in the enlarged EU was observed. These results show that the EU policy aimed at reducing income differences satisfied its goal in terms of accelerating economic growth of less developed regions and countries. It may be expected that the outcomes are likely to confirm a significant role of EU funds in fostering economic growth of the CEE countries. Various EU structural and aid funds, flown to the CEE countries under a variety of EU programs, stimulated – at least in the short run – output growth in the CEE countries and a catching-up process towards Western Europe.

Tables 2.6 and 2.7 show the results of verifying β-convergence hypothesis for the EU15 countries. As compared with the formerly examined group of the whole European Union, this sample consists of the old EU members that have belonged to the European Union for more years. According to the estimates, the average β-coefficient for the 1992-2012 period and overlapping data equals 3.03% while that for the 1993-2010 period and non-overlapping data amounts to 3.43%. Comparing these results to those for the whole EU, it turns out that the enlarged EU have converged at a more rapid pace than the old EU members. This means that the convergence process observed in the EU during 1990s and 2000s was mainly driven by the catching-up process of the CEE countries towards the EU core. The convergence inside the EU15 was weaker.

Table 2.6. GMM estimates of the convergence model for the EU15 countries (overlapping panel data)

Variable	Period	Coefficient[a]	*p*-value[b]	Total $\beta_1 + \theta_t$ (untransformed)[a.c]	Smoothed β convergence[d]
$lnGDP_{i,t-1}$	92-96	0.8602	0.000	–0.0280	2.19%
dummies for the respective periods θ_t	93-97	0.0301	0.000	–0.0219	2.25%
	94-98	0.0560	0.000	–0.0168	2.13%
	95-99	0.0567	0.000	–0.0166	1.98%
	96-00	0.0563	0.000	–0.0167	1.87%
	97-01	0.0466	0.000	–0.0186	1.85%
	98-02	0.0199	0.000	–0.0240	1.99%
	99-03	–0.0073	0.137	–0.0294	2.27%
	00-04	–0.0241	0.000	–0.0328	2.61%
	01-05	–0.0499	0.000	–0.0379	3.01%
	02-06	–0.0480	0.000	–0.0376	3.31%
	03-07	–0.0412	0.000	–0.0362	3.48%
	04-08	–0.0531	0.000	–0.0386	3.64%
	05-09	–0.1179	0.000	–0.0515	4.09%
	06-10	–0.1181	0.000	–0.0516	4.50%
	07-11	–0.1377	0.000	–0.0555	4.91%
	08-12	–0.1736	0.000	–0.0627	5.40%
inv		0.0032	0.000	Average beta	3.03%
human_cap		0.0806	0.000		
edu_exp		–0.0360	0.000		
gov_cons		–0.0017	0.003		
infl		0.0006	0.492		
cred		–0.0005	0.025		
econfree_fi		0.0954	0.000		
dem_fh		0.0538	0.000		
life		0.8624	0.000		
fert		0.0495	0.000		
pop_15_64		–0.0167	0.000		
pop_den		–0.0060	0.001		
pop_gr		–0.0444	0.000		
pop		–0.0304	0.000		
Constant		–1.7298	0.012		

Notes as in Table 2.4. AB test of autocorrelation of order 2: *p*-value = 0.03.
Source: Own calculations.

This finding evidences some kind of the reversal of EU policy during the last 20 years from insisting in reducing income gap between the old EU members, that is from fostering economic growth in less developed peripheral EU15 countries (like Mediterranean economies), towards pushing ahead the economic growth of the CEE countries. Hence, the speed of convergence among the enlarged EU was faster than in only EU15 countries.

Table 2.7. GMM estimates of the convergence model for the EU15 countries (non-overlapping panel data)

Variable	Period	Coef-ficient[a]	*p*-value[b]	Total $\beta_1 + \theta_t$ (untrans-formed)[a.c]	Smoothed β convergence[d]
$lnGDP_{i,t-1}$	93-95	0.9012	0.000	–0.0329	4.16%
dummies for the re-spective periods θ_t	96-98	0.0372	0.002	–0.0205	3.44%
	99-01	0.0339	0.030	–0.0216	2.92%
	02-04	–0.0135	0.463	–0.0374	3.08%
	05-07	0.0163	0.499	–0.0275	3.02%
	08-10	–0.0798	0.002	–0.0595	3.93%
Inv		0.0016	0.408	Average beta	3.43%
human_cap		0.0534	0.026		
edu_exp		–0.0179	0.001		
gov_cons		–0.0013	0.538		
Infl		–0.0013	0.514		
cred		–0.0007	0.251		
econfree_fi		0.0547	0.000		
dem_fh		0.0050	0.783		
Life		–0.0494	0.931		
fert		0.0284	0.579		
pop_15_64		–0.0067	0.092		
pop_den		–0.0044	0.514		
pop_gr		–0.0226	0.086		
Pop		–0.0148	0.013		
Constant		1.4856	0.537		

Notes as in Table 2.5. AB test of autocorrelation of order 2: *p*-value = 0.00.
Source: Own calculations.

The results for the OECD countries, shown in Tables 2.8 and 2.9, may be treated as a robustness check to those for the EU15 group because the EU15 group constitutes the large part of the OECD sample and the OECD consists mainly of well-developed economies of the world, so it may be expected that the process of convergence will be of a similar pace (and any differences are likely to reflect the inclusion of some developing economies in OECD, like Poland or Mexico). The estimates for the OECD countries confirm the convergence estimates for the EU15 group, but also they raise some doubts about the stability of the results. On the one hand, the outcomes for the 1992-2012 period and overlapping data indicate the average β-coefficient at the level of 4.32%. This means a slight acceleration of the pace of convergence as compared with the EU15 group. This outcome may be interpreted as being the result of including rapidly-growing less developed countries in the OECD

Table 2.8. GMM estimates of the convergence model for the OECD countries (overlapping panel data)

Variable	Period	Coef-ficient[a]	*p*-value[b]	Total $\beta_1 + \theta_t$ (untrans-formed)[a.c]	Smoothed β convergence[d]
$lnGDP_{i,t-1}$	92-96	0.7758	0.000	–0.0448	4.01%
dummies for the respec-tive periods θ_t	93-97	0.0284	0.000	–0.0391	4.05%
	94-98	0.0388	0.000	–0.0371	4.02%
	95-99	0.0382	0.000	–0.0372	3.97%
	96-00	0.0469	0.000	–0.0355	3.90%
	97-01	0.0307	0.000	–0.0387	3.88%
	98-02	0.0095	0.006	–0.0429	3.95%
	99-03	0.0008	0.828	–0.0447	4.08%
	00-04	0.0071	0.043	–0.0434	4.18%
	01-05	–0.0038	0.280	–0.0456	4.30%
	02-06	0.0115	0.001	–0.0425	4.35%
	03-07	0.0230	0.000	–0.0402	4.33%
	04-08	0.0117	0.001	–0.0425	4.32%
	05-09	–0.0621	0.000	–0.0573	4.57%
	06-10	–0.0607	0.000	–0.0570	4.87%
	07-11	–0.0695	0.000	–0.0587	5.17%
	08-12	–0.0912	0.000	–0.0631	5.49%
Inv		0.0031	0.000	Average beta	4.32%
human_cap		0.0092	0.116		
edu_exp		–0.0052	0.000		
gov_cons		0.0016	0.000		
Infl		–0.0006	0.000		
Cred		0.0006	0.000		
econfree_fi		0.0619	0.000		
dem_fh		0.0396	0.000		
Life		0.2737	0.000		
Fert		0.0149	0.103		
pop_15_64		0.0013	0.058		
pop_den		0.0069	0.000		
pop_gr		–0.0014	0.595		
Pop		–0.0082	0.000		
Constant		0.3698	0.149		

Notes as in Table 2.4. AB test of autocorrelation of order 2: *p*-value = 0.02.
Source: Own calculations.

group (like Poland or Turkey). However, on the other hand, the data for the 1993-2010 period and the non-overlapping observations are in contrast because they suggest that the catching-up process among the OECD countries was slower than that among the old EU members. These discrepancies should be rather treated as the weakness of the results that regard the rate of convergence and the proof if its lack of full robustness, to some extent due to risk of inaccurate estimates obtained with the use of GMM.

Table 2.9. GMM estimates of the convergence model for the OECD countries (non-overlapping panel data)

Variable	Period	Coefficient[a]	*p*-value[b]	Total $\beta_1 + \theta_t$ (untransformed)[a.c]	Smoothed β convergence[d]
$lnGDP_{i,t-1}$	93-95	0.8795	0.000	–0.0402	4.10%
dummies for the respective periods θ_t	96-98	0.0488	0.000	–0.0239	2.42%
	99-01	0.0696	0.000	–0.0170	1.71%
	02-04	0.0654	0.000	–0.0184	1.85%
	05-07	0.0558	0.000	–0.0215	2.18%
	08-10	0.0814	0.000	–0.0130	1.31%
Inv		0.0049	0.000	Average beta	2.26%
human_cap		–0.0139	0.450		
edu_exp		–0.0083	0.047		
gov_cons		–0.0004	0.713		
Infl		–0.0002	0.616		
Cred		–0.0003	0.509		
econfree_fi		0.0371	0.000		
dem_fh		0.0404	0.000		
Life		–0.3143	0.154		
Fert		–0.0828	0.027		
pop_15_64		–0.0083	0.002		
pop_den		0.0061	0.194		
pop_gr		0.0058	0.510		
Pop		–0.0072	0.090		
Constant		2.7210	0.002		

Notes as in Table 2.5. AB test of autocorrelation of order 2: *p*-value = 0.04.
Source: Own calculations.

In general, the convergence among the EU and OECD countries is in line with many other studies on economic growth and convergence (see e.g. Mankiw, Romer, Weil (1992); Islam (1995); Andrés, Doménech, Molinas (1996); Nonneman, Vanhoudt (1996); Murthy, Chien (1997); De La Fuente (2003); Di Liberto, Symons (2003); Kaitila (2004); Varblane, Vahter (2005); Vojinovic, Oplotnik (2008); Borys, Polgár, Zlate (2008); European Commission (2009); Čihák, Fonteyne (2009); Niebuhr, Schlitte (2009); Vamvakidis (2009); Kutan, Yigit (2009); Szeles, Marinescu (2010); Marelli, Signorelli (2010); Tatomir, Alexe (2011); Czasonis, Quinn (2012); Alexe (2012); Duro (2012); Kulhánek (2012); Staňisić (2012)). In contrast, our results for the transition countries seem to be contradictory to a few other analyses that also indicate divergence tendencies inside the post-socialist group as a whole (see e.g. Polanec (2004); Rapacki (2009)).

Table 2.10. GMM estimates of the convergence model for the post-socialist countries (overlapping panel data)

Variable	Period	Coef-ficient[a]	*p*-value[b]	Total $\beta_1 + \theta_t$ (untrans-formed)[a,c]	Smoothed β convergence[d]
$lnGDP_{i,t-1}$	92-96	0.7620	0.000	–0.0476	3.00%
dummies for the respec-tive periods θ_t	93-97	0.1614	0.000	–0.0153	2.92%
	94-98	0.1370	0.000	–0.0202	2.77%
	95-99	0.0980	0.000	–0.0280	2.72%
	96-00	0.0771	0.006	–0.0322	2.78%
	97-01	0.0966	0.001	–0.0283	2.81%
	98-02	0.0585	0.048	–0.0359	2.94%
	99-03	0.0615	0.044	–0.0353	3.09%
	00-04	0.0702	0.027	–0.0336	3.19%
	01-05	0.0540	0.097	–0.0368	3.31%
	02-06	0.0612	0.066	–0.0354	3.39%
	03-07	0.0668	0.048	–0.0342	3.44%
	04-08	0.0316	0.349	–0.0413	3.57%
	05-09	–0.1127	0.001	–0.0701	4.14%
	06-10	–0.1439	0.000	–0.0764	4.89%
	07-11	–0.1668	0.000	–0.0810	5.68%
	08-12	–0.1962	0.000	–0.0868	6.47%
inv		0.0039	0.000	Average beta	3.60%
human_cap		–0.0104	0.661		
edu_exp		0.0201	0.000		
gov_cons		0.0068	0.000		
infl		–0.0003	0.021		
cred		0.0050	0.000		
econfree_fi		0.0668	0.000		
dem_fh		0.0101	0.191		
life		1.7082	0.000		
fert		0.1317	0.001		
pop_15_64		0.0373	0.000		
pop_den		–0.0908	0.000		
pop_gr		–0.0231	0.002		
pop		0.0216	0.000		
Constant		–8.3002	0.000		

Notes as in Table 2.4. AB test of autocorrelation of order 2: *p*-value = 0.01.
Source: Own calculations.

The results for post-socialist countries show that the average β coefficient for the 1992-2012 period obtained in the model estimated with the overlapping panel data equals 3.60% while that for the 1993-2010 period attained with the non-overlapping observations amounts to 4.04%. This outcome as opposed to some other empirical research for this group of countries is due to applying the GMM methodology, which allows for the better extraction of the pure convergence mechanism than most methods based on least squares. Despite the fact

that some of the studies based on classical (mostly OLS) estimators confirm divergence tendencies, this analysis demonstrates the existence of catching-up process.

Table 2.11. GMM estimates of the convergence model for the post-socialist countries (non-overlapping panel data)

Variable	Period	Coef-ficient[a]	*p*-value[b]	Total $\beta_1 + \theta_t$ (untrans-formed)[a.c]	Smoothed β convergence[d]
$lnGDP_{i,t-1}$	93-95	0.8502	0.000	–0.0499	5.81%
dummies for the respec-tive periods θ_t	96-98	0.1665	0.007	0.0056	3.45%
	99-01	0.0700	0.186	–0.0266	2.80%
	02-04	0.0563	0.146	–0.0311	2.82%
	05-07	0.0273	0.283	–0.0408	3.30%
	08-10	–0.1611	0.000	–0.1036	6.07%
inv		0.0082	0.010	Average beta	4.04%
human_cap		0.0381	0.580		
edu_exp		0.0031	0.819		
gov_cons		0.0020	0.519		
infl		0.0000	0.984		
cred		0.0070	0.038		
econfree_fi		0.0468	0.046		
dem_fh		–0.0070	0.758		
life		0.9719	0.144		
fert		–0.1648	0.224		
pop_15_64		0.0167	0.183		
pop_den		–0.0395	0.286		
pop_gr		0.0078	0.815		
pop		0.0156	0.345		
Constant		–4.4792	0.145		

Notes as in Table 2.5. AB test of autocorrelation of order 2: *p*-value = 0.00.
Source: Own calculations.

Tables 2.12–2.17 show the results for the other groups of countries representing three different geographical territories: Latin America, South-East Asia, and Africa. Unlike the convergence among the European Union, where the analyzed countries are members of one economic and political organization and the convergence mechanism may be clearly explained by the policies pursued by the authorities of both the member countries and this organization aimed at reducing development differences, the calculations for Latin American, South-East Asian and African countries are based on more heterogeneous economies, that do not essentially belong to one international organization. Of course, a number of economic and political organizations may be indicated in those three groups of countries (e.g. APEC (Asia-Pacific Economic Co-operation), ASEAN (Association of South-East Asian Nations), ECOWAS

(Economic Community of West African States)); but unlike the EU, the countries examined in one model do not necessarily belong to one specified organization.

Table 2.12. GMM estimates of the convergence model for the Latin American countries (overlapping panel data)

Variable	Period	Coefficient[a]	*p*-value[b]	Total $\beta_1 + \theta_t$ (untransformed)[a.c]	Smoothed β convergence[d]
$lnGDP_{i,t-1}$	92-96	0.7740	0.000	–0.0452	4.35%
dummies for the respective periods θ_t	93-97	0.0023	0.688	–0.0447	4.52%
	94-98	–0.0091	0.121	–0.0470	4.73%
	95-99	–0.0355	0.000	–0.0523	5.17%
	96-00	–0.0443	0.000	–0.0541	5.45%
	97-01	–0.0705	0.000	–0.0593	5.90%
	98-02	–0.1072	0.000	–0.0666	6.59%
	99-03	–0.1071	0.000	–0.0666	6.82%
	00-04	–0.0705	0.000	–0.0593	6.35%
	01-05	–0.0452	0.000	–0.0542	5.81%
	02-06	–0.0072	0.260	–0.0466	5.10%
	03-07	0.0267	0.000	–0.0399	4.38%
	04-08	0.0289	0.000	–0.0394	4.12%
	05-09	–0.0243	0.000	–0.0501	4.80%
	06-10	–0.0187	0.004	–0.0489	4.97%
	07-11	–0.0276	0.000	–0.0507	5.13%
	08-12	–0.0358	0.000	–0.0524	5.30%
inv		0.0134	0.000	Average beta	5.26%
human_cap		0.1202	0.000		
edu_exp		–0.0317	0.000		
gov_cons		–0.0012	0.000		
infl		–0.0001	0.001		
cred		–0.0033	0.000		
econfree_fi		–0.0357	0.000		
dem_fh		0.0633	0.000		
life		–0.4664	0.000		
fert		–0.1295	0.000		
pop_15_64		0.0108	0.000		
pop_den		0.0178	0.000		
pop_gr		–0.0084	0.010		
pop		0.0044	0.008		
Constant		2.9566	0.000		

Notes as in Table 2.4. AB test of autocorrelation of order 2: *p*-value = 0.02.
Source: Own calculations.

Table 2.13. GMM estimates of the convergence model for the Latin American countries (non-overlapping panel data)

Variable	Period	Coefficient[a]	*p*-value[b]	Total $\beta_1 + \theta_t$ (untransformed)[a.c]	Smoothed β convergence[d]
$lnGDP_{i,t-1}$	93-95	0.8779	0.000	–0.0407	17.51%
dummies for the respective periods θ_t	96-98	0.0125	0.388	–0.0365	17.18%
	99-01	0.0190	0.182	–0.0344	16.85%
	02-04	–0.0484	0.000	–0.0568	16.53%
	05-07	0.0008	0.952	–0.0404	16.20%
	08-10	0.0614	0.000	–0.0202	15.88%
inv		0.0078	0.000	Average beta	16.69%
human_cap		0.0140	0.738		
edu_exp		–0.0194	0.000		
gov_cons		–0.0004	0.378		
infl		0.0000	0.034		
cred		–0.0026	0.050		
econfree_fi		–0.0116	0.240		
dem_fh		0.0239	0.014		
life		–0.3668	0.095		
fert		–0.0901	0.359		
pop_15_64		0.0066	0.192		
pop_den		–0.0098	0.334		
pop_gr		–0.0222	0.031		
pop		–0.0105	0.121		
Constant		2.4762	0.023		

Notes as in Table 2.5. AB test of autocorrelation of order 2: *p*-value = 0.00.
Source: Own calculations.

Moreover, these three groups include much more the countries which in terms of economic structure, political system, institutional environment, religion, history, trade and capital links, main trading partners, economic freedom etc. are much more heterogeneous thus the results may be much more mixed as compared with the European Union. For instance, Latin American group includes both big mainland countries like Argentina and Brazil and small island economies like Trinidad and Tobago and Dominican Republic; East-Asian group includes economically unfree countries (like Iran, Nepal and Vietnam), big players (China and India), and well developed countries from Far East (Japan and South Korea), while African group includes both Sub-Saharan countries (which are also very differentiated and some of them are engaged in wars) and the Arab economies from Northern Africa.

Regarding the Latin American countries, the average β-coefficient for the 1992-2012 period and overlapping observations amounts to 5.26% while that for the 1993-2010 period and non-overlapping observations is equal to

Table 2.14. GMM estimates of the convergence model for the South-Eastern Asian countries (overlapping panel data)

Variable	Period	Coef-ficient[a]	*p*-value[b]	Total $\beta_1 + \theta_t$ (untrans-formed)[a.c]	Smoothed β convergence[d]
$lnGDP_{i,t-1}$	92-96	0.9841	0.000	–0.0032	0.35%
dummies for the respec-tive periods θ_t	93-97	0.0031	0.607	–0.0026	0.32%
	94-98	–0.0421	0.000	–0.0116	0.61%
	95-99	–0.0445	0.000	–0.0121	0.87%
	96-00	–0.0447	0.000	–0.0121	1.03%
	97-01	–0.0697	0.000	–0.0171	1.30%
	98-02	–0.0656	0.000	–0.0163	1.46%
	99-03	–0.0064	0.346	–0.0045	1.14%
	00-04	–0.0009	0.895	–0.0034	0.81%
	01-05	0.0078	0.262	–0.0016	0.53%
	02-06	0.0404	0.000	0.0049	0.13%
	03-07	0.0629	0.000	0.0094	-0.31%
	04-08	0.0484	0.000	0.0065	-0.50%
	05-09	0.0170	0.018	0.0002	-0.37%
	06-10	0.0318	0.000	0.0032	-0.33%
	07-11	0.0230	0.001	0.0014	-0.26%
	08-12	0.0048	0.487	–0.0022	-0.08%
inv		0.0114	0.000	Average beta	0.39%
human_cap		0.0990	0.000		
edu_exp		0.0023	0.434		
gov_cons		0.0010	0.018		
infl		–0.0065	0.000		
cred		–0.0029	0.000		
econfree_fi		–0.0309	0.000		
dem_fh		–0.0186	0.000		
life		–0.8677	0.000		
fert		0.0057	0.750		
pop_15_64		0.0044	0.000		
pop_den		0.0326	0.000		
pop_gr		–0.0121	0.000		
pop		0.0052	0.000		
Constant		3.2162	0.000		

Notes as in Table 2.4. AB test of autocorrelation of order 2: *p*-value = 0.00.
Source: Own calculations.

16.69%. While the former result seems to be reasonable because it is in line with some other studies on convergence in the Caribbean world and Latin America (e.g. Dobson, Ramlogan (2002); Giudici, Mollick (2008)), the latter outcome seems to be overestimated.[4]

4. However, such an excessively high convergence coefficient need not be a mistake. Some studies indicate that the β-coefficient may be even higher which apart from being a character-

Table 2.15. GMM estimates of the convergence model for the South-Eastern Asian countries (non-overlapping panel data)

Variable	Period	Coef-ficient[a]	*p*-value[b]	Total $\beta_1 + \theta_t$ (untrans-formed)[a.c]	Smoothed β convergence[d]
$lnGDP_{i,t-1}$	93-95	0.9775	0.000	–0.0075	–1.11%
dummies for the respec-tive periods θ_t	96-98	–0.0057	0.688	–0.0094	–0.20%
	99-01	–0.0677	0.000	–0.0300	1.06%
	02-04	–0.0392	0.004	–0.0206	1.63%
	05-07	–0.0240	0.074	–0.0155	1.70%
	08-10	–0.0340	0.015	–0.0188	1.78%
Inv		0.0057	0.000	Average beta	0.81%
human_cap		0.0160	0.522		
edu_exp		0.0040	0.664		
gov_cons		0.0002	0.876		
infl		–0.0044	0.000		
cred		–0.0029	0.004		
econfree_fi		–0.0131	0.289		
dem_fh		–0.0132	0.007		
life		–0.0123	0.966		
fert		0.0486	0.393		
pop_15_64		0.0048	0.057		
pop_den		0.0213	0.014		
pop_gr		–0.0164	0.032		
pop		0.0055	0.385		
Constant		–0.2014	0.874		

Notes as in Table 2.5. AB test of autocorrelation of order 2: *p*-value = 0.02.
Source: Own calculations.

In the case of South-East Asia, GMM system estimator points to very low pace of convergence – there has been actually no convergence from the economic point of view. The average β-coefficient for the whole 1992-2012 period and overlapping observations amounts to 0.39% while the coefficient for non-overlapping data and the 1993-2010 period stands at 0.81%. Such low estimates of the pace of convergence supplement some other previous studies encompassing South-East Asia (e.g. Engelbrecht, Kelsen (1999) who analyze 17 APEC countries or Chowdhury (2005) who examines 9 ASEAN countries) and they can be explained as follows. Namely, South-East Asian group examined in this study is quite wide – such countries as Iran, Nepal, or Pakistan behave quite differently from the South-East Asian 'core' (mainly China and Japan) and they "negatively affect" the average rate of catching-up process for the whole region.

istic of the true process might also be due to the applied method. For example, Arnold, Bassanini, Scarpetta (2011) reported the β-coefficient at the level of 48-55% for 21 OECD countries during the 1971-2004 period with the use of the GMM-estimator.

Table 2.16. GMM estimates of the convergence model for the African countries (overlapping panel data)

Variable	Period	Coef-ficient[a]	*p*-value[b]	Total $\beta_1 + \theta_t$ (untrans-formed)[a.c]	Smoothed β convergence[d]
$lnGDP_{i,t-1}$	92-96	0.8136	0.000	–0.0373	3.65%
dummies for the respective periods θ_t	93-97	0.0235	0.001	–0.0326	3.61%
	94-98	0.0431	0.000	–0.0287	3.50%
	95-99	0.0520	0.000	–0.0269	3.36%
	96-00	0.0372	0.000	–0.0298	3.26%
	97-01	0.0424	0.000	–0.0288	3.18%
	98-02	0.0397	0.000	–0.0294	3.12%
	99-03	0.0304	0.000	–0.0312	3.10%
	00-04	0.0460	0.000	–0.0281	3.06%
	01-05	0.0572	0.000	–0.0259	2.99%
	02-06	0.0542	0.000	–0.0265	2.92%
	03-07	0.0368	0.000	–0.0299	2.91%
	04-08	0.0469	0.000	–0.0279	2.89%
	05-09	0.0141	0.094	–0.0345	2.96%
	06-10	0.0211	0.013	–0.0331	3.04%
	07-11	0.0149	0.084	–0.0343	3.13%
	08-12	0.0154	0.075	–0.0342	3.21%
inv		0.0054	0.000	Average beta	3.17%
human_cap		0.0934	0.000		
edu_exp		0.0039	0.024		
gov_cons		–0.0001	0.772		
infl		–0.0001	0.000		
cred		–0.0036	0.000		
econfree_fi		0.0553	0.000		
dem_fh		0.0131	0.000		
life		0.3641	0.000		
fert		–0.0929	0.002		
pop_15_64		0.0123	0.000		
pop_den		–0.0315	0.000		
pop_gr		0.0187	0.000		
pop		–0.0083	0.000		
Constant		–1.0153	0.000		

Notes as in Table 2.4. AB test of autocorrelation of order 2: *p*-value = 0.04.
Source: Own calculations.

In the case of Africa, the study yields β-coefficients at the level of 3.17% on average during 1992-2012 and overlapping panel data, or 3.49% during 1993-2010 and non-overlapping observations. These outcomes point to a moderate pace of convergence among the African countries. They also indicate a more rapid pace of β-convergence as compared with some other studies based on traditional estimators which confirms the previous finding that the GMM system estimator better extracts the relationship between the initial income level and the subsequent growth rate indicating to a more rapid pace of the catching-up process (e.g. Murthy, Upkolo (1999) estimated the rate of β-

convergence for 37 African countries at the level of 1.3-1.7% during 1960-1985 while Andreano, Laureti, Postiglione (2013) indicated the 0.52% rate of absolute convergence and the 1.50% rate of conditional convergence for 26 MENA (Middle East and North Africa) countries over the 1950-2007 period). But also here the empirical evidence is not fully stable as some authors point to a more rapid pace of the catching-up process (e.g. Wane (2004) for 7 WAEMU (West African Economic and Monetary Union) countries over 1965-2002).

Table 2.17. GMM estimates of the convergence model for the African countries (non-overlapping panel data)

Variable	Period	Coef-ficient[a]	*p*-value[b]	Total $\beta_1 + \theta_t$ (untrans-formed)[a.c]	Smoothed β convergence[d]
$lnGDP_{i,t-1}$	93-95	0.8953	0.000	–0.0349	4.30%
dummies for the respec-tive periods θ_t	96-98	0.0373	0.015	–0.0225	3.88%
	99-01	0.0192	0.245	–0.0285	3.57%
	02-04	0.0419	0.016	–0.0209	3.23%
	05-07	0.0259	0.160	–0.0263	3.02%
	08-10	0.0094	0.622	–0.0318	2.97%
inv		0.0019	0.122	Average beta	3.49%
human_cap		0.0820	0.071		
edu_exp		0.0001	0.987		
gov_cons		0.0009	0.452		
infl		0.0000	0.031		
cred		–0.0018	0.133		
econfree_fi		0.0308	0.013		
dem_fh		0.0098	0.080		
life		0.2904	0.000		
fert		–0.0209	0.832		
pop_15_64		0.0071	0.196		
pop_den		–0.0162	0.064		
pop_gr		0.0051	0.168		
pop		–0.0036	0.734		
Constant		–1.0338	0.099		

Notes as in Table 2.5. AB test of autocorrelation of order 2: *p*-value = 0.04.
Source: Own calculations.

The results for different country groups indicate highly diversified pace of catching-up process and confirm the necessity to analyze the club convergence hypothesis rather than the common convergence throughout the world economies. These outcomes show that various country clubs do not follow the same convergence path and they should be treated separately. Furthermore, the results for Asia suggest that the applied level of aggregation might even be too high in here, yet it would essentially increase the problem of small sample.

Thus this study does not indicate that the distinction of clubs proposed here is the only possible solution, but it demonstrates that the concept of club convergence should be treated with greater attention in the literature as the β-coefficient is unlikely to be constant across countries.

A relatively rapid income-level convergence evidenced for some groups of countries (notably EU28 economies) results from the applied econometric methodology and the set of explanatory variables included in the growth equation. Some of the studies (e.g. Bayraktar-Sağlam, Yetkiner, 2014) indicate that system GMM estimators lead to higher β-coefficients as compared with standard estimators (e.g. OLS), however the simulation studies demonstrate that it no longer is the problem of small sample bias as demonstrated formerly by the AB estimator and the results indicating the pace of convergence at the level of about 7-8% for the EU28 group throughout the whole period are by no means strange. To some extent the rapid pace of income-level convergence (as compared to the mainstream in the literature) in some models may also be due to a large set of explanatory variables included in the models: the unconditional convergence parameters tend to be rather lower (in absolute terms) than corresponding conditional convergence parameters due to the fact that the latter ones better extract the pure (*ceteris paribus*) catching-up mechanism. While we control for the growth factors, the role of initial conditions in subsequent economic growth is higher than in the case of the unconditional convergence regressions in which the convergence parameters reflect also the impact of all the factors affecting output dynamics (see e.g. Andreano, Laureti, Postiglione, 2013), but that in many cases might be due to the omitted variables error rather than the true low rate of convergence.

It is interesting to examine in details how the convergence coefficient evolved over time. β-coefficients for different subperiods have been smoothed with the use of double exponential algorithm in order to avoid the effects of short term shocks, errors in the data and any other types of short-term distortions. The results suggest that the pace of the catching-up process was generally not constant over time. The detailed outcomes depend however on the group of countries and on the way of data transformation. The convergence coefficients for the individual subperiods are mostly statistically significant meaning that the unstable pace of income-level convergence is confirmed from the formal point of view (although for some periods, and notably for the models estimated on the basis of non-overlapping observations, some of the θ_t coefficients are not significantly different from 0, which suggests the same rate of convergence for the given period as for the reference period, which in all the cases is the first period covered by the data).

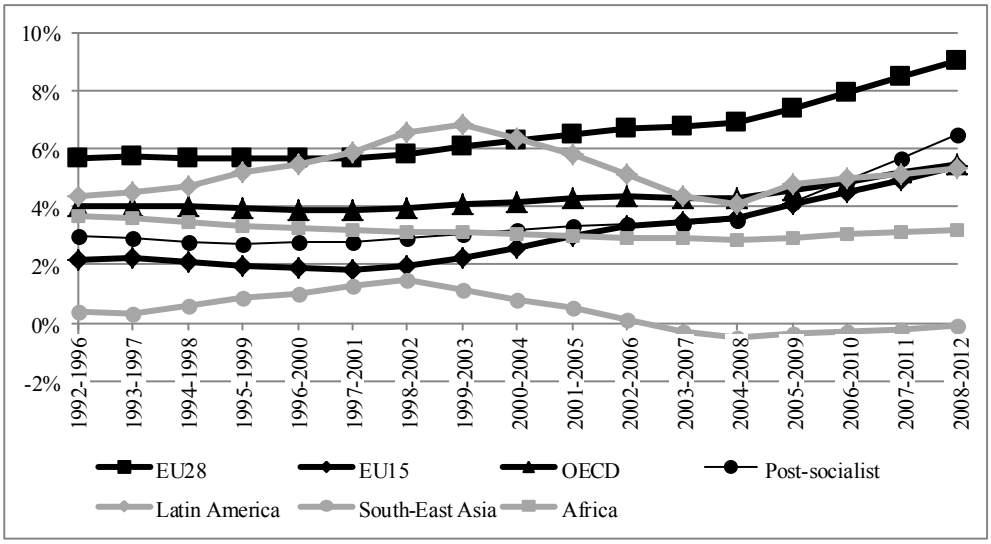
As regards overlapping panel data, convergence coefficients for individual subperiods are mostly statistically significantly different for all the considered groups of countries. For EU28 countries, 15 out of 16 subperiod dummies are

statistically significant (at a 10% significance level); for the remaining groups of countries the number of statistically significant subperiod dummies (at a 10% significance level) is also close to 16: for EU15 –15; for OECD –14; for post-socialist countries –15; for Latin America –13; for South-East Asia –11; and for Africa –16. The estimated convergence coefficient for the reference 1992-1996 subperiod is also statistically significant with *p*-value of nearly zero for all the distinguished groups of countries. These outcomes undoubtedly demonstrate that in the case of each sample the catching-up process existed and was not constant over time. Although its pace was different in various groups of countries, the common finding for each group about the time instability of the catching up is evident. The lack of constancy of the convergence parameter over time is also confirmed by the models estimated on the basis of non-overlapping panel data. However, in this case statistically insignificant time dummies for the individual subperiods become more frequent, which might be due to the fact that these models are estimated on fewer observations (in the sense of the distinguished time periods as well as the number of years covered by a single observation). This remark concerns also the other explanatory variables which more frequently prove to be statistically insignificant as compared with the models estimated based on overlapping data. Referring to the models estimated on the basis of non-overlapping observations, the convergence coefficients for the reference 1993-1995 subperiod are all statistically significantly different than zero with *p*-value of nearly zero. As regards dummies for the remaining five distinguished subperiods, there are 2 statistically significant dummies for the EU28 countries, 3 for EU15, all for OECD, 2 for post-socialist countries, 2 for Latin America, 4 for South-East Asia, and 2 for Africa (at a 10% significance level). These results reinforce our previous findings drawn from the analysis on overlapping data that the convergence coefficient is not constant over time.

Given that the speed of the catching-up process is not stable, it is worth to investigate how it evolved over time. Is it possible to find some similarities between the examined groups of countries, or maybe it is more likely that various groups exhibited rather different convergence paths? The answer to this question can be found in Figures 2.1 and 2.2. Figure 2.1 shows the time series of β-convergence coefficients in the individual subperiods for all the examined groups of countries for the models estimated on the basis of overlapping panel data while Figure 2.2 shows similar time series of the β-convergence coefficients for the models estimated on the basis of non-overlapping observations.

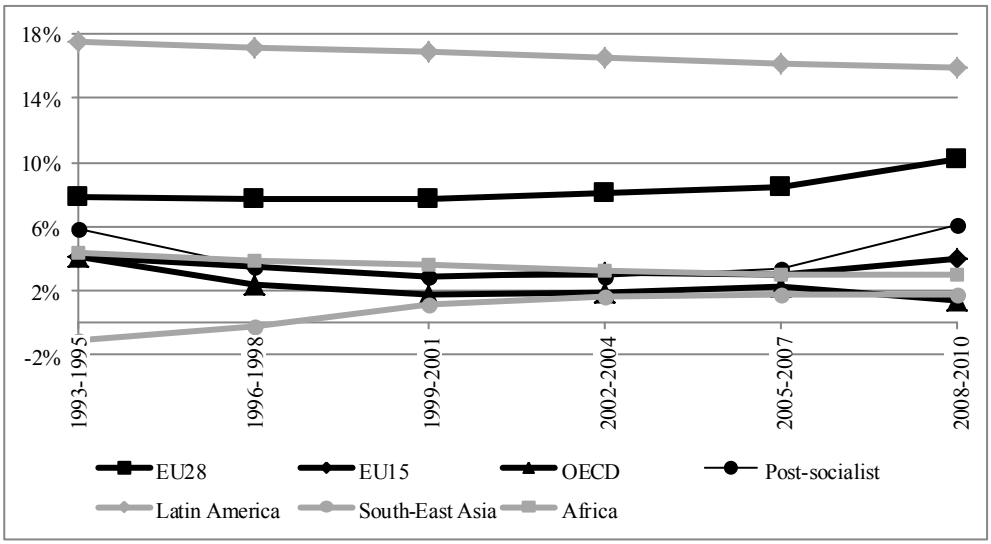
The analysis of time stability of the convergence coefficient, which allows us to indicate periods of a more rapid convergence and periods when this process was slow, is rarely found in the literature as most empirical studies on economic growth and convergence assume the convergence process to be constant over time (when the authors include some kind of robustness tests, they mostly concern the variability of the speed of convergence across various

Figure 2.1. β-convergence coefficients across the time in various groups of countries (overlapping panel data)



Source: Own calculations.

Figure 2.2. β-convergence coefficients across the time in various groups of countries (non-overlapping panel data)



Source: Own calculations.

groups of countries and not necessarily across different time periods). Of course, as it has already been mentioned earlier, this research is not the first attempt to analyze the time stability of the catching-up process and some studies that examine a variable pace of convergence and the existence of structural breaks include e.g. Cunado (2011); Di Vaio, Enflo (2011); Le Pen (2011); Crespo Cuaresma, Havettová, Lábaj (2013); Serranito (2013); however, none

of them use the dummies included in the regression on the overlapping panel, which is a value added of this research.

As regards overlapping panel data and the EU28 countries, one may observe a gradual acceleration of the pace of convergence throughout the entire period. This finding may be explained by several reasons. First of all, EU enlargement and the "integration anchor" both reduced the income gap between the old and new EU member states and they accelerated the income-level convergence between the individual countries. The biggest EU enlargement on Central and Eastern Europe took place in 2004 – approximately in the middle of the period analyzed. One may expect a more rapid pace of the catching-up process inside the enlarged EU due to economic and political factors. After the EU enlargement, a number of barriers in capital and labor flows between countries were abandoned. Large migration of workers from poorer to richer countries of the EU was an important factor in stimulating the process of convergence. Another factor was a massive transfer of EU aid to poorer regions and countries of the Union. Aid and structural funds devoted for the CEE region exploded after the EU enlargement. Although their basic effect is the long-term increase in potential output and the impact on the supply-side of the economy, their immediate effect is an increase in aggregate demand and the demand-side influence on output dynamics. Moreover, along with the EU accession, the CEE countries were forced to make some progress in institutional reforms such as privatization, enterprise restructuring, increasing the scope of economic freedom, price and exchange rate liberalization etc. All the above mentioned factors were likely to fuel a gradual acceleration of the pace of convergence over the analyzed period.

While thinking of convergence, most think of the poorer countries catching up on the richer ones. However, the other option is that the less developed countries lose less than the more developed ones. Thus another (undesirable) source of the accelerating pace of convergence is the global economic and financial crisis. The crisis started in 2007 and the resulting recession touched all the EU countries except Poland which noted only a slowdown in the growth of output. However, the depth of recession was different in various EU countries, being the largest one in the Baltic states and in Western European countries (notably, Mediterranean economies). Since the fall in output – in average terms – was higher in Western Europe than in CEE, it means that the latter countries reduced their distance towards the former ones in terms of the development gap. Hence, economic crisis was another factor that can explain a gradual acceleration in the pace of convergence throughout the entire period – this time in result of a sudden fall of the higher developed countries rather than in result of speeding up of the less developed ones.

Analyzing the results for the EU28 countries and overlapping panel data in greater detail, one may observe a trough in the values of β-coefficient in the

1995-1999 and 1996-2000 subperiods (betas were equal to 5.68% in that time). It is likely that a slowdown in the catching-up process in this period was caused by the Russian crisis. Russia is one of the major trading partners for many EU countries. Deterioration of the economic climate in Russia could negatively affect the process of income-level convergence in Europe.

A gradual increase in the value of β-coefficient over time has strong economic consequences. Namely, if these trends are maintained, one may expect a continuation of a rapid catching-up process in the enlarged EU and a relatively fast reduction of income gap between the old and new EU member states. Of course, these optimistic growth prospects for the CEE region in terms of the catching-up process should not be treated as the only possible future growth paths. Some studies suggest the possibility of reversing past convergence trends, pointing to the appearance of divergence tendencies in Europe (see e.g. Matkowski, Próchniak, Rapacki, 2013a).

A similar dynamics of the speed of convergence to that observed for the EU28 countries was also evidenced by three other groups: EU15, OECD, and post-socialist countries. Although the absolute value of the speed of convergence is different, the tendency of changes is to a large extent similar. For all these groups one may observe a gradual acceleration of the speed of convergence over the studied period. In the case of the EU15 countries, β-coefficient rose from about 2% to about 5% between the beginnings of 1990s and late 2000s; for the OECD group it increased from approximately 4% to 5% in the same period; while for post-socialist countries it augmented from circa 3% to 6%. These outcomes demonstrate that the following four groups distinguished in this study: EU28, EU15, OECD, and post-socialist countries constitute one "convergence club" in terms of the way of instability of the β-convergence coefficient.

The mechanism responsible for the behavior of the catching-up process in the EU28, EU15, OECD, and post-socialist countries is quite similar yet some differences can be observed. One of the key reasons of the similarities is that all of these groups partly cover the same countries – the EU15 group is even included in the EU28 sample, also many OECD countries belong to European Union while the new EU members states from Central and Eastern Europe are post-socialist economies included in the post-socialist group. Secondly, although the two groups: OECD and post-socialist countries include also some non-EU member states, they do not behave highly differently because many non-EU member countries included in those groups have close economic and political links with the European Union and are highly connected with Western and Central and Eastern Europe. On the one hand, a lot of transition countries that are non-EU members maintain close economic relationships with the European Union, including active engagement in international trade with EU and intensive bilateral or unilateral migration of labor, capital, and technology.

This concerns mainly the Balkan countries and the European CIS countries which are intensively integrated under some aspects with the European economies and some of them are also on the path towards the application of the EU membership. They are the former Soviet Union republics from Central Asia and Caucasus that most likely lead to somewhat different behavior of the catching-up process in the post-socialist group because their connections with European Union are lower and much of these countries are highly dependent on oil and gas exports so they may behave quite atypically as compared with the developed world (the detailed analysis of the economic situation in all the post-socialist countries was carried out by Matkowski, Próchniak, and Rapacki (2013b)). On the other hand, the non-EU OECD members are mostly well-developed world countries which are likely to behave in the same manner as the well-developed EU countries. Hence, since we observe a rapid acceleration of the pace of convergence among the EU countries during the recent global crisis and the convergence was fuelled by the fact that the richer economies suffered deeper recession, a similar tendency might be evidenced in the case of the OECD group where the global crisis accelerated the pace of convergence for the same reasons as in the case of the EU28 countries.

In contrast, the three other distinguished groups from Latin America, South-East Asia and Africa have not followed the same path of time changes of β-coefficient and should be included in a separate club in terms of the stability of convergence dynamics. Figure 2.1 (p. 47) shows that the path of β-coefficient (on the basis of overlapping observations) for Latin American, South-Eastern Asian and African countries is different as compared with the EU and OECD countries; but at the same time these groups (except Africa) behave similarly. In the case of Latin America and South-East Asia, one may observe an acceleration of the catching-up process during the 1990s, then a deceleration in the 1st half of the 2000s, and an acceleration again in the 2nd half of the 2000s. In the Latin America group, the peak was observed during the 1999-2003 subperiod with the β-coefficient at the level of 6.82% while the trough during 2004-2008 with the β-coefficient at 4.12%. In South-East Asia, the peak was evidenced during the 1998-2002 subperiod with the β-coefficient standing at the level of 1.46% and the troughs during 1993-1997 and 2004-2008. The first trough is likely to be related with the 1997 Asian financial crisis which started in mid-1997 after the Thai government floated its currency and the crisis negatively affected a lot of rapidly developing countries from Far East, mainly Thailand, South Korea, Indonesia, Malaysia, and Philippines. Once this crisis was combated, the South-East Asian countries started to converge at an accelerating pace. The β-coefficients for the South-Eastern Asian countries, presented in Table 2.14 (p. 41), are negative since the years 2003-2007, which means that these countries exhibited divergence tendencies in the last decade. More precisely, divergence trends were observed from the 2002-2006 till the 2007-2011 subperiods for which the estimated coefficient $\beta_1 + \theta_t$

is positive (the β-convergence parameters shown in the last column of Table 2.14 are smoothed; hence, their negative values do not necessarily correspond to the positive values of $\beta_1 + \theta_t$ as it would be so in the case of non-smoothed betas). Divergence tendencies observed in South-East Asia in the last decade show that this group of countries behaved differently during the crisis period and the situation that the crisis led to the drop in GDP of those that have been already rich did not take place regularly in the group as a whole. This finding also demonstrates the tendency towards polarization of income levels (in conditional terms) among South-East Asian countries during the last years.

As regards the time dynamics of the convergence coefficient for the models estimated on the basis of non-overlapping observations, there may be seen important differences as compared with overlapping data. These differences are an argument pointing to the fact that convergence estimates are not robust, inter alia, to the applied way of data transformation. Only for the EU28 countries the tendency of the β-coefficient based on non-overlapping data matches that based on overlapping data. Table 2.5 (p. 31) and Figure 2.2 (p. 47) show that the EU28 countries have converged at an increasing rate throughout the entire period: β-coefficient rose from 7.7-7.8% during the 1993-1995, 1996-1998 and 1999-2001 subperiods, to approximately 8% in 2002-2004 and 2005-2007, and to 10% in 2008-2010. Such a rise in the speed of convergence (with a small trough in mid-1990s) obtained on the basis of non-overlapping data corresponds to that for overlapping panel and is interpreted in the same way.

The results for the EU15 and OECD countries based on non-overlapping panel data suggest a deceleration in the pace of convergence of the two studied groups; hence, they are in contrast to those for overlapping observations. While in the case of the EU15 countries such huge differences might be explained by the fact that time dummies for the 2002-2004 and 2005-2007 subperiods are statistically insignificant that might lead to different results, in the case of the OECD countries all the considered time dummies are statistically significantly different than zero. Such discrepancies in the results may be explained by two main factors. Firstly, the 3-year GDP growth rates and 5-year GDP growth rates may reflect different economic relationships: the former ones are much more influenced by business cycles, short-term fiscal and monetary policies affecting the demand-side of the economy, and single shocks of both external and internal character; in contrast, 5-year subperiods better reflect medium-term (and even long-term) relationships and they are much more influenced by supply-side factors affecting economic growth. Since the process of convergence refers to the long run and should be analyzed over a sufficiently long time horizon as well as the control factors are chosen to represent rather supply-side factors, much more emphasis in the study is devoted to the analysis of 5-year-long observations. In the case of 3-year time spans, the role of initial conditions in stimulating subsequent economic growth

is weaker and less significant from the economic point of view. Secondly, they confirm the fact that the results are not robust to the way of data transformation and the inclusion of observations of a different length may lead to distinct outcomes. In particular it must be emphasized that although the applied estimators are consistent and in general do not have a serious small sample bias, the samples used for the estimation purposes indeed are not very big and thus despite the consistency of the estimators, their values in final samples might yield economically different conclusions.

Also the results for the South-Eastern Asian countries are not fully robust to the way the panel is constructed. Convergence model estimated based on non-overlapping data suggests that this group recorded actually no convergence tendencies at the beginnings of the studied period (smoothed betas are negative – standard betas are close to zero) while as it has already been mentioned the model based on overlapping data indicates in the opposite way that the divergence trends were recorded at the end of the examined period.

Despite the instability of the convergence process, the dynamics of the catching-up process does not allow to identify a particular path of the β parameter over time that could be approximated with a simple function. This, however, is not surprising: this could be feasible if in the period of the analysis there were no particular crises or any other greater shocks in the market. That, however, is not true. Additionally, in the case of such groups as EU28, EU15 or OECD the 2004 joining the EU by a numerous group of 10 countries might result in a structural break in the process of catching up, while probably one could point out similar events in the case of the other groups. We thus limit our attention to time dummies and do not try to replace them with a single functional form of a trend.

It is worth to look at the estimated coefficients standing for the other control variables. As it is not the aim of the study to analyze in detail the individual control variables, only the most important findings are discussed here. Since the results regarding the other control factors are highly differentiated across different groups of countries and different approaches of panel data, the conclusions drawn here do not refer exactly to all the models (especially those estimated based on 3-year non-overlapping data where a lot of variables are statistically insignificant). However, some regularities can also be observed.

The analysis confirms an important role of investments in accelerating economic growth of all the groups of countries. The estimated coefficient of the *inv* variable is positive and statistically significantly different from zero in almost all the models. This outcome corresponds to the theoretical and logical relationship that high investment rate is an important growth driver. It is also in line with, among others, neoclassical growth models according to which the countries which are far away from the steady-state could increase its invest-

ment rate to accelerate output growth. Such a positive relationship between investment rate and economic growth is evidenced on the basis of both 3-year and 5-year time spans. Hence, it can be expected that the positive impact of investment on economic growth reveals both demand-side and supply-side effects. The former ones are rather of the short-run nature where high investments mean high spending and in this way they influence economic growth while the latter ones represent rather long-run relationships where higher investment means higher accumulation of physical capital leading to a more rapid growth of potential output.

Another important finding of the model is a positive relationship between human capital and economic growth. The estimated coefficient standing for *human_cap* is positive and statistically significantly different than zero in most model specifications. This result evidences an important role of human capital accumulation in stimulating output growth of the world countries. Such a relationship is consistent with the theory of economics; however, a number of empirical studies on economic growth does not evidence this phenomenon because human capital variables give various results when including them into growth regression, partly due to the fact that it is very difficult to measure the stock of human capital in a given country. It turns out that the variable taken from the PWT database is a good measure of human capital stock from the point of view of growth regressions. To foster output growth it is necessary to invest in education by increasing years of schooling and make a better quality education to raise its returns. Life expectancy at birth (*life*) often is also positively correlated with GDP dynamics. Hence, the results reveal that a well-educated and healthy society is an important growth driver, helping the individual countries in achieving rapid GDP dynamics.

The results strongly suggest the negative impact of inflation on economic growth in the medium-run perspective (the coefficient standing for *infl* variable is usually negative and statistically significantly different than zero in the models estimated based on 5-year subperiods). These outcomes imply that accelerating inflation hampers output growth. In order to achieve sustainable economic development it is necessary to perform economic policy aimed at reducing inflation rate.

Last but not least, the calculations show a statistically significantly positive impact of good institutional environment and democratic society on economic growth (except the South-East Asia group where some of growth leaders – like China – are non-democratic countries). The two variables representing institutions (*econfree_fi* that shows the scope of economic freedom and the regulatory framework as well as *dem_fh* that represents political rights and civil liberties) both have positive and statistically significantly different than zero values of the estimated coefficients in most model specifications.

It is thus worth to assess the results obtained based on overlapping and non-overlapping data. In our opinion, the models estimated on the basis of overlapping observations seem to be better in verifying the income-level convergence hypothesis. First, they do not arbitrarily divide the studied period into separate non-overlapping subperiods; in contrast, they make a smooth and symmetric division of the considered period and each year has exactly the same role in the model. In the other words, in the case of overlapping data, GDP per capita from each year is included both as the initial income level for a specified subperiod and as the final year of a given subperiod for which the growth rate is calculated while in the case of non-overlapping panel data, initial GDPs are taken from only those years that are arbitrarily assumed to lie on the borders of intervals; hence, in the case of non-overlapping observations GDPs from the middle of subperiods are never included as initial conditions and some information is missed when estimating these models. Second, overlapping panel data give more statistically significant results because the models are estimated on a greater number of observations – also it is quite natural for the typically big-sample GMM estimators to provide more trustworthy results in bigger samples. Third, from the economic point of view β-coefficients for overlapping observations are more likely to match the true rates of convergence while in the case of non-overlapping observations some convergence coefficients seem to be overestimated (like those for Latin American countries).

2.5. CONCLUDING REMARKS

The study shows that the process of real economic convergence is undoubtedly variable over time. Regardless of the group of countries (or a convergence club), it is not appropriate to claim about a stable pace of income-level convergence. The analysis reveals that the catching-up process is dynamic and it is possible to extract the periods of a more rapid convergence and the periods in which income-level equalization was slower. There are various reasons of why different countries catch up at different rates. In the last years, one of the most important factor affected the pace of convergence was the global crisis; however, its impact on the economic growth path of various countries and regions was differentiated. In the case of the European Union countries, one may also observe a significant role of EU enlargement on the process of convergence (this had an influence on some other groups, like OECD countries, as well). It is also necessary to mention the role of regional shocks on the pace of convergence (e.g. the 1997 Asian financial crisis which affected the behavior of South-East Asian nations).

As the result, the study shows, among others, that the EU28 countries revealed an accelerating pace of income-level convergence over the last 20 years. The acceleration of the catching-up process was partly caused by EU enlargement and the "integration anchor" that bridged GDP levels between

member countries as well as by the global crisis that led to a more rapid drop in GDP of the well developed economies.

Instabilities in the pace of income-level convergence were also evidenced in the other studied groups; however, for the countries from Latin America, South-East Asia and Africa the time path of β-coefficient was different than that for the EU28 countries. This supports the initial assumption that it is appropriate to divide the countries into various convergence clubs and analyze the time path of β-coefficient separately for different clusters.

Finally, this study should be treated as an initial attempt to a more detailed analysis of time stability of the growth process. Future research on this topic should include alternative model specifications, different econometric approaches, and another division of countries into convergence clubs. Last but not least, the study indicates that the idea of club convergence should not be rejected in further examination.

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3 PARTICIPATION IN LOCAL GOVERNMENT DECISIONS AS THE FUNDAMENTAL RIGHT OF CITIZENS

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ABSTRACT

The purpose of this research is to improve the democratic processes on the local level in Croatia by detecting the extent to which citizens participate in the decision process initiated by the local authorities. A hypothesis is set up that citizens do not sufficiently use their right to political participation. This determines the main goal of this research paper in detecting why citizens do not exercise their right of participation in a set of possible modes, determining the reasons for such behavior in citizens' participation. In order to achieve this objective and the purpose of the research, this work is divided into two main parts. In the first one the theories of motivation to political participation are explained. In the second one an insight in the cities administrations documentation is undertaken as well as a questionnaire to an appropriate number of citizens, finally presented as the research results.

Democratic life and political participation as its functional dimension are the result of different social conditions and processes. The data in our research shows a few striking features of the Croatian democratic process in the light of political participation, with which the hypothesis that citizens do not sufficiently use their right to participation is proven. There is no interest in politics and public life, indicating a final loss of trust in local politicians. On the other hand people believe that they are not good enough informed about the political processes and decisions made buy local governments. In consequence, a negative level of interest is present as well as a negative level of political efficacy. A strong majority of the people think that they have no influence on the local government. One of the major obstacles to participation is seen by the people in the lack of resources, skills, information, time, and money. Participation is not only the instrument of democratic change but also has value in itself, and this can have many other positive and unexpected consequences.

Key words: political participation, political motivation, local government, Croatia, referendum, neighborhood council, proposal, written opinion, mayor meeting

3.1. INTRODUCTION

In theory, political participation (PP), participation in democratic life, is the life-line of civil society. Civil society operates and lives by participation of its members (Pateman, 1970; Moyser and Day, 1992; Wilhelm, 2000; McKinney et al., 2005; Zukin et al., 2006; Weller and Nobbs, 2010; Hedtke and Zimenkova, 2013). After the research of relevant theories that can explain the motivation for PP, the legislative framework for such action of citizens in the

case of Croatia will be examined. Namely, only through legislation the right to participate can be effectively realized.

For example, the Croatian Constitution guarantees citizens the right to directly participate in the management of local affairs, through citizens' meetings, referendums and other forms of direct decision-making in accordance with the law. Starting from the Croatian Constitution in the Law on Local and Territorial (Regional) Self-government is determined that citizens can directly participate in decision-making about local affairs through referendums and local citizens' meetings, in accordance with the law and the statute of the local (regional) self-government units, like counties, cities and municipalities.

According to the Croatian Constitution and the Law on Local and Territorial (Regional) Self-government, counties, cities and municipalities elect their own statutes by local parliaments meetings. In this study the cities of Zagreb, Osijek, Split and Rijeka will be taken with their statutes, which are providing that citizens can directly decide and participate in decision-making about local affairs. It has been found that in the Republic of Croatia the specific modes of citizens' participation in the decisions of the local governments, next to direct elections, are the local referendum and the local advisory referendum, the local neighborhood council citizens' meetings, the citizens' proposals to the councils, written opinions, comments and suggestions to the heads of local administrative bodies and the direct citizens' meetings with the local mayor.

The purpose of this research is to improve democratic processes on the local level by detecting the extent to which citizens participate in the above mentioned modes of the decision process initiated by the authorities. A hypothesis is set up, on the basis of previous researches, that citizens do not sufficiently use their right to participation. This determines the main goal of this research paper to detect why citizens do not exercise their right to participation. From this main goal the other research objectives deriving which consist in determining the number of the mentioned modes in this kind of PP in the last ten years, to statistical analyze the data's obtained, what will lead us to reject or to prove of the stated hypotheses. In the end we have to determine the reasons for proven behavior in citizens' participation.

In order to achieve the set objectives and the purpose of the research, this work is divided into two main parts. In the second chapter the current theories explaining the motivation of citizens to PP are explored. In the third chapter an insight in the cities administrations documentation is undertaken as well as a questionnaire to an appropriate number of citizens, finally presented as the research results.

3.2. THE THEORIES OF POLITICAL PARTICIPATION

Citizen participation research has been progressed significantly over the last two decades, and intensified in the last few years, looking at various aspects of citizen participation (Gilia, 2013; Eckstein, Noack and Gniewosz, 2012; Gallego and Oberski, 2012; Dawes, Loewen and Fowler, 2011; Chapman, Walker and Gillion, 2009).

In the absence of a theory that directly explains the citizen participation in local government decisions, theories will be used that explain the political engagement of citizens. These theories are suitable for this work and are often used to clarify the motivation of citizens in various forms of PP (Gamson, 1975, p. 139; Dauphinais, Barkan and Cohn, 1992; McAdam, McCarthy and Zald, 1998). Therefore, they can explain the motivation of citizens to participate in the political life of a country, but they do also explain citizen participation in decisions making, as it is based on the same motivations.

PP can be defined as those activities by private citizens that are more or less directly aimed at influencing the selection of governmental personnel and/or the actions they take. It indicates that we are interested more abstractly in attempts to influence the authoritative allocations of values for a society, which may or may not take place through governmental decision (Sidney and Nie, 1987, p. 2). This is a rough and only one of the possible definitions in the broad debate about PP, but for the purposes of this paper this definition can be used.

Also the modes of PP are numerous and different from state to state. They can be classified in many possible ways. For example we can talk about regularly voting in presidential elections or parliamentary elections as well as in local elections. Citizens can also be active in one organization involved in community problems or they can actively work, maybe donating money for a party or candidates during an election. Furthermore, citizens can contact a national or local government official about some issue or problem or they can form a group or organization to attempt to solve some problem (Brady et. al., 1995; Brown et. al., 1980; Davidson and Cotte, 1989; Finkel, 1987, Sidney and Nie, 1987, p. 31).

Of course, in the broad discussion on the concept of PP it is not enough to establish some definitions or modes of PP. It is more necessary to explain the behavior of voters or citizens and why they are involved or not involved in PP. From this viewpoint for the purposes of this study one of the possible classifications (Whiteley and Seyd, 2002) of PP behavior is applied. This classification consists of several models which are known as the Civic Voluntarism Model, Rational Choice Model, Social Psychological Model, Mobilization Model and the General Incentives Model.

3.2.1. AN OVERVIEW OF THE POLITICAL BEHAVIOR MODELS

The most well-known and widely applied model of PP in political sciences was originally referred to as the resource model and had its origins in the work of Sidney Verba and Norman Nie (1972) in their influence research on participation in the United States. It was subsequently applied by the authors, their collaborators, and others to explain participation in other countries. The central ideas of the civic voluntarism model of participation are captured in the following quote:

"We focus on three factors to account for political activity. We suggested earlier that one helpful way to understand the three factors is to invert the usual question and ask instead why people do not become political activists. Three answers come to mind: because they can't; because they don't want to; or because nobody asked. In other words people may be inactive because they lack resources, because they lack psychological engagement with politics, or because they are outside of the recruitment networks that bring people into politics" (Brady, Verba and Scholzmann, 1995, p. 269).

Verba and his colleagues (Verba, Schlozman and Brady, 1995; Burns, Schlozman and Verba, 2001) developed the first empirical typology of different modes of participation and classified citizens into six different groups on the basis of the types of activities they undertook (Verba and Nie, 1972, pp. 118-119). There are, first, the inactives; second, the voting specialists, who vote regularly but do nothing else; third, the parochial participants, who contact officials but are otherwise inactive; fourth, the communalists, who intermittently engage in political action on broad social issues but are not highly involved; fifth, campaigners, who are heavily involved in campaigns of various kinds; and finally, the complete activists, who participate in all kind of activities.

The civic voluntarism model has four components. These four components provide a general explanation for citizenship and other forms of environmental participation (Barkan, 2004).

The first is resources, such as time, money, and communication and organizational skills that provide the means and ability to be politically active. Because people with high socioeconomic status are more likely to have such resources, they are more likely than those with lower socioeconomic status to be politically active. Thus, the civic voluntarism model recognizes the importance of socioeconomic status, especially education, for PP.

The second component is psychological engagement with politics, or attitudes that incline citizens to become politically active. Examples of such cognitions include interest in political issues; political efficacy, or the belief that

one's actions will influence the political process; and a feeling of trust in political leaders and in one's fellow citizens. All these views help motivate people to become politically active. If those with the resources for political activity were not so motivated, they would be less inclined to take part in political action.

A third component is recruitment by friends and associates in one's interpersonal networks. People may have the resources and psychological engagement for political activity but still remain inactive unless asked by their network members to take part. Common networks are found in places of worship, voluntary organizations, and work settings. Thus, people with greater involvement in such settings are more likely to be recruited into political activity. Such involvement is important for another reason: it can help people learn and refine the communication and organizational skills emphasized earlier.

The final component is issue engagements, or opinions about specific issues that induce political activity on these issues. People may be concerned about an issue because it affects them personally or because it bears on their moral and/or political values. Those with such concerns are more likely to become politically active on the issue in question.

Rational choice theory has played an important role in the analysis of PP ever since Down's seminal work, An Economic Theory of Democracy (1957). The rational choice model is summarized succinctly by Downs in the following terms:

"A rational man is one who behaves as follows: (1) he can always make a decision when confronted with a range of alternatives; (2) he ranks all the alternatives facing him in order of his preferences in such a way that each is either preferred to, indifferent to, or inferior to each other; (3) his preference ranking is transitive; (4) he always chooses from among the possible alternatives that which ranks highest in his preference ordering; and (5) he always makes the same decision each time he is confronted with the same alternatives" (Downs, 1957, p. 6).

It is well known that rational choice theory applied to the task of explaining PP faces a key problem, the paradox of participation, first highlighted by Olson (1965; Feddersen, 2004; Levine and Palfrey, 2007). This is the proposition that rational actors will not participate in collective action to achieve common goals because the product of such collective action are public goods. Public goods have two properties: jointness of supply and the impossibility of exclusion (Samuelson, 1954). Jointness of supply implies that one person's consumption does not reduce the amount available to anyone else, and the impossibility of exclusion that an individual cannot be prevented from consum-

ing the good once is provided, even if he or she did not contribute to its provision in the first place.

Olson's insight was to note that the policy goals and programs, which are the "products" of a political party, are public goods, and consequently rational actors have an incentive to free ride on the efforts of others and to let them do the work to provide such goods. Consequently, a voluntary organization like a party would get no assistance from the rational self-interested individual in the absence of other types of incentives to participate (Olson, 1965, pp. 9-11).

As we can see, rational choice scholars have typically approached the problem of PP by using models based on pure self-interest (Downs, 1957, 1985; Ledyard, 1982; Palfrey and Rosenthal, 1985; Aldrich, 1993; Feddersen and Pesendorfer, 1996). These models encounter the well-known difficulty: although an individual may derive personal benefits from a certain political outcome, the probability that a single act of participation will significantly affect the outcome is very small in large populations. This gives individuals an incentive to avoid the costs of participation and free ride on the efforts of others, producing the well-known paradox of participation.

This work allows us to address the literature on rational choice by demonstrating that the core motivational elements of rational choice theory need not rest entirely or solely on self-interest, that other regarding behavior can and should be taken into account, and that rationality in no obvious or necessary way requires material self-interest to be privileged as the primary motivator in models of political behavior.

The altruism and social identifier theories of participation have important implications for rational choice. The rationality assumption means only that people have preferences that are complete and transitive. Notice that the words "self-interest" appear nowhere in this definition (Jackman, 1993).While it is true that most rational models are based on material self-interest, a concern for others need not be excluded from these models. Social identity theory suggests people gain utility by helping their ingroup, often at outgroup's expenses. Theories of altruism suggest that people gain utility by providing benefits to others, even when it is personally costly. Rational calculations need not be limited to narrow definitions of material self-interest, especially since such models have failed to explain observable behavior. The evidence clearly suggests that individuals look beyond the self when deciding whether or not to participate in politics (Fowler and Kam, 2007).

The third broad theoretical approach comes from the psychological literature and has been particularly important in understanding unorthodox forms of participation such as protest behavior and rebellious collective action (Muller, 1979; Klandermans, 2004). The underlying theory is concerned with explain-

ing the relationship between attitudes and behavior. Applied to the task of modeling the link between attitudes and PP (Dalton, 2000), this meant that citizens should be asked about their attitudes towards various types of protest behavior rather than about their attitudes to unjust laws or political events that might have triggered this behavior. Muller operationalized the theory using a series of indicators to the question of modeling aggressive PP. He writes:

"Attitudes about behavior are defined as the individual's beliefs about the consequences of his behavior multiplied by their subjective value or utility to him. Normative beliefs refer to an individual's own belief in the justifiability of his behavior as well as to his perception of significant others' (parents, peers) expectations about it. Motivation to comply with the norms reflects such factors as an individual's personality and his perception of the reasonableness of expectation of others. In other words individuals will participate if they believe that this will bring those benefits, providing that they also believe that participation is effective" (Muller, 1979, pp. 69-100).

Thus a key problem with social psychological models is that they pay no attention to the rationality of decision making. Their lack of attention to the objective basis of political influence is a serious omission that needs to be rectified if they are to provide an adequate account of participation.

The mobilization model asserts that individuals participate in response to the political opportunities in their environment and to stimuli from other people. Put simply, some people participate because the opportunities for them to do so are greater than for other people and also because they are persuaded to get involved by other people. The model can be linked to the resource model, as Verba, Scholzman and Brady point out in the earlier quote illustrating the reasons why most people do not become political activists. The opportunities for participation are obviously linked to the resources model since individuals with high socioeconomic status are more likely to have access to political parties, interest groups, or campaign organizations. An interaction between resources and opportunities mobilizes some individuals to get involved.

With the mobilization model is mainly explained the election turnout. Different studies on different elections at different times using different methods have all found that political mobilization – variously labeled voter contact, get-out-the-vote, or the voter canvass – matters. These works, among them some of the oldest empirical and behavioral studies in this discipline, demonstrate that political activity and mobilization contacts must be part of any comprehensive explanation of why citizens participate in politics. Recent studies, however, have taken this basic finding a step further, arguing that mobilization is not only an important determinant of individual participation, but that decreases in either its amount – which would reduce its net effect – or quality – which could reduce its effectiveness – can explain the mystery of declining

turnout in the United States over the past 40 years (Goldstein and Ridout, 2002).

Another example stated that human behavior is thought to spread through face-to-face social networks, but it is difficult to identify social influence effects in observational studies, and it is unknown whether online social networks operate in the same way. Here we report results from a randomized controlled trial of political mobilization messages delivered to 61 million Facebook users during the 2010 US congressional elections. The result of the experiment has shown that the messages directly influenced political self-expression, information seeking and real-world voting behavior of millions of people. Furthermore, the messages not only influenced the users who received them but also the users' friends, and friends of friends. The effect of social transmission on real-world voting was greater than the direct effect of the messages themselves, and nearly all the transmission occurred between 'close friends' who were more likely to have a face-to-face relationship. These results suggest that strong ties are instrumental for spreading both online and real-world behavior in human social networks (Bond, et. al., 2012).

The mobilization model clearly highlights aspects of PP neglected by the other models. But it is in some way the least well developed of the theoretical models of PP, and it leaves many unanswered questions, most particular, that why people should change their behavior in response to the efforts of others to persuade them to do so. The point that the social environment in which some people live is more favorable to participation than it is for others is well taken. But overall the mobilization model cannot provide a complete theory of participation.

Studies of the Labour and Conservative parties (Seyd and Whiteley 1992, 2002; Whiteley and Seyd 1998, 2002) are based on a general incentives model of participation, used to explain why people join parties and why some become active. At first sight, this approach appears to be an attempt at expanding rational choice explanations. However, we can describe this approach as a synthesis of rational choice and social-psychological accounts of participation. Like Olson, these authors argue that incentives to action exist – that the perception of cost and benefits plays an important role – although they disagree with the precise nature or characteristics of these incentives. During the time they point to five distinct factors which motivate people to join a political party: selective incentives, collective incentives, group incentives, affective or expressive motives and social norms.

Selective incentives can take a number of forms. Selective outcome incentives apply to the achievement of goals which are private, not collective. These private returns can be experienced only by members. Selective process incentives apply to the very act of participating, not the perceived outcome of ef-

forts. Ideological selective incentives are another type. It is argued that party membership might amount to give expression to beliefs, in much the same way as active church-going. Ideological radicalism would motivate individuals to join the party because it allows them to interact with like-minded people and give expression to deeply held beliefs. However, they again suggest that these motives are only likely to apply to active members.

Collective incentives relate to policy goals. In an early description of collective positive incentives they argue that individuals can put themselves in the place of the group, and think about the group welfare, rather than just their own individual welfare. This amounts to a search for a collective good. The underlying assumption is that people choose not to free ride because they know if everyone did that the policy goal or collective good would not be achieved. But members can also be motivated by collective negative incentives and free ride.

Group incentives are related to how individuals view the success, or efficacy, of the group. Individuals are more likely to participate if the group or organization is viewed as successful, or able to make a difference. Group solidarity engendered by success does provide an incentive to participate, independently of other factors.

Expressive attachments can be explained as the amount to a general emotional attachment to the party. Such motives are grounded in a sense of loyalty and affection for the party, which is unrelated to cognitive calculations of the cost and benefits of membership.

Finally, the authors describe social norms which favor participation and involve a desire for respect or social approval within a group. Policy outcomes are almost irrelevant in this context. As in partisan attachment, family norms can be very important (Bennie, 2004.).

3.2.2. THE REVIEW OF PARTICIPATION MOTIVATIONS

People participate politically because they have the resources, such as time, money, and communication and organizational skills. Those with a higher socioeconomic status have access to a greater amount of such resources and it can be therefore assumed that they will participate on a higher level. The psychological engagement includes interest in political issues, as well as political efficacy or the belief that one's actions will influence the political process and a feeling of trust in political leaders and in one's fellow citizens. People can also be recruited by friends and associates in one's interpersonal networks. Important is also the issue engagement or opinions about specific issues that induce political activity on these issues.

Scholars of rational choice theory have typically approached the problem of PP by using models based on pure self-interest. If the benefit is greater then the cost, people will participate. But this gives individuals also an incentive to avoid the costs of participation and free ride on the efforts of others, as politics can be considered as a public good, producing the well-known paradox of participation.

The social psychological model examines the relationship between attitudes and behavior. Individuals will participate if they believe that this will bring benefits, providing that they also believe that participation is effective.

In the mobilization model some people participate because the opportunities for them to do so are greater than for other people and also because they are persuaded to get involved by other people. The point that the social environment in which some people live is more favorable to participation than it is for others is well taken.

A synthesis of rational choice and social-psychological accounts of participation has resulted in the general incentives model, with a variety of incentives. Selective incentives include the achievement of goals which are private, the very act of participating and ideological radicalism that would motivate individuals to join the party because it allows them to interact with like-minded people and give expression to deeply held beliefs. The collective incentives explain that individuals can put themselves in the place of the group, and think about the group welfare. But members can also be motivated by collective negative incentives and free ride. Group incentives are motivating individuals to participate if the group or organization is viewed as successful, or able to make a difference. Group solidarity plays an important role in this case. Expressive attachments are such motives that are grounded in a sense of loyalty and affection for the party. The social norms favor participation and involve a desire for respect or social approval within a group.

Although it is difficult to put these theories to a common denominator, in this article a focus is set on political efficacy or the belief that one's actions will influence the political process, the believe that participation is effective if we are able to make a difference, with the feeling of trust in political leaders and in one's fellow citizens. It seems that if we go in this direction that this might be a common component of the theories.

3.3. THE POLITICAL PARTICIPATION IN CROATIA

PP is achieved in practice through laws. In Article 133 Paragraph 2 of The Croatian Constitution[1] the citizen's right to directly participate in the management of local affairs, through meetings, referendums and other forms of direct decision-making, in accordance with the law, is guaranteed. This constitutional provision has a more general character and should be further operationally clarified by statutory laws.

However, The Law on Local and Territorial (Regional) Self-government[2] in the Chapter on the direct involvement of citizens in decision-making modifies the forms of direct decision of citizens in the management of local affairs. In Article 24 the said Act stipulates that citizens can directly participate in decision-making about local affairs through referendums and local citizens meetings, in accordance with the law and the statute of the local (regional) self-government. As we can see, neither the law does not explain in details the operational implementation of the present constitutional provision, but it refers to the statutes of the cities and municipalities.

Therefore, and for the purposes of this research the statutes of the cities Zagreb, Split, Rijeka and Osijek are taken into examination. By reading the mention statutes it is found that there is no difference between them and that the specific modes of citizens' participation in the decisions of the local governments, next to direct elections, are the local referendum and the local advisory referendum, the neighborhood councils where it is possible to meet with the major, the proposals to the representative body, written opinions, comments and suggestions to the heads of local administrative bodies and the direct citizens' meetings with the local mayor.

The research is performed on a dual mode. Firstly memos are delivered to the major cities in Croatia with a number of populations above 100,000 (Zagreb, Split, Rijeka and Osijek). In these letters data is requested from the above cities on the number of referendums, neighborhood councils, proposals to the representative body, written opinions, comments and suggestions to the heads of administrative bodies, and the meetings with the mayor, for a period from 2004 to 2013. Data were provided by all cities except Osijek, but with certain difficulties as the cities do not have the appropriate database.

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1. The Official Gazette of The Republic of Croatia, The Official Part, The Croatian Constitution, Consolidated text, (NN 85/10), http://narodne-novine.nn.hr/clanci/sluzbeni/2010_07_85_2422.html

2. The Official Gazette of The Republic of Croatia, The Official Part, The Law on Local and Territorial (Regional) Self-government, Consolidated text, (NN 19/13), http://narodne-novine.nn.hr/clanci/sluzbeni/2013_02_19_323.html

Since it was expected that the present cities do not have the requested data, in the second part of the research a questionnaire was done among the citizens of these cities. The Poll was conducted on the random sample of 1,000 respondents, eligible voters, in the following cities: Zagreb (656), Split (148), Rijeka (107) and Osijek (89). The number of respondents is determined in relation to the population number in these cities. It was conducted by a written anonymous questionnaire. There are two basic categories of data: background socioeconomic data of respondents and data on participation or community involvement. The poll is not extensive. It includes only 25 questions, and takes about 30 minutes to be completed.

The questionnaire is designed in a way that it informs the citizens about the purpose of the survey, followed by questions whether they have or have not participated in any of the modes of PP, influencing the decisions of the local governments. After this section, the citizens have to give answers to statements related about the motivation for such activities and if they believe that these activities could have negative consequences for them. In the end the citizens have to give answers about their sex, age, labor status, professional qualification and residence.

In this report PP will be used in more general terms and will include not only the formal participation as voting. PP is a rational way to influence and control political life and social environment, provide for better legitimacy and acceptance of collective decisions, and integrate the citizens in their community. PP is not only an instrument of influence and power but also a value in itself. Participation requires resources – time, money, skills and information – that citizens may not have (Grdešić, 1998, p. 10).

3.3.1. THE REFERENDUMS

In the statutes of the cities and municipalities[3] it is emphasized that a referendum can be called to decide on a change of the statute, on the proposal of

3. For the purposes of this research into consideration will be taken the statutes of the following cities:

The City of Zagreb, The Statute of the City of Zagreb (Official Gazette of the City of Zagreb 20/01 - consolidated text, 10/04, 18/05, 2/06, 18/06, 7/09, 16/09, 25/09, 10/10 and 4/13), http://www.zagreb.hr/default.aspx?id=12963.

The City of Split, The Statute of Split ("Official Gazette of the City of Split", No.17, 15 July 2009)., http://www.split.hr/Default.aspx?sec=343.

The City of Rijeka, The Statute of Rijeka ("Official Gazette" of the County of Primorsko-Goranska No. 24/09, 11/10 and 5/13), http://www.rijeka.hr/VaznijiAktiGrada.

The City of Osijek, The Statute of Osijek (Official Journal of the City of Osijek No. 6/01, 3/03, 1A/05, 8/05, 2/09, 9/09, 13/09, 9/13 and 11/13 - consolidated text), http://www.osijek.hr/index.php/cro/Gradska-uprava/Vazni-dokumenti/Statut-Grada-Osijeka.

a general act or other issues related to the representative body as well as other matters specified by law and statute.

Under the provision of the laws and statues a referendum can be called if it is suggested by at least one third of the members of the representative body, by the head of the community, the mayor or the prefect, or by 20% of the total number of voters in the constituency in which it seeks a referendum. A referendum can also be called if it is suggested by the majority of the neighborhood councils or the city districts in the municipalities, the cities and the City of Zagreb by or if it is suggested by city regions in the municipalities, cities or the City of Zagreb[4].

If a referendum is proposed by at least one third of the members of the representative body, or if a referendum is proposed by the head of the community, the mayor or the prefect, and if a referendum is proposed by the majority of neighborhood councils, city districts or city regions, the representative body must declare on the submitted proposal and if the proposal is accepted, a decision has to be done to call out the referendum within 30 days of the receipt of the proposal. The decision to call out a referendum shall be adopted by a majority vote of all the members of the representative body.

If a referendum is proposed by 20 % of the total number of voters, the representative body shall submit the proposal received to the central government body responsible for the local (regional) self-government within eight days of receipt of the proposal. The central government body responsible for the local (regional) self-government must, within 60 days of delivery, determine the correctness of the submitted proposal, or determine whether the proposal is submitted by the required number of voters and if the referendum question is in accordance with the law. The decision of that has to be submitted to the local representative body. If the central government body responsible for the local (regional) self-government determines that the proposal is correct, the representative body will call out a referendum within 30 days of receiving this decision. Against the decision of the central government body that the proposal is not correct can not be appealed, but an administrative dispute before the High Administrative Court of the Republic of Croatia can be initiated.

The representative body can also call out an advisory referendum on matters within its competences. The rights to vote on the referendum have citizens who reside in the municipality, town or county and are enrolled in the electoral list. A decision made on a referendum is obligatory for the representative body,

4. The City of Zagreb has a special arrangement of the local government based on the Law of the City of Zagreb (The Official Gazette of The Republic of Croatia, The Official Part, The Law of the City of Zagreb, Consolidated text, (NN 62/01, 125/08, 36/09), http://narodne-novine.nn.hr/clanci/sluzbeni/2009_03_36_794.html).

except for decisions made on an advisory referendum, which is not compulsory.

Table 3.1. The Total Number of Referendums from 2004 to 2013

	Zagreb	Split	Rijeka	Osijek
Total population	790.017	178.102	128.624	108.048
Local Referendum	-	-	-	-
Local Advisory Referendum	-	-	-	-

Source 1: made by author based on data obtained from the cities of Zagreb, Split, Rijeka and Osijek

As we can see, there was not any kind of referendum held in the research period. If we take into account the usual statistical error, the questionnaire showed that 100 % of the population knows about the existence of the referendums but has never participated in a local referendum. The main reason for this is that the local referendums were never held, as it is confirmed by data obtained from the cities (Table 3.1).

The second reason is too strict conditions for the convening of such a referendum. In doing so, however, 95 % of citizens are not familiar with the exact terms of the convening of this type of referendum and for what purpose the local referendum can be convened. The above percentage is considered that a local referendum shall be convened only when it is necessary to shift the mayor. Namely, the Croatian citizens do elect in local elections separately and directly the local parliament as well as the city mayor. In some cases, the structure of the local parliament belongs, as the voting result, to one political option while the mayor at the same time comes from a different political option, which often leads to non-functioning of the local authorities. Therefore 95 % of the population is the opinion that a local referendum only serves to overcome such a political crisis, but considers that the conditions for convening a referendum (requires the signature of 20 % of voters) are too strict and that this instrument is therefore useless.

For the local advisory referendum the results are the following. 100 % of the population has never participated in a local referendum as such a referendum was never held. The difference to the results above is that 72% of the population does not know that this kind of referendum even exists. In this way 100% of the surveyed citizens do not know about the exact conditions for the convening of such a referendum.

3.3.2. THE NEIGHBORHOOD COUNCILS AND THE CITIZENS MEETINGS

There are two ways of meetings. The first is that the municipal or city council may seek the opinion of the neighborhood councils on a proposed general act or other issues in the competence of the municipality or city, as well as on other matters specified by law or statute. The opinion obtained by the neighborhood councils does not obligate the municipal or city council.

The second way is to enable a declaration of citizens on specific issues of local importance. This is done by a discussion on the citizens' neighborhood councils meetings, on the needs and interests of citizens and proposals for resolving issues of local importance. The citizens' neighborhood councils meeting is convened by the neighborhood council. The citizens' neighborhood councils meeting can also be convened by the local municipals or cities councils when they seek the opinion of the local citizens on a general act or issue in their competence, as well as on other matters defined by law. The citizens' neighborhood councils meeting should be convened for a part of the area of the neighborhood council that makes a particular unit (apartment block, etc.). With the decision on convening the citizens neighborhood councils meeting the question of requesting an opinion is determined as well as the area for which the citizens neighborhood councils meeting is convened.

The meeting is convened at least eight days prior by the media, by advertising posters and by notes on bulletin boards of the neighborhood councils. The citizens' neighborhood councils meeting is guided by the president of the neighborhood council or by a member of the neighborhood council appointed by the neighborhood council itself. The decisions of the citizens' neighborhood councils meetings are made by public vote, unless a majority of the present citizens votes for the decision of a secret voting. The decision made by the citizens neighborhood councils meeting is obligatory for the neighborhood council, but not for the local municipals or cities councils.

Furthermore, the head of the community, the mayor or prefect, can convened a citizens neighborhood councils meeting, through the neighborhood councils, to polling citizens on issues of self-government competencies that direct and daily impact on their life and work.

For the neighborhood council's data is available only for Split and Rijeka. According to the data obtained from Split, in the period from 2004 to 2013, meetings where held on 5 topics, but Split don't know how many meetings this is in total. In the same period in Rijeka a total number of 54 meetings are held, or about 5 meetings per year. For both cities the total number of people on these meetings is not available. All other data on this is also not available as it is shown in Table 3.2.

The Neighborhood Councils is the most familiar mode of decision participation to the population. 95% of the asked people do know about and do know exactly who and why can convene such a meeting. Furthermore, 23% of the population has at least once been present to such a meeting. But what 93% do not know is the fact that a neighborhood council can also be convened by the city mayor for the purpose of solving city affairs. The citizens believe namely that the neighborhood councils are intended solely for discussions about strictly local issues, such as pedestrian crossings or children's playgrounds in residential areas. That a neighborhood council can be convened also for resolving significant and major urban issues surprised almost all of the interviewee.

Table 3.2. The Total Number of Citizens' Neighborhood Councils Meetings from 2004 to 2013

	Zagreb	Split	Rijeka	Osijek
Total population	790.017	178.102	128.624	108.048
Citizens' Neighborhood Councils Meetings	-	5 (?)	54	-

Source 2: made by author based on data obtained from the cities of Zagreb, Split, Rijeka and Osijek

3.3.3. THE PROPOSALS TO THE REPRESENTATIVE BODY

The citizens have the right to propose to the representative body the adoption of a particular act or the resolve of certain issues from its competence. A proposal to the representative body must be discussed if it is supported by the signatures of at least 10% of the voters registered in the electoral roll of the municipality, city or county, and the answer to the applicants has to be given no later than three months from the receipt of the proposal.

Table 3.3. The Total Number of Proposals from 2004 to 2013

	Zagreb	**Split**	**Rijeka**	**Osijek**
Total population	790.017	178.102	128.624	108.048
Citizens' Proposals to the Council	-	-	-	-

Source 3: made by author based on data obtained from the cities of Zagreb, Split, Rijeka and Osijek

As we can see in Table 3.3, the city councils do not received any kind of proposals from the citizens in the research period. The questionnaire also

shows that citizens' proposal to the representative bodies is a mode that is not used at all by the population. The reason for this is very simple. There is no individual that would be supported by the signatures of at least 10% of the voters, not calculated the time and money needed for such a support. The second reason is that voters do elect the city council and as such they are considered if the chosen representatives sufficiently represent their interests in that body. If they do not the population will in the next elections vote for another list of representatives, although some of the citizens in 13% of the case have directly verbally contacted the representative to show their displeasure. A need for written proposals to the city council is therefore not present.

It should be added that the survey also showed that the population is not familiar with the agendas of the city councils. Almost everybody reads the results of the voted agendas in the media, after which proposals do not make sense, because when the items of the agendas are voted then they are finished. To send in advance a proposal is not used by the population as they do not know the points of the agendas or if they know the time of mostly 7 days is too short for a proposal and the needed support. Furthermore, 68% of respondents believe that the city council is only a service to the mayor, as the mayor is the person who leads the policies. The city council actually voted only on his proposals. If the population is unsatisfied with the mayor, they don't see a way how to show this the mayor or how to change the policies.

3.3.4. THE WRITTEN OPINIONS, COMMENTS AND SUGGESTIONS TO THE HEADS OF ADMINISTRATVE BODIES

The bodies of the local and territorial (regional) governments are obliged to provide the citizens and legal persons the submission of petitions and complaints about their work and the work of their governing bodies, furthermore on abnormal behavior of employees of these bodies when they contact them for the realization of their rights and interests or for the execution of their civic duties. On the petitions and complaints the head of the body of the local government or administrative body of this unit shall give an answer to the citizens and legal entities within 30 days of the day of submission of the petition or complaint. The bodies are furthermore obliged to secure in official rooms the necessary technical and other resources for the submission of petitions and complaints (complaints book, etc.) and to allow a verbally statement of the petition and complaint.

Thus, only Zagreb and Rijeka provided data for written opinions, comments and suggestions to the heads of administrative bodies, including the mayor (Table 3.4). In the period from 2004 to 2013 in Zagreb a total of 387 of such objections were addressed to the mayor, which is an average of 39 per year, or about 3 per month. To the heads of the administrative body a total of 36.507 objections were addressed, which is 3.651 per year, or 304 per month.

In relation to the total population of the City of Zagreb, this right is only used by 0.46% of the citizens annually. In Rijeka the data for written opinions, comments and suggestions to the heads of administrative bodies is the following. 14.781 of such objections were addressed to the heads in the mentioned period, which is an average of 1.478 per year, or about 123 per month. In relation to the total population in the case of Rijeka, this right is used by 1.15% of the citizens annually. Split and Osijek do not have any data for this topic.

Table 3.4. The Total Number of Written opinions, Comments and Suggestions to the Heads of Local Administrative Bodies

	Zagreb	Split	Rijeka	Osijek
Total population	790.017	178.102	128.624	108.048
Written opinions, Comments and Suggestions to the Heads of Local Administrative Bodies				
2004.	27	-	1173	-
2005.	32	-	1283	-
2006.	31	-	1439	-
2007.	27	-	1282	-
2008.	18	-	1175	-
2009.	22	-	1351	-
2010.	59	-	1679	-
2011.	40	-	1961	-
2012.	50	-	1995	-
2013.	81	-	1443	-
Total	387 + 36.507		14.781	

Source 4: made by author based on data obtained from the cities of Zagreb, Split, Rijeka and Osijek

The questionnaire shows that written opinions, comments and suggestions to the heads of the local administrative bodies is a mode of PP that is not used by the citizens in a way how it is described in the statutes of the cities. In this question, almost all citizens have stated that they have complained, but about the utility services, mostly on the amounts of the bills received and that is the farthest reach of contacting the management of the city staff. It can be assumed that the data obtained from the cities in this case also mainly relates to citizen complaints about utility services, because it is not otherwise specified.

3.3.5. THE CITIZENS' MEETINGS WITH THE MAYOR

Although the statutes of the cities do not specify such institution, the mayors are practicing the direct civic reception in their offices.

As we can see in Table 3.5, the meeting with the mayor shows the following results. Data is available only for Split and Rijeka. According to the data obtained from Split, in the period from 2009 to 2013, a total of 1,216 such meetings are held. This is 243 per year or 20 monthly. For Rijeka is the total number for the period from 2004 to 2013 available and amounts 832, what are 83 meetings per year or 7 meetings per months. On an annual basis this amounts 0.14% of the total population in Split and 0.06% in Rijeka.

Table 3.5. The Total Number of Citizens' Meetings with the Mayor

	Zagreb	Split	Rijeka	Osijek
Total population	790.017	178.102	128.624	108.048
Citizens' Meetings with the Mayor				
2004.	-	-	155	-
2005.	-	-	92	-
2006.	-	-	56	-
2007.	-	-	63	-
2008.	-	-	142	-
2009.	-	585	89	-
2010.	-	410	65	-
2011.	-	42	55	-
2012.	-	-	58	-
2013.	-	179	57	-
Total		1.216	832	

Source 5: made by author based on data obtained from the cities of Zagreb, Split, Rijeka and Osijek

But the data obtained from the questionnaires shows us that no one was on a meeting with the mayor individually, simply because the mayor, even in the event of such an attempt, did not receive the citizen. 25% of citizens said they were in a meeting with the mayor, but mainly within an association and other forms of receipt, for which citizens believe that it is only a political propaganda.

3.3.6. THE MOTOVATION OF CROATIAN CITIZENS TO PARTICIPATE

In the last three survey questions the basic indicators, perception of interest to participate, perception of influence on political process and does PP matter, are explored. While this kind of evaluation is quite general, it is based on personal experience, and tells us a lot not only about the personal attitudes but also about the political culture. It has a feedback affect on the potential participation – "if others are not willing to participate why I should bother".

High levels of interest can be seen in about 13% of citizens, 56% is not interested and 31% of them are somewhat interested (Table 3.6). The distribution of this data is rather normal and does not show any extreme values. There is a ground for a possible increase of citizens' interests in public issues. People on average have some interest in public issues, which is additionally supported by the fact that they do some kind of conversation about the problems of the community. More than half of the respondents (54%) say they discuss the problems every day or several times per week. But there are also more than a half of the citizens (51%) who have no interest in political life and consider voting the maximum of their political activity.

Table 3.6. The General Interest of Citizens in the 4 Major Cities of Croatia to Participate in the Public and Political Life

Degree of interest	%
1. Not interested	22
2. Weak interest	34
3. Somewhat interested	31
4. Very interested	11
5. Very much interested	2
Total	100

Source 6: made by author based on data obtained from the survey

Table 3.7. Perception of Influence

Level of influence	%
1. No influence	24
2. Little influence	35
3. Medium influence	36
4. Big influence	1
5. Very big influence	2
6. Not able to evaluate	2
Total	100

Source 7: by author based on data obtained from the survey

The perception of influence on political process that it is worthwhile to perform one's civic duties is described as political efficacy. People who have a sense of political efficacy, who perceive to have influence, are more likely to participate. While data on general interest are pessimistic, even a larger majority of respondents evaluate that they have very small influence or no influence at all (Table 3.7). Here influence is perceived in a general way, not for specific issues.

If people perceive that they have very little or no influence at all (59%) it will be very difficult to motivate them to participate. We have also asked the population about their perception of possible change by PP in public affairs. The data is similar to the perception of influence, 57% think that nothing or very little can be changed by participation. The data on general interest do not contradict to the negative perception of influence or possible change by participation. Interest presumes some level of information and understanding and this allows for an evaluation of perception of influence. People can be interested but think that there is little that they can change by their involvement in public life. The problem is that in the long run this situation will also decrease the level of interest.

Table 3.8. Does Political Participation Matter

Can things be changed by the participation in public affairs	**%**
1. Cannot change	24
2. Can change little	33
3. Can change quite a lot	31
4. Can change plenty	7
5. Can change everything	5
Total	100

Source 8: made by author based on data obtained from the survey

Low levels of perceptions of interest to participate, to influence political processes and to change things need additional explanation and clarification. On the systemic level Croatia, as other post-communist countries, is still in the process of institutional stabilization or better still in the process of public institutions functioning. Many public institutions and systems such as the rule of law, health and education have big problems and do not work efficiently. This process is characterized by heavy regulative activity and most of all by bureaucratic tendencies. This processes coupled with a strong centralization of state apparatus foreclosed the opportunities for individual or group influence limiting the perception of influence and political efficacy, even on the local sector.

The strong political ruling parties have locked individual political ambitions outside the realm of party politics. The political life in general has been

captured by the political parties (including the opposition parties), almost stolen from the citizens due to the role the parties had in the communist period. The politics in the country is confined to party relations and activities.

On the other hand, transition issues of state-building, introduction of a market, democratic developments, which are still not finished despite to Croatia's membership in the European Union, are not the standard issues for PP. They all need high levels of commitment and activity of the whole population, since this is almost a plebiscitary way of politics. This pattern of political life is not the best environment for standard participatory behavior. On more personal or group level some additional explanations are possible and are provided by respondents.

Lack of resources, time, money, information, knowledge and skills explain 73% of low efficacy. About 19% of respondents think that this is not their responsibility but that of politicians, 7% that participation makes no difference and is not worth the effort. Interestingly, only 1% of respondents think that PP is the communist legacy. On the operational level of the knowledge and skills we can see that 64% of respondents do not know where to go to get or give relevant information. This is a rather significant indicator because it opens the possibility for training and support that could increase the sense of political possibilities and political efficacy.

3.4. CONCLUSION

Democratic life and PP as its functional dimension are the result of different social conditions and processes. The data in our research shows a few striking features of the Croatian democratic process in the light of PP, with which the hypothesis that citizens do not sufficiently use their right to participation is proven.

There is no interest in politics and public life. This is the result of many years of political promises of "a better life in Croatia, solving firstly the economic crisis" that lasts since 1986. This promise has not been fulfilled until today, with the consequence that the population is tired of politics, politicians and political promises. "If they cannot change anything in this long period, how could I?" This is the guiding principle. On the other hand people believe that they are not good enough informed about the political processes and decisions made buy local governments. They receive their information in most cases from the electronic mass media, local televisions and local radio stations, but indicating a final loss of trust in local politicians. This can be considered as normal given to the non-fulfillment of promises. In consequence, a negative level of interest is present as well as a negative level of political efficacy. A strong majority of the people think that they have no influence on the local or national government.

Elections are the major form of PP. In Croatia they had additional importance as the instrument of democratic change. But in general the turnout of electoral participation is smaller and smaller every year. At the last local elections in the four surveyed cities, the electoral participation of voters reached a level of 47%[5]. Citizens prefer to observe and vote but are not willing to take part in party campaign activities.

Croatian citizens see their problems in the economic area, income, standard of living, unemployment, etc. Political issues are not their priorities. They see the strength of the country in the people and natural resources, combined with the national values and the independent state. The areas of possible intervention by strengthening participation and community efforts are human rights and local democracy in general. In these areas there are basic positive conditions for improvement and change in the desired direction.

One of the major obstacles to participation is seen by the people in the lack of resources, skills, information, time, and money. Investment in democratic capacity and potential will influence those areas in which citizens today see a limited space for influence (the areas under the strong state regulation). Participation is not only the instrument of democratic change but also has value in itself, and this can have many other positive and unexpected consequences.

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4 LAWS, SECRECY AND STATISTICS: RECENT DEVELOPMENTS IN RUSSIAN DEFENSE BUDGETING

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ABSTRACT

Russia's political leadership is going to spend more than Rb 20,000 billion till 2020 on armaments program assuming that this injection would modernize and diversify the economy. My doubts about the attainability of the goal are not related directly to the inability of the industry to manufacture arms for that amount, but to the quality of the budget process itself. There is a list of novelties of questionable quality in budgetary matters which make not only defense budgeting but all federal finance system more prone to money waste and corruption. My arguments are based on Budget code and federal laws' analysis, public statistics, publications in mass-media, and data of Open Budget Survey 2012.

4.1. INTRODUCTION

On April 14 the Stockholm International Peace Research Institute (SIPRI) published its Fact Sheet (Perlo-Freeman and Solmirano, 2014) of trends in global military expenditure in 2013 which is traditionally published prior to the SIPRI Yearbook in July (SIPRI 2013). According to the Fact Sheet, global military expenditure fell last year for the second consecutive time over the last 15 years. The fall was more significant (1.9%) then a year ago (0.5%) in real terms, and global military expenditure amounted to $1.747 trillion, or 2.4% of global GDP.

In spite of Russia has lost its leadership in growth rates of military expenditure in a group of 15 countries with high absolute figures as it was in 2012, Russia's military expenditure increased in 2013 according to SIPRI data by 4.8% – or to 4.1% of GDP. It was underscored that Russia's "military burden exceeded that of the USA for the first time since 2003" (Perlo-Freeman and Solmirano, 2014).

So Russia (5.0% of global military expenditure) caught up with the United States (37% of global military expenditure) in the military burden on the

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economy, which is not the occasion for rejoicing. While President Obama believes that US military expenditure can be reduced to 2.4% of GDP by 2023 (OMB 2013: 191), beginning with a 6% reduction in 2012, the Russian Government has steadily accelerated its defense procurement implementing the State Armament Program for 2011-2020, under which it was planned to spend Rb 21.5 trillion (or $767 billion at 2011 exchange rate) (Zatsepin, 2011).

However, the practice shows that there is a very big difference between ambitious plans of rearmament and their implementation, which cannot be smoothed away by reports behind closed doors as used by Russian deputy prime-minister Dmitry Rogozin:

> Speaking of presidential series, as for what these financial statistics conceal in terms of specific weapons systems, military and special-purpose equipment, Mr Medvedev, I would like to tell you about this in private (Transcript, 2013).

Prime-minister Dmitry Medvedev himself being then the president of the Russian Federation (RF) has admitted in connection with defense budgeting that "at present many aspects are completely hazy" (Transcript 2011). Two years have passed and by this time he - as prime-minister - acknowledges the same again in connection with total budgetary situation:

> …it is such a hazy situation really: everything looks almost good, on the other hand there are problems in the development caused by external factors and internal ones. I said justly in an interview that the budget really has the pre-crisis character. This is not a crisis budget, but the pre-crisis one (Transcript 2013a).[1]

The "haziness" mentioned by Dmitry Medvedev for years takes on a special meaning. Yet, if one attempts to look for answers about the nature of this haze and its origins, it then seems that all of it is the immediate result of actions of the Russian state authorities, the president and government themselves. Therefore it is worth to look more closely on the haze's internal clockwork and immediate effects.

The paper is structured as follows. It starts with a short overview of recent developments in Russian budgeting (Section 4.2). Then contradictory interconnection between budget openness, state secrecy and law is addressed (Section 4.3). A nexus between drawbacks on the side of official statistics and quality of management in Russian defense sector is treated in Section 4.4. I conclude that exaggerated bureaucratic secrecy can effectively cured by means of statistics and that better statistics and improved budgetary transparency could help Russia to get up from its institutional trap that prevents it from catching up with developed countries.

1. Translated by the author.

4.2. RECENT DEVELOPMENTS IN RUSSIAN DEFENSE BUDGETING

The mentioned pre-crisis character of current Russian budget has its roots in political decisions of years 2010-2011 when new state armament program for years 2011-2020 with fivefold increase in spending was signed and almost threefold raise in compensations for military personal approved. Then in September 2011 Dmitry Medvedev himself asserted that:

> …regardless of anything else, both myself as Commander-in-Chief and my colleagues will always stand behind prioritizing spending on defense, new weapons, compensation for service members, their daily lives and their apartments as part of the government's efforts. We cannot have it any other way (Transcript, 2011a).

Making this thesis a general moral commandment ("…this is an imperative"), he built it on the premise that, "we will always have very high spending to support defense and security (however sad that might be for our budget); frankly, that is our mission with regard to our people and to our neighbors" (Transcript, 2011a) and associated that with such factors as the size of Russia's territory, its seat on the UN Security Council, and its nuclear arsenal.

Sadly, not only do the fruits of the then president's intellectual voltage force one to question his logic (at least, as far as Russia's mission with respect to its neighbors is concerned) and the accuracy of his factoring into the effect of relevance and signs of factors, but they proved being in a direct conflict with articles 23 and 112 of the National Security Strategy of RF until 2020 (NSS), which he personally approved two years before. The Strategy does not at all refer to military expenditures as one of major national security priorities or major characteristics of the state of the national security. Meanwhile, unlike "strategic national priority", the concept of "prioritizing spending on defense" has not been codified in the document at all.

Medvedev's simple-hearted reference to "prioritizing spending on defense" is not saved even by the moral pillar of the imperative and reference to Russia's "special mission". His failure to understand the concept of optimal balance manifested in NSS or his ignorance of it simply means the traditional preference to the great-power status over an increase in the citizenry's well-being, the necrosis of investment resources and decline in economic growth rates in the long run.

But not only policy has led to the current state. Russia's budgeting procedures themselves contributed significantly to that as well, being in transition since the adoption of Budget Code in 1998 with most recent major revisions in 2007 (Kraan et al., 2008) and 2013 (Federal Law, 2013).

The form of the revisions directed officially on implementing medium-term budgetary planning in public finances has devastating effects on its transparency. Despite a change of previously used 'Publicity (Glasnost')' in the heading of article 36 of Budget Code to the new term 'Transparency (Prozrachnost')' the transparency itself and consequently budgetary accountability have fallen as first victims of the novelties.

Even the form of presentation of federal budget itself has changed fairly substantially – to the extent that from officially published texts of the respective federal laws have been excluded usual annexes with breakup of appropriations across sections and subsections of the expenditure classification. Because of this doubtful innovation by the RF Ministry of Finance the law on the federal budget now gives no chance to know a full volume of budgetary appropriations not only on defense and security, but amazingly, on almost all other government functions except environmental protection.

So in the last five years one had to resort to the use of only secondary data: an explanatory note to the government's draft of the federal budget, a Russian Federal Treasury's monthly report on the implementation of the federal budget in January of the budget year and official resolutions on budget law from Defense Committee of the State Duma etc. The only good side of this was that the data were quite open. But the height of absurdity was achieved in the end of 2012 when both November resolutions of the Federal Assembly's Committees relating to the final version of current year's budget did not contain for the first time in the last five years the full amount for defense appropriations, showing only its redistribution (Decision, 2012; Resolution, 2012). The marked deterioration of the situation regarding transparency of Russian defense budgeting occurred after the public statement made in January 2012 on the intention of Vladimir Komoedov, the newly elected chairman of the Defense Committee of the 6th convocation of the State Duma, to take "a fresh look at the problem of the relationship between the public and private items of the military budget" (Miranovich, 2012).

Time series for the share of secret expenditure in the RF federal budget in 2008-1014 are shown in Table 4.1.

The very fact of existence of secret expenditures in most divisions and subdivisions of classification of the budget expenditures of the federal budget excludes completely the possibility of a correct analysis of the budget in general, which, unfortunately, is not always comprehended even by prominent Russian economists who have a pronounced tendency to scrutinize only public part of the budget (Delyagin, 2011).

Table 4.1. Secrecy in Russia's federal expenditure, 2008-2014 (% classified)

Code and title of division and subdivision [a]	2008	2009	2010	2011	2012	2013	2014
1	2	3	4	5	6	7	8
Total federal expenditure	11.9	10.0	10.5	11.7	11.7	13.9	16.7
0100 GENERAL PUBLIC SERVICES	8.7	5.1	4.8	9.8	11.4	9.5	9.2
0106 Operations of financial, tax and customs agencies, financial (financial and budget) oversight agencies	–	–	–	–	–	–	0.0 [b]
0108 International relations	–	–	–	–	–	–	0.0
0109 State material reserve	90.2	85.0	85.1	86.6	86.8	87.2	87.7
0110 Basic research	1.0	0.8	0.3	1.0	2.7	1.2	0.7
0114 Other issues, general public services	4.4	1.6	1.1	1.3	1.3	2.3	3.1
0200 NATIONAL DEFENSE	46.1	48.1	46.4	46.9	47.6	52.6	58.8
0201 Armed Forces of Russian Federation	39.0	40.2	39.0	40.9	41.2	48.3	54.3
0204 Preparation for economic mobilization	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0206 Nuclear-weapons complex	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0208 International obligations in military-technical cooperation	100.0	100.0	100.0	100.0	100.0	80.1	79.8
0209 Applied research, national defense	93.2	92.9	91.3	92.2	94.5	94.1	94.2
0208 Other issues, national defense	29.2	34.6	42.0	36.8	44.9	41.9	53.8
0300 NATIONAL SECURITY AND LAW ENFORCEMENT	31.8	30.8	32.1	32.5	23.3	27.4	29.0
0302 Internal affairs bodies	5.0	3.7	4.3	3.9	3.4	3.8	4.3
0303 Interior troops	10.3	8.2	8.3	7.9	4.6	4.5	5.4
0304 Agencies of justice	–	–	–	–	–	–	0.0
0306 Security services	99.1	99.6	97.1	99.6	99.6	99.7	99.8
0307 Border service bodies	100.0	99.5	98.6	99.1	99.1	99.6	99.9
0308 Agencies for control over the circulation of narcotics and psychotropic substances	–	–	–	–	–	–	0.1
0309 Prevention and liquidation of consequences of emergency situations and natural disasters, civil defense	51.4	51.0	51.3	47.0	42.6	40.7	38.6
0313 Applied research, national security and law-enforcement activity	75.5	79.4	92.1	86.0	85.9	91.4	82.4
0314 Other issues, national security and law-enforcement activity	56.3	68.4	67.9	78.3	13.6	12.3	85.3
0400 NATIONAL ECONOMY	0.6	0.6	1.6	1.8	2.4	4.9	5.2
0410 Communications and information technology	–	–	–	–	–	1.6	2.0
0411 Applied research, national economy	5.8	4.5	5.6	11.9	14.2	18.2	23.0
0412 Other issues, national economy	0.3	0.7	4.5	1.9	2.3	8.5	10.0
0500 HOUSING AND UTILITIES SECTOR	7.0	10.1	19.3	14.2	6.6	11.0	11.1
0501 Housing sector	16.0	12.9	20.8	20.7	8.5	21.3	24.1
0600 ENVIRONMENTAL CONSERVATION	–	–	–	–	–	–	0.1
0605 Other issues, environmental conservation	–	–	–	–	–	–	0.1

Table 4.1 (continued)

1	2	3	4	5	6	7	8
0700 EDUCATION	2.6	3.1	3.6	4.0	3.2	4.3	4.7
0701 Preschool education	2.5	2.5	3.9	3.9	4.4	4.5	2.6
0702 General education	2.0	2.8	3.5	0.4	0.2	0.5	1.5
0704 Secondary professional education	0.9	–	–	–	–	–	0.0
0705 Retraining and professional improvement	1.8	2.5	9.4	17.4	8.6	6.2	2.9
0706 Higher and post-graduate professional education	3.1	3.6	4.1	5.2	4.1	5.2	5.3
0709 Other issues, education	0.3	0.5	0.6	0.3	0.4	0.4	0.9
0800 CULTURE, CINEMATOGRAPHY, AND MASS MEDIA	*0.2*	*0.2*	*0.2*	–	–	–	–
0800 CULTURE AND CINEMATOGRAPHY	–	–	–	0.1	0.1	0.1	0.1
0801 Culture	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0804 Periodical press and publishing houses	*2.6*	*3.1*	*3.6*	–	–	–	–
0900 HEALTH, PHYSICAL CULTURE AND SPORT	*4.1*	*3.5*	*3.0*	–	–	–	–
0900 HEALTH	–	–	–	2.7	2.4	2.7	2.9
0901 In-patient medical care	3.2	2.8	2.4	2.3	2.0	1.8	1.7
0902 Out-patient medical care	13.9	4.3	3.8	2.9	3.1	4.2	4.4
0905 Sanatorium and health-improvement care	14.1	15.9	10.7	11.1	10.8	12.1	14.0
0907 Sanitary and epidemiological well-being	2.1	0.6	0.6	0.7	1.4	0.8	0.8
0908 Physical fitness and sport	*0.4*	*0.3*	*0.6*	–	–	–	–
0910 Other issues, health, physical culture, and mass media	*1.7*	*1.1*	*1.0*	–	–	–	–
0910 Other issues, health	–	–	–	0.4	0.4	0.3	0.6
1000 SOCIAL POLICY	–	–	–	–	0.1	0.1	0.0
1003 Social security	0.0	0.0	–	–	0.4	0.3	0.1
1004 Family and child welfare	–	–	–	–	–	–	0.0
1100 PHYSICAL FITNESS AND SPORT	–	–	–	0.3	0.2	0.4	0.3
1101 Physical fitness	–	–	–	62.0	41.6	9.1	9.8
1200 MASS MEDIA	–	–	–	0.3	0.3	0.4	0.4
1202 Periodical press and publishing houses	–	–	–	3.5	3.5	4.6	5.5

Note: a – current budgetary functional classification, the previous classification is shown in italics; b – under 0.05%.
Sources: 2008-14 planned budget data (for 2008-13 with all amendments).

Since the autumn of 2007 errors in understanding, transmission and use of budget information caused by its unjustified classification have become widespread among Russian politicians, economists and journalists. In due course, these errors began to appear also in newspapers and journals (the author has spotted more than 10 such cases in autumn 2012 publications alone) and then

found their way into some textbooks (Moiseev, 2010: 418) and even scenarios of economic development (Grigoriev, 2012: 28). And sometimes one can get a feeling that even the Russian prime-minister has access only to the public part of RF Ministry of Defense (MoD) budget (Zatsepin, 2012).

Table 4.2. Russian military expenditure, 2008-2013

	2008	2009	2010	2011	2012	2013
1	2	3	4	5	6	7
Panel A (billions, constant Rb; base year = 1999)						
DefEx (outlays)	137.9	143.0	141.7	148.8	149.5	153.3
DefEx (budget)	136.7	143.5	141.9	150.9	152.3	153.9
DefEx (outlays/budget. %)	101%	100%	100%	99%	98%	100%
DefEx outlays growth (1999=100%)	119%	124%	123%	129%	129%	133%
MilEx (budget)	189.9	209.0	210.2	216.9	218.7	217.9
Panel B (as percentage of GDP)						
DefEx (outlays)	2.5	3.1	2.8	2.7	2.9	3.2
DefEx (budget)	2.5	3.1	2.8	2.8	3.0	3.2
MilEx (budget)	3.5	4.5	4.1	4.0	4.3	4.5
SIPRI [a]	3.3	4.1	3.8	3.7	3.9	4.1
Panel C (billions, current Rb)						
DefEx (outlays) [b]	1,040.8	1,188.2	1,276.5	1,516.0	1,812.3	2,103.6
DefEx outlays change (year-on-year, %)	25%	14%	7%	19%	20%	16%
DefEx (budget)	1,031.6	1,192.9	1,278.0	1,537.4	1,846.3	2,111.7
MilEx (budget)	1,433.8	1,736.6	1,893.6	2,209.9	2,651.3	2,990.6
Panel D (billions. current US $)						
DefEx (outlays)	72.6	83.6	81.5	87.0	97.9	110.5
DefEx (budget)	71.9	83.9	81.6	88.3	99.7	111.0
MilEx2 (budget)	100.0	122.1	120.9	126.9	143.2	157.2
Auxilary statistics						
GDP [c], billions. current Rb	41,276.8	38,807.2	46,308.5	55,644.0	61,810.8	66,689.1
Deflator of collective consumption expenditure by government (%)	122.7%	110.1%	108.4%	113.1%	119.0%	*113.2%*[d]
Purchasing power parity, Rb/$	14.34	14.22	15.66	17.42	18.52	*19.03*[e]

Sources: a – SIPRI, 2014; b – Russian Federal Treasury; c – Rosstat; d, e – own estimations.

There is no doubt, that the asymmetry of information corresponding to the misunderstanding shown above supports observed growth of Russian military expenditure, which pretends by this to be too small at least in the eyes of Rus-

sian citizens. Of course, this weak militarization effect does not work abroad where Russian military expenditure is under longstanding scrutiny of not only many governmental agencies, but also of international organizations, among which SIPRI plays an outstanding role.

Compiled in the Gaidar Institute since 1999, statistics of Russian military expenditure (Gaidar Institute, 2014) are shown for the years 2008-2013 in Table 4.2: *DefEx* – expenditure according to division 0200 "National defense" of budgetary classification, and *MilEx* – military expenditure according to (UN, 2011). Note that in contrast to previously published time series for 1999-2007 (Zatsepin, 2007:53) expenditure on subdivision 0306 "Security services" of budgetary classification and everything related to civil defense are excluded on all time span since 1999 in an effort to harmonize national statistics with the latest international practices (UN, 2011).

One more question concerns Russian military expenditure on sub-national levels of budgetary system. Contrary to prevalent opinion in international financial organizations like expressed in (Kraan et al., 2008: 47), there are quite visible efforts (Kochergin, 2014) on regional level to support local industry mobilization and reserve military training (Table 4.3).

Table 4.3. Military expenditure in consolidated budgets of the RF subjects, 2008-2013 (Rb million, current)

Code and title of subdivision	2008	2009	2010	2011	2012	2013
0201 Armed Forces of Russian Federation	0.3 0.3	–	–	–	–	–
0202 Modernization of Armed Forces of Russian Federation and military units	1.0 0.5	–	–	–	–	–
0203 Mobilization and reserve military training	1,797.9 1,702.2	2,116.0 2,021.6	2,003.7 1,958.4	2,250.0 2,187.3	2,366.7 2,316.4	2,506.5 2,444.7
0204 Preparation for economic mobilization	1,137.2 1,063.9	1,045.4 989.7	1,298.4 1,247.8	1,351.2 1,266.3	1,781.0 1,689.1	2,343.1 1,935.1
0208 Other issues, national defense	0.7 0.5	4.4 4.4	<0.1 <0.1	2.7 2.7	3.2 3.0	3.2 2.9
0303 Interior troops	0.3 0.3	–	–	–	–	–

Source: Russian Federal Treasury.
*Note:*Numerator – budget, denominator – outlays.

But this expenditure cannot be simply added to that of the federal budget because of a possible double counting error due to inter-budget grants' effect as shown for 2011 in (Rosstat, 2012:27) where consolidated outlays on national defense are about Rb 2.3 billion less than those derivable by direct summation. According to Rosstat's year-books and Federal Treasury's reports in the

period since 1998 federal transfers (from Rb 0.1 to 2.5 billion) to local budgets are observed only in 2005, 2008, and 2011-2013. Their real mechanics is still unclear and seems just an additional aspect of Russian budgetary haziness.

Beside expenditure on national defense and national security on sub-national level there existed practice of social grants from Moscow's city government to Sevastopol's municipality in Ukraine through "Moscow-Sevastopol" foundation to support families of Russian Black Sea fleet's seamen and veterans. According to Voronov (2011) in 2004-2011 Moscow city has spent on this Rb 950.0 million. Newly appointed mayor Sergei Sobyanin has made an attempt in 2011 to cease the program as too hazy, but was allegedly restrained from Kremlin. And according to laws on the Moscow city budget in years 2012-2013 the resumed spending amounts to Rb 70.6 and 77.6 million correspondingly, but through a new channel – this time it is state unitary enterprise "Moscow's Centre of International Cooperation", not the mentioned foundation.

Both this kinds of expenditure on sub-national level are negligibly small relative to Russian military expenditure on federal level and have mostly symbolic significance for internal policy only (Kochergin, 2014).

A similar symbolic significance, but this time on level of the Union state with the Republic of Belarus, has Rb 507.2 million spent in RF in 2008-2012 according to combined military infrastructure development program funded through Union state's budget (Kuz'mitsky and Bogomolov, 2013). RF MoD's share in Union state's budget for year 2013 amounts to Rb 29.3 million (Union state, 2013).

The most recent revision of the Budget Code (Federal Law 2013) according to a basic idea of its proponents in the Russian government should introduce in power long awaited program budgeting. And so major revamping of used budgetary system lies ahead. Some visible caveats can be made. First, according to Russian finance minister Anton Siluanov the previous major revamping of budgetary system to medium-term planning in 2007 gives actually nothing:

> … we have a three-year budget and practically no one takes advantage of the three-year budget, and the situation is even worse in the second and third years of the three-year period. As of today, only 9.9% of the transfers for the second and third years were distributed for 2014 and 8.9% for 2015. Whatever happened to the three-year contracts that we are talking about? In reality, no one signs them (Transcript, 2013a).[2]

2. Translated by the author.

Second, there is negative experience with state armament programs, which are used in Russia to fail in every of its goals (Cooper, 2012: 174), but still too many people in Russia do not see any link between efficiency and transparency. So the country moves to program budgeting without success stories and lessons learned in the most important and longstanding of existing programs, which increases risks.

And third, the last year's attempt to work out a program structure for budgetary system looks quite disastrous (Minfin, 2012): 31st program "Ensuring the country's defense capability" should amount Rb 1,088.4 billion in 2013 (i.e. half of budget division "National defense"). So other half of Russia defense expenditure supports some other state programs (and goals), what is a quite spectacular result of this first program budgeting implementation. Evidently at best, that the rest may fall on unlucky state armament program.

Further details can be added after some analysis of program participants and sources. Among 38 ministries and other governmental agencies participating in that program only seven have their budgets from division 0200 "National defense". The rest 31 should use for Russia's defense capability Rb 10.7 billion in total from other functional divisions of federal budget expenditure – from 0100 "General public services" to 1200 "Mass media". How to treat this quite modest amount is still not clear, but complete vanishing of the 31st program from updated version of state programs published on 14 May 2013 (Minfin, 2013) is noteworthy itself. At the same time, the situation could be admittedly more serious because in developing Russia's Defense Strategy have participated 49 ministries and agencies (Transcript, 2013b) rather than 38.

4.3. SECRECY VERSUS OPENNESS AND LAW

The most recent amendments of the federal budget for 2013 according to (Decision 2013) are shown above in Tables 4.1 and 4.2 (only total and defense expenditure). Specific haziness in these changes becomes apparent just by comparing announced reduction of expenditure in division 0200 "National defense" by Rb 6.5 billion to implicit increases in the secret part of total budget expenditure by Rb 12.9 billion. Of course, this phenomenon should be explained by reallocation of expenditure in favor of the state defense order i.e. the state armament program, which in Russia is almost completely hidden. And the tendency in it is quite clear (Table 4.4) if to extend data series from Table 4.1 and to take into account planned expenditures according to federal budget for 2014-2016 (Federal Law, 2013a).

Knowing the tendency one could be surprised by Russia's gain in Open Budget Index 2012 to 10th place (74 points) from 21st (60 points) two years ago (IBP 2013). And despite that an alternative appraisal (Zatsepin, 2013)

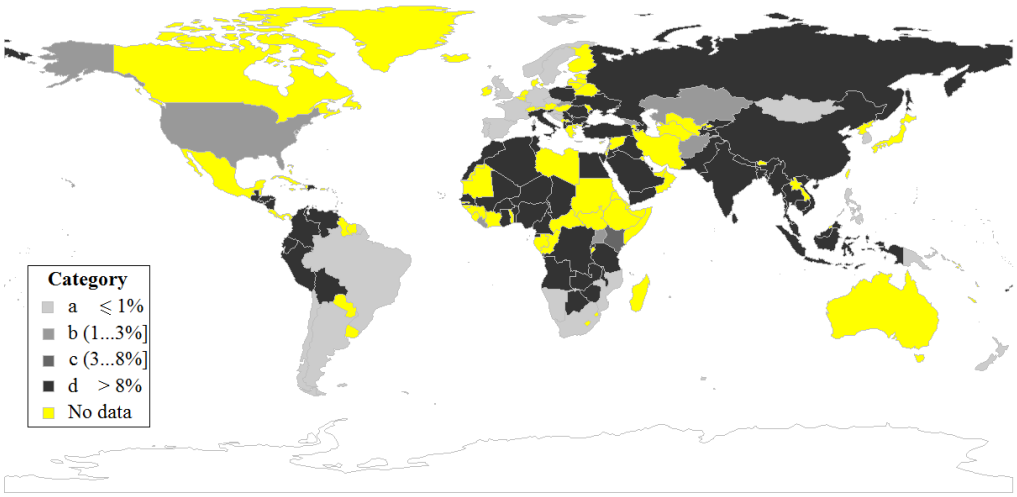
shows more appropriate ranking for Russia with 34-35th places (54 points) shared with Ukraine behind another our neighbor Georgia (32-33rd places with 55 points), one should appreciate efforts of International Budget Partnership because their comprehensive database (IBP 2013a) has allowed at last to look on budgetary secrecy all over the world and to do comparative international measurement (Figure 4.1).

Table 4.4. Share of secret expenditure in Russian federal budget and economy, 2010-2015 (% classified)

	2010	2011	2012	2013	2014	2015	2016
Federal budget expenditure, total	10.5	11.7	11.7	13.9	*16.7*	*21.2*	*24.8*
GDP	2.0	2.0	2.3	2.8	*3.2*	*4.1*	*4.7*

Note: In *italics* as planned.

Figure 4.1. Percentage of secret expenditure in budgets of central governments throughout the world, 2012[3]



Of course, the question arises how can the country's ranking in Open Budget Index grow simultaneously with growing secrecy in its budget? One can only hope that this contradiction will be resolved during the next Open Budget Survey in 2014.

In case of Russia's budgetary secrecy the main driving factor is well known bureaucratic secrecy (Aftergood, 2009: 402) with a longstanding tradition. Russian state budget was published for the first time only 150 years ago after special efforts by finance minister Michael von Reutern. In spite of that in the very beginning of 20th century a contemporary has observed:

3. The choropleth is produced in R with packages *XLConnect* and *rworldmap* and using data from (IBP, 2013a).

> Appointed on various administrative areas, secret assignments unwittingly cast doubt on their accuracy, appropriateness and legality. Secret assignments allow operate under cover of special secrecy to such bodies of public administration, in which according to essence of their function can be nothing of secret. Such, for example, are the Department of Agriculture, the Department of the State Land Property, Ministry of Education, General Directorate of Excise Taxes (Avinov, 1906: 23).[4]

After October 1917 the secrecy was partly relaxed in some of administrative areas including state finance but soon reinstated (Bone, 1999: 68). And the tendency has developed to absurdity in late 1980s. Yury Maslyukov, a head of the Soviet military-industrial commission and Gosplan in Mikhail Gorbachev's times has acknowledged:

> The totals on defense of the country until 1988 were considered as secret of exceptional state importance, and limited circle of people (leadership of the USSR State Planning Committee, and not even all the members of the Politburo) was familiar with them. Figures were not allowed to print in the typing pools, and they were inserted in printed documents manually by the authorized persons (Maslyukov and Glubokov, 2005: 50).

Of course, the collapse of the USSR in 1991 has too many factors but such absurd secrecy in military spending seems now one of the main (Harrison 2009), likening the Soviet leaders to car drivers with tied eyes. In the early post-soviet period of new Russia's history some lessons were learned and until 2007 transparency and accountability in Russian defense budgeting have slowly but almost steadily improved till medium-term budgetary revamping. And one could not say that the problem with mismanagement of secrecy in the defense sector as a whole and in military expenditure particularly remains unnoticed by the Russian leadership.

Besides the above mentioned failed attempt of State Duma's Defense Committee's Chairman Vladimir Komoedov (Miranovich, 2012), questions on the subject were raised in 2012 at least two more times. First, in Vladimir Putin's article on defense and security published in February:

> …situation calls for innovative approaches towards the principles underlying the exchange of information and the revision of obsolete approaches to the protection of state secrets (Putin, 2012).

Second, almost two months later in April, on a meeting of the Open Government working group the subject of secrecy was touched upon about 10 times by three of the meeting's participants, one of them was then acting President Dmitry Medvedev himself:

4. Translated by the author.

> …I happen to come across almost every day when visitors bring me for signing all kinds of papers, completely opaque. Because it really is not clear who will do, how will do, and, of course, the whole of them are also classified. One can only hope in the good faith of the employee. It is time to put things in order there, and, of course, the solutions must change the nature of the relationship between the Ministry of Defense, the developers of military equipment and manufacturers as well (Transcript, 2012).

But all this was before the change of presidents in office on May, 7th 2012. After Putin's return to the helm of state, none of the ideas expressed in February and April have appeared in his inaugural executive order on the improvement of public administration (Executive Order, 2012). Of course, one can explain that as an effect of the march on Bolotnaya square a day before, but most likely we have here some 'speechwriter's effect' – when the idea written in Putin's text in February was just not known (or seems not reasonable enough) to the Executive Order's writer(s) two months later.

But the most specific feature of the problem of the Russian budgetary secrecy is that its solution does not require any new executive orders or new laws but only to overcome the centuries old national bureaucratic disease called 'misinterpretation of laws' (in Russian: 'prevratnoye tolkovanie zakonov']. It can be shown (Figure 4.2), that despite a quite clear legal conflict of article 4 of Law "On State Secrets" with article 29 of the Constitution which leads to two different lists of legally secret data, in the Russian federal budget the secret expenditure can be in divisions "National defense" and "National security and law enforcement activities" only on intelligence, counterintelligence and special investigative activities.

Classification of expenditure of state defense order comes out from fraudulent or negligent bureaucratic collusion (do not matter explicit or implicit in the case) what is proved by Russian budgetary practice of 2003-2005 when appropriate data on state defense order was published as individual annex to the Federal Law on federal budget.

4.4. STATISTICS OF DEFENSE SECTOR

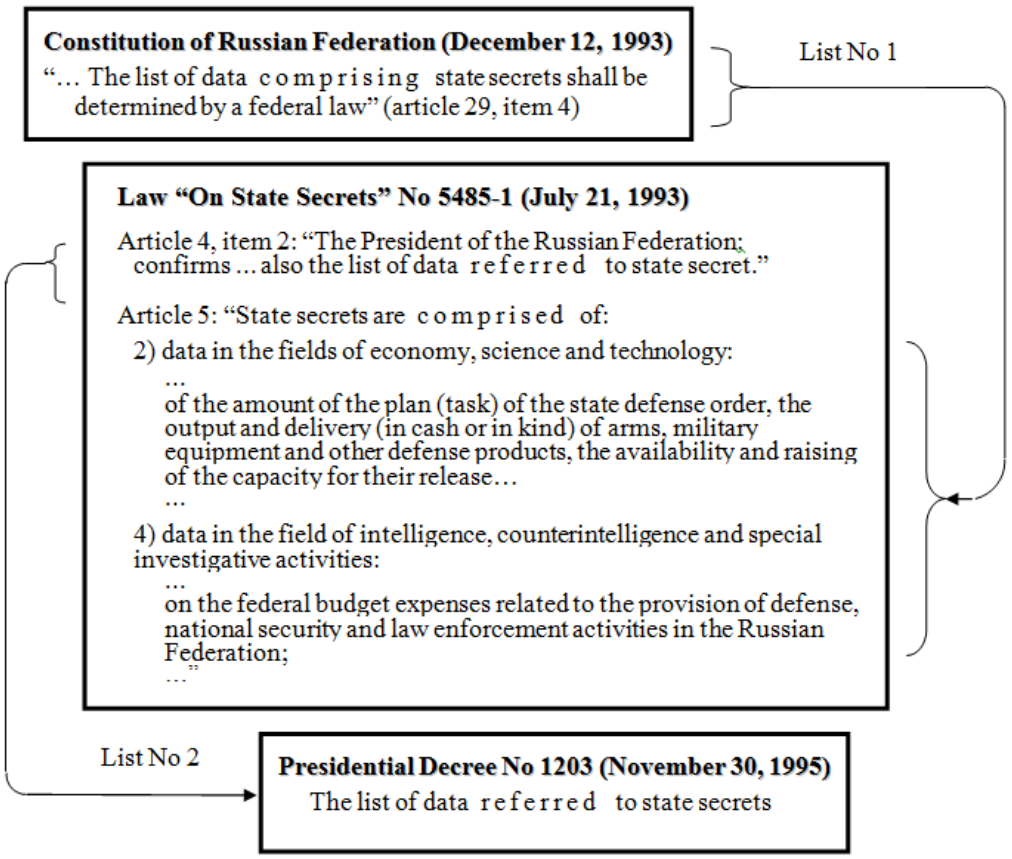
One of the first victims of redundant secrecy in Russia is official statistics of defense sector. It is indicative that serious distortions present even in such simple figure as quantity of enterprises in defense sector.

So, Yury Borisov, then first deputy of the Chairman of the Military-Industrial Commission under the RF government, has claimed last year before the State Duma that in defense sector:

> …the number of bankrupt corporations is down by one-third. It can be argued that the situation has stabilized in this respect, thanks to the very drastic increase

in the volume of the defense order over the past three years. The outflow – the fall in the number of enterprises, which recently accounted for some 5-7% annually – has decelerated today, and now the situation has stabilized (Transcript, 2012a).

Figure 4.2. Russian secrecy legal framework



One can to call into question the kind of statistics used by the Military-Industrial Commission for statements before the State Duma and what time span is covered by 'today' and 'now'. According to officials who bear a significant responsibility for the MIC's advancement, between March 2011 and April 2012 the number of corporations included in the consolidated register of enterprises in defense sector tumbled from 1,729 (Transcript 2010) to 1,353 (Transcript 2012b), i.e. less 21.7% over the two years in question, or by an average annual 11.5%, or nearly twice as much as the figures used by Borisov in the State Duma.

The data collected by the RF Ministry of Industry and Trade in accordance with the Federal Plan of Statistical Works does not add much clarity either. As Igor Karavaev, the Deputy Minister, claims that there has been over 1,300 enterprises of defense sector in the country employing over 1.3 million (Nakanune.RU 2012). Several days later one of his subordinates reckoned that

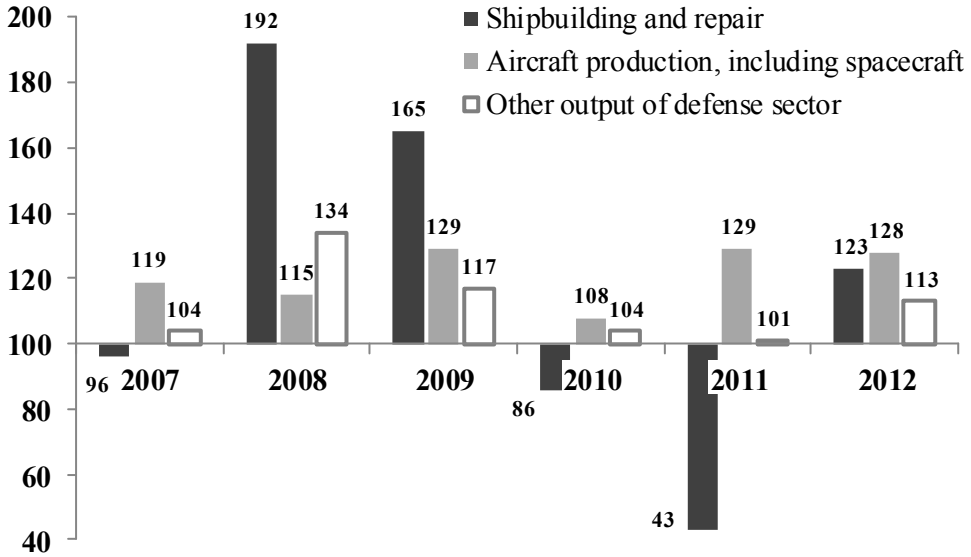
the number of employees in the defense sector was about 2 million (Ryazantsev, 2012). It is impossible to judge whether the word "aggregate" in the latter update is indeed meaningful without checking the RF Ministry of Industry and Trade's statistical data tagged as classified; however, the 700,000-strong difference is quite remarkable.

No questions would be asked, had the Ministry concerned, as well as Rosstat, been published aggregate data by all the federal statistical observation forms (including 1-PO, 1-SR and M-GOZ). Alas, this is impossible at present juncture, as these data are hidden from, and not available to, both outsiders and, given the situation with the aggregate numbers of enterprises and the number of their employees, the leadership of the Russian defense sector. There is no conundrum about this, as the Ministry of Industry and Trade has no statistical division. No doubt, statistics are collected there – data from the classified aggregate register of defense sector enterprises can be purchased from affiliated close corporation, but statistics-wise, our defense sector's administration bodies generally are a failure. There is nothing new about this, unfortunately – during WWI, the Special Commission on State Defense established its own Statistical Bureau only "thanks to vigorous pressure on the part of our former allies who nearly mocked us for the absence of badly needed statistical data".

So, not surprisingly, when it comes to defense sector, the decision making style a-là russe implies largely 'debates' (Putin, 2012), aka 'discussions' (Transcript, 2010). To better discern its effects for a distant year of 2020 (until then it is planned to spend from federal budget Rb 20 trillion on the state armament program and another 1.8 trillion – on modernization of defense sector), as well as for the recent crisis period of 2008-2009 which saw the injection of Rb 120 billion (equivalent of 0.3% of 2009 GDP), it appears appropriate to examine detailed statistics of national accounts published by Rosstat since 2010 (Rosstat, 2013: 220).

As shown by the dynamic of gross value-added deflators (Figure 4.3), the extra aid the Government provided to the defense sector in the form of subsidies, purchases of equity and enterprise bail-outs mysteriously concurred with a significant price rise: e.g. shipbuilders increased their prices three-fold over the two crisis years, while aircraft and conventional arms manufacturers' appetite proved more modest and their price tags mirrored a 'meager' 150% price increase.

Figure 4.3. Deflators of gross added value across Russian defence sector's branches, 2007-2012 (Rosstat, 2013: 220)[5]



After the aforementioned abnormal price rise for shipbuilders' production during the crisis, the Joint Shipbuilding Corporation's bold refusal to disclose the price stricture of its produce to the MoD may have a pretty banal explanation: it is just impossible to give a rationale for its prices (at least, without having investigative agencies involved).

The Russian leadership's confidence in massive financial injections in the defense sector being capable of starting the mechanism of innovation-based economic growth was hammered in the above debates and appears insufficiently grounded in the Russian case:

> Technological breakthroughs in individuals sectors related to the defense industry could not affect the general trend: because of closeness of this sphere, achievements were not used beyond it. This contrasts the US's practice of transferring solutions and ideas from military-industrial complex to the civil sector (Tsedilin, 2012: 110).

In this connection, certain optimism is buoyed by Rosstat's efforts to develop new basic input-output tables for 2011. By late 2015 the agency is going to publish the tables covering 185 industries and 337 commodities (Mikheeva, 2011: 143). If successful, the undertaking will enable Russia to have by 2020 a state armament program grounded on a solid statistical basement, provided that the Interdepartmental Commission on Protection of State Secrets, which

5. Other output of defense sector includes according (Rosstat, 2013) processing of secondary raw materials (sic!), production of nuclear materials, manufacture of explosives, weapons and ammunition.

once banned publication of the detailed 1995 input-output tables, will not step in.

4.5. CONCLUSION

There is no better remedy to ultra-secrecy than statistics: annual public accounts by the Interdepartmental Commission on Protection of State Secrets on the number of new classified and declassified documents, publishing in federal budget allocations on operations of agencies that protect state secrets and on extra allowances to civil and military servants engaged in operations with classified data can become a first step of a long way.

At this point, an alarm bell is a total and utter absence of authorities' efforts in this respect: after the nation's leadership fairly shrewdly admitted the challenge in 2012, there have been no subsequent activities, while the Executive Order No. 601 on public administration simply omitted the matter (Executive Order, 2012). But lost time is never found again, and despite visible efforts to establish the Foundation for Advanced Research one should count on the fact that prevailing Russian mentality appears protective, rather than pioneering. Plus, tendencies in the current domestic policy do not seem to encourage either, despite all the pep talk about transparency and Open Government.

As for the aggressive rhetoric practiced by the national military-industrial complex establishment, it is just a proof of absence of an adequate appreciation of the challenges it is currently facing, the prevalence of unprofessionalism in the organization of public administration, and the authorities' genetic propensity to Soviet-style agitprop methods.

It is just better statistics and a whole lot of budgetary transparency, which would enable Russia to successfully close the gap with global leaders.

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5 OPTIMIZATION OF TAX POLICY IN STRENGTHENING THE SMALL MEDIUM ENTERPRISES SECTOR IN INDONESIA

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ABSTRACT

Asean Free Trade Area (AFTA) 2015 has required its member to increase economic growth and compete in the global economy. Indonesia as AFTA member need to prepare for steady state's economic. Small Medium Enterprises (SMEs) as an instrument of economic sectors in Indonesia is considered to contribute in supporting the resilience of the economy when global economic crisis happened in 2008. The government is expected to create policies that can stimulate the growth of SMEs in Indonesia in order to optimize the growth and to explore the potential of SMEs sector. One of the policies is tax policy named "Government Regulation Number 46 year 2013 about income tax on income from business that received or accrued by the taxpayer which has certain gross turnover". However, there are pros and cons of some of the things contained in the regulation. Therefore, this research is aimed to provide comprehensive overview about pros and cons that happens in society and give the best suggestion to government as policy maker in order to optimize the role of this regulation for supporting SMEs sector in Indonesia. Qualitative approach with in-depth interview is done for data collection. As the result, this research can be a recommendation that can be used by the government in implementing policies related to SMEs sector in Indonesia to face AFTA 2015.

***Keywords**: Asean Free Trade Area, Tax Policy, Income Tax, Small Medium Enterprises.*

5.1. INTRODUCTION

This paper reviews government regulation number 46 year 2013 about income tax on income from business received or accrued by taxpayer which has certain gross turnover. ASEAN Free Trade Area (hereinafter referred to as AFTA) is an agreement of the ASEAN countries to establish a free trade area with the aim of enhancing the economic competitiveness of the ASEAN region. This is can be achieved by making ASEAN as a production base of the world and creating a regional market for approximately 500 million population. AFTA scheme can be interpreted also as the ASEAN free trade area where there are no tariff barriers (import duty of 0%-5 %) and non-tariff barriers for ASEAN member countries. AFTA was first formed and agreed upon at the ASEAN Summit IV in Singapore in 1992. The objectives of

AFTA planned to be achieved within 15 years (1993 to 2008) and then accelerated to 2002[1].

AFTA 2002 is a long commitment that is carefully defined and implemented in phases and this is the ideas of the ASEAN countries have agreed. Actually, the process of economic regionalization does not stop at the AFTA in 2002, but it continues until the ASEAN agreed to establish the ASEAN Economic Community (AEC) in 2015. For those purposes, there are four main pillars that guide the ASEAN countries in implementing AFTA, namely: (1) ASEAN as a single market and single production-based, supported by elements of the free flow of goods, services, investment, skilled labor and capital; (2) ASEAN as a region with high economic competitiveness, with elements of competition rules, consumer protection, intellectual property rights, infrastructure development, taxation and e-commerce; (3) ASEAN as a region with equitable economic development with elements of the small and medium enterprises development and initiative for ASEAN integration CMLV countries (Cambodia, Myanmar, Laos, and Vietnam); and (4) ASEAN as a fully integrated region into the global economy with elements of a coherent approach to economic relations outside the region and increase participation in global production networks[2].

By the implementation of AFTA, the international economic system shifted toward a free market. As a result, ASEAN countries are required to integrate the national economy towards a free trade system, including Indonesia. Applicability of AFTA in 2015 will have a serious impact on the economic condition of Indonesia. Indonesia should be able to push itself to be a capable state that is highly competitive to other ASEAN countries. With all its economic potential, Indonesia is required to continuously improve the ability to conduct business in a professional manner. By doing that, it is expected that Indonesia's products can compete with other ASEAN countries, so that Indonesia can take the advantages in the domestic and other markets in ASEAN countries.

In practice, the economy condition in Indonesia has a lot of potential to be delivered in a superior position to other ASEAN countries. In line with the third point on the four main pillars of AFTA, which make ASEAN as a region with equitable economy development with elements of the development of small and medium enterprises, then it can be said that one of the potential economic factors that Indonesia has come of Small and Medium Enterprises sectors (hereinafter referred to SMEs[3]). The large number of SMEs in Indo-

1. Central Board of Revenue Policy State – Fiscal Policy Agency, 2014.

2. *ASEAN Economic Community Blueprint* 2015.

3. In Indonesia, SME's is including Micro Enterprises sector. The definition of Micro Enterprises sector can be found in section 5.4.1.

nesia is the reason why the sector becomes potential economy sectors that can support Indonesia in dealing with AFTA. A large number of SMEs that ultimately affect the increase in employment, an increase in the Gross Domestic Product (hereinafter referred to as the GDP), and an increase in the establishment of national investment. This can be seen in table 5.1 below.

Table 5.1. Data of Growth Micro, Small and Medium Enterprises (SMEs) and Large Enterprises 2010-2011 Period

NO	INDICATOR	UNIT	2010		2011		GROWTH	
			TOTAL	(%)	TOTAL	(%)	TOTAL	%
1	BUSINESS	(Unit)	53,828,569		55,211,396		1,382,827	2.57
	UNIT	(Unit)	53,823,732	99.99	55,206,444	99.99	1,382,713	2.57
	A. SMEs	(Unit)	52,207,500	98.85	54,559,969	99	1,352,470	2.54
	- Micro	(Unit)	573,601	1.07	602,195	1.09	28,594	4.98
	- Small	(Unit)	42,631	0.08	44,280	0.08	1,649	3.87
	- Medium	(Unit)	4,838	0.01	4,952	0.01	114	2.35
	B. Large							
2	LABOR	(Person)	102,241,486		104,613,681		2,372,196	2.32
	A SMEs	(Person)	99,401,775	97.22	101,722,458	97.24	2,320,683	2.33
	- Micro	(Person)	93,014,759	90.98	94,957,797	90.77	1,943,038	2.09
	- Small	(Person)	3,627,164	3.55	3,919,992	3.75	292,828	8.07
	- Medium	(Person)	2,759,852	2.70	2,844,669	2.72	84,816	3.07
	B. Large	(Person)	2,839,711	2.78	2,891,224	2.76	51,513	1.81
3	GDP BASED ON CONSTANT PRICE 2000	(Rp. Billion)	2,217,947.0		2,377,110.0		159,163.0	7.18
	A SMEs	(Rp. Billion)	1,282,571.8	57.83	1,369,326,0	57.60	86,754,2	6.76
	- Micro	(Rp. Billion)	719,070.2	32.42	761,228,8	32.02	42,158,6	5.86
	- Small	(Rp. Billion)	239,111.4	10.78	261,315,8	10.99	22,204,4	9.29
	- Medium	(Rp.Billion)	324,390.2	14.63	346,781,4	14.59	22,391,2	6.90
	B. Large	(Rp. Billion)	935,375.2	42.17	1,007,784,0	42.40	72,408,8	7.74
4	INVESTMENT BASED ON CONSTANT PRICE 2000	(Rp. Billion)	511,248.0		531,342,6		20,094,7	3.93
	A SMEs	(Rp. Billion)	247,139.5	48.34	260,934.8	49.11	13,795.3	5.58
	- Micro	(Rp. Billion)	42,240.1	8.26	42,351.3	7.97	111.2	0.26
	- Small	(Rp. Billion)	93,856.6	18.36	94,779.4	17.84	922.8	0.98
	- Medium	(Rp. Billion)	111,042.8	21.72	123,804.1	23.30	12,761.3	11.49
	B. Large	(Rp. Billion)	264,108.5	51.66	270,407.9	50.89	6,299.4	2.39

Source: Ministry of Cooperatives and SMEs, 2011

Based on the business unit, the number of SMEs in 2010 was 53,823,732 units and in 2011 increased to 55,206,444 units. In one year, it can be seen that the growth in the number of SMEs in the economy sector that occurred in 2010-2011 period totaled to 1,382,713 units, an increase of 2.57% of SMEs. While a large number of businesses in 2010 was 4,838 units and in 2011 increased to 4,952 units. In one year, a large number of business growth is 114 units, an increase of 2.35%. Meanwhile, if viewed from the level of employment, SMEs successfully reached 97.22% of the entire workforce in Indonesia. Moreover, from the total 102,244,163 labors in Indonesia, the total employment of SMEs reached 99,401,775.

Another interesting aspect to be highlighted is the SMEs contribution to the GDP of Indonesia. Based on the Table 5.1, the increase of number of SMEs in Indonesia in 2010-2011 caused the GDP which generated by SMEs dominate Indonesia's GDP with contribution more than 50%. In 2010 the contribution of SMEs to Indonesia's GDP reached 57.83% or totaled 1,282.6 Trillion Rupiah and in 2011 reached 57.60% or totaled 1,369.3 Trillion Rupiah. Meanwhile, in 2011, the total value of Indonesia's GDP reached 2,377,110 Billion Rupiah and SMEs contributed 1,369,326 Billion Rupiah or 57.60% of the total GDP of Indonesia.

By the increasing revenue of the GDP, it also contributes to an increase in the establishment of national investment, which is one of the four essential components in the production of free trade. The role of SMEs in the establishment of a national investment can be seen in the Table 5.1. In 2010, SMEs contributed to the investment of 247.1 Trillion Rupiah, or 48.34% of the total national investment totaled to 511.2 Trillion Rupiah. It consists of contribution from Micro Enterprises of 42.2 Trillion Rupiah, or 8.26%, and Small Enterprises at 93.9 trillion rupiah , or 18.36%, and Medium Enterprises of 111 Trillion Rupiah or 21.72% and the rest is 264.1 Trillion Rupiah, or 51.66% is Large Enterprises.

In 2011, the role of SMEs in the establishment of a national investment has increased 5.58% or 13.8 Trillion Rupiah. It brings the total investment of SMEs totaled to 260.9 Trillion Rupiah, or 49.11% of the total national investment on the constant price of 2000 which totaled to 531.3 trillion rupiah. The contribution of Micro Enterprises reached 42.4 Trillion Rupiah, or 7.97% and Small Business reached 94.8 Trillion Rupiah, or 17.84%, while Medium Enterprises reached 123.8 Trillion Rupiah or 23.30% and the rest is 270.4 Trillion Rupiah, or 50.89% is Large Enterprises. The data above shows that SMEs contribute substantially in the establishment of the national investment in the 2010-2011 period. Establishment of investment also increased in 2011. Compared with investment of Large Enterprises, SMEs contribution is slightly different with rate 0.89 % .

In the implementation, an increase in GDP, employment, and the establishment of a national investment are aspects that contained in the four pillars of AFTA, and SMEs successfully showed its role in contributing to these three aspects. But the significance of SMEs in supporting the national economy is inversely proportional to the contribution of SMEs to the state tax revenue. According to the Director of Counseling, Services and Public Relations Directorate General of Taxation (DGT), Kismantoro Petrus in news conference at DGT, the contribution of SMEs to the tax revenue is only

0.7%[4]. It is certainly a challenge for the government to be able to optimize the potential of SMEs to increase tax revenues in Indonesia. Therefore, government needs to issue the economy policies to support and develop SMEs. This economy policy must necessarily come from all aspects in terms of the banking, finance, and taxation. However, in this research, the researchers focus on the discussion of tax policy in accordance with the background of the researchers.

One form of tax policy issued by the Indonesian Government in order to support the SMEs in the national economy is Government Regulation No. 46 Year 2013 About Income Tax on Income from Business Received or Accrued by Taxpayer which Has Certain Gross Turnover (hereinafter referred to as PP 46/2013). However, some basic substances contained in this regulation, does not support Government's aim to encourage SMEs in order to increase its contribution to Indonesia in order to meet the four pillars of the AFTA. Therefore, the researchers will explain how to optimize this regulation in order to increase tax revenues from the SMEs in the context of Indonesia's participation in AFTA 2015.

5.2. LITERATURE REVIEW

5.2.1. INCOME TAX

The Accretion Theory of Income presented by Schanz, Haig and Simon explained that:

> *" ... Under the which a person's annual income is the value of what should consume in a year that her wealth while keeping constant ... "*

With that case the income tax is defined as the ability to master all additional sources of goods and services that can be used to meet the requirement[5]. This concept is different from the concept of gross income or more commonly known as turnover. According to Great Dictionary of the Indonesian Language, turnover represents the value of transactions that occur within a certain time, e.g. daily, weekly, monthly, yearly and is not a representation of gains or losses.

Further more, income tax system has two design, global taxation and schedular taxation. Global taxation aggregates all of the various sources of

4. Ini Alasan Dirjen Pajak Kenakan PPh 1% Omzet untuk UKM (2013) Gatra. Accesed January 20, 2014 (http://www.gatra.com/ekonomi/1/33591-ini-alasan-ditjen-pajak-kenakan-pph-1-omzet-untuk-ukm.html).

5. Yonah, Reuven S. Avi, Nicola Sartori and Omri Marian (2011) *Global Perspective on Income Taxation Law*, Oxford: Oxford University Press.

income while schedular system taxes from each source of income separately. Schedular taxation is commonly used by developing countries[6]. In schedular taxation, there are certain tariff imposed on certain income by the applicable rules. Concepts that used in Indonesia for schedular taxation is final tax. Final tax is a tax imposed once when taxpayer is receiving income. Final tax which imposed for income cannot be deducted of gross income and tax paid cannot be credited or used as a deduction in Corporate Income Tax (Corporate Tax) or Personal Income Tax (Income Tax)[7].

5.2.2. TAXATION AS AN INSTRUMENT TO INFLUENCE SOCIAL AND ECONOMY BEHAVIOR

One of the functions of taxation in economy development is setting functions (regulatory) where taxes can be used by the government to regulate macroeconomic variables to achieve the level of economic growth as targeted, improving income distribution, and economic stability through regulation of consumption and public investment[8]. Thus, it can be said that one of the functions of the tax is to influence social and economic behavior.

5.2.3. TAX ADMINISTRATION

Self-assessment system in simple terms means that the taxpayer will assess their own tax liabilities and tax authorities will accept this as correct. The growth rationale for the self-assessment system of taxation includes the following factors[9]:

1. to improve compliance by taxpayer
2. to speed up the assessment process
3. to reduce the cost of compliance
4. to facilitate tax collection.

It is no doubt that a starting point in working towards the successful implementation of the self-assessment system is by improving taxpayer compliance. Because basically, compliance is "behavioral problem" and is achieved when taxpayer have accepted the prevailing tax system. Tax compliance will be achieved if there is good cooperation between taxpayer and the tax authorities[10].

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6. Michael Keen (2012). *IMF Working Paper, Taxation and Development---Again*, Fiscal Affair Department IMF.

7. Mansury, R. (1996) *Pajak Penghasilan Lanjutan,* Jakarta: Ind Hill Co.

8. Musgrave, Richard Abel and Peggy B. Musgrave (1989) *Public Finance in Theory and Practice*, McGraw-Hill.

9. Singh, Veerinderjeet (2005) *Tax Thoughts on Today Taxing Times*, Digibook Sdn Bhd.

10. Singh, Veerinderjeet (2005) *Tax Thoughts on Today Taxing Times*, Digibook Sdn Bhd.

It is normal if there are people who do not want to pay taxes for some particular reason. Imposed tax in sector, people, and activities that fall into hard-to-tax group is a challenge for tax administration. There is no exact definition of the hard to tax, but about who is included in the hard to tax are the ones who often fail to register voluntarily. Although they sign up, they still maintain the confidentiality of income and expenses, they are often not timely submits the tax return and has a tendency to run away from tax obligations[11].

In its implementation, the mechanism of tax collection for the hard to tax this group is what we called as presumptive taxation. The use of presumptive taxation provides several advantages. One of the advantages which may be obtained for developing countries is the effectiveness of presumptive taxation to tax small businesses. If in an emerging small business is the dominant sector in large numbers then the application of presumptive taxation can increase the number of the taxpayer. Moreover, for a country with a population that would lay still quite large accounting, presumptive taxation be an effective method to reduce cost and time to examine (audit). In the end, presumptive taxation can improve horizontal equity in the tax system if the state can provide a more effective method of taxation to the hard-to-tax group[12].

There are several approaches that can be used to determine the presumptive taxation, including the following[13].

1. The tax administration will determine the method used to estimate the income and then apply it to each taxpayer.
2. Applying a tax on wealth (tax assets).
3. Applying turnover or gross income tax.
4. Taxing based on external indicators of income.

In addition to the four approaches, there is *tachshiv* approach (assessment guidelines) that was developed in Israel. This approach emphasizes the use of objective factors such as services provided, equipment used, location, employee work schedules, etc. to estimate income for the taxpayer who failed to maintain adequate records. Approach to assessment guidelines prepared a detailed research and a visit to a business which is used as an example of the representation[14].

11. Terkper, Seth (2003). "Managing Small and Medium-Size Taxpayer in Developing Economies", Tax Notes International.

12. Bulutoglu, Kenan (1995) "Presumptive Taxation", *Tax Policy Handbook.*

13. Bulutoglu, Kenan (1995) "Presumptive Taxation", *Tax Policy Handbook.*

14. Bulutoglu, Kenan (1995) "Presumptive Taxation", *Tax Policy Handbook.*

Presumptive taxation can be determined collectively and individually. In the collective method, the tax administration divide the taxpayer into certain the tax obligations are determined by the group. This method makes it easy for tax administration, but the taxpayer will be more passive. In the individual methods, taxpayer more active in providing certain in establishment annually to the tax administration to the next determined its net income. However, these individual methods can be a source of corruption and taxpayer harassment[15].

5.2.4. THE SOUND PRINCIPLES OF TAXATION

5.2.4.1. EQUITY PRINCIPLE

Equity is one of principle of taxes that often become a main consideration in making a tax policy. It creates taxpayer's awareness and tax compliance by considering equity on tax policies. Equity in taxation consist of horizontal equity and vertical equity. Horizontal equity attained if taxpayer in equal condition are given equal treatment. Equal condition means equal level of the entire increase in economic capability. Vertical equity attained when taxpayer which has different increase in economic capability are given different treatment:[16]

1. progressive tax burden (the bigger ability-to-pay, the higher tax burden to be borne)
2. tax burden is distinguished solely based on level of ability-to-pay, and isn't based on type or source of income.

5.2.4.2. REVENUE PRODUCTIVITY

Tax main function is to raise funds from the public to finance government operations, both routine and development funding (budgetary function). Therefore, the principle of revenue productivity is always applied in taxation. Although the tax imposed must be able to finance government expenditures, the tax burden should not be imposed too high which in turn may hamper economic growth[17].

> *" ... A national tax system should guarantee adequate revenues to cover the expenditures of government at all levels. Since public expenditures growing niche to grow at least as fast as the national product, taxes as the main vehicle of*

15. Bulutoglu, Kenan (1995) "Presumptive Taxation", *Tax Policy Handbook.*

16. Rosdiana, Haula and Irianto (2011) *Panduan Lengkap Ketentuan Umum dan Tata Cara Perpajakan*, Jakarta: Visimedia.

17. Rosdiana, Haula and Irianto (2011) *Panduan Lengkap Ketentuan Umum dan Tata Cara Perpajakan*, Jakarta: Visimedia.

government finance should produce revenues that grow correspondingly. In developed economies this criterion would give first place[18] *..."*

5.2.4.3. EASE OF ADMINISTRATION

Administration tax policy requires minimum compliance costs for the taxpayer and minimum collection costs for the government. In this case, simplicity and certainty is important to avoid complexity, because there will be factors that cause complexity that certainly distort market decisions[19].

5.2.4.3.1. SIMPLICITY

Simplicity contains two meanings, namely simplicity of the structure of the taxation system and the simplicity of the composition of the tax laws. Simplicity of the system can create ease in collecting taxes, while simplicity of the law can simplify understanding the regulation[20].

Tax law should be simple so that taxpayer can understand the rules and obey them properly with efficient cost. Simplicity in the tax system is very important, both for taxpayer and for the officer who manage the various types of taxes. Complex rules lead to errors and does not fit the system that can reduce tax compliance. Simplicity is important to improve compliance and to enable taxpayer to get better understanding the rights and obligations of a tax on transactions which would or they have done[21].

5.2.4.3.2. CERTAINTY

Determination of tax should not be determined arbitrarily. Therefore, taxpayer should know clearly and certainly the amount of tax payable, when to be paid and payment deadline[22]. Tax regulation should specify when the tax must be paid , how to pay, and the amount to be paid. Person's tax liability should definitely not be doubted. Tax regulation also has to determine what is taxed (the tax base) and how much the tax rates. Taxpayer should be able to determine their tax liability for transactions exist with reasonable certainty. If the transaction is taxed easy to be identified and assessed, the prin-

18. The New Encyclopedia Britannica, Volume 28, London: Encyclopedia Britannica, Inc., p. 410.

19. Brunori, David (2011) *State Tax Policy, A Political Prespective*, Washington DC: The Urban Institute Press.

20. Mansury, R. (1996) *Pajak Penghasilan Lanjutan,* Jakarta: Ind Hill Co.

21. AICPA (2001) *Guiding Principles of Good Tax Policy: A Framework for Evaluating Tax Proposals*, New York: America Institute of Certified Public Accountants.

22. Mansury, R. (1996) *Pajak Penghasilan Lanjutan,* Jakarta: Ind Hill Co.

ciple of certainty is more likely to be achieved. On the other hand, if the tax base depends on the subjective judgment or transactions that are difficult to categorize, the principle of certainty might not be achieve. In addition, how the taxes are paid and when taxes are due must be spelled out in the applicable regulation. Certainty is generally derived from the clear regulation and administration instruction for taxpayer to understand[23].

5.3. RESEARCH METHOD

5.3.1. DATA COLLECTION TECHNIQUE

In this research, researchers used literature study and interview as data collection technique. The study of literature is the data collection techniques to provide a review of the study of books, literatures, records, and reports that relate to the problem or research question that research want to find the answer. Whereas, the interview is one of the instruments used in the collection of information or data[24].The interview means re-checking of information or evidence which researchers got before. Interview technique used in this research is in-depth interviews, where researchers conducted face-to -face interview by using the guidelines interview. Therefore, interviewer should think about how thus questions will be explored in a concrete and relevant in the interrogative sentence, as well as adjust the actual context of the questions during the interview[25].

5.3.2. VALIDITY AND RELIABILITY DATA

Validity can be achieved with the proper data collection process. One way is by the process of triangulation, which is a technique that utilizes data validity by checking something else out that data for checking purposes or as a comparison to the data. There are four kinds of triangulation as a technique for achieving validity checks[26], namely:

1. *Triangulation of Data*
Researchers use a variety of data sources such as documents, records, interviews, interviewing more than one subject considered that has different viewpoints.

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23. AICPA (2001) *Guiding Principles of Good Tax Policy: A Framework for Evaluating Tax Proposals*, New York: America Institute of Certified Public Accountants.

24. Creswell, John W. (2009) *Research Design Qualitative, Quantitative, and Mix Methods Approaches*, California: Sage Publications.

25. Patton, Michael Quinn (2002) Qualitative Research and Evaluation Methods. California: Sage Publication.

26. Patton, Michael Quinn (2002) Qualitative Research and Evaluation Methods. California: Sage Publication.

2. *Triangulation Observers*
There are of observers outside researchers who helped examine the results of the data collection. In this research, researchers supervised by Research and Training Expertise of DANNY DARUSSALAM Tax Center and act as expert judgment that provide feedback on the results of data collection.

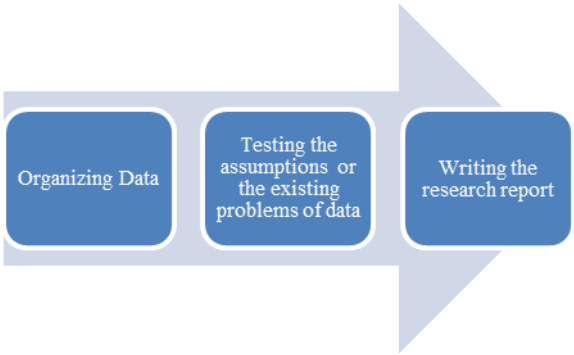
3. *Triangulation Theory*
In this research, various theories have been described in the literature review and used for the collection of testing the data.

4. *Triangulation Method*
In this research, researchers conducted the interview as a method of information or data collection instrument.

5.3.3. DATA ANALYSIS TECHNIQUES

Researchers using qualitative data analysis techniques to the process of data analysis in this research[27]. In analyzing the qualitative research, there are several steps that need to be done, but in this case the researchers will explain the steps that have been done in the following figure:

Figure 5.1. Data Analysis Technique



Source: Marshall and Rossman 2006, researchers processed

5.3.3.1. ORGANIZING DATA

Researchers get the data directly from subjects through in-depth interview, where the data is recorded with a tape recorder. Moreover, the transcripts made by changing the form of recordings of interviews into written form verbatim. The data have been obtained had repeatedly read so the researchers understood about the contain of the data.

27. Marshall, Catherin and Gretchen B. Rossman (2006) *Designing Qualitative Research*. California: Sage Publication

5.3.3.2. TESTING THE ASSUMPTIONS OR THE EXISTING PROBLEMS OF DATA

At this stage the information that has been obtained through the analysis been reviewed based on the literature review that has been described in the previous section, so that it can be matched if there are any similarities between the theoretical basis of the results achieved.

5.3.3.3. WRITING THE RESEARCH REPORT

Writing the data subject that has been collected is a matter that helps the author to recheck if the conclusions made have been completed. Furthermore, comprehensive interpretation is done, where it covers the full conclusions and recommendations of the research.

5.3.4. LIMITATIONS OF RESEARCH

This research was conducted from mid-January 2014 to late April 2014. In this research, researchers focusing the analysis to PP 46/2013 which is one of tax policy implemented related to SMEs in Indonesia.

5.4. DISCUSSION

5.4.1. OVERVIEW OF THE GOVERNMENT REGULATION NUMBER 46 YEAR 2013 ABOUT INCOME TAX ON INCOME FROM BUSINESS RECEIVED OR ACCRUED BY TAXPAYER WHICH HAS CERTAIN GROSS TURNOVER

According to Law Number 20 Year 2008 about Micro Enterprises, Small Enterprises, and Medium Enterprises, definition of micro enterprises, small enterprises, and medium enterprises is as follows.

1. Micro enterprises is a productive enterprise owned by individuals and/or entities that meet the criteria of individual micro enterprises as defined in this Law. Criteria for micro enterprises is a business that has a net wealth of at most Rp 50,000,000 (fifty million rupiah), excluding land and building for business; or having an annual sales not exceeding Rp 300,000,000 (three hundred million rupiah).

2. Small enterprises is a productive independent economy business, which is conducted by an individual or business entity that is not a subsidiary or branch company owned, controlled, or be a part either directly or indirectly from a medium or large enterprises that meet criteria for a small enterprises as defined in this Law. Criteria for small enterprises is a business that has a net wealth more than Rp 50,000,000 (fifty million rupiah) not exceeding Rp 500,000,000 (five hundred million rupiah) excluding land and building for

business; or having annual sales of more than Rp 300,000,000 (three hundred million rupiah) not exceeding Rp 2,500,000,000 (two billion five hundred million rupiah).

3. Medium enterprises is a productive independent economy business, which is conducted by an individual or business entity that is not a subsidiary or branch company owned, controlled, or be a part either directly or indirectly with a small business or a large business with the amount of wealth or annual net sales as defined in this Law. Criteria for medium enterprises is a business that has a net wealth of more than Rp 500,000,000 (five hundred million rupiah) not exceeding Rp 10,000,000.000 (ten billion rupiah), excluding land and building for business; or having annual sales of more than Rp 2,500,000,000 (two billion five hundred million rupiah) up to a maximum of Rp 50,000,000,000 (fifty billion rupiah).

SMEs as one of the main pillars of Indonesia in implementing AFTA needs to be supported with a wide range of policies issued by the government. One of the policies issued by the government is a tax policy, namely PP 46/2013. This regulation was issued on June 13, 2013 and it is effective from July 1, 2013. Issuance of PP 46/2013 affected a change in income tax rates for the SMEs. Before the issuance of PP 46/2013, there has been a tax policy about taxation of income received by the SMEs namely Law Number 36 Year 2008 (Income Tax Law) Article 31E.

Article 31E

(1) Resident entity taxpayer with gross income of Rp 50,000,000,000 (fifty billion rupiah) receives facilities in the form of reduction of the rate by 50% of the rate as referred to in paragraph (1) subparagraph b and (2a) of Article 17 imposed on taxable Income from the part of the gross revenue of Rp 4,800,000,000 (four billion, eight hundred million rupiah).
(2) The amount of the gross revenue as referred to in paragraph (1) can be increased with the Minister of Finance Regulation.

Since taxable year 2010, the tax rate applied to taxable income for SMEs in accordance with Article 17 of the Income Tax Law amounted to 25% (25%). With the enactment of the Income Tax Law Article 31E, the SMEs with a gross turnover of up to Rp 50,000,000,000 (fifty billion rupiah) received a 50% rate reduction, so the effective rate is 12,5%. However, after the issuance of PP 46/2013, individual or entity with a gross turnover up to Rp 4,800,000,000 (four billion eight hundred million rupiah) in a taxable year imposed 1% tax rates of the monthly gross turnover (in accordance with Article 4 paragraph (1) PP 46/2013).

DGT issued the PP 46/2013 for the aims as follows, (1) to create ease and simplification of the tax rules, (2) to educate the public to the well organized

administration, (3) to reduce administrative burden both for the taxpayer and the DGT (4) to educate the public for transparency, (5) allowing the public to contribute to the organization of the state, (6) giving attention to the economy and monetary developments. While the purposes of the issuance of the PP 46/2013 are (1) to provide convenience to the taxpayer who received or accrued income from a business that has a certain gross turnover, to perform the counting, depositing, and reporting of income tax payable, (2) increasing knowledge about the benefits of taxation for the community, (3) to create a conditions of social control in meeting tax obligations. The result that are expected by the PP 46/2013 is the increase of tax revenue so that the chance for the welfare of the people also increase.

The legal basis for the issuance of the PP 46/2013 refers to Article 4 paragraph (2) letter e and Article 17 paragraph (7) Income Tax Law. By using the PP 46/2013, calculating the income tax is more simple than using the Income Tax Law in general because the taxpayer calculate and pay taxes based on gross turnover. The PP 46/2013 was published to create a simplicity and uniformity in taxation obligations.

Final income tax is subjected to income from businesses that received or accrued by the taxpayer that has a certain gross turnover. Taxpayer in this regulation means an individual taxpayer or a corporate taxpayer does not include a permanent establishment and receive income from the business, excluding income from independent personal services with respect to the gross turnover not exceeding Rp 4,800,000,000 (four billion, eight hundred million rupiah) in a taxable year. Gross turnover is total of gross turnover of all outlets/counters either central or branch.

Income that is not taxed by the PP 46/2013 is income from independent personal services such as a doctors, lawyers/attorneys, accountants, notaries, Land Deed Official (PPAT), architect, musician, presenter and income from trading businesses and services that are subject to a final income tax such as a dorm room rental, house rental, construction services (planning, implementation and monitoring), the oil and gas business income tax, and other income that are regulated by Government Regulation.

Taxpayer who is not included in the provisions of the PP 46/2013 is an individual taxpayer who undertake business activities and/or services in their efforts to use facilities or infrastructure that can be assembled, whether settled or not settled and that an individual taxpayer in efforts to use part or all of the place to which the public interest is not destined for a place of business or selling, as well as corporate taxpayer who has not been in commercial operation or a corporate taxpayer that within a period of one (1) year after the commercial operations obtain gross turnover exceeds Rp 4,800,000,000 (four billion eight hundred million rupiah).

The rate of income tax payable in accordance with the provisions of the PP 46/2013 is 1%. The imposition of income tax based on the gross turnover of the business within 1 (one) year from the last taxable year right before the taxable year. Tax base that used to calculate the final income tax is the amount of gross turnover each month. A specific things related to gross turnover as a tax base that imposed final income tax in accordance to this government regulation are set as follows:

1. Based on the amount of last taxable year gross turnover before the taxable year of this Government Regulation that annualized, in the case of the last taxable year before the taxable year of the enactment of this Government Regulation covers less than a period of 12 (twelve) months;

2. Based on the amount of gross turnover that annualized from the month when the taxpayer is registered to the month before the enactment of this regulation, in case the taxpayer is registered in the same taxable year with taxable year when the enactment of this Government Regulation in the month before this regulation applied;

3. Based on the amount of gross turnover on the first month when income received from business income that annualized, in case of the taxpayer is recently registered as a taxpayer since the enactment of this Government Regulation. Income tax payable is calculated based on the rates of 1% multiplied by the tax base.

Final tax provisions in the PP 46/2013 does not apply to income from business that is subject to final income tax under the provisions of the regulation in the field of taxation. On income other than business as referred to the Article 2 paragraph (1) the PP 46/2013, received or accrued by taxpayer, subject to income tax under the provisions of Income Tax Law.

5.4.2. STRENGTHS OF GOVERNMENT REGULATION NUMBER 46 YEAR 2013 ABOUT INCOME TAX ON INCOME FROM BUSINESS RECEIVED OR ACCRUED BY TAXPAYER WHICH HAS CERTAIN GROSS TURNOVER

Government Regulation 46/2013 does not explicitly state that this rule is intended to SMEs, but the threshold of gross turnover 4.8 Billion Rupiah is included in the group of SMEs. Therefore, it can be said that PP 46/2013 set for taxing SMEs. Based on Law Number 20 year 2008 concerning SMEs, SMEs is business that done by individual or business entity with a maximum gross turnover 50 Billion Rupiah in a year.

Based on data from the Cooperatives and SMEs Ministry, the contribution of the SMEs in GDP in 2011 was 57.83%. Meanwhile, according to Kismantoro Petrus in press conference at the DGT Office, the contribution of

SMEs in tax revenues totaled only 0.7%. It indicates that the SMEs is very potential but has not been optimally explored. Indonesia has small number of SMEs that registered as a taxpayer. Most of them also cannot or do not want to do their tax obligations (counting, depositing, reporting) by themselves. It indicates that SMEs is categorized as hard to tax.

In developing countries, including Indonesia, most of taxpayer has no financial transparency that discourage government to do effective taxation. Therefore, the government needs to make a right estimation of the income threshold to be taxed. This design is generally used with the aim to improve compliance and encourage the taxpayer's bookkeeping. PP 46/2013 implied presumptive regime, a special design taxation with the goal for minimizing the cost of compliance. This form is applied in sector which still has limited administrative and bookkeeping capabilities. Bookkeeping is an activity to calculate net income by adding up the total revenue and deducting the costs for the business.

In order to tax the hard to tax sector and improves tax compliance, DGT simplify tax administration for SMEs. The main consideration of the enactment of this rule is to provide ease administration for individual taxpayer and entity taxpayer that have certain gross turnover. Ease in this case is simplicity provisions regarding counting, depositing, and reporting of income tax payable. Final tax rate 1% of gross turnover is considered to facilitate taxpayer, so taxpayer doesn't need to do bookkeeping or make financial statement which is more complicated and requires additional charge. Bookkeeping is something that cannot be done properly for SMEs because SMEs tend not constitute formal sector and not well educated. Based on in-depth interview with Associate SMEs Center Faculty of Economics, Universitas Indonesia, the number of SMEs that has already done bookkeeping is still smaller than who hasn't done bookkeeping. Moreover, SMEs which register as taxpayer is also still small. With these considerations, the simplicity is the main point to be realized from this rule. Simplicity in tax collection can reduce the administrative burden and compliance costs for both the taxpayer and the DGT.

SMEs in Indonesia, according to the Ministry of Cooperatives and SMEs in 2011 totaled to 55,206,444 units and generates GDP of 2.377.110 Billion Rupiah. If viewed from the principle of revenue productivity, taxing the SMEs with large amounts can increase tax revenues. With large SMEs contribution to the national economy, SMEs also should be the potential sector to increase revenue through taxes. Based on data of tax revenues from 2005 to 2012, most of the tax revenue is still dominated instead of SMEs, rather than Large Enterprises. In 2009 for example, SMEs tax payments totaled to only 2.81 Trillion Rupiah, or 0.7% of total tax revenue totaled to 565.77 Trillion Rupiah. It also happened in 2012 budget, the non-oil income tax targeted to 445.7 Trillion Rupiah and Value Added Tax (VAT) is targeted to 336.1

Trillion Rupiah. The biggest realization of those targets was from Large Enterprises instead of SMEs[28]. In line with efforts to improve tax compliance of SMEs to have a willingness to carry out their tax obligations voluntarily, DGT will solicit a new taxpayer. This is an implementation of DGT extensification, which also implies to increase of tax revenue.

In addition to revenue productivity, there are other benefits over the enactment of this tax policy, namely in terms of social and economic influences. According to Indonesian Finance Minister, Agus Martowardoyo, PP46/2013 can encourage SMEs to raise the status of a formal sector so that SMEs gain easier access to finance, capital, and bank credit as one of the requirements of the bank loan is government participation Taxpayer Identification Number (TIN).

The principle of certainty emphasized that tax laws should clearly specify when the tax must be paid, how to pay, and the amount to be paid. Similarly, the rate base and that should be obvious. Imposition of tax at the rate of 1 % has reflected the principle of certainty in terms of tax base and rate. Moreover, the taxpayer and the DGT can obtain certainty as how much the tax amount. DGT can estimate how much tax revenue from SMEs in the period, it implies for future policy planning of DGT. As for SMEs, they can calculate how much tax due to a certain amount of turnover, so they can plan business cash flow.

With the ease of administration efforts to create the taxing hard to tax sectors, DGT expects an increase in tax compliance. This tax compliance will encourage SME sector to voluntarily perform tax obligations including paying taxes on his business. In other words, the compliance rate will be directly proportional to the amount of government revenue from taxes on the SMEs. It can strengthen Indonesia's position in the AFTA in 2015 because there is the potential for increased tax revenue that will be used to finance public spending in order to increase national competitiveness.

5.4.3. WEAKNESSES OF GOVERNMENT REGULATION NUMBER 46 YEAR 2013 ABOUT INCOME TAX ON INCOME FROM BUSINESS RECEIVED OR ACCRUED BY TAXPAYER WHICH HAS CERTAIN GROSS TURNOVER

PP 46/2013 basically is a tax policy that aims to facilitate and simplify certain taxpayer in meeting their tax obligations. Nonetheless, it is difficult to meet a vertical equity condition in this regulation. This regulation implicitly doesn’t give a progressive tax burden based on the taxpayer’s ability to pay.

28. Pusat Kebijakan Pendapatan Negara - Badan Kebijakan Fiskal. (2013). Kajian PPh final UMKM PKPN. Accesed March 28th, 2014.

Total income tax that should be levied is determined by taxpayer gross turnover instead of their income. 1% tariff to the gross turnover absolutely doesn't fit to accretion concept which become base to determine income that should be levied the tax in Indonesia. In addition, to meet breakeven condition where total tax counted by 1% schedular tariff equals with total tax debt counted by 12.5% income tax law tariff, taxpayer should have at least 8% net income from their total gross turnover.

Table 5.2. Illustration of Comparison of Income Tax Determination Based on Income Tax Law Tariff and PP 46/2013 Tariff

Margin Ratio	5%	8%	20%	40%	-5%
Gross Turnover	2,500,000,000	2,500,000,000	2,500,000,000	2,500,000,000	2,500,000,000
Taxable Income (A)	125,000,000	200,000,000	500,000,000	1,000,000,000	(125,000,000)
Income Tax Law rate	0.125	0.125	0.125	0.125	0.125
Income Tax (rate 12,5%) (B)	**15,625,000**	**25,000,000**	**62,500,000**	**125,000,000**	**0**
PP 46/2013 rate	1%	1%	1%	1%	1%
Income Tax (rate 1%) (C)	**25,000,000**	**25,000,000**	**25,000,000**	**25,000,000**	**25,000,000**
Taxpayer Benefit (Loss) (B-C)	(9,375,000)	-	37,500,000	100,000,000	(25,000,000)

Source: data processed by researchers

By applying 1% schedular tariff to total gross turnover, taxpayer which has closest gross turnover to Rp 4,800,000,000 (with assumption the margin ratio is more than 8%) that considered has more ability-to-pay will bear for less tax burden rather than when taxpayer apply normal tariff of income tax. In other words, the closer gross turnover to Rp 4,800,000,000 the less tax burden to be borne by the taxpayer. That condition may be beneficial for tax-

payer which has great turnover. Yet, it would be such burden for taxpayer with less gross turnover. Taxpayer which has less than 8% margin ratio from their gross turnover would be levied less income tax if they applied income tax law tariff. It can be explained in the following calculation.

Simplicity is an important principle in taxation, especially for taxation with self-assessment system. When simplicity whether in determining or paying tax could be felt by the taxpayer, it is likely improves taxpayer's compliance in meeting their tax obligations. If taxpayer finds it more convenient in determining their own tax, they will be more aware to the self assessment system. In a long term condition, improve of taxpayer compliance will be impact the increase of tax revenue.

As a consideration, PP 46/2013 is made to provide simplicity to the taxpayer which has certain gross turnover. Yet this regulation in contrary does not provide simplicity for the taxpayer. SMEs sector, particularly in Indonesia is still tends to be unstable and seasonal based on fact that in some certain moments, increase of SMEs gross turnover could reach more than 20% to 300% from its normal gross turnover. The difficulty for taxpayer on applying this regulation appears when the taxpayer gross turnover reaches more than Rp 4,800,000,000 within a year, then they are required to count their income tax based on general rule of income tax law by next year period. Moreover, the taxpayer will need to use the provisions of Government Regulation Number 46 if within that year period, the gross turnover not exceed than Rp 4.800.000.000. It is likely to be a subtly for taxpayer to frequently adjust their calculation of the tax payable based on required rule since their total of gross turnover fluctuate every year.

Table 5.3 Illustration of Tax Imposed with Fluctuate Gross Turnover

Year	Gross Turnover	Income Tax in the Current Fiscal Year	Income Tax in the Next Fiscal Year
2014	3.000.000.000	Article 31E Income Tax Law (12,5% rate)	PP 46/2013 (1% final rate)
2015	5.000.000.000	PP 46/2013 (1% final rate)	Article 31E Income Tax Law (12,5% rate)
2016	2.500.000.000	Article 31E Income Tax Law (12,5% rate)	PP 46/2013 (1% final rate)

Source: data processed by researchers

On accounting, either bookkeeping and record keeping should be based on consistency principle. So does the principle of taxation. In PP 46/2013,

SMEs which has gross turnover fluctuation under 4,8 billion rupiah and over 4,8 billion rupiah each year, should always adjusts the reporting system and procedure of tax payment. It can disrupt taxpayer's liquidity and can be difficult for taxpayer to estimate tax debt for the following years. Thus, besides went away from simplicity principle, PP 46/2013 also not in line with consistency principle. It can be simply summarize in the following table.

Presumptive taxation has been common to be used generally when there is lack of information or data which can be determined as a tax base to levy tax, and particularly when books and records aren't exist in order to determine a tax base of income tax. So that taxpayer that the tax base has already can be determined, shouldn't categorized as presumptive method subject. Definition of taxpayer that are properly chosen on presumptive method should be arranged prudently, so there won't be a gap for taxpayer which already has higher income or has sufficient books and records[29]. Neither should the implementation of this regulation that essentially is implementation of presumptive taxation. However, government as a policymaker isn't selective enough in determining whose can be subject of this regulation. There is no article in this regulation which excludes taxpayer with sufficient books and records from the regulation.

PP 46/2013 seen generalize that all of SMEs in Indonesia doesn't have book keeping, but only have record keeping. It is true that majority of SMEs in Indonesia only do the record keeping and even many of them doesn't make a records at all. However, in fact, there are SMEs that have a book keeping, although in a few number. A few number of SMEs that has a book keeping cannot be a justification to generalize and consider that all of the SMEs only do the record keeping.

In article 11 PP 46/2013 stated that this regulation takes effect from 1st July 2013. So, started from the date, all of taxpayer included as the subject of this regulation should apply the rule. This in additional weakness of PP 46/2013. This regulation is a special rule with a mandatory, where all taxpayer categorized in this regulation has to comply with the rule, and there are no option for taxpayer whether to choose to apply this regulation or to choose to apply the general rule of income tax law.

Another weakness appears in implementing this regulation. A good regulation should has a transition period for the taxpayer to feel the differences between implementation of two regulation. Yet there is no transition period for taxpayer to try applying PP 46/2013 and compare it with the previous regulation. Since there is no transition period, government fail to get feed-

29. Thuronyi, Victor (2004) "Presumptive Taxation of the Hard-To-Tax", *Taxing the Hard-To-Tax, Lesson from Theory and Practice,* 2(4): 101-120.

back to review whether or not this regulation is relevant and meet with taxpayer's need.

Socialization process of PP 46/2013 by DGT also isn't comprehensive enough for many SMEs in Indonesia. According to in-depth interview with Nayla, Associate UKM Center Faculty of Economy Universitas Indonesia, many of SMEs in Indonesia even doesn't know that PP 46/2013 exists. Most of the SMEs that have already understood the PP 46/2013 is the SMEs that is managed by well-educated, whereas many of the others have never understood the PP 46/2013.

5.4.4 OPTIMIZATION OF TAX POLICY IN STRENGTHENING THE SMALL MEDIUM ENTERPRISES SECTOR IN INDONESIA (REVIEW OF GOVERNMENT REGULATION NUMBER 46 YEAR 2013 ABOUT INCOME TAX ON INCOME FROM BUSINESS RECEIVED OR ACCRUED BY TAXPAYER WHICH HAS CERTAIN GROSS TURNOVER).

Before the enactment of PP 46/2013, SMEs perform tax calculations using the facilities of the Income Tax law article 31E. Where in the article stated "*Resident entity taxpayer with gross income of Rp 50,000,000,000 (fifty billion rupiah) receives facilities in the form of reduction of the rate by 50% of the rate as referred to in paragraph (1) subparagraph b and (2a) of Article 17 imposed on taxable Income from the part of the gross revenue of Rp4,800,000,000 (four billion, eight hundred million rupiah).*" Corporate income tax rate in Indonesia according Income Tax law Article 17, paragraph (2) is 25%. So for eligible domestic corporate taxpayer, the effective rate on income up to 4,8 billion is 12,5%. The imposition of the income tax in this case carried out on taxable income calculated from the profit-and-loss accounting (bookkeeping) after correction for the fiscal basis of Article 28 paragraph (1) of Law No. 28 year 2007 (Law of General Rule and Procedure of taxation), taxpayer are required to do bookkeeping.

50% x 25% x Net Income.= 12,5 % Net Income.

After the enactment of PP 46/2013, an individual taxpayer or entity taxpayer that does not include a permanent establishment which receives income from businesses with gross turnover not exceeding Rp.4.8 billion within one (1) of the taxable year, subject to final Income Tax with rate of 1% of gross turnover. With Final Income Tax rate, 1% of gross turnover, SMEs is not harmed when the percentage of taxable income to the gross turnover can reach 8%. This can be formulated as follows:

1% x Gross Turnover = 12,5% x Net Income
1% x Gross Turnover = 12,5% x 8% x Gross Turnover

If SMEs in the form of business entity is able to achieve a percentage of taxable income to the gross turnover above 8%, the SMEs in the form of business entity will benefit because paying less income tax than the previous rule. Vice versa, they will pay more income tax if the percentage of taxable income is less than 8% of the gross turnover, and they also still pay income tax even though in a state final loss.

The minimum percentage on taxable income that must be achieved by individual SMEs will be greater than 8% so as not to be harmed by the imposition of the final income tax of 1% of gross turnover. Since the enactment of PP 46/2013, tax exemption no longer be deductible in calculating the income tax liability individual SMEs. Tariff of tax exemption according the Income Tax Law for the person is Rp 24,300,000. Maximum tax exemption that allowed by Income Tax Law is Rp 32,400,000 provided that the taxpayer is married with 3 dependents in accordance with the Income Tax Law. PP 46/2013 incriminate if the actual net income that earned by taxpayer under tax exemption. Because basically tax is a source of state revenue that will ultimately be used for the greatest welfare of the people. This is in accordance with the UUD 1945 which is the highest law in the State of Indonesia. Taxes collected from the people should not be burdensome and impoverish its people. Imposition tax exemption is restrictions imposed by the government in order that the tax collected does not burden the people. In this case it can be said, that the PP 46/2013 which applied not be burdensome than the previous rules (in this case Article 31 of Income Tax Act and the application of e tax exemption), then the government should establish a minimum income which is categorized into the PP 46/2013 .

As has been explained previously, tax collection using PP 46/2013 will not be burdensome than the previous taxation rules if the ratio of net income to gross turnover more than 8% and net income earned above the maximum tax exemption. This calculation is based on in-depth interviews that the researchers did to one of the speakers, Prof. Dr. Gunadi, M.Sc., Akt., a Professor of Taxation at the Faculty of Social and Political Sciences Universitas Indonesia.

8% x Gross Turnover = Rp 32.400.000,-
Gross Turnover = Rp 32.400.000,- / 8%
Gross Turnover = Rp. 405.000.000,-

So based on these calculations, the minimum income should be non-taxable threshold of PP 46/2013 is 405 Million Rupiah.

Another fact that contained in this regulation, PP 46/2013 has a very wide range of threshold. It will be better if government groups taxpayer based on

gross turnover within a certain range and charge a progressive tax rate in accordance with a predetermined income groups. By grouping and adjusting tax rates based on the range of gross turnover, it expected that the tax burden of the SMEs is not too heavy and it can increase productivity of SMEs. Besides, an effort to optimize this rule can be made by special rules for certain SMEs such as; tax exemption for certain SMEs. The exemption applied based on certain criteria predefined by the relevant parties. It is based on the argument that not all types of SMEs have high levels of gross turnover that can be said deserve to be taxed and it would harm SMEs itself.

Applying of earmarking tax also can be one of the efforts that can optimize this regulation. Tax collection from SMEs partly allocated as cash reserves for banks as sources of credit for SMEs. Thus, the SMEs can easier gain access to capital and banking in order to increase their business productivity. The last but not the least, it is better that PP 46/2013 used as an alternative regulation, so taxpayer can choose to calculate the income tax based on PP 46/2013 or based on general rules (Income Tax Law article 31 E). The taxpayer should be able to choose which one is easier for them so they are expected to improve the level of tax compliance.

5.5. CONCLUSIONS AND RECOMMENDATIONS

5.5.1. CONCLUSIONS

- Enactment of PP 46/2013 is important to solicit new taxpayer from SMEs. SMEs is the largest contributor to GDP in Indonesia. The source of the data shows that SMEs accounted for 57.83% of the GDP, but its contribution to total of tax revenue is only 0.7 %.

- PP 46/2013 is the tax law for gross turnover below 4.8 Billion Rupiah which replaced the previous regulations of Income Tax Law article 31 E. Rate this regulation is set at 1% of gross turnover and charged as a final tax. PP 46/2013 was published in June 2013 and issued in July 2013 . Starting July 1st, 2013 , the tax law to a particular entity or individual with a gross turnover of below 4.8 billion Rupiah the provisions must operate PP 46/2013. The regulations issued by considerations of simplicity in tax administration.

- There are some strengths and weaknesses in PP 46/2013. The strengths are this regulation taxes the potential sector and fit in the category of hard to tax, raise the status of the SMEs into the formal sector, and providing ease and certainty in tax administration. The weaknesses are sacrificing the principle of vertical equity. In addition , this rule does not really achieve the initial goal of simplicity and not careful in determining the tax subject. Other weakness is that the PP 46/2013 is mandatory where the taxpayer

does not have the right to choose to use this rule or the Income Tax Law article 31 E. Also, it is aggravated with the lack of transition period between the previous provisions and the implementation of PP 46/2013.

5.5.2. RECOMMENDATIONS

- Basically, the tax charged to the taxpayer for the welfare of the people should not burden them. DGT must give attention to the tax exemption as a right of every taxpayer. Tax exemption should be considered and excluded as an object of taxation.

- We recommend that the tax base determination of income to PP 46/2013 is based on income and not on gross turnover. Since the large gross turnover does not necessarily represent the large of the net income, so the principle of vertical equity can be met.

- SMEs as a sector that has a range of micro, small and medium enterprises have a various in the level of margin ratio that making it difficult to generalize the same rules for different business groups. It will be better if policy makers make special rules for SMEs to accommodate different ability to pay.

- One of the objectives of PP 46/2013 is to improve the status of SMEs into the formal sector that making it easier for SMEs to access bank assistance. But this regulation cannot guarantee that the bank could easily provide access to capital. The government can use earmarking tax mechanism so that the allocation of the tax levied for SMEs can be channeled through the banking sector. Taxes received from the SMEs which is given to the banks will be given back to the SMEs that need venture capital funds as a loan.

- One of the weaknesses in PP 46/2013 is that SMEs will remain taxable even though they are in a state of loss and it will burden the taxpayer. Therefore it is necessary for the government not to tax SMEs at the state final loss.

- It is better that PP 46/2013 used as an alternative rule not a mandatory, so taxpayer can choose to calculate the income tax based on PP 46/2013 or based on general rules.

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6 CRISIS PHENOMENA IN THE PROCESS OF FORMATION OF A MARKET PORTFOLIO

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ABSTRACT

The purpose of this research is revelation of mechanisms of emerging crisis, turbulent events in markets, with singling out the advantageous stable phase, turbulent phase and non-advantageous stable phase. The idea of this work was to research impact of change of assets market parameters in the market on state of the marker portfolio. The basic methodological approach in this research is the methodology of the modern portfolio theory. The essential result of this work is: Revelation of conditions of existing the advantageous stable market state, conditions of leap-wise transition of the market into the turbulent phase and conditions of emerging the non-advantageous stable market state. This result is suggested which assists, when performing practical management of assets and portfolios, in understanding closeness of critical events and making decisions related to risk management. It may also become a signal to possible changes of principles of market regulation for the government and regulating authorities.

6.1. LOCATION OF EFFICIENT AND INEFFICIENT PORTFOLIOS WITH VARIOUS β- COEFFICIENTS IN MARKOWITZ MODEL AND ON THE SML

It is generally known (see for example (Markowitz,1952) , (Markowitz, 1959), (Sharpe at al., 1998)), that according to the modern portfolio theory, efficient assets and portfolios are located both on the CML and the SML, while inefficient assets and portfolios are located on the SML, but are not located on the CML, being located inside and on the border of the Markowitz umbrella (see fig. 6.1).

Recall that the CML equation looks as follows:

$$E(R) = R_f + \frac{E(R_m) - R_f}{\sigma(R_m)}\sigma \qquad (1)$$

and connects the expected yields E(R) and volatilities σ of efficient portfolios, where R_f is the yield of a risk-free asset, and $E(R_m)$ and $\sigma(R_m)$ are, respectively, the expected return and volatility of the market portfolio.

And the SML equation is presented as follows:

$$E(R) = R_f + \beta(E(R_m) - R_f), \quad (2)$$

where β is a beta coefficient of the respective portfolio or asset.

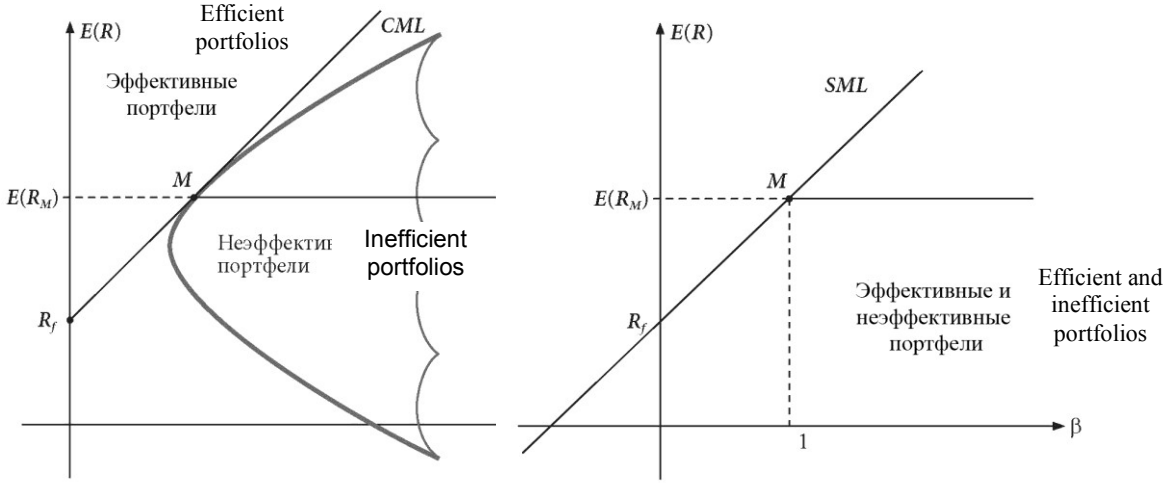
Note that interrelation (1) may be rewritten in the following form:

$$E(R) = (1 - \frac{\sigma}{\sigma(R_m)})R_f + \frac{\sigma}{\sigma(R_m)}E(R_m) \quad (3)$$

which suggests that the weight of the market portfolio in each efficient portfolio is equal to $w_m = \frac{\sigma}{\sigma(R_m)}$, i.e. it is defined by the interrelation of volatilities of the considered efficient portfolio and the market portfolio.

Note that the CAPM ratio (2) may also be rewritten in the following form:

Fig. 6.1. Location of efficient and inefficient portfolios in Markowitz model and on the SML



$$E(R) = (1 - \beta)R_f + \beta E(R_m), \quad (4)$$

which suggests that the weight of the market portfolio in each portfolio (including an efficient one) coincides with β coefficient of the given portfolio: $w_m = \beta$. Comparing the resulting expressions for the market portfolio share, we obtain the following ratio: $\beta = \frac{\sigma}{\sigma(R_m)}$, or $\sigma = \beta\sigma(R_m)$

It means that the volatility of any efficient portfolio is proportional to the volatility of the market portfolio, and β coefficient is the respective sensitivity coefficient. Thus, depending on the share of the market portfolio in the considered efficient portfolio, the volatility of the efficient portfolio differs from the volatility of the market portfolio by the respective number of times.

It should be noted that for all portfolios, both efficient and inefficient, true is the formula of decomposition of the full risk, represented by the variance of the portfolio return into the sum of summands responsible for the systematic part of the risk, defined by the market (market portfolio), and the non-systematic part of the risk, associated with the specificity of the assets or portfolio (see for example (Sharpe et al.1998)):

$$\sigma^2 = \beta^2\sigma(R_m)^2 + \sigma_\varepsilon^2,$$

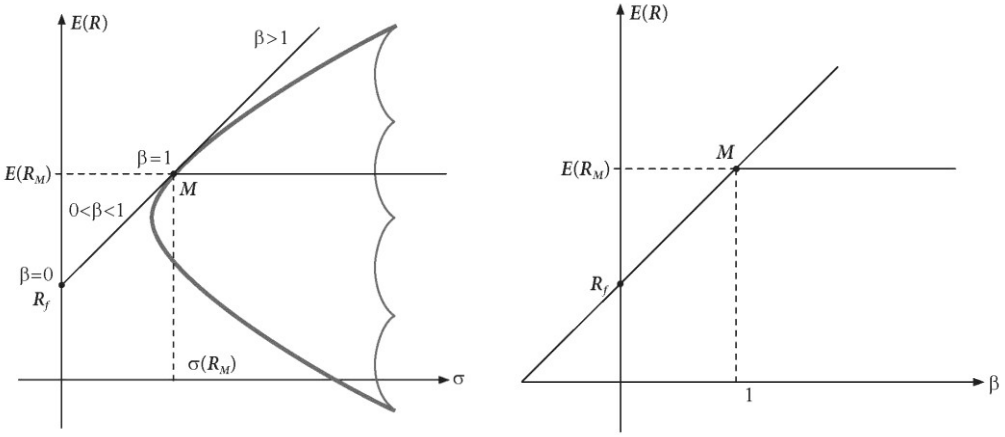
where σ_ε^2 is the summand responsible for the non-systematic risk.

For the portfolios lying on the efficient border, $\sigma_\varepsilon = 0$, and we come to the already mentioned proportion $\sigma = \beta\sigma(R_m)$. However, for inefficient portfolios, $\sigma_\varepsilon > 0$, and between the volatilities of such portfolios and the volatilities of the market portfolio there is no proportionality with β coefficient. The volatility of inefficient portfolios is considerably influenced by nonsystematic component of risk σ_ε.

Let us consider the geometrical arrangement of efficient portfolios on CML and SML (fig. 6.2). At point R_f (i.e. for the risk-free asset), β = 0. At point M (i.e. for the market portfolio), $\beta = 1$. For the portfolios from segment (R_f, M), β coefficient varies within limits $0 < \beta < 1$. To the right of point M, beta coefficient takes the values: $\beta > 1$.

Thus, the risk-free asset is absolutely insensitive to the market moves. Efficient portfolios located on CML on segment (R_f, M) are less volatile than the market portfolio and less sensitive to the market moves than market portfolio M itself. These are the portfolios that appear during distribution of the investor's own money resources between the risk-free asset and the market portfolio $(0 < \beta = w_m < 1)$.

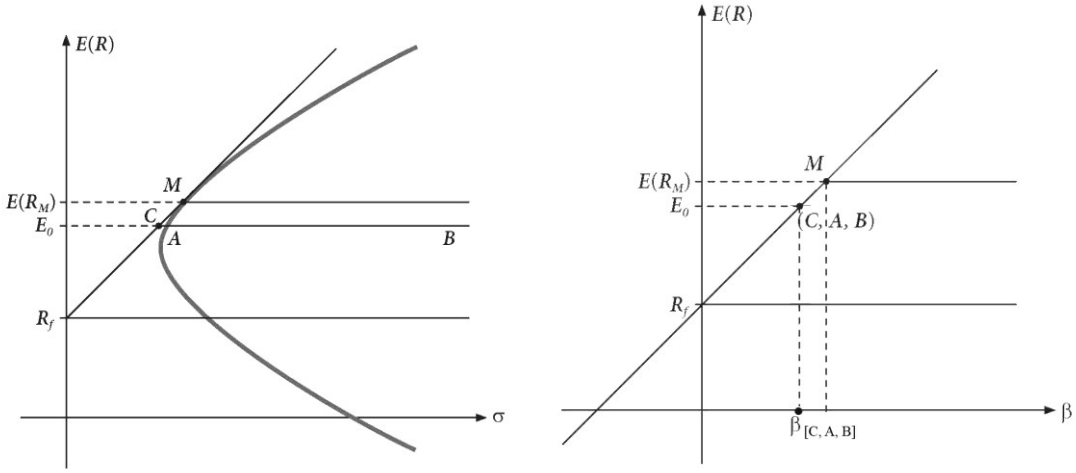
Fig. 6.2. Location of portfolios with various β on CML and SML



The portfolios located to the right of point M are more volatile than the market portfolio and more sensitive to the market moves than market portfolio M itself. These are the portfolios that appear when obtaining a credit at risk-free rate R_f and investing the obtained amount, together with the investor's own money resources, in the market portfolio $(\beta = w_m > 1)$.

Let us ask a question: where on Markowitz umbrella and SML are located inefficient portfolios with various values of β? Let us consider in Markowitz umbrella all the portfolios with a set expected yield (see fig. 6.3).

Fig. 6.3. Location on CML and SML of portfolios with a fixed value of expected yield E_0

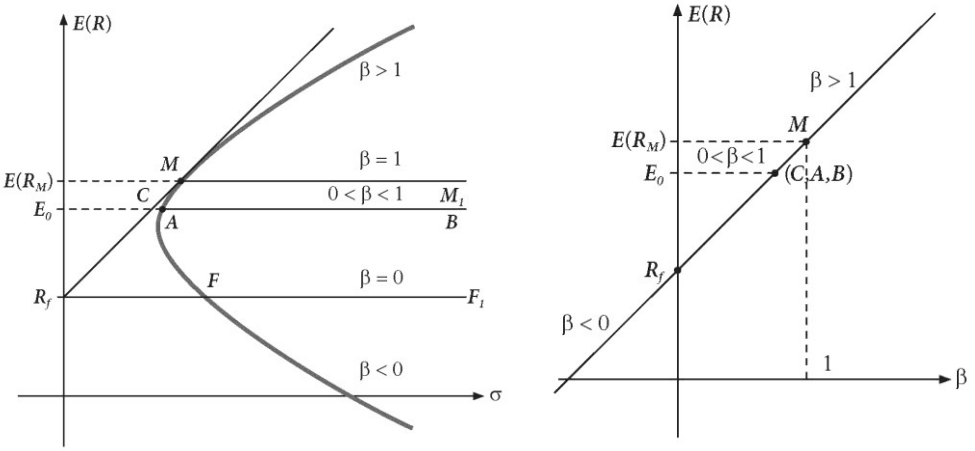


These portfolios are geometrically arranged on ray [C,A,B). And the portfolios lying on ray [AB) – these are the respective purely risk portfolios, while the portfolios lying on segment [C,A) – these are the portfolios where shares of the respective risk asset as well as risk-free asset are present. For E_0 values lower than R_f, the respective portfolios are only shown as points of the respective ray [A,B), containing risk assets only. Coefficient $\beta = \beta_{[C,A,B)}$ of these portfolios is equal and is defined from the ratio:

$$E_0 = R_f + \beta(E(R_m) - R_f), \text{ i.e. } \beta_{[C,A,B)} = \frac{E_0 - R_f}{E(R_m) - R_f}$$

Fig. 6.4 shows the ranges of portfolios with various β with highlighted borders of portfolios having critical values β = 0 and β = 1 in two planes. In particular, for all portfolios lying on ray $[R_f,F,F_1)$, β = 0. On SML, they all are shown as one point R_f (which means that their reaction to the market move is identical to that of the risk-free asset, i.e. there is no reaction). For all portfolios lying on ray $[M,M_1)$, β = 1. On SML, they are all shown as one point M (which means that their reaction to the market move is identical to that move).

Fig. 6.4. Location on Markowitz umbrella of the ranges corresponding to portfolios with various β



All portfolios with the value of β coefficient being within the range $0 < \beta < 1$ (i.e. those less sensitive to the market moves than the market portfolio M) are shown as points lying in range M_1,C,R_f,F_1. And the respective purely risk portfolios are located in range M_1,M,F,F_1, while in additional range M,R_f,F are located the respective portfolios in which the risk-free asset is present with a certain share.

On SML, these portfolios are shown as points of segment (R_f,M), and each horizontal ray [C,A,B) is shown on SML in the respective point defined as [C,A,B) (see fig. 6.4). All portfolios with the value of β coefficient being within the range $\beta > 1$ (i.e. those more sensitive to the market moves than the market portfolio M) are shown as points lying above line MM_1. On SML, these portfolios are shown as points above point M (see fig. 6.4).

All portfolios with the value of β coefficient being within the range $\beta < 0$ (moving inversely to market portfolio M) are shown as points lying below line R_f,F,F_1. On SML, these portfolios are shown as points below point R_f (see fig. 6.4).

6.2. CRISIS MARKET PHENOMENA AND CRITICAL CHANGE OF THE MARKET BENCHMARK

For further analysis we should need a more exact description of the border of Markowitz umbrella. As is known, the border of Markowitz umbrella appears when solving the following optimization problem: determination of portfolios p with fixed yields

$$E(R_p) = \sum_{i=1}^{N} w_i E(R_i),$$

and the minimal risk value expressed by the portfolio return variance

$$\sigma_p^2 = Var(R_p) = \sum_{i=1}^{N}\sum_{j=1}^{N} w_i w_j \sigma_{ij},$$

where

R_i – return of the i-th asset,

R_p- return of the portfolio in the selected time interval,

E – mathematical expectation symbol,

w_i – share of funds (weight) invested in the i –th asset (i = 1,2,…,N),

$\sigma_{ij} = Cov(R_i, R_j)$ - covariance of the retuns of the i-th and j-th assets included in the portfolio,

σ_p^2 - portfolio return variance.

In order to write this optimization problem in a matrix form, let us introduce the required matrices.

E – (N×1) column vector of mathematical expectations;

$$E = \begin{pmatrix} E(R_1) \\ E(R_2) \\ : \\ E(R_N) \end{pmatrix}$$

1 - (N×1) unit column vector;

$$1 = \begin{pmatrix} 1 \\ 1 \\ : \\ 1 \end{pmatrix}$$

$\mathbf{w_p}$ - (N×1) column vector of weights of portfolio p;

$$w_p = \begin{pmatrix} w_1 \\ w_2 \\ : \\ w_N \end{pmatrix}$$

Ω - (N×N) symmetric matrix of risk asset returns' covariance;

$$\Omega = \begin{pmatrix} \sigma_{11} & \sigma_{12} & \ldots & \sigma_{1N} \\ \sigma_{21} & \sigma_{22} & \ldots & \sigma_{2N} \\ : & : & \ldots & : \\ \sigma_{N1} & \sigma_{N2} & \ldots & \sigma_{NN} \end{pmatrix}$$

Using the matrix algebra, the formulated optimization problem may be rewritten in the form of the following conditional extremum problem:

$$\min_{w_p}\{w_p' \cdot \Omega \cdot w_p\} \tag{5}$$

with constraints:

$$\begin{cases} w_p' \cdot E = E(R_p) \\ w_p' \cdot 1 = 1 \end{cases}, \tag{6}$$

where A' denotes a matrix transposed to matrix A.

As is known (see for example (Amenc and Le Sourd, 2003), (Elton et al. 2007), (Jurczenko, 2008)), the solution of this problem for various values $E(R_p)$ results in determination of a set of optimal portfolios p, whose expected yields $E(R_p)$ and risks σ_p satisfy the following equation, determining the set of portfolios with the minimal variance:

$$\sigma_p^2 = \frac{cE(R_p)^2 - 2aE(R_p) + b}{d}, \tag{7}$$

where

$$a = 1' \cdot \Omega^{-1} \cdot E = E' \cdot \Omega^{-1} \cdot 1, \tag{8}$$

$$b = E' \cdot \Omega^{-1} \cdot E, \tag{9}$$

$$c = 1' \cdot \Omega^{-1} \cdot 1, \tag{10}$$

$$d = bc - a^2 > 0. \tag{11}$$

Ω^{-1} denotes a matrix inverse to matrix Ω.

Equation (7) is easy to transpose to:

$$\sigma_p^2 - \frac{c}{d}(E(R_p) - \frac{a}{c})^2 = \frac{c}{d}(\frac{bc - a^2}{c^2}),$$

and, using the identity (11), we obtain the equation:

$$\sigma_p^2 - \frac{c}{d}(E(R_p) - \frac{a}{c})^2 = \frac{1}{c},$$

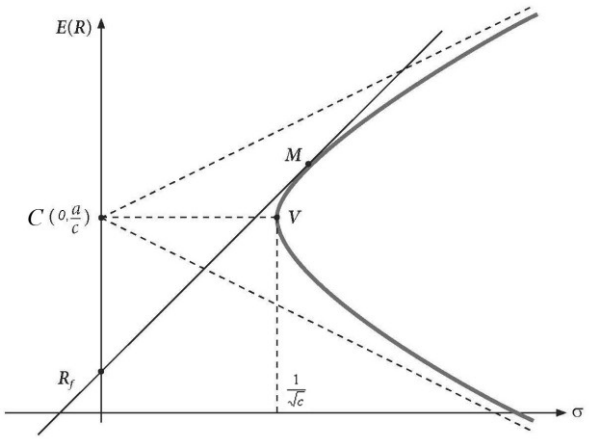
from which we obtain the equation in the form

$$\frac{\sigma_p^2}{(\frac{1}{c})} - \frac{(E(R_p) - \frac{a}{c})^2}{(\frac{d}{c^2})} = 1. \tag{12}$$

As is known from geometry (see for example (Alexandrov,1968)), this equation in plane $(\sigma_p, E(R_p))$ is a hyperbole equation with the vertex at point $V = (\frac{1}{\sqrt{c}}, \frac{a}{c})$, the center at point $C = (0, \frac{a}{c})$ and semiaxes $\frac{1}{\sqrt{c}}$ and $\frac{\sqrt{d}}{c}$. It is not difficult to understand (see for example (Alexandrov,1968)) that asymptotes of this hyperbola have the following equations:

$E(R_p) = \frac{a}{c} \pm \sqrt{\frac{d}{c}}\sigma_p$ (see fig. 6.5)

Fig. 6.5. Location of the set of portfolios with minimal variances, with asymptotes and respective tangents.



Let us put the following important geometrical questions from the point of view of the fundamentals of the modern portfolio theory: do the tangents from point $(0, R_f)$ to the minimal variance set always exist, and if yes, then how many are they, in other words, do the tangents to the upper half-hyperbola and the lower half-hyperbola always simultaneously exist? And it is desirable to obtain equations of the respective tangents.

The following assertion is true:

Assertion 1

A) The tangent to the upper branch of the minimal variance set exists when and only when point $(0, R_f)$ is located on the vertical level lower than vertex $V(\frac{1}{\sqrt{c}}, \frac{a}{c})$, i.e. if the risk-free rate R_f satisfies the following inequality:

$R_f < \frac{a}{c}$, and values a and c are determined from the market indices of the risk assets (see (10) and (12)), expressed by the elements of their covariance matrix and vector of their expected returns.

The equation of this tangent has the following form:

$$E(R_p) = R_f + \frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{\frac{1}{\sqrt{c}}}\sigma_p.$$

B) The tangent to the lower branch of the minimal variance set exists when and only when point $(0, R_f)$ is located on the vertical level upper than vertex $V(\frac{1}{\sqrt{c}}, \frac{a}{c})$, i.e. if the risk-free rate R_f satisfies the following inequality:

$R_f > \frac{a}{c}$.

The equation of this tangent has the following form:

$$E(R_p) = R_f - \frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{\frac{1}{\sqrt{c}}}\sigma_p.$$

C) If point $(0, R_f)$ is on the same vertical level with vertex $V(\frac{1}{\sqrt{c}}, \frac{a}{c})$, i.e. if the risk-free rate R_f satisfies the following equation

$R_f = \frac{a}{c}$,

then there is no tangent either to upper or to lower branches from point $(0, R_f)$.

Proving

It follows from the hyperbola equation (14) that

$$E(R_p) = \frac{a}{c} \pm \sqrt{\frac{d}{c}}\sqrt{\sigma_p^2 - \frac{1}{c}} \qquad (13)$$

These are equations of the upper and lower half-hyperbolas written in the form of a function of volatility of portfolio σ_p, and the plus sign corresponds to the upper branch, while the minus sign corresponds to the lower branch.

In order to obtain the equation of tangents to these branches, let us calculate the derivative of this function with respect to variable σ_p.

$$(E(R_p))' = \pm\sqrt{\frac{d}{c}}\frac{\sigma_p}{\sqrt{\sigma_p^2 - \frac{1}{c}}}.$$

Then, the equations of tangents to these branches at a point with abscissa $\sigma_{p,0}$ should be presented as:

$$E(R_p) = \frac{a}{c} \pm \sqrt{\frac{d}{c}}\sqrt{\sigma_{p,0}^2 - \frac{1}{c}} \pm \sqrt{\frac{d}{c}}\frac{\sigma_{p,0}}{\sqrt{\sigma_{p,0}^2 - \frac{1}{c}}}(\sigma_p - \sigma_{p,0}).$$

A) Let us consider a case of a tangent to the upper branch, i.e.

$$E(R_p) = \frac{a}{c} + \sqrt{\frac{d}{c}}\sqrt{\sigma_{p,0}^2 - \frac{1}{c}} + \sqrt{\frac{d}{c}}\frac{\sigma_{p,0}}{\sqrt{\sigma_{p,0}^2 - \frac{1}{c}}}(\sigma_p - \sigma_{p,0}). \tag{14}$$

If it is demanded that this tangent should pass through point $(0, R_f)$, then it is necessary and sufficient that the identity is satisfied

$$R_f = \frac{a}{c} + \sqrt{\frac{d}{c}}\sqrt{\sigma_{p,0}^2 - \frac{1}{c}} - \sqrt{\frac{d}{c}}\frac{\sigma^2{}_{p,0}}{\sqrt{\sigma_{p,0}^2 - \frac{1}{c}}},$$

which is easily transformable to the form:

$$R_f = \frac{a}{c} - \frac{\sqrt{d}}{c\sqrt{c}}\frac{1}{\sqrt{\sigma_{p,0}^2 - \frac{1}{c}}}. \tag{15}$$

Since c > 0, this implies that $R_f < \frac{a}{c}$ and vice versa, it is obvious that under such a condition there is tangent to the upper branch. Assume that $R_f < \frac{a}{c}$.

Expressing from (15) $\sigma_{p,0}$ through R_f, we obtain:

$$\sigma_{p,0} = \frac{1}{\sqrt{c}}\frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{\left|R_f - \frac{a}{c}\right|} = -\frac{1}{\sqrt{c}}\frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{R_f - \frac{a}{c}} \tag{16}$$

Inserting (16) in (14), we obtain an equation of tangent to the upper half-hyperbola:

$$E(R_p) = \frac{a}{c} + \sqrt{\frac{d}{c}}\sqrt{\frac{1}{c}\frac{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}{(R_f - \frac{a}{c})^2} - \frac{1}{c}} - \sqrt{\frac{d}{c}}\frac{\frac{1}{\sqrt{c}}\frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{R_f - \frac{a}{c}}}{\sqrt{\frac{1}{c}\frac{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}{(R_f - \frac{a}{c})^2} - \frac{1}{c}}} \times$$

$$\times(\sigma_p + \frac{1}{\sqrt{c}}\frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{R_f - \frac{a}{c}}).$$

Reducing the obtained equation, we come to:

$$E(R_p)=\frac{a}{c}+\frac{d}{c^2\left|R_f-\frac{a}{c}\right|}-\frac{\frac{\sqrt{d}}{c}}{R_f-\frac{a}{c}}\frac{\sqrt{(R_f-\frac{a}{c})^2+\frac{d}{c^2}}}{\frac{\sqrt{d}}{c\sqrt{c}}/\left|R_f-\frac{a}{c}\right|}(\sigma_p+\frac{1}{\sqrt{c}}\frac{\sqrt{(R_f-\frac{a}{c})^2+\frac{d}{c^2}}}{R_f-\frac{a}{c}})$$

or

$$E(R_p)=\frac{a}{c}-\frac{d}{c^2(R_f-\frac{a}{c})}+\frac{\sqrt{(R_f-\frac{a}{c})^2+\frac{d}{c^2}}}{\frac{1}{\sqrt{c}}}(\sigma_p+\frac{1}{\sqrt{c}}\frac{\sqrt{(R_f-\frac{a}{c})^2+\frac{d}{c^2}}}{R_f-\frac{a}{c}}).$$

From which we obtain:

$$E(R_p)=\frac{a}{c}-\frac{d}{c^2(R_f-\frac{a}{c})}+\frac{\sqrt{(R_f-\frac{a}{c})^2+\frac{d}{c^2}}}{\frac{1}{\sqrt{c}}}\sigma_p+\frac{(R_f-\frac{a}{c})^2+\frac{d}{c^2}}{R_f-\frac{a}{c}}.$$

Reducing the last equation, we come to the following equation of tangent to the upper half-hyperbola:

$$E(R_p)=R_f+\frac{\sqrt{(R_f-\frac{a}{c})^2+\frac{d}{c^2}}}{\frac{1}{\sqrt{c}}}\sigma_p. \tag{17}$$

B) Now let us consider the case of a tangent to the lower branch, i.e.

$$E(R_p)=\frac{a}{c}-\sqrt{\frac{d}{c}}\sqrt{\sigma_{p,0}^2-\frac{1}{c}}-\sqrt{\frac{d}{c}}\frac{\sigma_{p,0}}{\sqrt{\sigma_{p,0}^2-\frac{1}{c}}}(\sigma_p-\sigma_{p,0}). \tag{18}$$

If it is demanded that this tangent should pass through point $(0,R_f)$, then it is necessary and sufficient that the identity is satisfied

$$R_f=\frac{a}{c}-\sqrt{\frac{d}{c}}\sqrt{\sigma_{p,0}^2-\frac{1}{c}}+\sqrt{\frac{d}{c}}\frac{\sigma^2{}_{p,0}}{\sqrt{\sigma_{p,0}^2-\frac{1}{c}}},$$

which is easily transformable to the form:

$$R_f=\frac{a}{c}+\frac{\sqrt{d}}{c\sqrt{c}}\frac{1}{\sqrt{\sigma_{p,0}^2-\frac{1}{c}}}. \tag{19}$$

Since c > 0, this implies that $R_f<\frac{a}{c}$ and vice versa, it is obvious that under such a condition there is tangent to the lower branch. Assume that $R_f>\frac{a}{c}$.

Expressing from (19) $\sigma_{p,0}$ through R_f , we obtain:

$$\sigma_{p,0} = \sigma_M = \frac{1}{\sqrt{c}} \frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{\left| R_f - \frac{a}{c} \right|} = \frac{1}{\sqrt{c}} \frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{R_f - \frac{a}{c}} \tag{20}$$

Inserting (20) in (18), we obtain an equation of tangent to the lower half-hyperbola:

$$E(R_p) = \frac{a}{c} - \sqrt{\frac{d}{c}} \sqrt{\frac{1}{c} \frac{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}{(R_f - \frac{a}{c})^2} - \frac{1}{c}} - \sqrt{\frac{d}{c}} \frac{\frac{1}{\sqrt{c}} \frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{R_f - \frac{a}{c}}}{\sqrt{\frac{1}{c} \frac{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}{(R_f - \frac{a}{c})^2} - \frac{1}{c}}} \times$$

$$\times (\sigma_p - \frac{1}{\sqrt{c}} \frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{R_f - \frac{a}{c}}).$$

Reducing the obtained equation, we come to:

$$E(R_p) = \frac{a}{c} - \frac{d}{c^2 \left| R_f - \frac{a}{c} \right|} - \frac{\frac{\sqrt{d}}{c}}{R_f - \frac{a}{c}} \frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{\frac{\sqrt{d}}{c\sqrt{c}} / \left| R_f - \frac{a}{c} \right|} (\sigma_p - \frac{1}{\sqrt{c}} \frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{R_f - \frac{a}{c}})$$

or

$$E(R_p) = \frac{a}{c} - \frac{d}{c^2 (R_f - \frac{a}{c})} - \frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{\frac{1}{\sqrt{c}}} (\sigma_p - \frac{1}{\sqrt{c}} \frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{R_f - \frac{a}{c}}).$$

From which we obtain:

$$E(R_p) = \frac{a}{c} - \frac{d}{c^2 (R_f - \frac{a}{c})} - \frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{\frac{1}{\sqrt{c}}} \sigma_p + \frac{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}{R_f - \frac{a}{c}}.$$

Reducing the last equation, we come to the following equation of tangent to the lower half-hyperbola:

$$E(R_p) = R_f - \frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{\frac{1}{\sqrt{c}}}\sigma_p. \qquad (21)$$

C) If there had been a tangent drawn from point $(0, R_f)$, and the condition $R_f = \frac{a}{c}$ had been satisfied, then should have been satisfied the identities:

$$\frac{a}{c} = \frac{a}{c} \pm \sqrt{\frac{d}{c}}\sqrt{\sigma^2_{p,0} - \frac{1}{c}} \mp \sqrt{\frac{d}{c}}\frac{\sigma^2{}_{p,0}}{\sqrt{\sigma^2_{p,0} - \frac{1}{c}}},$$

or

$$\sqrt{\frac{d}{c}}\left(\frac{-\frac{1}{c}}{\sqrt{\sigma^2_{p,0} - \frac{1}{c}}}\right) = 0 \ .$$

Obviously, this equation has no solutions. It means that in this case it is impossible to draw a tangent either to upper, or to lower half-hyperbola from point $(0, R_f)$. The assertion is proved.

The proved assertion has important informative consequences to understanding of the occurrence of critical crisis phenomena in the market. Here one can easily trace the bifurcation, phase transition phenomena: a sharp change in the system's behavior, in this case the market, certain interrelations between the system (market) parameters being observed.

Let us formulate a respective informative assertion, which obviously follows from Assertion 1.

Assertion 2

A) The condition for normal, favorable and stable state of the market is the observance of the following relationship between the risk-free rate and the market indices of the risk assets, expressed by the elements of their covariance matrix and vector of their expected yields:

$R_f < \frac{a}{c}$. In this case (see fig. 6.6) there exists a single market portfolio M_+, represented by a tangential point of a tangent drawn from point $(0, R_f)$ to the upper branch of the minimal variance frontier. And the market portfolio demonstrates positive expected return, which is connected with predominance in the market of the assets with positive expected returns.

B) If the market situation changes so that between the risk-free rate and the market indices of risk assets, expressed by the elements of their covariance matrix and vector of their expected yields, occurs the following equality: $R_f = \frac{a}{c}$, then the market situation spasmodically transforms from a stable to a chaotic and turbulent phase, in which the notion of market portfolio disappears in this case (see fig. 6.7). The interrelations observed in the stable phase disappear from the market, while those logics and interrelations that should appear in the unfavorable stagnation phase do not yet appear.

C) The condition for abnormal, unfavorable, stagnant but stable state of the market is the observance of the following relationship between the risk-free rate and the market indices of the risk assets, expressed by the elements of their covariance matrix and vector of their expected yields:

$R_f > \frac{a}{c}$. In this case (see fig. 6.8) there exists a single market portfolio M., represented by a tangential point of a tangent drawn from point $(0, R_f)$ to the lower branch of the minimal variance frontier. I.e. the market portfolio instantly after the market parameters pass the critical value $R_f = \frac{a}{c}$, changes its location from the upper half-hyperbola to the lower half-hyperbola. There appear new interrelations in the market that are not observed in the stable phase, that is logics and interrelations that naturally correspond to the unfavorable stagnation phase. And the market portfolio often demonstrates negative expected return, which is connected with predominance in the market of the assets with negative expected returns.

Fig. 6.6. Location of the market portfolio in the favorable stable stage

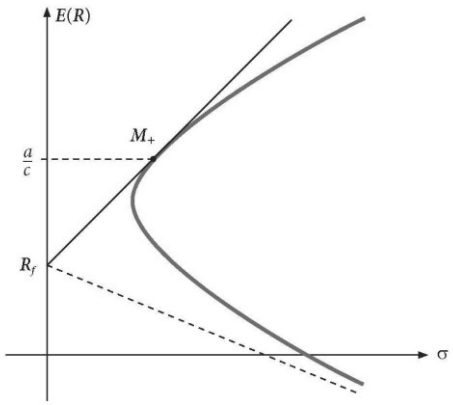


Fig. 6.7. Turbulent phase. Critical appearance of phase transition. The notion of market portfolio disappears.

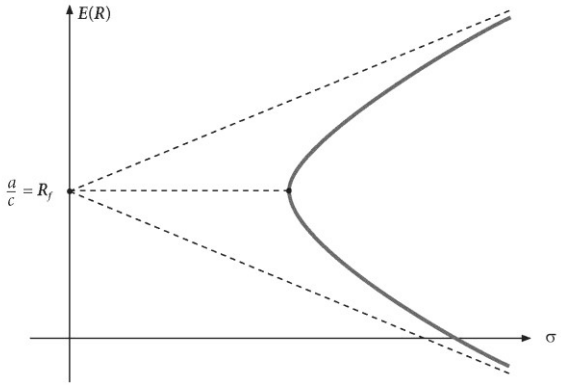
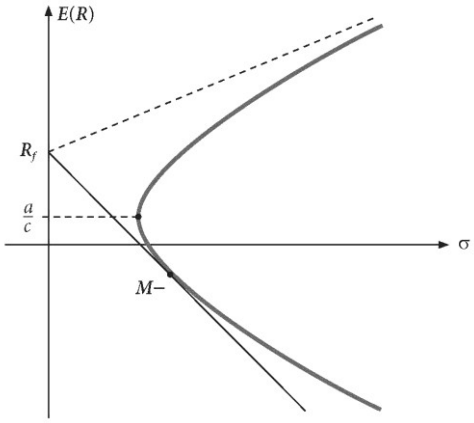


Fig. 6.8. Location of the market portfolio in the unfavorable stable stage



Of interest is the location of the efficient frontier in various phases. Recall that the efficient border usually means a set of portfolios in which at a fixed return a minimal risk level is reached, and at a fixed risk a maximal return level is reached.

In the stable favorable phase $R_f < \frac{a}{c}$, everything corresponds to a classic and well-described situation (see fig. 6.1). However, even in this case, for assets with expected returns lower than the risk-free rate, the portfolios with minimal risk are shown as a part of KL frontier (see fig. 6.9), but they do not belong to the frontier with maximal expected return; for assets with volatility from range $[\sigma(R_K),+\infty)$, the portfolios with maximal yield are located not on KL, but on a piece of tangent M_+,S.

In the unstable situation there is no efficient set and no real set of assets with maximal expected return at fixed risk, and no set with minimal risk at fixed expected return (see fig. 6.10).

Fig. 6.9. Sets of minimal risk and maximal expected yield in the stable favorable phase

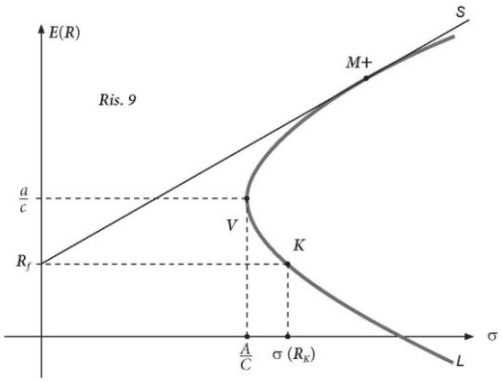


Fig. 6.10. In the chaotic phase, there is no efficient set and no real set of assets with maximal expected yield at fixed risk, and no set with minimal risk at fixed expected yield

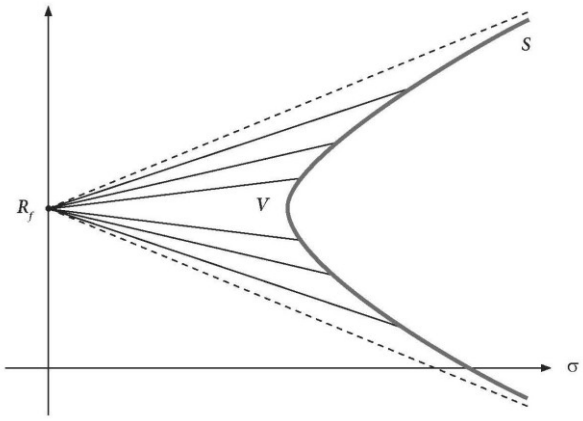
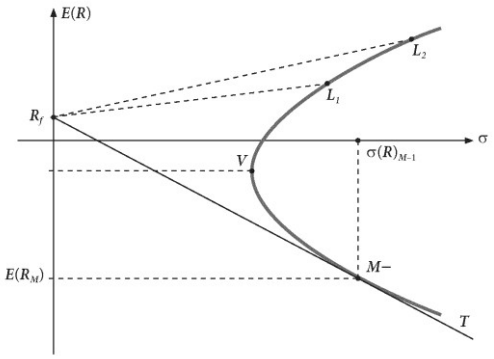


Fig. 6.11. Stable stagnation phase. The set of assets with maximal expected yield at fixed risk and the set with minimal risk at fixed expected yield



In the stable unfavorable phase $R_f > \frac{a}{c}$, the set of assets with maximal expected yield at fixed risk and the set with minimal risk at fixed expected yield do not coincide, and these sets do not always exist.

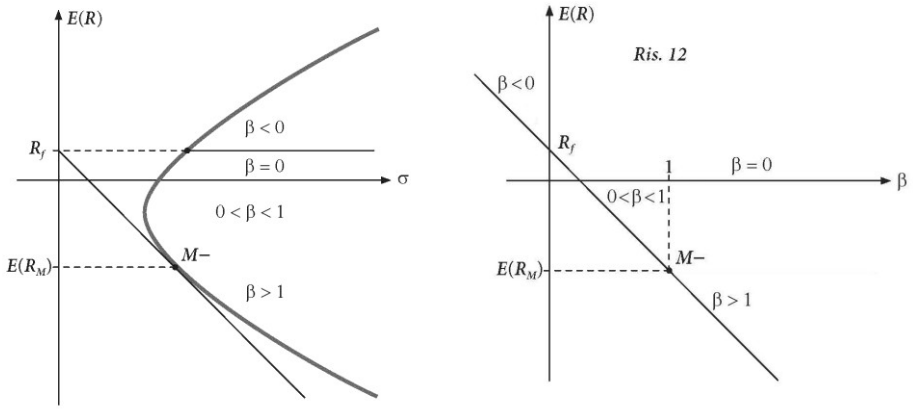
Any set of assets with maximal expected yield at fixed risk obviously does not exist (see fig. 6.11). If a set of secants is considered: $[R_f, L_1)$, $[R_f, L_2)$, etc., then it becomes clear that the farther along the hyperbola goes point L_i, the greater values of expected yield are reached on the respective ray. No ultimate line is achievable in reality (no points of this line are realizable in the form of the actually existing assets). The set of portfolios with minimal risk at fixed expected yields is described as follows (see fig. 6.11). For the expected yields from range $(-\infty, R_f)$, the optimal positions of risks were the points of tangent R_f,T, except point R_f. At the point with ordinate (expected return) R_f occurs phase transition with respect to risks, and for the expected returns from range $[R_f, +\infty)$ there are no optimal portfolios.

6.3. LOCATIONS OF PORTFOLIOS WITH VARIOUS VALUES OF β-COEFFICIENT BOTH IN MARKOWITZ UMBRELLA AND ON SML IN THE STABLE UNFAVORABLE PHASE OF THE MARKET

We have previously described (see fig. 6.4) the locations of the portfolios with various values of β coefficient both in Markowitz umbrella and on SML in the stable favorable phase of the market.

Let us proceed to describing the locations of the portfolios with various values of β coefficient both in Markowitz umbrella and on SML in the stable unfavorable phase of the market. In the stable unfavorable phase, the equation of CML (1) describes the portfolios on tangent R_f,M. And most often $E(R_{M\_}) < 0$, and following the market leads to unfavorable (often negative) results with respect to the expected returns. When ordinate $\frac{a}{c}$ of the vertex of the minimal risk frontier intersects the level of risk-free rate R_f, SML spasmodically changes its angle to axis σ from positive to negative (phase transition with respect to parameter β). The location of the portfolios with various values of β coefficient both in Markowitz umbrella and on SML in the stable unfavorable phase of the market is shown in fig. 6.12.

Fig. 6.12. Location of the portfolios with various values of β coefficient both in Markowitz umbrella and on SML in the stable unfavorable phase of the market



6.4. CONDITION FOR APPEARANCE OF PHASE TRANSITION IN THE CHAOTIC PHASE

In Assertion 2 we have formulated the condition for appearance of a chaotic phase in the market. If the market situation changes so that between the risk-free rate and the market indices of risk assets, expressed by the elements of their covariance matrix and vector of their expected returns, occurs the following equality: $R_f = \frac{a}{c}$, then the market situation spasmodically transforms from a stable to a chaotic and turbulent phase, in which the notion of market portfolio disappears in this case. Let us try to study this equality.

We shall start with a particular case when there are N = 2 of securities in the market. Recall the expressions of parameters a and c (see (8) and (10)):
$a = 1' \cdot \Omega^{-1} \cdot E$, $c = 1' \cdot \Omega^{-1} \cdot 1$,
where Ω is a covariance matrix of these securities:

$$\Omega = \begin{pmatrix} \sigma_{11} & \sigma_{12} \\ \sigma_{12} & \sigma_{22} \end{pmatrix},$$

and Ω^{-1} - is a matrix inverse to Ω. As is known (see for example (Alexandrov,1968)), if matrix Ω is not a degenerate one, i.e. is its determinant is other than zero: $|\Omega| = \sigma_{11}\sigma_{22} - \sigma_{12}^2 \neq 0$, then Ω^{-1} exists and is presented in the form:

$$\Omega^{-1} = \frac{1}{|\Omega|} \begin{pmatrix} \sigma_{22} & -\sigma_{12} \\ -\sigma_{21} & \sigma_{22} \end{pmatrix}.$$

Then we have the following expressions for a:

$$a=(1,1)\frac{1}{|\Omega|}\begin{pmatrix}\sigma_{22} & -\sigma_{12}\\ -\sigma_{21} & \sigma_{22}\end{pmatrix}\begin{pmatrix}E(R_1)\\ E(R_2)\end{pmatrix}=\frac{1}{|\Omega|}(1,1)\begin{pmatrix}\sigma_{22}E(R_1)-\sigma_{12}E(R_2)\\ -\sigma_{21}E(R_1)+\sigma_{11}E(R_2)\end{pmatrix}=$$

$$=\frac{1}{|\Omega|}(\sigma_{22}(E(R_1)-\sigma_{12}E(R_2)-\sigma_{21}E(R_1)+\sigma_{11}E(R_2)),$$

i.e.

$$a=\frac{(\sigma_{22}-\sigma_{21})E(R_1)+(\sigma_{11}-\sigma_{12})E(R_2)}{|\Omega|}. \tag{22}$$

Similarly, we obtain the following expression for c:

$$c=(1,1)\frac{1}{|\Omega|}\begin{pmatrix}\sigma_{22} & -\sigma_{12}\\ -\sigma_{21} & \sigma_{22}\end{pmatrix}\begin{pmatrix}1\\ 1\end{pmatrix}=\frac{1}{|\Omega|}(1,1)\begin{pmatrix}\sigma_{22}-\sigma_{12}\\ -\sigma_{21}+\sigma_{11}\end{pmatrix},$$

i.e.

$$c=\frac{\sigma_{11}-2\sigma_{12}+\sigma_{22}}{|\Omega|}. \tag{23}$$

(22) and (23) imply that

$$\frac{a}{c}=\frac{(\sigma_{22}-\sigma_{21})E(R_1)+(\sigma_{11}-\sigma_{12})E(R_2)}{\sigma_{11}-2\sigma_{12}+\sigma_{22}}\ , \tag{24}$$

and hence the equality of interest is presented in the form:

$$R_f=\frac{\sigma_{22}-\sigma_{21}}{\sigma_{11}-2\sigma_{12}+\sigma_{22}}E(R_1)+\frac{\sigma_{11}-\sigma_{12}}{\sigma_{11}-2\sigma_{12}+\sigma_{22}}E(R_2). \tag{25}$$

Ratio (25) means that the condition for appearance of phase transition in the market means that the risk-free rate in the chaotic phase is presented in the form of a weighted average of the expected yields of these assets:

$$R_f=w_{c1}E(R_1)+w_{c2}E(R_2), \tag{26}$$

with the following critical weights expressed through the market parameters of the securities:

$$w_{c1}=\frac{\sigma_{22}-\sigma_{21}}{\sigma_{11}-2\sigma_{12}+\sigma_{22}}, \tag{27}$$

$$w_{c2}=\frac{\sigma_{11}-\sigma_{12}}{\sigma_{11}-2\sigma_{12}+\sigma_{22}}. \tag{28}$$

Similar assertion can also be proved for a general case, with a random number N of securities in the market.

Assertion 3

The condition of phase transition in the market $R_f = \frac{a}{c}$ means that in the critical chaotic phase the risk-free rate is presented in the form of a weighted average of the expected yields of these assets:

$$R_f = w_{c1}E(R_1) + w_{c2}E(R_2) + ... + w_{cN}E(R_N), \tag{29}$$

with the following expressions for the critical weights:

$$w_{ci} = \frac{\sum_{j=1}^{N} A_{ij}}{\sum_{i=1}^{N}\sum_{j=1}^{N} A_{ij}}, \tag{30}$$

where A_{ij}, (i,j = 1,2,…,N) denotes algebraic complements of element σ_{ij} of covariance matrix Ω. It is obvious that the critical weights are expressed through the market parameters of the securities.

Proving

Let us use the expressions for parameters a and c (see (8) and (10)):

$a = 1' \cdot \Omega^{-1} \cdot E$, $c = 1' \cdot \Omega^{-1} \cdot 1$,

where Ω is a covariance matrix of these securities:

$$\Omega = \begin{pmatrix} \sigma_{11} & \sigma_{12} & ... & \sigma_{1N} \\ \sigma_{21} & \sigma_{22} & ... & \sigma_{2N} \\ \vdots & \vdots & ... & \vdots \\ \sigma_{N1} & \sigma_{N2} & ... & \sigma_{NN} \end{pmatrix},$$

and Ω^{-1} - is a matrix inverse to Ω. As is known (see for example (Alexandrov,1968)), if matrix Ω is not a degenerate one, i.e. is its determinant is other than zero: $|\Omega| \neq 0$, then Ω^{-1} exists and is presented in the form:

$$\Omega^{-1} = \frac{1}{|\Omega|}\begin{pmatrix} A_{11} & A_{21} & ... & A_{N1} \\ A_{12} & A_{22} & ... & A_{N2} \\ ... & ... & ... & ... \\ A_{1N} & A_{2N} & ... & A_{NN} \end{pmatrix}.$$

Then we have the following expressions for a:

$$a=(1,1,...1)\frac{1}{|\Omega|}\begin{pmatrix} A_{11} & A_{21} & ... & A_{N1} \\ A_{12} & A_{22} & ... & A_{N2} \\ ... & ... & ... & ... \\ A_{1N} & A_{2N} & ... & A_{NN} \end{pmatrix}\begin{pmatrix} E(R_1) \\ E(R_2) \\ ... \\ E(R_N) \end{pmatrix}=\frac{1}{|\Omega|}(1,1,...1)\begin{pmatrix} \sum_{i=1}^{N} A_{i1}E(R_i) \\ \sum_{i=1}^{N} A_{i2}E(R_i) \\ ... \\ \sum_{i=1}^{N} A_{iN}E(R_i) \end{pmatrix},$$

т.е.

$$a=\frac{\sum_{i=1}^{N} E(R_i)\sum_{j=1}^{N} A_{ij}}{|\Omega|}. \tag{31}$$

Similarly, we obtain the following expression for c:

$$c=(1,1,...1)\frac{1}{|\Omega|}\begin{pmatrix} A_{11} & A_{21} & ... & A_{N1} \\ A_{12} & A_{22} & ... & A_{N2} \\ ... & ... & ... & ... \\ A_{1N} & A_{2N} & ... & A_{NN} \end{pmatrix}\begin{pmatrix} 1 \\ 1 \\ ... \\ 1 \end{pmatrix}=\frac{1}{|\Omega|}(1,1,...1)\begin{pmatrix} \sum_{i=1}^{N} A_{i1} \\ \sum_{i=1}^{N} A_{i2} \\ ... \\ \sum_{i=1}^{N} A_{iN} \end{pmatrix},$$

i.e.

$$c=\frac{\sum_{i=1}^{N}\sum_{j=1}^{N} A_{ij}}{|\Omega|}. \tag{32}$$

(31) and (32) imply that

$$\frac{a}{c}=\frac{\sum_{i=1}^{N} E(R_i)\sum_{j=1}^{N} A_{ij}}{\sum_{i=1}^{N}\sum_{j=1}^{N} A_{ij}}, \tag{33}$$

and hence the risk-free rate is presented in the form of a weighted average of the expected yields of these assets:

$$R_f = w_{c1}E(R_1)+w_{c2}E(R_2)+...+w_{cN}E(R_N),$$

with the following expressions for the critical weights:

$$w_{ci} = \frac{\sum_{j=1}^{N} A_{ij}}{\sum_{i=1}^{N}\sum_{j=1}^{N} A_{ij}}.$$

The assertion is proved.

6.5. EXPRESSING THE INDEX OF THE EXCESS EXPECTED MARKET RETURN/MARKET RISK THROUGH THE MARKET INDICES OF THE SECURITIES IN THE MARKET

In Assertion 1 we gave proof to the following presentation of CML equation in the equilibrium favorable phase:

$$E(R_p) = R_f + \frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{\frac{1}{\sqrt{c}}}\sigma_p.$$

And the following presentation was obtained for CML equation in the equilibrium unfavorable phase:

$$E(R_p) = R_f - \frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{\frac{1}{\sqrt{c}}}\sigma_p.$$

From comparison of these expressions with the known CML equation (see (1))

$E(R) = R_f + \frac{E(R_m) - R_f}{\sigma(R_m)}\sigma$, the following assertion is derived.

Assertion 4

The index of the excess expected market yield/market risk is expressed through the market indices of the securities in the market by the following formula:

$$\frac{E(R_{m\pm}) - R_f}{\sigma(R_{m\pm})} = \pm\frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{\frac{1}{\sqrt{c}}}, \qquad (34)$$

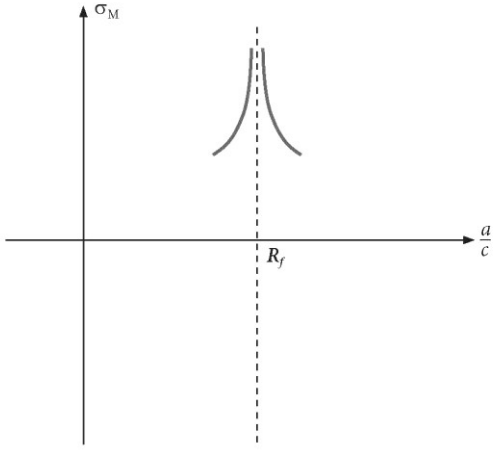
and the plus sign corresponds to the equilibrium favorable phase of the market, while the minus sign corresponds to the equilibrium stagnation phase.

6.6. APPROACHING THE UNSTABLE STATE

Of interest is the very process of the market approaching the critical unstable state. If the market parameters a, b and c in the process of the market movement change so that $a \to a_{\lim}, b \to b_{\lim}, c \to c_{\lim} \neq 0,$ and so that $(\frac{a}{c}) \to \frac{a_{\lim}}{c_{\lim}} = R_f \pm 0,$ i.e. $(\frac{a}{c})$ approaches R_f, remaining greater or less than R_f, then the volatility of the market portfolio unrestrictedly grows $\sigma_{M_\pm} \to +\infty$ (see fig. 6.13). This is not difficult to see both from the geometric considerations and from the expression for $\sigma_{M_\pm}$, which was obtained in the process of deducing assertion 1:

$$\sigma_{M_\pm} = \frac{1}{\sqrt{c}} \frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{\left| R_f - \frac{a}{c} \right|} = \frac{1}{\sqrt{c}} \frac{\sqrt{(R_f - \frac{a}{c})^2 + (\frac{b}{c} - (\frac{a}{c})^2}}{\left| R_f - \frac{a}{c} \right|} \to +\infty \ .$$

Fig. 6.13. Behavior of the market volatility when approaching the critical state



Similarly, if the market parameters a, b and c in the process of the market movement change so that $a \to a_{\lim}, b \to b_{\lim}, c \to c_{\lim} \neq 0,$ and so that $(\frac{a}{c}) \to \frac{a_{\lim}}{c_{\lim}} = R_f \pm 0,$ i.e. $(\frac{a}{c})$ approaches R_f, remaining greater or less than R_f, then the expected yield of the market value unrestrictedly grows $E(R_M) \to \pm\infty$ (see fig. 6.14). This is not difficult to see both from the geometric considerations and from the expression for $E(R_M)$, which can be obtained using the formula (18). Inserting $\sigma_P = \sigma_{P,0} = \sigma_{M_\pm}$, we have

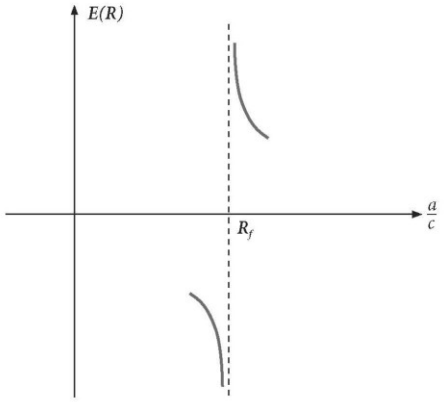
$$E(R_{M_\pm}) = \frac{a}{c} \pm \sqrt{\frac{d}{c}} \sqrt{\frac{1}{c} \frac{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}{(R_f - \frac{a}{c})^2} - \frac{1}{c}} = \frac{a}{c} - \frac{d}{c^2} \frac{1}{R_f - \frac{a}{c}} \to \pm\infty .$$

We have at the same time obtained the expression of coordinates of the market portfolio, i.e. the market volatility and the expected market yield:

$$M_\pm \left(\frac{1}{\sqrt{c}} \frac{\sqrt{(R_f - \frac{a}{c})^2 + \frac{d}{c^2}}}{\left| R_f - \frac{a}{c} \right|}, \frac{a}{c} - \frac{d}{c^2} \frac{1}{R_f - \frac{a}{c}} \right).$$

Thus, when the market state approaches the critical phase, the market volatilities tend to infinity, while the expected market yields tend to infinitely great values (modulo). And if the move towards the critical state takes place from the stable favorable phase, then the expected market yields tend to $+\infty$, and if the move towards the critical state takes place from the stable unfavorable phase, then the expected market yields tend to $-\infty$. In both cases this results in the desire to quickly shed the assets located in the portfolio, followed by growing illiquidity of the assets. And this is the real manifestation of the critical crisis phenomena under investigation.

Fig. 6.14. Behavior of the expected market yield when approaching the critical state



6.7. CONCLUSION

The problem of crisis occurrences in markets, reasons and mechanisms of their origination is of great interest. In the works (Limitovskiy and Minasyan 2009), (Limitovskiy and Minasyan (part 1) 2010), and (Limitovskiy and Minasyan (part 2) 2010), this problem was considered in context of appearance of heterogeneous volatilities in the market. And, in particular, it was found out that starting from a certain level of growing heterogeneity of volatil-

ities, the risks of portfolios, including the market portfolio, cease changing in accordance with the classical diversification rule. When the assets grow in the portfolio, the non-systematic component of the risk may not tend to zero, and in some cases even grow. At origination of strongly developed heterogeneous volatility, some classical ideas of the portfolio theory (see (Elton et al., 2007), Markowitz, 1952), Markowitz, (1959)) require adjustments. And thus, a certain mechanism of appearance of the critical market phenomena was investigated.

In the present work, the mechanism of appearance of the crisis phenomena is investigated with respect to how the critical changes of the market state are reflected in the market (market portfolio) state. The conditions for appearance of the crisis phenomena are determined and the parameter is detected whose value defines the closeness of the crisis phenomena, and the moment of its origination, which it is natural to call distance before crisis.

This is value

$$M_{cr} = \frac{a}{c} - R_f ,$$

smallness of which signals about the growth of the crisis phenomena. Thus, during the practical asset and portfolio management, there appears a criterion that helps understand the closeness of the critical phenomena and take respective risk- management decisions. This also may be a meaningful signal about possible change of the risk-free rate value or the market regulation rules for the state and authorities. The work also thoroughly investigates the conditions for appearance of the crisis phenomena.

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7 THE CAREER WOMEN: RECONCILING WORK AND FAMILY LIVES

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ABSTRACT

This paper reviews the literature on hurdles that career women face. It additionally seeks to illustrate the importance of reconciling work and family not only for the wellbeing of women themselves but also for the benefit of organizations to be able to retain a talent pool as rich as that of the female workforce. Reconciling strategies of work and family lives are also proposed. With the changing gender patterns and evolving roles of women, the labor force is witnessing a steady increase in the number of women throughout the world. Work plays a remarkable role in people's lives, as it is an utmost significant source of income, personal realization, personal and professional improvement. However, compared to men, working women, especially women with domestic responsibilities face many hurdles that prevent them in progressing in their career, whether as employees or employers. The society often emphasizes a woman's basic responsibilities as performing household chores and child care provider. As long as this belief prevails, working women will face more struggles. An increasing number of women are engaged in diverse roles of wife, mother, caretaker of elderly parents, employee or employer amongst others. Rather than playing one role at a time, in such a role proliferation, women perform concurrently an accumulation of distinct roles, and each of them necessitating profound dedication. Playing different roles may have a negative impact on their career, family and health if they do not or are not able to reconcile the various roles. This situation concerns many working women in developing or developed countries alike, whether they are employed at floor, middle management, and senior management levels or are employers themselves. Some suggestions to reconcile the work and family lives of career women are proposed. It is important for the career women to have a good management of work and family lives. Policy makers could encourage organizations to implement work-family programs, employers could provide more flexibility to working women and family members could provide more support to these women.

Key words: Women, career, family, entrepreneurs, work balance

7.1. INTRODUCTION

More and more women are entering the labor force around the world for financial as well as personal reasons. Women are present in the labor force as employees or employers and their work is a means through which they develop and actualize themselves, as well as make a place for themselves in their environment (Itani et al.,2011). Alongside this upsurge, many challenges are becoming apparent. No matter how modern our society has become the primary responsibility of women as opposed to their male counterparts, remains family and domestic responsibilities (Rehman and Roomi, 2012). An increasing number of women are engaged in diverse roles of wife, mother, caretaker of elderly parents, employee or employer amongst others (Sharma, 1999). Rather than playing one role at a time, in such a role proliferation, women perform concurrently an accumulation of distinct roles, and each of them necessitating profound dedication (Kopp and Ruzicka, 1993). Therefore, balancing work, personal and social lives is often more complex for women than men (Bird, 2006) and they often lag behind in as far as improving their career prospects and quality of life (Cross and Linehan, 2006; Rehman and Roomi, 2012). Women tend to organize their professional lives around personal matters (Todd, 2004) Studies have also demonstrated that although women attach significant importance to their careers for diverse reasons, such as, a source of income, economic independence, need for achievement, personal and professional improvement (Gustainiene and Endriulaitiene, 2009), many of them nonetheless opt out of employment because of stress related within and outside the work domain (Muhonen, 2011). Additionally, juggling different roles may have a negative impact on the health of these career women since they devote less time to their own well-being (Houle et al., 2009). Various research studies show that this situation concerns many working women in developing or developed countries alike, whether they are employed at floor, middle management, and senior management levels, entrepreneurs or are employers themselves (Rehman and Roomi, 2012; Muhonen, 2011; Sharma, 1999; Foley et al., 1999).

In their study on employees in managerial positions, Torkelson and Muhonen (2003) acknowledge that both male and female managers have to deal with a high workload; however various studies also point out that woman in managerial positions experience more stress within and outside their workplace than their male counterparts (Nelson and Burke, 2002; Davidson and Cooper, 1987). As far as women entrepreneurs are concerned, they also face difficulties in balancing personal responsibilities and achieving their professional objectives (DeMartino et al., 2006; Shelton, 2006) since they are responsible primarily for both their business and home. Stress experienced by women linked to the workplace include low salary, sexual harassment (Burke and Richardsen, 2009), the glass ceiling (Muhonen, 2011) which is a metaphor used to describe the structural difficulties faced by women when attempting to

advance in their organizations. Stress outside the workplace is due to their personal circumstances and very often linked to work-family conflict (Fielden and Cooper, 2001), especially for married women. Studies have shown that women employees, especially mothers feel more rushed and overwhelmed than fathers and perceive higher levels of conflict between their work and family roles (Frone, 2003). This feeling often leads to a scaling back or even opting out of the labor market for many talented and well-educated women (Tischler, 2004). In the present context where there is a need for talented, skilled and experienced workers in many industries, it is important to understand and address the work-family conflict and also how to reduce the conflict in order to tap into, a talent pool as rich as that of the female workforce. Hence, this study draws from the literature and attempts to illustrate the importance of reconciling work personal and social lives for the overall well-being of the career women and also for the benefit of stakeholders.

7.2. WOMEN PARTICIPATION IN THE LABOUR FORCE

The trend in employment has witnessed considerable changes over the years as a result of globalization and the increasingly competitive environment, especially from countries with lower-wage economies; the rapid changes and adoption of new technologies as well as the increasing customer expectations for a 24/7 service in various sectors (Woodward, 2007). Social and cultural shifts have also brought about changes in the patterns of employment. Thus, women nowadays represent a significant proportion of the labour market worldwide (Houston, 2005). For instance, in the UK, the proportion of female employees aged between 16 and 24 stands at 67% (Woodward, 2007). In the USA, women comprised 47% of the total U.S. labor force (In developing countries, although as compared to men, the participation rate in the labor market is inferior, still statistics demonstrate that women's participation has been increasing. Taking Pakistan, a patriarchal society, Rehman and Roomi, (2012) state that there has been an increase from 11.4% in 1994-1995 to 16.0% in 2004-2005. In India, women's work participation rate, which was 19.7% in 1981, rose to 25.7% in 2001 (Paul, 2010). In Mauritius, 42% of women aged 16 years and above were economically active in 2008 (CSO, 2009).

Acknowledging the fact that women are joining the labor force more ever than before, they nonetheless lag well behind their male counterparts in all spheres of work, whether as entrepreneurs, or in the corporate domain. For instance, managerial and professional women, while in lower level professional and managerial jobs, are considerably under-represented in senior management and executive positions worldwide (Burke and Mattis, 2008). Although women have obtained the necessary education and work experience, they still face numerous hurdles to these high level ranks and one of them is family responsibilities (Burke, 2009).

7.3. WORK AND FAMILY ROLES CONFLICT

Role conflicts often arise when any one individual plays different roles, for instance, being employed and being a spouse and parent and where there are multiple and incompatible sets of demands (Duxbury and Higgins, 2003). When family responsibilities prevent individuals from attending to work demands and when professional obligations make it hard to meet family obligations, role conflicts arise (Houle et al., 2009). These conflicts can impact negatively on lives of individuals. This situation is more customary for working women, because even when employed, or being their own boss, women in general have the prime responsibility of childcare and domestic chores more than their male counterparts (Collins, 2007). The following sections review the literature on the work and family conflicts that women face in the context of women entrepreneurs and women employees in general. The health problems associated with work and family conflicts are also discussed followed by the coping strategies to reconcile these conflicts.

7.4. WOMEN ENTREPRENEURS: THE DILEMMA OF WORK AND FAMILY

Children and marriage are among the motivating reasons for women choosing an entrepreneurial career (Caputo and Dolinsky, 1998) as this type of career option provides more flexibility than the duty bound career in a traditional corporate job. However, fitting business with family obligations has its complexities for most women particularly those having children (Wilmerding, 2006). While working hard to achieve success in fulfilling the work and family responsibilities, women tend to overexert themselves and often make difficult choices, even at the cost of their own health only to satisfy their customers and keep their families happy (Rehman and Roomi, 2012). For women who choose entrepreneurship as a career, the dilemma of work and family can be a serious concern as they are responsible for the success of their own business and the welfare of their employees (Kim and Ling, 2001). Success for entrepreneurs is synonymous to personal success, therefore for women entrepreneurs, their dedication and commitment to their work is much greater than women employees (Carter and Cannon, 1992). Studies also report that married women entrepreneurs face difficulties in reconciling their work and personal and social lives. Women entrepreneurs normally work more than 50 hours per week (Aryee, 1992; Kwek, 1996), hence they spend less time with their family and friends, and even less in taking time off for themselves to relax. This has a negative impact on their job satisfaction, life satisfaction, health and for those who are married, marital satisfaction (Arora et al., 1990). Therefore, work-family conflict can affect the well-being of a person, influencing a person's satisfaction with his/her job, social relationship, for example marriage, and life as a whole.

Moreover, in many societies, especially in patriarchal ones, it is taken for granted that women cannot compete equally with men on professional grounds where societal mindset considers a woman's business as secondary to her husband's work and family (Ahl, 2007). In such cases women entrepreneurs face many challenges in achieving a balance in their work and personal obligations. In their study surveying women entrepreneurs in Pakistan, Rehman and Roomi (2012) found that the challenges women faced in achieving work-life balance included lack of sufficient time, husband's non-involvement in domestic chores, cultural, societal and family norms, as well as gender biases. They further highlighted that women entrepreneurs had to work hard to manage the overload of work and domestic engagements due to which their quality of personal life suffered. Juggling with the competing demand of work and family roles they have to work long hours, which greatly affects the quality of life of women entrepreneurs (Rehman and Roomi, 2012).

7.5. WOMEN EMPLOYEES: WORK AND FAMILY PRESSURES

In the case of women employees, some studies suggest that women may experience stress at work due to the inflexible nature of the organization or workplace (Carmicheal et al., 2013). This may impact negatively on their home and domestic responsibilities and thus they prefer to leave their employment. In their study examining the relations among work and family conflict, Houle et al., (2009) found that the more levels of interference between work and family increased, the more women felt exhausted and tense, the less they were committed to their employer, and the more likely they were to consider quitting their job. Furthermore, the demands on working women's non-working time can be intensified by the trend towards dual responsibility of child dependants and parental dependants as longevity increases. This view is reinforced by Carmicheal et al., (2013) who in their study found that more women than men had either changed jobs or moved out of work completely because of caring responsibilities, which excluded child care. Such pressures are very often not taken into consideration in resource and organizational terms by employers. Although some governments and employers are taking positive steps towards putting in place family friendly policies, it is observed that the division between government policies and employment reality has yet to be overcome in the workplace (Foley et al., 1999).

Societal norms are also blamed for the imbalance between work, personal and family lives of women employees. For instance, in patriarchal societies, observations similar to the case of women entrepreneurs have been reported. According to Turkish data both man and women see women's place as in the home, and the importance of mother and family roles for women (Fiksenbaum et al., 2010). It is further highlighted that the highest hurdle for career advancement of women was the societal norms of appropriate gender roles (Vinnicombe and Bank, 2003).

7.6. HEALTH PROBLEMS ASSOCIATED WITH THE WELLBEING OF THE CAREER WOMEN

The impact of not being able to reconcile work, personal and family lives can have a negative impact on women's wellbeing. The multiple roles that women embracing an entrepreneurial career or choosing the corporate ladder have to play have been reported to cause various adverse effects on women's health, both physical and mental (Sharma, 1999). Studies show that women in such cases experience difficulties in concentrating, lose self confidence and have low self-esteem, are unhappy and depressed and a have a feeling of being a worthless person (Gustainiene and Endriulaitiene, 2009). Other negative effects highlighted by Hughes and Galinsky, 1994) include several health problems such as overeating, smoking, drinking, taking tranquillizers, trouble in sleeping, feeling nervous and tense, loss of appetite, difficulty waking up in the morning, shortness of breath, heart palpitation, dizziness, perspiring hands, and back pains). In a study of women managers, Muhonen (2011) observes that the most frequent health problems women faced in stressful situations included pain in their shoulders, neck, lower back, heartburn, gastritis, ulcer and migraine. These health problems are also linked to the combination of high demands from both work and private lives.

This can have implications for both the women employees and the organization. The employees would be more committed due to job satisfaction and the positive consequences of job satisfaction for the organization include reduced turnover, a more committed workforce, enhanced work efficiency (Ybema, 2008), increased goodwill, remaining competitive and being recognized as a socially responsible employer by its stakeholders. As Houle et al., (2009) state "companies having programs and policies that support work-life balance and foster women's sense of efficacy may be one of the simplest and most effective way of benefiting from, and tapping into, a pool as rich as that of the female workforce" (p. 279).

Earlier research has shown that working women face a number of demands and difficulties that make them more vulnerable to health problems, but also more inclined to quit their jobs or positions (Burke and Richardsen, 2009). Hence, working women, from all walks of life, would be well advised to look after their health in order to maintain a balance in all their responsibilities. The importance of control at work for occupational health and well-being has been highlighted by Muhonen (2011) who found that those who considered themselves as healthy took care of themselves and tried to maintain regularity concerning both their eating and exercising habits. She also found that "although their work has been an important part of their lives, they had not lived only for their jobs, but had meaningful activities outside work (Muhonen, 2011, p.428) In other words, working women should try to draw a line between work and their personal and social lives. However this view may

well contradict the observation made by White et al., who pointed out that balance can be achieved through the strength gained with the overlapping of personal and professional lives.

7.7. COPING STRATEGIES TO RECONCILE WORK AND FAMILY LIVES

Women face many constraints in trying to create a balance amongst the various roles they juggle simultaneously. Some coping strategies that could help in creating a balance between work and family could include employing domestic helpers to reduce household and childcare pressures (Itani et al., (2011). This would reduce the stress and to some extent the guilt of not taking care of domestic responsibilities. The importance of good management has also been cited as a way to reconcile work and family. Rehman and Roomi (2012) found that in the case of women entrepreneurs, they have two domains: that of the family and work. They suggest that in order to achieve entrepreneurial success in each domain, leadership skills, including planning, organizing, delegating and relationship building should be a priority. When a woman decides to set up a business of her own, she must acknowledge that each domain cannot stand in isolation and cannot be managed as separate bodies, but have to be integrated into real life (Rehman and Roomi, 2012). This integration will at some point result in an overlap of personal and professional lives and it is observed that through this overlapping strength can be found and balance achieved (White et al., 2003).

Similarly for women employees, Houle et al., (2009) observe that conflicting demands between work and family lives, are not inescapable, and that a firm belief in one's own abilities can be emotionally and professionally enhancing in itself. Doress-Worters (1994) also supports this view by arguing that women with multiple roles have been found to be enjoying better physical and psychological health since they cherish motivational stimulation, self esteem, sense of control, physical stamina, and burst of energy. However, this view should be taken with caution and cannot be generalized as the effects of complex interactions among various life variables should not be ignored. Nonetheless, the belief that women can cope well in both domains can be reinforced by supportive attitudes and constructive feedback such as searching for role models or mentors to whom they can identify to in terms of age, experience, and challenges, and who will be able to assist them with respect to reconciling work and family (Houle et al., 2009).

Employers could also contribute in reconciling the balance of work and family of female employees. As suggested by Carmicheal et al., (2013), women tend to leave employment because of lack of flexibility in their workplace. Hence, to retain these employees, employers can review the work schedules and practices by providing more flexibility. A survey on employees' attitudes

revealed that 94 percent of employers and 95 percent of employees viewed that people give their best at work when they can balance their work and other aspects of their lives (Stevens et al., 2004). Policy makers need to encourage organizations to implement and improve work-family programs for the benefit of all parties. In some countries, for instance in Canada, the government has made work-life balance a priority whereby investments are made to improve parental benefits and the quality and availability of daycare (Houle et al., 2009). Organizations, especially in advanced societies have become increasingly aware and they acknowledge the fact that employees have personal obligations that compete for their time and they make various efforts towards their employees to reconcile work and their personal lives (Dick and Hyde, 2006). Hence, in an effort towards reducing the conflict between the various roles of women employees, the corporate policies of organizations could be made to be more flexible, employee-benefit programs could be reviewed to address the employees' current needs so as to facilitate the management of work and family demands.

7.8. CONCLUSION

Today still, women remain unequal in various ways. The career women do still experience a degree of work-family conflict more than their male counterparts. The main source of work-family conflict is the caring responsibility that these women have and which includes child dependants as well as parental dependants in some cases. These women therefore organise their work considering their family responsibilities first and as a result their work life suffers. When working women face difficulties in balancing their work and family lives, they either change jobs or move out of work completely. For women entrepreneurs, the dilemma of work and family is a serious concern as they are responsible for the success of their own business and the welfare of their employees. In some societies, such as in patriarchal societies, the career women do not enjoy the same status as their male counterparts and cannot aspire to career development as the societal norms of appropriate gender roles are seen as the highest hurdle. Not being able to reconcile work and family lives may lead to several emotional and health problems. Organisations may lose out if well educated and talented women decide to change or opt out of employment altogether. To lower hurdles associated with work and family conflicts, women need to be able to manage their time appropriately and they should also be able to take time off for themselves. The family members could also support the working women by sharing domestic responsibilities. Policy makers could encourage organizations to implement appropriate work-family programs. The work place could offer more flexibility in terms of working hours and provide and improve leisure facilities to help relieve stress. By doing so, companies can design more supportive environments and achieve financial success without putting at risk women's wellbeing. This can also be one of the simplest

and most effective ways in benefiting from, and tapping into, a talent pool as rich as that of the female workforce.

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8 'IT'S A PLEASURE' - IS THE LOCAL POPULATION RESONATING WITH THE BRANDING OF MAURITIUS?

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ABSTRACT

Purpose: In October 2009, the Mauritian government took the initiative to brand Mauritius in an attempt to position the island, in the context of the new and complex economic and environmental challenges facing the island. This project was conceptualized in 18 months. Four years on, no studies that have been carried out to evaluate how this new image has allowed us to promote Mauritius better in order to attract more tourists, to increase our export and encourage foreign direct investment. The role of the local population is significant in the success of this project and the objective of this study is to assess the extent to which the local population is resonating with this new project.

Methodology: For this study, Echtner and Richie's model (1993) was used to assess the perceived image of Mauritian residents towards the island branding: 'It's a pleasure'. This comprehensive model encompasses the tangible and intangible and unique components of the nation's image, capturing these dimensions by using both structured and unstructured methodologies. A sample of 154 participants aged 18-60 was targeted, using a survey questionnaire over a period of 2 weeks in March across various strategic shopping malls in the island.

Findings: The findings of the survey demonstrate that 66% of the participants have seen communications on branding Mauritius via the TV, press, billboards and magazines and online. However, although 55.30% of the respondents agreed that the slogan is descriptive of Mauritius, 44% of the sample found the term 'pleasure' as inappropriate because of the implied sexual connotation of the term, when used in the Mauritian context. 64.05% of the respondents showed a lack of empathy and could not identify themselves with the brand. Furthermore, 53.32% disagreed that the tag line is a contributor to the brand. Only 30.47% agreed to contribute towards the brand and showed their optimism towards the idea. It should be noted that 40.40% of the respondents neither agreed nor disagreed and were neutral to the idea. With respect to locally made products, although, Mauritians are well aware of the label 'Made in Mauritius brand', they do not search for this label and prefer to buy goods that are imported. The study also found that Mauritians in general showed no interest in heritage sites and museums.

Conclusion: Although this study shows some encouraging signs and having attracted a lot of attention from the media and generated a lot of discussion on national identity, there is a need for a strong and coordinated communication campaign to raise awareness among the citizens of Mauritius in order to generate passion in nation building. As it takes many years to establish a brand image, name recognition to develop brand recall of a destination or product, awareness campaigns and educational tours can be organized to sensitize the population, young and old, of the importance of our history and make these events memorable and enjoyable – for example, use of 3-D technology to simulate the lives our forefathers had lived in building this country. Legends and heroes of the country can be used as brand ambassadors and also be included in part of our curriculum.

Limitations: The main limitations of this study are: although significant, this study explores the role of branding from the local perspective only, and does not provide an outside-in view, and the sample size may be too small to make generalizations.

Key words: Branding Mauritius, model, it's a pleasure, resonance

8.1. INTRODUCTION

More than ever before, producers are now facing stiff competition to be able to compete and to sustain economically on the global platform. There is need for them to differentiate their products in order to boost their competitive edge. Branding is an important marketing tool which producers should not neglect if they want to have a share of the market. According to Kotler, (1998), "a brand is a name, term, sign, symbol or design, or a combination of them intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of other sellers." To alter the attributes of a particular product so as to make it more appealing against competitors does not suffice. Promotion activities should be carried out so that customers are informed why they should purchase a specific brand and they must be ensured that the brand provide solutions to solve their specifics needs.

Countries also face the need to rejuvenate themselves by repositioning their image; this can be achieved through what is called country branding. Country branding is still in its infancy stage and scholars are still doing researches to develop a congruent set of theories to provide a better explanation to this concept. Hence, till now there is no proper definition available for this concept. Somehow, according to the wiki page of country branding, it has been defined as the use of marketing tools to change the perception and attitude of a targeted market towards the image of a particular place or nation. In theory, product and country branding is the same both have to identify and communicate these attributes which will encourage the target market to associate themselves with, Supphellen, cited Frost, (2004). However, Frost (2004) argued that a product can be modified after it has been launched to meet the demand of the customers but as far as countries are concerned, marketers have less control in modifying the countries' offering. Previously, countries used their national image such as their traditional costumes, flags, anthems to build

their brand identity (Dinnie, 2008). But with this method, in the long run the images used can be outdated. It should be noted that nation branding differs completely from the concept of destination branding. The latter is more about the promotion of tourist destination with the sole aim of encouraging tourists to visit the country. Apart from tourism, nation branding covers a wider range of aspects such as exportation, culture and heritage, governance, people and investment as it is clearly represented by the Anholt Nations Brands hexagon on the gfkamerica website.

8.2. THE CHALLENGES FACING NATION BRANDING

Quelch and Jocz (2005) argued that when tourists visit a particular destination, there may be a mismatch between the projected image of the destination and from the reality of the country which will cause disappointment amongst the tourists. This will cause damage to the brand image and this may lead to low repeat visits. Another challenge is that there can be a lack of cohesiveness between the local authorities and the government where the mayors may want to promote his city differently. Anholt (2008) argued that the challenge lies in the fact that all stakeholders should be committed to the development of the national image. He further mentioned that each stakeholder should adopt an attitude that will make a difference when they work towards building the nation brand. Keller, (1993) further argued that the basic statement of brand equity is that its power lies in the customers' thoughts, feelings, images, beliefs, and attitudes which they have formed from their previous experiences and from what they had learned about the brand over time. Different scholars have expressed brand equity differently but there is a consistency which can be denoted that brand equity represents the additional value a product or service benefits from marketing activities (Tuominen, 1999).When it comes to nation branding, Dinnie (2008) said that a nation can be branded by using different facets of their exclusive set of characteristics. The reputation, popularity and image of a country are the result of nation brand equity which is closely associated to the actions of the different stakeholders (Van Ham, 2004).

There are a number of ways in which brands have been defined in literature. According to the Kotler, (1988), "a brand is defined as a name, term, sign, symbol, design, or a combination of all these elements that is intended to identify the goods or services of a seller and differentiates them from competitors." Simeon (2006) argued that a brand also comprises of emotions and as soon as a new name, logo or symbol is designed for a particular product; a brand name is created along with it. Anholt (2004) further stipulates that a brand is intangible because the value which customers hold for a brand lies in their expectations which they have from the brand in terms of trust based on its performance, guarantee for its reputation and ultimately for the service they received when purchasing or consuming the product. This view is shared by Morgan and Pritchard, (2004), who found that brand value is indeed intangible

because when customers trust a brand due to their reputation or performance, it is triggered by their emotions and the latter allows the customers to connect with the brand. Branding therefore can be defined as an activity, whereby brand owners associate the brand name of a particular product, service or destination with information, meanings and emotions. In other words, they are dimensions which customers would consider as determinant in their decision-making process (Walvis, 2007). Branding is also a process of developing brand awareness to the targeted market through the use of different media where emphasis is stretched upon the attributes of the subject with the aim of differentiating it against the competitors. (Leisen, 2001). Cameron and Baker (2008) added that branding is to create "an emotional connection with consumers through the development of a unique personality or image for a product or service." A powerful brand has the ability to indulge customers in making repeated purchase because they trust the brand and stick to it which is is referred as loyalty.

8.3. NATION BRANDING

A nation consists of a large group of people of the same race sharing the same culture, language, history and lives in a particular territory governed by one government. The Oxford, (2007); Longman, (1995). On the other hand, a country is an area which is occupied by a nation (Fan, 2006). O'Shaughnessy (2000) argues that a country is something very different compared to a product thus it cannot be accepted as a concept. Instead the idea of portraying a national image which is closely associated to a common culture which includes norms, values and institutions is a more viable approach. The idea of nation branding can be constituted by taking into consideration the characteristics of the country where the emphasis is laid upon a collection of essences which includes its people (Wilder, 2007). It also takes into account the people of the country and encourages them to get themselves engage to develop and build the brand (Anholt, 2007). Fan (2006) has defined nation branding as the application of branding strategies on a national scale to promote the image and to build the country as a brand. It is a consistent effort to articulate a compelling and competitive strategic vision which is encoded and supported through every communication activities between a country and other countries (Anholt, 1998). Putting it in his own words, Szondi (2008) said that it is a "strategic self-presentation of a country with the aim of creating reputational capital through economic, political and social interest promotion at home and abroad." Fan (2006) had identified a wide variety of factors which represent and contribute to what the brand has to offer. Amongst these factors, they include place, natural resources, people, history, culture, language, political and economic systems, social institutions, infrastructure, and famous persons. The aim of nation branding is to portray these intangible assets into symbolic verbal and visual messages to create an emotional link with a diverse set of audience (Jaffe and Nebenzahl, 2001). With globalization there has been a need

for countries to be more competitive on the world stage. This has led to the emergence of nation branding where brand management techniques are used so that they can position themselves effectively (Dinnie, 2008). Since then studies of nation branding have been increased in importance during the last decades. Nation branding studies can be found under different 4 categories; country-of-origin (COO), destination branding, public diplomacy and national identity (Fan, 2010).

8.4. COUNTRY-OF-ORIGIN

Country-of-origin is one of the fundamental principles of nation branding (Fan, 2006). According to Lee (2009), in the tag "made in" has always been a determinant factor that has enabled customers to create a stereotype and reputation about a country and thereof linking products from specifics country. Products which are originated from developed countries can easily affect the consumers purchasing decisions (Lee, 2009). Consumers analyze the image of countries and then the related products thereby affecting their knowledge and experience about these two determinants where feedbacks of the latter are formed (Nebenzahl*et al*, 1997). In a study carried out by Chinen (2000), it shows that there is a direct relationship when consumers make their purchase, their perceived image about the product and the political image of the country. Another highlight of this study is that when consumers make evaluation, the country-of-origin image has a more impactful effect compared to the product's brand (Chinen, 2000). However if the country-of-origin image is negative, a strong brand name is not sufficient to overcome this shortage in the consumers perceptions (Ahmed *et al*. 2002). To ensure long term gains in term of profits, market shares amongst others, the study suggests that companies need to associate with strong country-of-origin. In recent years, country-of-origin has become an important practice for multinational companies (Harzing and Sorge, 2003). Anholt (2003) put forward the idea that country-of-origin should be used more creatively through branded exports and by companies which are aiming to develop and build the countries' economies for emerging markets. Kotler (2002) said that countries should put more emphasis to nation branding and use it as a strategic management tool. A positive country image can positively affect the attitudes which customers have in respect to the products and services from that particular country. Subsequently, more tourists can be encouraged to visit the country there could be more foreign investments (Kotler, 2002).

But the effect of country-of-origin is just one component of nation branding (Jaworski and Fosher, 2003) and the gain from the country-of-origin is only symbolic of the value of the product (Anholt, 2005). Nation branding is a more complex phenomenon (Anholt, 2005). Nation branding is the seeking out of a country's characteristics and its assets to differentiate itself from other countries and thereof to promote the nation's image on the global market

(Dinnie, 2008). The importance of country-of-origin in nation branding is huge but as the perceptions of consumers change with time, it is not an aspect which can be relying upon solely (Dinnie, 2008).

8.5. IMPORTANCE OF NATION BRANDING

The importance of nation branding has been mentioned by Kotler et *al.* (1999) cited by Woo (2009). are as follows:

- Due to the fast changes occurring in the global environment, countries need to adapt themselves to these changes so that they stay in accordance with the current realities and avoid of being outdated and outpaced.
- With time, countries face the risk of urban decay, where a previously functioning city falls suffers from wear and tear. Having a strong brand will help the countries to cope firmly in these difficult times and dispatch any negative publicity which may have resulted.
- In an attempt to attract more tourists and affluent residents, countries need to be branded so as to stand out as the most attractive destinations
- Lastly, for self-governance and local funding, it helps countries to organize and host international events thereby positioning them on the world map. This will enable them to raise funds through hotel charges, tickets revenues and fees from live telecasts.

8.6. CONCEPTUAL FRAMEWORK

There are a number of models which are cited in literature which can be used for a strategic nation branding campaign, Dinnie (2008) designed a model which he termed 'Model of asset based nation brand equity' Gilmore (2002) conceptualized a model to identify the fundamental factors which influence the brand of a nation and she proposed that the brand of a nation consists of 3 layers. The spirit of the local people develop a positioning which is meaningful inspirational, challenging, differentiating and translatable for each of the different audiences and the third, are the stakeholders which are normally the targeted audiences. Anholt (2003) has developed a hexagon in which six areas of national competence were identified and represents the perception which people have for a country brand. They are people, tourism, exports, culture and heritage, governance and investment and immigration. For the purpose of this study, the Echtner and Ritchie Model was found to be appropriate and which consist of the following:

Destination image can be classified as having two main components: those that are attribute-based and those that are holistic.

- These components hold two characteristics functional and psychological. The functional characteristics relate more to the tangible aspects of the des-

tination like climate and infrastructures while perception on psychological characteristics is concerned with the intangible aspects such as safety and friendliness.

- These images of the destination can be further classified as common functional and psychological traits or as unique features and feelings.

8.7. METHODOLOGY

The objective of this study was to assess the extent to which the local population is resonating with this new project. A representative sample of 154 participants took part in this survey, aged 18-60, using a face to face interview over a period of 2 weeks in March across various strategic shopping malls of the island.

8.8. FINDINGS

51.3% of the respondents were female and 48.7% male. The age group of the respondents were as follows: 48.70% of the respondents are between 18 and 25; 33.10% are between 26 and 35 and the rest were between 36 and 60. As far as the education attainment of the respondents is concerned, 0.65% has an academic background which was restricted to the primary level, 29.22% have completed their secondary education, and 54.55% were university graduates, holding at least a Diploma or BSc (Hons) while 12.99% had their masters and finally there are 2.60% who have followed other trainings. Concerning the level of income per month, 9% did not have a monthly income, 12.60% received an income below 5,000, 18.20% between 5,000 – 10,000, 32.10% got 10,000 – 20,000. 9.70% between 20,000 – 35,000, and finally the rest received an income of over 35,000. With regards to the ethnic group of the respondents, a large majority were Hindu which is represented by 42.90%. Muslim respondents were 20.80%, the General Population were 17.50% while the Sino-Mauritian were represented by 7.10% in this survey and lastly 11.70% were identified as others.

To assess the extent to which the respondents were aware or if they have ever heard of Mauritius – It's a Pleasure, a filter question was used. It was found that 78% of the respondents had heard of the slogan while 22% were not aware of it. The primary objective of this question was to evaluate the views of the respondents about the appropriateness of the term used in the slogan. 44% of the respondents found that the term 'pleasure' as inappropriate, while 34% of the respondents said they were neutral by not declaring a view. From these findings, it can be deduced that a large proportion of Mauritians do not relate well with the slogan. One plausible reason to explain this; is may be Mauritians find the word 'pleasure' vulgar because in their native language creole the word can be used to have double meaning. 66% of the respondents

had seen an advertisement related to Mauritius – It's a Pleasure. Thus, it can be deduced that advertising campaigns on branding Mauritius – It's a Pleasure is effective, although a third of the sample were not aware and different media and approaches need to be devised to reach out to them. 41% of the respondents said they could not identify themselves with the brand. In addition, 57% said they would not bring their share of contribution to the brand in the future. The findings of the survey demonstrate that 66% of the participants have seen communications on branding Mauritius via the TV, press, billboards and magazines and online. However, although 55.30% of the respondents agreed that the slogan is descriptive of Mauritius, 44% of the sample found the term 'pleasure' as inappropriate because of the implied sexual connotation of the term, when used in the Mauritian context. 64.05% of the respondents showed a lack of empathy and could not identify themselves with the brand. Furthermore, 53.32% disagreed that the tag line is a contributor to the brand. Only 30.47% agreed to contribute towards the brand and showed their optimism towards the idea. It should be noted that 40.40% of the respondents neither agreed nor disagreed and were neutral to the idea. With respect to locally made products, although, Mauritians are well aware of the label 'Made in Mauritius brand', they do not search for this label and prefer to buy goods that are imported. The study also found that Mauritians in general showed no interest in heritage sites and museums.

The % of respondents who categorized Mauritians as astute, sensitive, efficient and gentle with about 50.32%, 66.87%, 57.96% and 51.60% respectively. In addition to that, 52.52% of the respondents agreed that the Mauritians are friendly. Thus, it can be deduced that the Mauritians are productive, hold positive energy and they are up-to-date with new technology. And living in a multi-cultural society, they are friendly and tolerant towards other's cultures. With regards to appreciation of the respondents with the different situations prevailing in the country, 67.66% of the respondents felt that Mauritius provides good opportunity for opportunities for education. 34.42% felt there was economic stability. 63.77% felt there was political stability. These two factors were key in providing a favorable environment for foreign investors. 36.36% stated that personal safety was fair and 35.06% said that it is poor. As far as the level of democracy is concerned, 41.56% of the respondents claimed that it is poor.

8.9. CONCLUSION

Although this study shows some encouraging signs and having attracted a lot of attention from the media and generated a lot of discussion on national identity, there is a need for a strong and coordinated communication campaign to raise awareness among the citizens of Mauritius in order to generate passion in nation building. As it takes many years to establish a brand image, name recognition to develop brand recall of a destination or product, awareness

campaigns and educational tours can be organized to sensitize the population, young and old, of the importance of our history and make these events memorable and enjoyable – for example, use of 3-D technology to simulate the lives our forefathers had lived in building this country. Legends and heroes of the country can be used as brand ambassadors and also be included in part of our curriculum.

8.10 LIMITATIONS

The main limitations of this study are: although significant, this study explores the role of branding from the local perspective only, and does not provide an outside- in view, and the sample size may be too small to make generalizations.

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9 Labor Market and Guidance

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ABSTRACT

Meeting within the Council, the European Council and the representatives of the Member States governments formed a resolution on better integrating lifelong guidance into lifelong learning strategies (2008/C 319/02, 21 November 2008). The resolution points out the significance and necessity of guidance because of the growing globalization, the lengthening of the period of active employment, and the increased potential for mobility. Individuals' lives are increasingly characterized by multiple transitions: e.g. from public education to vocational education and training (VET) or higher education, or from employment in one professional area to another area of expertise.

Guidance plays a decisive role in the major decisions individuals have to take all through their lives, and it may contribute to empowering individuals to manage their own career paths in a more secure way in the context of today's labor market.

9.1. GUIDANCE – PRINCIPLES

Meeting within the Council, the European Council and the representatives of the Member States governments formed a resolution on better integrating lifelong guidance into lifelong learning strategies (2008/C 319/02, 21 November 2008). The resolution points out the significance and necessity of guidance because of the growing globalization, the lengthening of the period of active employment, and the increased potential for mobility. Individuals' lives are increasingly characterized by multiple transitions: e.g. from public education to vocational education and training (VET) or higher education, or from employment in one professional area to another area of expertise.

Guidance plays a decisive role in the major decisions individuals have to take all through their lives, and it may contribute to empowering individuals to manage their own career paths in a more secure way in the context of today's labor market.

Therefore it is an EU recommendation to strengthen the role of guidance in national strategies concerning lifelong learning. In accordance with national conditions and laws and in order to facilitate transitions throughout the lives of citizens, it is recommended to use the following **principles**:

- promoting the lifelong learning of career management skills;
- facilitating the access to career guidance services for everyone;
- establishing the quality assurance of guidance services;
- encouraging coordination and cooperation among the various national, regional and local actors.

Guidance services are services with the aim to enable people at any point of their lives to make educational, training and occupational decisions and to manage their life paths. „Career counseling should motivate towards and must make clients capable of planning their life paths." (Andrási et al., 2008; p. 5.) „In line with the concept of career counseling, career preparation should start in primary school (at ISCED 2 level[49] at the latest) (including the development of career management skills, the broadening of career knowledge, and guidance-related tasks such as making educational and occupational choices), but it should not end with adolescence." (Borbély-Pecze, 2010; p. 8.)

The idea of lifelong learning has resulted in the widening contents of guidance and the dynamic expansion of its user group since the 1990s. According to international experience, there is an increasing need and demand for career counseling, the institutional framework to satisfy these has been partly developed, other parts are still evolving along with the range of the available services, and this inevitably raises the question of the utility of these activities. From a tighter economic approach utility involves the economic benefits of the different professional services, as well as the loss of earnings in the absence of these, while in the broader sense, it refers to the investment in human capital and its impact on society.

ICCDPP (The International Centre for Career Development and Public Policy) is a scientific organization that collects examples of existing national and regional career counseling strategies that are worth to follow, as well as useful technical instructions in order to distribute them. It aims to emphasize the importance of counseling in the fields of education, further training, employment and social inclusion.

The career guidance system has been established in all member states of the European Union, although with different efficiency and efficacy. Taking good international practices as well as the competitiveness of the countries into consideration, the example of Finland is remarkable, which both in terms of competitiveness and educational outcomes (see PISA surveys) showed outstanding success over the last decade.

49. ISCED 2 (International Standard Classification of Education): lower secondary education or the second stage of basic education.

„International indicators show that the most educated residents of the world live in Finland." (Sahlberg, 2012; p. 20.) Based on PISA surveys, **the Finnish student performance has been ranked first in the world** for years - despite the fact that at the beginning of the 1990s the education of Finland showed no difference from the international trends. „The performance of Finnish students was almost average in international assessments, with the exception of reading, in which Finnish students outperformed their peers from other countries. At that time, the unexpected recession has caused a financial breakdown, economic policy changes were needed to settle the national fiscal inequality and revive foreign trade." (Sahlberg, 2012; p. 20.) Nowadays, education leaders from many countries worldwide share the opinion that their education system is at a very similar state as in Finland in the 1990's. The United States, England, Sweden, Norway and France - just to name a few - are among those countries where public education has declined due to providing inadequate educational facilities to students.

The Finnish example is also remarkable because from „mediocre" it has obtained „strong performance" level over the last three decades: Finland was able to create an education system in which students learn well. It is important that not only the education system is well-functioning in Finland, but it is part of a well-functioning democratic welfare state. Free school lunches, overall welfare services and an early support of the needy – these have become available free of charge for every child in the Finnish schools. (To explain the success of the Finnish education system we must put it in a broader context. There is no coincidence that economic and educational professionals from all over the world are analyzing how Finland has become one of the most competitive countries regarding its economic and high academic performance.)

Counselors from abroad are often impressed by the quality and provision of the **Finnish guidance and counseling services**. Several factors have been identified that contribute to the positive outcome.

One is the level and nature of education and training of the **guidance professionals**.

Guidance practitioners working in schools must have a teacher's qualification. Most often they obtain a BSc degree in teaching, and then they gain a special MSc in counseling. Besides gaining theoretical technical knowledge on this special MSc training, the students take part in a number of field exercises that provides them with the appropriate practical and theoretical basis for their work later. The training standards of the staff are high at the Employment and Economic Development Offices which also ensure the quality of the guidance services they offer.

Thirdly, the way **policy makers at every level support** the implementa-

tion of career counseling, proves to be essential for the provision of successful guidance policies and services. Since Finland is a small country, policy-makers and practitioners know each other well, the infrastructure fosters cooperation between the various sectors, and personal commitment plays an important role by the further development of the guidance services.

The fourth characteristic feature in the Finnish career guidance services is the way the **public employment services** complement the work of career counselors within the school system. The guidance services in public employment offices are widely used by the youth and adults alike. (Lifelong guidance in Finland, pp. 3-4.)

9.2. ADAPTABILITY IN HUNGARY

In summary, we can say that we can find the most common guidance services also in Finland, but there is a substantial difference compared to our country: in the Finnish education system career counseling and guidance appears already on the primary level education and it continues in secondary schools, too. In this way, students from a very early age are given support to make conscious career choices, so they are in a much easier situation when they need to make decisions before starting their secondary and higher education than the Hungarian youth. By then most of the Finnish students are already aware of their skills and their interests, therefore they are able to select e.g. the appropriate faculty for themselves more easily.

The Finnish guidance system as a model, operates at its best embedded in the Finnish special socio-economic context, including the R&D oriented economic policies as well as the education system based on gender equality and justice. Therefore it is obvious that the mechanical receipt of the model for other countries can hardly be successful. However, it is still worth to study it as a good „practice", a good example, and it is advisable to adapt the items that could be utilized in our national socio-economic-political medium.

The method, location and time of application are to be reconsidered. Taking the current national administrative structure into account, adaptation is more likely to be launched first in a particular territorial unit as a pilot project.

9.3. 6TH INTERNATIONAL SYMPOSIUM ON CAREER DEVELOP-MENT AND PUBLIC POLICY

ICCDPP held its 6th International Symposium on Career Development and Public Policy (IS2011) in 2011in Budapest. According to its recommendations, it is necessary to reconsider the impact assessment frameworks among the different specialities, particularly:

- the input data, processes and learning outcomes (e.g. career management skills);
- short-term behavioral outcomes (e.g. participation in education or employment);
- long-term economic and social outcomes;
- other quality criteria (e.g. practitioner competence, user involvement, service provision and improvement strategies, and cost-benefits to society and individuals); also, research strategies must be developed which will provide the basis for the evidence-based policy and practice.

As for the international literature, we can see many examples of assessing the results and impact of career counseling, that at the same time highlight the problems and the difficulties that may arise.

Based on the above, the information needs were divided into two main groups from a functional approach:

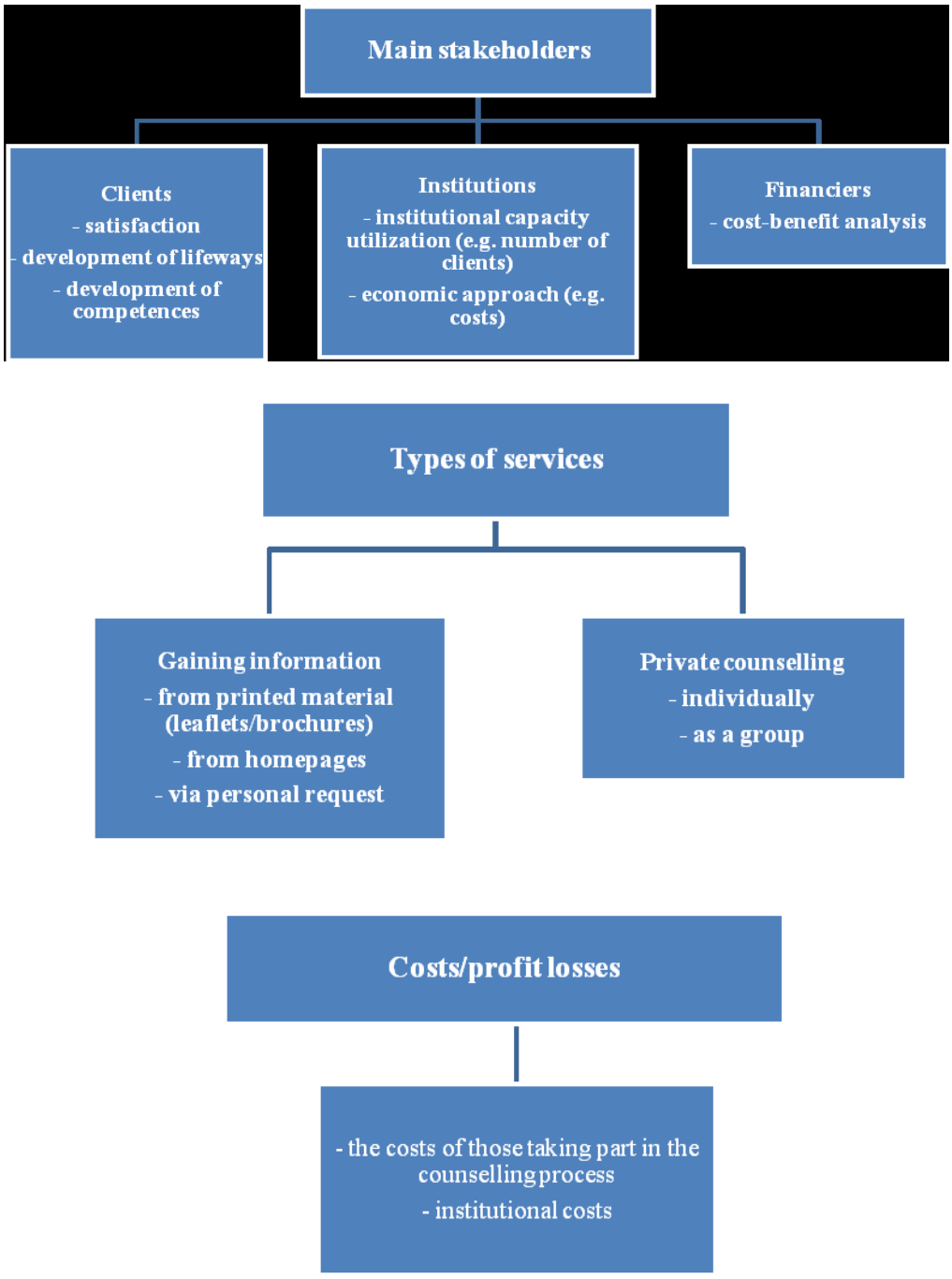
- The first group consists of **the data of service assessment** that can prove the efficiency, efficacy and effectiveness of the service (i.e. counseling): „Are there any results? Is there an impact?" and can evaluate these results: „What is the result? What is the impact?" „These issues are primarily interesting from a political and policy-related point of view: Is there any need for advice? What is the social use of counseling, or what do individual target groups benefit from that? What percentage of the total budget should be spent on counseling? Should one spend more on it than last year or less? etc. Such information is important right after a policy intervention in order to evaluate it, while on the other hand it is needed to design the next intervention in advance." (Hárs - Tóth 2009; p. 66.)

- The second major category of information needs targets **the quality of service**. Is the service good enough? How good is the service? What should be done in order to improve the service? In this case, "the data are required not ex-ante or ex-post, but constantly, in the course of the service provision." (Hárs - Tóth, 2009; p. 66.)

National and international literature emphasizes the need for longitudinal studies in both cases.

Taking international experience in the impact assessment of career counseling into account, we can say that before making any statements regarding counseling it is important to consider the underlying experience and the facts it justifies. According to the study of the KOPINT-TARKI working group, it is advisable to introduce the five-stage model in evaluating the empirical base.

Figure 9.1. The main aspects of impact assessment[50]



Gration and Hughes (2009)[51] examined the possible options and resources

50. Edited by the author.

of evaluation and based on the strength of evidence of the resources, they formed a scale: in their five-stage model, the first level is the weakest empirical base and the fifth is the most powerful.

The most common focal points/indicators when assessing the effectiveness of guidance, and the application of which is advisable when developing a home career monitoring system, are the following:

- changes in the number of people using different types of services,
- client satisfaction,
- the development of client lifeway during a certain period of time,
- the development of client competences within specified time.

9.4. SUMMARY

In summary, in view of the international experiences and practices it is advisable to establish and develop an institutionalized career guidance and career counselor system in Hungary in such a way that both the supply side (the services and those providing the services) and the demand side (the current and potential users of the services) should be made clear – for this, it is essential to develop an active and constantly updated database system. In addition, considering both the scarcity of resources as well as the efficiency of the system, a continuous and systematic monitoring is of particular significance, to which regards the scope of the applicable indicators - beyond the international practice - the national literature has already shown a number of good and useful examples.[52]

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10 US STOCK MARKET SENSITIVITY: NOMINAL, REAL INTEREST AND INFLATION RATE SHOCKS

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ABSTRACT

This paper is a first approach to estimate the nominal and real interest and inflation sensitivity in the US stock market (that is, the stock sensitivity to unexpected shocks in nominal interest rates, or its components: real interest and inflation rates), using an extension of the Stone (1974) two-factor model proposed in Jareño (2006) and, partly, in Jareño (2008). Thus, we point out the key role of these estimates for managers.

According to most of literature (Sweeney and Warga, 1986, Fraser et al., 2002, Tessaromatis, 2003, Jareño, 2008), the sensitivity of stock returns to movements of the nominal (real) interest rates is usually negative. The US stock market seems to provide evidence in favor of the previous literature, although our results also show a non-significant relationship between interest rates and some sector stock returns (mainly with sectorial portfolios, such as Booth and Officer, 1985; and Bae, 1990).

We argue that analysed period (1989-2014) could make conditional to these results, so we distinguish between two subsamples: crisis and expansion period.

Thus, we decompose nominal interest rates into real interest and inflation rates in order to explain some non-significant results, and we propose to distinguish sensitivity results depending of the state of the economy (crisis vs expansion).

We evidence significant relationship between nominal interest rate changes and stock returns and also when we decompose these nominal interest

rates into real interest and inflation rates, mainly in the "crisis", but also in "expansion" subsample. Moreover, we find relevant differences across sectors.

11 THE FISHER EFFECT IN EUROPE: A FIRST APPROACH

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ABSTRACT

This research studies the existence of the Fisher Effect in Europe along the period 1997-2012 with a very easy test, to verify if the most part of nominal interest rates changes are caused by inflation rate movements, remaining constant the real interest rate. Also, we split our sample in two different periods: a first "expansion" period (1997-2007) and a second "crisis" period (2008-2012). Estimates of inflation expectations and nominal interest rates were extracted from Eurostat database.

We find a positive and significant relationship between variations in the current expected inflation rate and variations in nominal interest rates for the whole of Europe, increasing the Fisher Effect in the crisis period. This pattern is the same for Germany, Spain and Finland. Considering only the Eurozone countries, the Fisher Effect occurs only in the crisis period. This phenomenon happens too for Austria, Slovenia, Slovakia, and for Italy and Portugal, being the countries where the Fisher Effect shows with the biggest intensity. In Latvia, Hungary and Netherlands, the Fisher Effect takes place only in the crisis period but in the opposite way, that is, an increment of 100% in the inflation rate gets nominal interest rates decreases.

Differences between countries can be motivated by spreads of the inflation rates. This is an interesting topic in that members of a common monetary area should also converge in terms of inflation rates due to the loss of competitiveness that, in the medium and long term, would be caused by such a situation.

One potential explanation of these phenomena could be a lack of liberalization or competition in some sectors of these countries, in the sense that firms in those industries are able to easily transmit inflation shocks to their output prices. According to some of the hypotheses described below, these facts could also have consequences on the impact of changes of nominal interest rates on company stock prices. In short, these hypotheses suggest that when

changes in interest rates are due to changes in the expected inflation and simultaneously firms are capable of passing on these inflation shocks to their output prices (and thus to nominal revenues and profits), the impact of these interest rate changes on stock prices should be minimal.

12 INTEREST RATE RISK IN THE SPANISH STOCK MARKET: A QUANTILE APPROACH

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ABSTRACT

This study investigates the level of interest rate exposure faced by Spanish industries using the quantile regression methodology. Unlike the traditional OLS approach which relies on the central tendency distribution of the dependent variable, the quantile regression also examines the dependent variable at the tails of the distribution, thus facilitating an investigation across the entire distribution of returns.

The results reveal that, overall, the Spanish industries show a significant level of interest rate exposure, but this sensitivity differs among industries and over time (Bartram, 2002; Reilly et al., 2007; Ferrer et al, 2010; Olugbode et al., 2013). This finding is consistent with the commonly held view that regulated, heavily indebted and financial industries are the most interest rate sensitive (Sweeney and Warga, 1986; Bartram, 2002; Reilly et al., 2007; Ferrer et al., 2010). In contrast, the Oil and Gas, Consumer Services, and Telecommunications industries are characterized by a very low interest rate exposure irrespective of the time period involved.

Further, the interest rate exposure seems to have a time-varying nature. A pattern of positive interest rate sensitivity seems to emerge since the early 2000s for some industries (Industrials, Basic Materials ….). Interestingly, the number of industries significantly exposed to interest rate risk increases during the period of global financial crisis.

These results may have important practical implications for risk management, portfolio selection, etc., and it would be interesting to complement the results obtained in previous studies based on the conditional mean approach with those found with the QR method.