

DETERMINANTS OF TAXABLE CAPACITY IN SAARC COUNTRIES

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ABSTRACT

The main objective of this study is to estimate the determinants of taxable capacity of SAARC countries. For measuring the taxable capacity secondary data is gathered from the international country risk guide and World Bank development indicators. For data analysis, a Random effect model has been used. Important determinants to increase the taxable capacity of SAARC countries are found in this study. Economic factors such as GDP per capita, trade openness and agriculture value-added share have a highly significant impact on the taxable capacity of SAARC countries. The demographic factor-like population growth rate has a significant impact on the taxable capacity of SAARC countries. Institutional factors such as control of corruption and bureaucracy quality index have a significant impact on the taxable capacity of SAARC countries. This study helps the SAARC country's policymakers; they can increase the tax revenues of SAARC countries by increasing the GDP, import and export (Trade Openness), bureaucracy quality and control of corruption.

Key Terms: Taxable Income, Pakistan, SAARC, GDP.

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Will underdeveloped nations learn to tax...? asked Kaldor (1963), 58 years prior. Fundamental to this inquiry is the speculation that in case a nation wants to turn into a developed country, it needs to gather in charge a sum bigger than the 10-15 % found in many emerging nations.

According to the aid effectiveness dialogues Le et al., (2008), found that taxation is the basic source for government revenue and long-run development, and further if a country wants to avoid foreign dependency and decrease poverty it should increase the taxable revenue and taxations is the only sustainable way to reduce the poverty and to avoid the external aids. So developing countries should increase the tax revenue and to increase the tax they should find out the determinants of tax revenue. Those determinants will explain then that on which determinants if they focused upon then they will be able to enhance their tax revenue. So they can increase their tax revenue by finding out the determinants and after that, they can increase the tax revenues.

Recent discussion about the effectiveness of aid gave the argument that social development and economic development are dependent on tax revenue enhancement (Le, et al., 2008). World Development Report (1997) by the World Bank declares that for achieving macro stabilization and development, resource allocation is the fundamental tool and for fulfilling the needs of the state they should rely on the efficient taxation system.

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But developing countries do have not such ability to increase the tax revenue for the human growth services and fundamental public infrastructure (World Bank Global Monitoring Report, 2005). In 2002, according to the report of UN on financing for development, the United Nations secretary-general explained that for the growth and development of any nation its financial resources mobilization is very important and also focused that adequate public expenditure financing and another hand decreasing deficits of the budget calls for tax revenues alternatives, further reports explains that the developing countries of World must start considerable tax reforms if they want to increase their revenues (United Nation Report, 2002).

The issues for emerging nations to increase the tax incomes are twofold. To start with, they normally have a low taxable capacity and an enormous piece of financial activity in the informal area. Second, their tax assessment framework might be filled with the number of tax exemptions as well as tax expenditure, which therefore diminish the tax base and further will in general decrease the tax collection proficiency and viability (Le, et al., 2008). All the developing countries faced the same kind of problem: how to meet public spending needs by enhancement of the tax revenue in a way that is not only economically sustainable but also conducive to the political survival of those making policies (Bird, 2007).

In SAARC countries like Pakistan, India, Srilanka, and Bangladesh tax revenues are not according to the taxable capacity and they depend on foreign aid. Pakistan has a low GDP tax ratio as compared to other developing countries (Pasha, 2010). From the last 20 years, the overall tax to GDP ratio of Pakistan is decreased by 1% (Pasha, 2010). Thus the problem of the study is obvious: if SAARC countries want to become richer, and want sustainable and long-run development, and want to reduce foreign dependency they should increase revenue, and to increase the revenue they should find out the determinants of taxable capacity.

1.2 RESEARCH QUESTIONS:

This study tried to find the answer to the following questions:

1. Do Economic indicators (GDP per capita and trade openness) of SAARC countries have a significant impact on the taxable capacity of SAARC countries?
2. Do demographic variables (Population growth rate) of SAARC countries have a significant impact on the taxable capacity of SAARC countries?
3. Do Institutional variables (Corruption index and bureaucracy quality index) of SAARC countries have a significant impact on the taxable capacity of SAARC countries?

1.3 OBJECTIVES OF THE STUDY

The main purpose of this study is to determine the taxable capacity of the SAARC countries like Pakistan, Bangladesh, Srilanka, and India More specifically the objectives of the study were:

1. To examine that Economic indicators (GDP per capita and trade openness) of SAARC countries have a significant impact on the taxable capacity of SAARC countries
2. To examine that demographic variables (Population growth rate) of SAARC countries have a significant impact on the taxable capacity of SAARC countries

3. To examine that Institutional variables (Corruption index and bureaucracy quality index) of SAARC countries have a significant impact on the taxable capacity of SAARC countries

1.5 SIGNIFICANCE OF THE STUDY

The study aims to find the determinants which have an impact on the taxable capacity of the SAARC countries. This is the first study that examines the taxable capacity with institutional variables, particularly for SAARC countries. This study will represent that which is the important determinants that affect the taxable capacity of SAARC countries.

This study has importance now a day, because it helps the SAARC countries to enhance their tax revenues and to increase their tax revenues by focusing on the highly impacting factor on tax revenues and especially for developing countries now day suffer from aid dependency, tax deficit, and other problems. And there is a lot of poverty in developing countries due to the low tax revenue. If we analyzed tax revenue enhancement many researchers have explained the vital role of the enhancement of tax revenue and they have explained that long-term development is possible through the enhancement of tax revenue. An effective tax system is essential for successful development. So now a day, increasing the taxable capacity of the countries are emphasized more and more by the policymakers, and for the academic researcher to find out the determinants, which will lead towards tax enhancement.

2.1 Literature Review

Taxable capacity is the expected tax/GDP ratio anticipated from a regression, with regards to the country's particular characteristics. The use of tax/GDP ratio is the important source if one attempts to compare the taxable capacity crosses countries with parallel economic structures and at a similar income level (Musgrave, 1969).

The estimation of a country's taxable capacity can be measured based on per capita GDP, trade openness degree, population growth rate, the share of agriculture as a part of GDP, corruption index, and bureaucracy quality (Le, et al., 2008).

GDP per capita is a proxy for the growth of the economy and GDP Per capita is likely to be positively associated with taxable capacity as it is predictable to be the best sign of the overall economic growth (Gupta, 2007). The large demand for public commodities and high-income levels are highly correlated with each other, and ultimately higher tax collection is a consequence of an increase in income which increased the taxable capacity in the society (Fox, 2005; Bahl, 1971). Furthermore, according to the Wagner's law, demand for government goods and services is income elastic, so according to this law when the income will raise the share of government goods and services is expected to rise.

International trade is estimated by the share of imports exports (Le et al., 2008). International trade is amenable to tax as they take place at specified locations. One can expect losses in tariff revenue if the liberalization occurs mainly through a reduction in tariffs. Whereas, Keen and Simone (2004) conclude that revenue might increase if trade liberalization occurs through the elimination of exemptions, tariffication of quotas, improvement in customs procedure, and reduction in tariff peaks. There is a positive relationship observed between taxable capacity and trade openness, but the strength of this correlation between the taxable capacity and trade openness should be gradually decreased (Rodrik, 1998). The empirical findings have been mixed from previous studies because of the different countries' observations

and different periods. In 2001, Piancastelli found a positive relationship with the GDP per capita and trade openness on the taxable capacity. Later on, many researchers also related the taxable capacity with the population. As the population growth rate increase, as much of the tax system could lag in its capability to capture fresh taxpayers and this issue is more protruding when a country has a fragile tax administration capacity (Bird et al., 2004).

In 1971, Chelliah studied the taxable capacity of 50 developing countries (1953-1955 and 1996-1998). He found a negative relationship with the agriculture share. Later on, many researchers like Tait, Gratz and Eichengreen (1979) work on the same variables and update the Chelliah study. (Ghura,1998), found that there is a negative relationship with agriculture on the taxable capacity. In 2001 Piancastelli also found a negative relationship of agriculture share on the taxable capacity.

Many researchers studied determinate of taxable capacity on a regional basis. In 1991, Leuthold studied the taxable capacity of sub-Saharan African countries. He found that taxable capacity has a positive relationship with trade but a negative relationship with agriculture.

According to the previous studies, corruption of any particular country leads to decreasing the revenue of any particular government (Fjeldstad & Tungodden, 2003). Le et al., (2008), found that there is a significant impact of institutional variables on the taxable capacity and he found that corruption has a negative relationship with taxable capacity and bureaucracy quality has a positive relationship with the taxable capacity.

Le et al., (2008) worked on the “Expanding Taxable Capacity and Reaching Revenue Potential: Cross-Country Analysis” in this study he used 104 countries' data to measure their taxable capacity. He found the taxable capacity of 104 countries by applying a regression equation. In this equation, he found the most impacting factors which influence the taxable capacity of those countries. Pasha (2010) worked on how to increase the taxable capacity of Pakistan. In this study, she observed the trend factors persuading the trend in individual and total tax/GDP ratios of 20 years.

In a summarized way, most of the studies find that the GDP per capita, bureaucratic quality has a positive relationship with the taxable capacity. Whereas trade openness has a mixed relationship with the taxable capacity. In some countries, it has a positive correlation and in some countries like developing it has a negative correlation with taxable capacity. Whereas Corruption capacity has a negative correlation with taxable capacity.

2.2 LITERATURE GAP

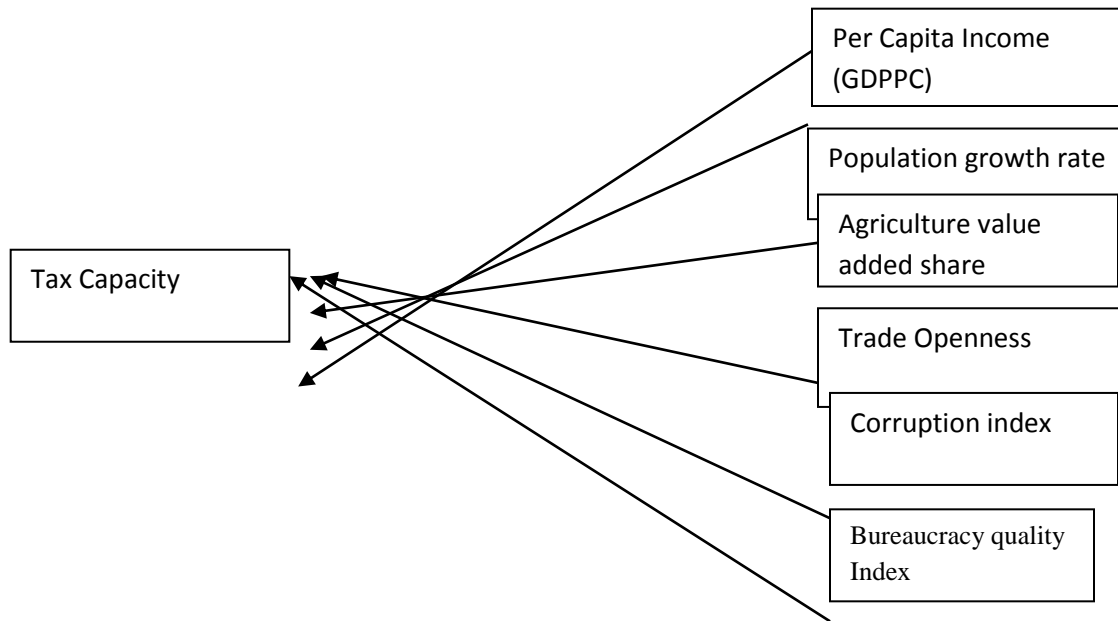
Although many researchers did work on taxation like Pasha (2010) worked on how to increase the tax revenue of Pakistan and came out from the low tax-GDP ratio. In this study, she explores in what way Pakistan could get out of the low tax to GDP ratio and come close to attaining the target settled with the IMF by 2013-14, and she analysis the overall and individual trends in the tax-to-GDP ratio of Pakistan. This study was particularly for Pakistan so there is a need to expand this study from one country to the SAARC countries.

Le et al., (2008) also worked on ways to increase the taxable revenues, but it was not specifically for SAARC countries. He focused on SAARC countries in the general context. But they have not focused on the SAARC countries. Although several studies have analyzed the main determinants of tax revenue, in this study some previous econometric issues which were ignored in previous studies are corrected and the literature is expanded by adopting a broader dataset. The dataset is extended by adopting more than one country over a long time horizon.

Moreover, we included new variables such as the bureaucratic quality index and corruption index.

4.2 THEORETICAL FRAMEWORK

The following proposed theoretical framework of this study:



4.3 RESEARCH HYPOTHESES

The objective of the present research is to estimate determinants of taxable capacity of SAARC countries. For this purpose, the following six hypotheses have been developed.

Hypothesis:

- H1: Increase in per capita GDP increases tax revenue
- H2: Decrease in Population growth rate increases tax revenue
- H3: Decrease in Agriculture value-added share increases tax revenue
- H4: Increase in trade increases tax revenue
- H5: Increase in Bureaucracy quality increases tax revenue
- H6: Increase in control of corruption increases tax revenue

4.4 METHODOLOGY

In this study, the empirical methodology applied by Gupta (2004) and Le et al., (2008) is adopted to examine the taxable capacity of SAARC countries over the period of 1984-2010.

$$Tax/GDP_{it} = \alpha_i + \alpha_1 GDPC_{it} + \alpha_2 Trade_{it} + \beta Popg_{it} + \gamma Ans_{it} + \varepsilon_{it}$$

Where,

Tax/ GDP (it) = Tax to GDP Ratio

GDPC (it) =Gross Domestic Product per capita

Trade (it) = trade openness (Imports + Exports)/GDP

POPG (it) = growth rate of population

INS (it) = Institutional factors (index of control of corruption and bureaucratic quality)

The above specification is based on the underlying hypothesis that the taxable capacity of a country is determined by economic, demographic, and institutional variables. GDP per capita, trade openness relate to the economic variables of SAARC countries. Population growth rate relates to the demographic variable. Corruption and bureaucratic quality relate to the institutional variable.

GDP per capita is included in the specification as a proxy for the level of a county's development. It means it indicates the development of a country, if a GDP per capita is high it means the economic development in that country is high if there is low GDP per capita it means there is low economic development. The large demand for public commodities and high-income level is highly correlated with each other, and ultimately higher tax collection is a consequence of an increase in income which increases the capacity of Tax in the society (Fox, 2005; Bahl, 1971). All the previous studies agreed that GDP per capita has a positive impact on the taxable capacity of the country. It means that with an increase in GDP per capita, the tax capacity of people will increase as they will consume more goods and their income will increase and they will be able to pay more tax.

Trade openness is an accumulation of imports and export calculated as a fraction of GDP. Conventionally, taxes from trade have been one of the major bases of revenue in developing countries. As well as there is ease to collect taxes in the trade sector as they are more formalized as compared to other sectors. However, international trade competition and globalization have gradually reduced tax revenues from this sector in developing countries. We are supposed to observe a positive relationship between taxable capacity and trade openness, but the strength of this correlation among the taxable capacity and trade openness should be gradually decreased (Rodrik, 1998).

Population growth rates were also used in previous studies to analyze the impact of demographic characteristics on the taxable capacity of the country. Previous studies also suggest that the population growth rate is likely to be negatively related to the taxable capacity of a country. It means that as population growth will increases the taxable capacity will decrease and as much the population growth rate will decrease the taxable capacity of a country will increase.

There is a significant impact of institutional variables on the taxable capacity. Corruption has a negative relationship with taxable capacity and a positive relationship with the bureaucracy quality (Le, et al. 2008). One definition defines corruption as someone getting personal benefits from his public authority (Todaro & Smith, 2003). The corruption index tells about the extent of fraudulent activity in a country. It means in a country where corruption exists people will try to fraud with the government to pay tax, they will search for other ways to avoid the tax. Ultimately, it will negatively impact the taxable capacity of that country. According to the previous studies, corruption of any particular country leads to decreasing the revenue of any particular government. (Fjeldstad & Tungodden, 2003). A country having a high index means the corruption level of that country is low, and the low index indicates that the corruption level is very high. The bureaucracy quality index is another institutional indicator of country governance. It measures how much a country has bureaucracy quality.

There are some limitations related to this methodology, for example, there might be a chance of systematic error while measuring the independent variables. Important thing is that

taxable capacity measurement is based upon some explanatory variables which do not explain the political motivation or public expenditure to tax; they just explain the tax capacity of a country (Bird 1978). Although there are many problems related to that particular methodology and we cannot apply it in a mechanistic fashion but for judging the scope for more taxes we can consider it as useful additional information (Chelliah, 1975).

4.5 DATA COLLECTION

To measure the taxable capacity of the SAARC countries data is collected of two major sets of independent variables, which are traditional supply variables (economic and demographic variables) and institutional variables from 1984 to 2010. To ensure data consistency, data related to tax to GDP ratios are taken from similar sources, World Bank Development Indicators 2011. Data related to the economic and demographic variables such as Gross domestic product, trade openness, and population growth rate are gathered from the World Bank indicators (2011). The data for the institutional variables such as corruption index and bureaucratic quality index is gathered from the international country risk guide (ICRG, 2011).

Economic variables include GDP per capita and trade openness. In this study, GDP per capita is constant at 2000 US dollars. So data of GDP per capita of constant 2000 US Dollar of SAARC countries from 1984-2010 is collected. The second variable of economic variables, trade openness of SAARC countries is gathered from World Bank (2011) from 1984-2010.

The population growth rate is related to the demographic variable. According to the World Bank indicators definition, population growth rates the ratio of the working-age population (those in the productive age between 15 and 64). So the population from 15-64 of SAARC countries is obtained from 1984-2010 from the World Bank (2011).

Institutional variables include the corruption index and bureaucracy quality index. The ICRG, 2011 provides data related to the institutional variables, particularly about the corruption index and bureaucratic quality. The ICRG staff gathered economic data, political information, and financial data. Then based on a consistent pattern of assessment, they converted the data of each individual into points. ICRG collected data about the corruption index by getting subjective data on the corruption of a country and further converted the data into numerical points. The corruption index varies from 1-6. A high index of a country indicates low corruption in that country and a low index of a country shows high corruption in that country.

Data related to the bureaucracy quality index is taken from ICRG from 1984-2010 of SAARC countries. The bureaucracy quality index evaluates the political stability of a country. The bureaucracy quality index varies from 1 to 4. A high index of a country indicates high bureaucracy quality in that country and a low index of a country shows low bureaucracy quality in that country.

4.6 DATA ANALYSIS APPROACH

To analyze the panel data, two approaches are used in this study. These are the random effect model and fixed-effect model. The fixed effect model is based on assumption that certain specific country characteristics are not captured by the independent variables and that independent variables are not correlated with the error term.

There are some limitations related to this methodology, for example, there might be a chance of systematic error while measuring the independent variables. Important thing is that taxable capacity measurement is based upon some explanatory variables which do not explain

the political motivation or public expenditure to tax; they just explain the tax capacity of a country (Bird, 1978).

Instead of letting for serial correlation among the error term and variables, the econometric specification could also keep the determination in taxable capacity by adding the lagged value of the dependent variable. Because the lagged dependent variable correlates with the error term, ultimately lagged on the dependent variable creates some estimation problems such as endogeneity. To astound these problems, Arellano and Bond (1991) anticipated a GMM estimator using lagged levels of the predetermined variables and dependent variables and differences of firmly exogenous variables. In highly persistent variables research can follow the method of Arellano and Bover (1995). They both explain how additional moment conditions can raise efficiency. This method is referred to as system-GMM.

In this study, another problem has been faced during the estimation. Independent variables have a correlation with each other which ultimately creates problems in the estimation. This problem is called multicollinearity. To overcome this kind of problem, separate specifications are made for highly correlated variables such as corruption index and bureaucratic quality score and similarly with GDP and agriculture value addition to GDP.

EMPIRICAL RESULTS

5.1 DATA ANALYSIS

Table 6 shows the results of the present study. Table 6 shows the result of the random effect model. Model 1 includes the log of GDP Per Capita, population growth, trade openness. In model 1, the GDP per capita is significant at a 1% significance level. In model 1; the trade openness shows insignificant results. In model 1, the population growth rate is significant at a 1% significance level and shows a negative correlation with the taxable capacity of SAARC countries.

Later on, to check the impact of corruption on the taxable capacity of SAARC countries, the control of corruption variable is added in model 2. In model 2, the GDP per capita is significant at a 1% significance level and shows a positive relationship. In model 2, the trade openness is significant at a 1% significance level. In model 2, the population growth rate is significant at a 1% significance level but shows a negative relationship. In model 2, the control of corruption is significant at a 1% significance level and shows a positive relationship. The Hausman test results show that Random effects specifications best describe the data in all the specifications.

In model 3, the institutional variable bureaucracy quality index is included with the variables of model 1. In model 3, the GDP per capita is significant at a 1% significance level and shows a positive relationship. In model 3, the trade openness is significant at a 1% significance level. In model 3, the population growth rate is significant at a 1% significance level but shows a negative relationship. In model 3, the bureaucracy quality index is significant at a 1% significance level and shows a positive relationship.

Further to check the impact of agriculture value-added taxes is included in model 4, 5, and 6, and GDP per capita is excluded. In model 4, Agriculture value-added shows significant results, and results show that Agriculture value-added to have a negative relationship with the taxable capacity of SAARC countries. In model 4, trade openness shows insignificant results, and results show that Trade openness has no relationship with the taxable capacity of SAARC countries. In model 4, the Population growth rate shows significant results, and results show that the Population growth rate has a negative relationship with the taxable capacity of SAARC countries. In model 4, the control of corruption index shows significant results, and results show that control of corruption has a positive relationship with the taxable capacity of SAARC countries.

In model 5, Agriculture value-added shows significant results and results show that Agriculture value-added to have a negative relationship with the taxable capacity of SAARC countries. In model 5, trade openness shows insignificant results and results show that Trade openness has no relationship with the taxable capacity of SAARC countries. In model 5, the Population growth rate shows significant results and results show that the Population growth rate has a negative relationship with the taxable capacity of SAARC countries. In model 5, the bureaucracy quality index shows significant results and results show that the bureaucracy quality index has a positive relationship with the taxable capacity of SAARC countries.

In model 6, Agriculture value-added shows significant results and results show that Agriculture value-added to have a negative relationship with the taxable capacity of SAARC

countries. In model 6, trade openness shows insignificant results and results show that Trade openness has no relationship with the taxable capacity of SAARC countries. In model 6, the Population growth rate shows significant results and results show that the Population growth rate has a negative relationship with the taxable capacity of SAARC countries.

Table 6

Determinants of Taxable capacity in SAARC Countries: 1984-2010

	Mod1	Mod2	Mod3	Mod4	Mod5	Mod6
Constant	0.25* (2.8)	0.12* (5.4)	0.19* (7.22)	0.14* (3.4)	0.16* (4.6)	0.18* (5.8)
GDP per capita	0.09* (2.6)	0.08* (3.92)	0.07* (3.5)			
Agriculture Value Added share				-0.05* (-3.3)	-0.04* (-2.04)	-0.02* (-1.6)
Trade Openness	0.08 (2.56)	0.05* (2.26)	0.06* (3.10)	0.04 (0.7)	0.03 (0.09)	0.08 (0.56)
Population Growth Rate	-0.04* (-3.02)	-0.04* (-2.32)	-0.03* (-5.44)	-0.03* (-4.4)	-0.02* (-4.2)	-0.03* (-3.89)
Control of Corruption		0.01* (3.98)		0.02* (3.9)		
Bureaucracy Quality Index			0.01* (2.79)		0.01* (2.1)	
Hausman Test (p value)	(0.44)	(0.27)	(0.21)	(0.58)	(0.31)	(0.44)
R ²	0.65	0.67	0.66	0.66	0.65	0.64

Note: The * indicates significance at 1%. The Hausman Test supports the Random effect model. The GMM is an estimation technique and lag exogenous are used as instruments.

According to Hypothesis 1, the Taxable capacity of SAARC countries will increase if the GDP per capita of SAARC countries Increases. GDP per capita in table 6 shows significant results. So, the H 1 is accepted. Apart from this, this study's results are supported by the previous literature. It can be concluded after the analysis from revenue collection patterns and trends, that the more revenue is collected by the rich countries as they are now wealthy so their revenue collection is increased due to the wealth of the peoples (Le, et al., 2008).

According to Hypothesis 2, a Decrease in the Population growth rate of SAARC countries increases the tax revenue of SAARC countries Taxable capacity. The population growth rate in table 6 shows significant results but a negative relationship. So, the H 2 is accepted. It means when the population growth rate of SAARC countries increased taxable capacity of SAARC countries decreased. Previous studies also suggest that the population growth rate is likely to be negatively related to the taxable capacity of a country. It means that as population growth increases, the taxable capacity will be decreased and as the population growth rate decreases the taxable capacity of a country increased. As the population growth rate will increase, as much of the tax system might lag in its capability to capture new taxpayers and this issue is more noticeable when a country has a frail tax administration capacity (Bird et al., 2004).

According to Hypothesis 3, a decrease in agriculture value-added of SAARC countries will increase tax revenue of SAARC countries Taxable capacity. Agriculture value-added rate in table 6 shows significant results but a negative relationship. So, the H 3 is accepted. It means as much the agricultural value-added will increase the taxable capacity will decrease and as much the agricultural value-added will decrease, the taxable capacity of a country will increase.

countries with a comparatively higher share of agriculture in the economy usually have lesser demand for public goods and services meanwhile most great value public services are city-based (Tanzi, 1992).

According to Hypothesis 4, an increase in trade openness of SAARC countries increases tax revenue of SAARC countries Taxable capacity. Trade openness in table 6 shows significant results and shows a positive relationship. So, the H 4 is accepted. A previous study found a direct relationship between trade openness and taxable capacity. It is supposed to observe a direct relationship between taxable capacity and trade openness, but the forte of this correlation among the taxable capacity and trade openness should be gradually decreased (Rodrik, 1998).

According to Hypothesis 5, an Increase in the Bureaucracy quality of SAARC countries increases the taxable capacity of SAARC countries. The bureaucracy quality index in table 6 shows significant results and a positive relationship. So, the H5 is accepted. It means as much the Bureaucracy quality increase, the taxable capacity will increase, and as much the Bureaucracy quality decrease, the taxable capacity of a country will decrease.

According to hypothesis 6, the control of corruption of SAARC countries leads towards the high taxable capacity of SAARC countries. Control of corruption in table 6 shows significant results and a positive relationship. So, the H6 is accepted. It means as much control of corruption increases the taxable capacity also increased and as the control of corruption of SAARC countries will decrease the taxable capacity of SAARC countries will also decrease.

CONCLUSION

The basic objective of this study was to estimate the taxable capacity of SAARC countries from 1984-2010. Three factors (economic indicators, demographic and institutional) are estimated in this study by the fixed effect model and random effect model.

In this study, the important determinants of taxable capacity of SAARC countries have been identified. The economic factors, GDP per capita, and agriculture value-added share have a highly significant impact on the Taxable capacity of SAARC countries, and GDP per capita has a positive relationship with the taxable capacity while the agriculture value-added share has a negative relationship with the taxable capacity of SAARC countries. Whereas other economic factors such as trade openness have a significant impact on the taxable capacity of SAARC countries in some other models and insignificant results in some models. Demographic factor such as population growth rate has a significant impact on the taxable capacity of SAARC countries but have a negative relationship with the taxable capacity of SAARC countries. Institutional factors such as control of corruption and bureaucracy quality index have a significant impact on the taxable capacity of SAARC countries and results show that there is a positive relationship between the taxable capacity of SAARC countries and institutional factors.

The present study recommends that if SAARC countries want to come out of the debt trap and poverty, these countries will have to increase their taxable capacity. Developing countries usually face a continuously growing gap among the required public funds level and the revenue level and that gap can be protected through taxation, as taxation is the consistent source for the long run funding of public spending (Le, et al., 2008). To increase the taxable capacity of SAARC countries the SAARC countries should increase the GDP per capita, trade openness, and bureaucracy quality and SAARC countries should control the population growth rate and corruption to enhance the taxable capacity of SAARC countries.

FUTURE IMPLICATIONS

Recommendations to the future researcher are that they should add more explanatory variables because many other factors have an impact on the taxable capacity of a country. Like debt to GDP, inflation, etc. if more variables are discussed in the study it will show a better result, and the researcher should add more developing countries and enhance the sample years to examine the taxable capacity.

REFERENCES

- Arellano, M., & Bond, S. (1991). Some Tests of specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations. *The Review of Economic Studies* , 277-297.
- Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of econometrics*, 68(1), 29-51.
- Bahl, R.W. (1971). *A Regression Approach to Tax Effort and Tax Ratio Analysis*. (Staff Paper No. 18) International Monetary Fund: Washington, DC.
- Bird, R. M. (1978). Assessing Tax Performance in Developing Countries: a Critical Review of the Literature, in *Taxation and Economic Development: Twelve Critical Studies*. J.F.J. Toyed. London, UK: Totowa, N.J., . 33-61.
- Bird, R. M., vazquez, j. m., & torgler, b. (2004). *Societal Institutions and Tax Efforts in Developing Countries*. (Working paper No. 04-06) . Georgia, Atlanta, USA: Andrew young School of Policy Studies.
- Bird, R. M. (2007). Tax Challenges Facing Developing Countries: A Perspective from Outside the Policy Arena.
- Chelliah, J. R. (1971). *Trends in Taxation in Developing Countries*. (Staff Papers Vol 6) International Monetary Fund: Washington, DC.
- Chelliah, J. R., Hesse, J. B., & Margaret, K. R. (1975). *Tax Ratios and Tax Effort in Developing Countries*. (Staff Papers Vol 22) International Monetary Fund: Washington, DC.
- Fjeldstad, O. H., & Tungodden, B. (2003). Fiscal corruption: a vice or a virtue?. *World Development*, 31(8), 1459-1467.
- Fox, William F. and Tami Gurley (2005) An Exploration of Tax Patterns around the World. Tax Notes International: Special Reports. 793-807.
- Ghura, D. (1998). *Tax Revenue in Sub Saharan Africa: Effects of Economic Policies and Corruption*. (Working Paper No. 98/135). Washington: International Monetary Fund.
- Gupta, S., Clements, B., Pivovarsky, A., & Tiongson, E. R. (2004). *Foreign Aid and Revenue Response: Does the Composition of Aid Matter*. in *Helping Countries Develop: The Role of Fiscal Policy* Retrieved from the International Monetary Fund website: <http://www.imf.org/external/pubs/nft/2004/hcd/>
- Gupta, A. S. (2007). *Determinants of Tax Revenue Efforts in devolping countries* (Working Paper No. 184). Retrieved from the International Monetary Fund website: <http://www.imf.org/external/pubs/ft/wp/2007/wp07184.pdf>
- ICRG (2011) "International Country Risk Guide Index." The PRS Group: New York.
- Kaldor, N. (1963) Will Under developed Countries Learn to Tax? *Foreign Affairs*, 41: 410-19.
- Keen, M., & Simone, A. (2004). Is tax competition harming developing countries more than developed?. *Tax Notes International*, 34(13), 1317-1326.
- Leuthold, H. J. (1991). Tax Shares in Developing Countries: A Panel Study. *Journal of Development Economics* , 173-185.
- Le, T. M., Moreno-Dodson, B., & Rojchaichanthorn, J. (2008). *Expanding Taxable Capacity*

and Reaching: Cross-Country Analysis.(Policy Research Working Paper No. 4559). The World Bank.

- Musgrave, R.A. (1969)*Fiscal Systems*. (New Heaven: Yale University press).
- Pasha, A. G. (2010). Can Pakistan Get Out of the Low Tax-to-GDP Trap? *The Lahore Journal of Economics* , 171-185.
- Piancastelli, M. (2001) Measuring the Tax Effort of Developed and Developing Countries: Cross Country Panel data Analysis. Texto Para Discussion No: 818.
- Rodrik, D. (1998). Why do More Open Economies have Bigger Governments. *Journal of Political Economy* , 997-1032.
- Tait, A. A., Barry J. E., & Wilfrid L.M. G. (1979). *International Comparisons of Taxation for Selected Developing Countries*.(Staff Paper Vol No. 26). International Monetary Fund.: Washington, DC.
- Tanzi, V., (1992), *Structural Factors and Tax Revenue in Developing Countries: A Decade of Evidence*, in *Open Economies: Structural Adjustment and Agriculture*, (Cambridge: Cambridge University Press), pp. 267–281
- Tanzi., D. H . (1997) *Corruption, public investment and growth*. (Working Paper No. 97/139) International Monetary Fund: Washington D, C
- Todaro, M. & S. Smith: 2003, *Economic Development*, 8th edition (Addison Wesley, New York, NY) p. 711.
- United Nation, (2002). Report of the International Conference on Financing for Development. *United Nation ,2002. Financing for Development. Monterrey consensus. Monterrey, Mexico: The United Nations*.
- World Bank. (1997). *World Development Report 1997: The State in Changing World*. Washington, DC: The World Bank Group.
- World Bank. (2011). "Global Monitoring Report 2005: Millennium Development Goals: From Consensus to Momentum. World Bank: Washington, DC.
- World Bank, 2011. *World Development Indicators (WDI)*, the World Bank, Washington DC

Appendix - A

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
TAXG	252	.00000376 430	144297.71 90876350 0	13753.017 30272680 00	38827.829394 91584000
gdpc	252	13.604368 082300	25852190. 14532319 0000	1248993.7 00508931 00000	5030006.8680 10190000000
Agriculture	252	4.68	177.38	78.5117	42.58124
Trade	252	.00025894 6928	13828500. 19973720 0000	143817.21 99757000 0000	1195768.0901 25037000000
popg	251	-.40	3.84	.8611	.88569
Cor	252	0	5	2.38	1.104
BQ	252	0	4	2.05	.846

Appendix - B

Correlations

		TAXG	gdpc	Agriculture	Trade	popg	Cor	BQ
TAXG	Pearson Correlation	1	-.088	.080	.142(*)	-.323(**)	.065	.384(**)
	Sig. (2-tailed)		.163	.206	.024	.000	.306	.000
	N	252	252	252	252	251	252	252
gdpc	Pearson Correlation	-.088	1	-.070	-.030	.100	.314(**)	-.017
	Sig. (2-tailed)	.163		.269	.636	.114	.000	.786
	N	252	252	252	252	251	252	252
Agriculture	Pearson Correlation	.080	-.070	1	.247(**)	-.168(**)	-.089	.257(**)
	Sig. (2-tailed)	.206	.269		.000	.008	.158	.000
	N	252	252	252	252	251	252	252
Trade	Pearson Correlation	.142(*)	-.030	.247(**)	1	-.106	-.001	.097
	Sig. (2-tailed)	.024	.636	.000		.094	.992	.124
	N	252	252	252	252	251	252	252
popg	Pearson Correlation	-.323(**)	.100	-.168(**)	-.106	1	.187(**)	.039
	Sig. (2-tailed)	.000	.114	.008	.094		.003	.538
	N	251	251	251	251	251	251	251
Cor	Pearson Correlation	.065	.314(**)	-.089	-.001	.187(**)	1	.538(**)
	Sig. (2-tailed)	.306	.000	.158	.992	.003		.000
	N	252	252	252	252	251	252	252
BQ	Pearson Correlation	.384(**)	-.017	.257(**)	.097	.039	.538(**)	1
	Sig. (2-tailed)	.000	.786	.000	.124	.538	.000	
	N	252	252	252	252	251	252	252

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).