An Analysis of Taxation Trends in South Korea

Sohrab Abizadeh and Mahmood Yousefi*

Scholars and policy makers marvel at the success of South Korea, a newly industrialized nation. In one generation this country has been transformed from a nation of war torn poverty to an industrial giant. This makes an examination of taxation in South Korea a worthwhile exercise. Basically, the objective of this paper is to provide an analysis of taxation trends in South Korea. This paper begins with a brief review of the economic environment in South Korea. Next, it focuses on a descriptive as well as empirical analysis of taxation trends. The paper concludes with a brief summary. (*JEL* Classification: H20)

I. Introduction

A. General

Korea's economy was ravaged by the second world war whose end brought the division of the country into north and south and ended thirty-six years of Japanese colonization. It was ravaged again by the bloody war of 1950. In the 1950s and early 1960s, poverty was widespread complicated by severe overcrowding. Manufacturing made up less than 10% of all output. Exports made up 3.5% of GNP and per capita income in 1961 was \$80 (Alam 1989, p.24). Today, South Korea's GNP is \$239.5 billion and per capita income is \$5,569 (Balk 1991, p.24). The literacy rate that was 30% in the mid 1950s is now at 95% level.

The economic liberalization of the mid 1960s was designed to develop manufacturing industries which would make use of South Korea's relative comparative advantage in labor-intensive technologies. The ex-

*Professor, Department of Economics, University of Winnipeg, Canada, and Professor, Department of Economics, University of Northern Iowa, U.S.A. [Seoul Journal of Economics 1994, Vol. 7, No. 3]

change rate was devalued, commercial lending rates which had been traditionally kept at low levels were allowed to rise, and certain imports were decontrolled. The result was greater international contact and competition. Tax credits and subsidies were used to improve productivity. Exports were encouraged through export subsidies. Additionally, the 1970s brought a move away from labor intensive manufacturing goods to heavy and chemical industries. The economic strategy of the 1980s stressed light and high technology industries. All these are indications of the policies which have led to long term economic growth and development making South Korea a prime candidate for testing the relationship between economic performance and tax revenues.

B. Taxation

The power to tax is highly centralized in South Korea. According to Mel (1979, p.329) local governments, including provinces, have ample responsibilities when it comes to the provision of services, particularly education. However, this responsibility is not fairly matched by the limited authority that they enjoy in raising revenues and ability to borrow. As a result, local governments are highly dependent upon the transfer payments received from the central authorities. Meanwhile, in the last few decades, the central government has almost exclusively used its tax system for the purpose of economic growth (see Kim and Yun 1988, pp.77-8). The tax system of South Korea incorporates all major taxes used by modern industrialized economies. Table 1 provides information on the sources of revenue for the central government. As shown in this table, a significant growth in tax revenues was realized between the 1975-80 period, totalling 319.3 percent. The highest rate of growth was in the area of personal income taxes (456.1%). The year 1975 was a turning point for South Korea's tax system in general and personal income tax in particular. In that year the government introduced legislation to establish a global and comprehensive personal income tax system; global in the sense that, with a few exceptions, a single base and rate structure would apply across the board. Under this system "the tax payer takes interest, dividend, real estate, business, wages and salaries and other miscellaneous personal incomes in the aggregate and deduct personal exemptions for" own, spouse and dependents (Kim and Yun 1988, p.68). Minor new changes were introduced in 1977 (see Mel 1979, pp.346-7 for details). These changes mostly explain the sudden and sharp increase in personal income tax revenues during the 1975-80 period.

TABLE 1

CONSOLIDATED CENTRAL GOVERNMENT REVENUE (BILLIONS OF WON)

Type of Revenue	19	1975		1980			1985			1990	
·	Absolute % of	% of	Absolute	% Rate	% of	Absolute	% Rate	% of	Absolute	% Rate	% of
		Tax		Growth	Tax		Growth	Tax		Growth	Tax
		Revenue		വ	Revenue		Since 1980	Revenue	4	Since 1985	8
Individual Taxes	137.7	8.6	766.0	456.1	13.0	1845.0	140.9	15.2	4099.0	122.2	17.6
Corporation Taxes	134.5	9.6	737.8	448.5	12.5	1626.0	120.4	13.4	4818.0	196.3	20.7
Social Security	13.4	6.0	72.9	44.4	1.2	207.0	283.9	1.7	1286.0	521.2	5.5
Property Taxes	52.5	3.7	36.5	-30.4	9.0	80.0	119.2	9.0	759.0	848.7	3.2
Goods and Services	718.0	51.1	3092.6	330.7	52.4	5934.0	91.9	49.0	8794.0	48.2	37.8
Tax											
International Trade Tayes	201.9	14.3	1013.6	387.0	17.2	1950.0	92.3	16.1	2778.0	42.5	11.9
Other Taxes	12.8	6.0	33.9	163.5	9.0	459.0	1253.9	3.8	728.0	58.6	3.1
Non Tax Revenue	130.2	9.3	839.9	545.1	14.2	1634.0	95.5	13.5	2989.0	82.9	12.8
Total Tax Revenue	1406.2	100.0	5896.9	319.3	100.0	12104.0	105.3	100.0	23262.0	92.2	100.0*
Total Revenue	1563.6	1	6833.2	337.0	1	13923.0	103.8	1	26818.0	9.96	1

Source: International Monetary Fund, Government Finance Statistics Yearbook, different issues. Note: *: Without the percentage of non-tax revenues added in.

Table 1 also provides information about corporate income tax and its rate. The significance of this tax with a growth rate of 448.5% is only second to that of personal income tax. "Corporations in Korea are subject to a graduated two-step rate schedule, according to the size of income and form of business organization. A 20% tax rate is applied to the first 50 million won ... and a tax rate of 33% is imposed thereafter on the annual net income earned by large non-listed corporate bodies whose values of outstanding shares exceeds 5 billion won or whose net worth is over 10 billion won; whereas a reduced rate of 30% applies to listed corporations." (Kim and Yun 1988, p.71). "One distinctive feature of corporate taxation is that it clearly favors open corporations over closed corporations. The opening up of corporations by enlarging the number of shareholders and listing on the stock exchange is considered desirable for fostering economic development in South Korea." (Mel 1979a, p.347). For this reason open corporations are encouraged.

The relatively high rate of growth in tax revenues continued into the 1980s. Although it slowed down between 1980-85 and 1985-90, the total tax revenue continued to increase by more than two and three folds, respectively, in those years. While the growth of individual and corporate taxes follow the familiar pattern that most industrializing countries have experienced (a continual rise and growth in relative importance as the economy grows)¹ there were a few surprises. For instance, the growth rate for other taxes including stamp taxes showed a substantial rise between 1980 and 1985. Social security and property taxes continued to grow during the same period. Between 1980-85, social security taxes showed the highest rate of growth, after "other taxes". While this high growth rate continued into the 1985-90 period (512.2%), property taxes showed the highest rate of growth by far.

Goods and services taxes, although growing over time, showed a decline in their relative importance. Presently, they remain the major component of total tax revenue for the central government, about 50% of total tax revenues continue to be drawn from these taxes. Goods and services taxes include the value added tax (VAT) which was introduced in July 1977. The relatively sharp increase (330%) in revenues (between 1975 and 1980 period) from this category is due largely to this change. Currently, the two major components of the goods and service taxes are a value added tax of 10% and the special consumption tax

¹For a comprehensive analysis of recent economic growth in South Korea, see Kwack (1986).

introduced in 1977. These taxes are replacing a number of excise and turnover taxes such as business activity tax, the commodity tax, the petroleum products tax, the textile product tax, the admissions tax, and the entertainment and restaurant tax that were in place prior to the 1975 tax reform (see Mel 1979, p.341). The value added tax, on the other hand, is levied on the value added by each enterprise, including the retail and import stages. Some necessities and a number of other items, which involve a high administrative cost and/or their taxation adversely affect the welfare of the population are exempt from VAT. These items include products such as unprocessed food, water briquettes for home heating, medical services, education, books and others (see Mel 1979, pp.342-3). Finally, international trade taxes showed a high rate of growth (between 1975-80) as well. Since 1980 their rate of growth have begun to decline.²

In relative terms, in the 1990 period, goods and services taxes with 37. 8% of total tax revenue remained a major source of tax revenues for the central government. Corporate taxes, which continued to grow in relative importance, ranked second (20.7% of total tax revenue) followed by the personal income taxes at 17.6% of total tax revenue. As shown in Table 1, taxes experiencing a significant rate of growth do not necessarily form the largest component of the total tax revenue. For example, social security taxes show the highest rate of growth in recent decade, however, their relative share of total tax revenue for 1990 are only 5.5%.

The category "other taxes" includes several specific taxes. For instance, the government introduced an education tax in 1988 to finance the increased cost of education. This tax is imposed on interest and dividend income, liquor, cigarettes, and gross receipts from finance and insurance business practices ranging from 5 to 10. In addition, in 1975 the government enacted the Defense Tax Law for the purpose of facilitating the expenditure growth in this area. This involved the imposition of a surtax on all tax liabilities ranging from 2.5% to 30% (see Kim and Yun 1988, p.73).

II. Quantitative Investigation

It appears that governments continue to be concerned with broaden-

²This hypothesis will be tested in the next section. According to Rhee (1990, pp.38-9), the government is planning to introduce a capital gains tax to discourage land speculation. It is also expected that higher property taxes and taxes on capital will be introduced.

ing the existing tax basis and devising new sources of tax revenue. The underlying reasons are different for developed countries (DCs) and less developed countries (LDCs). In LDCs, tax revenues are needed to develop the infrastructure necessary for economic development while providing incentives in the private sector for increased investment and output. Most DCs are in need of higher tax revenues, however, to finance their rising expenditures on welfare related programs and those warranted by market failure and externalities.

Differences in tax ratios³ and changes in tax components have been examined, over time and in relation to economic development by several investigators. (See, for instance, Hinrich 1968; Chelliah 1971; Abizadeh and Wyckoff 1982). Total tax revenues have grown, undoubtedly, faster than GDP for many countries in the noncommunist block and particularly in the industrializing countries. Usually developed economies are characterized by higher ratios of taxation to national product than less developed economies (see Chelliah 1971, pp.260-7; Musgrave 1969 for details). Another type of change in taxation, theoretically linked to the degree of economic development, is a change in the tax component or the relative importance of a specific tax in the entire tax structure.⁴

Tax structure change in South Korea goes back to the 1950-70 period when, according to Kim and Yun (1988, p.68), the tax structure "was marked by a gradual shift from a commodity-oriented indirect taxation to modern income taxes". However, this process continued into the 1970s, particularly 1975, as mentioned earlier, when a comprehensive tax reform was introduced. This marks the beginning of a new era in South Korea's tax system.⁵

In this section we investigate the relevance of these issues for South Korea. Specifically, we are concerned with changes in the total tax ratio and structural tax changes which have characterized the Korean economy during the course of its development. Our examination will be constrained by the following considerations:

³The role of industrialization on the relative importance of this type of tax as well as goods and services taxes will be empirically investigated in the following section.

⁴Tax ratio is usually defined as the ratio of all taxes and tax-like charges (including gross social insurance contributions from private sectors, if any) to the gross national product (GNP).

⁵The group of taxes to which individuals and businesses in a given country are subjected is called the "tax structure".

- a. Highly developed countries exhibit a higher tax ratio than do the less developed economies. An interesting issue is the examination of tax ratio in South Korea as the economy develops.
- b. In order to clearly test the hypothesis concerning tax ratio, structural tax changes, and the latter's relationship to the degree of economic development, extended time series data should be utilized. An extended time period allows for changes in the level of economic development.

It is hypothesized that the total tax ratio in South Korea is affected by four variables selected to reflect the degree of economic development. Those variables are openness OP (defined as exports divided by GDP), per capita income (YP), currency deposit ratio CU (defined as the ratio of total currency to total demand deposits), and the ratio of full employment GDP over actual GDP (YR). The use of per capita GDP as an indicator of the degree of economic development seems justified. Its inclusion in our model enables us to either substantiate or refute the findings of previous studies which have used this variable. It has been argued that as income rises and economic development proceeds, a country's financial institutions including commercial banks, trust companies and the like become more sophisticated. This will result in a decreased currency to deposit ratio (CU). Meanwhile, the ratio of currency held outside banks to total money supply tends to decrease. In case of industrializing economies, expanded monetization and financial transactions leads to a decline in the currency deposit ratio (see Dadkhah and Mookerjee 1988, p.369). Economic growth and development is expected to close the gap between actual and potential output. The variable YR measures economic under performance (the gap between potential and actual GDP). Hence, it is expected that the higher YR implies a lower level of tax revenues.

Generally, a higher volume of trade has been treated as a favorable factor in accelerating the growth of different countries. South Korea is no exception and it relies extensively on foreign trade. Export-led growth, in the last two decades, has established South Korea as an economic power. Past studies have shown that openness, representing the foreign trade sector, is an important determinant of tax structure change (see Abizadeh 1979).

The foregoing arguments are the essence of our postulated model. This model (equation (1)) is the basis of our empirical analysis of tax structure in South Korean. 6

$$TR_{tt} = \alpha (YP_t)^{\beta_1} \cdot (CU_t)^{\beta_2} \cdot (YR_t)^{\beta_3} \cdot (OP_t)^{\beta_4} \cdot \mu \tag{1}$$

or

$$lnTR_{tt} = ln\alpha + \beta_1 (lnYP_t) + \beta_2 (lnCU_t) + \beta_3 (lnYR_t) + \beta_4 (lnOP_t) + ln\mu$$
 (2)

where

 $i = 1, 2, \dots 5$ types of taxes

 $t = 1, 2, \dots 21$ time periods (1970-90)

 TR_i = the dependent variable defined as follows

- 1) TR_1 = total tax ratio (defined as total tax revenue divided by GDP)
- 2) TR_2 = total personal income taxes as a percentage of total tax revenues
- 3) TR_3 = total corporate income taxes as a percentage of total tax revenues
- 4) TR_4 = total international trade taxes as a percentage of total tax revenues
- 5) TR_5 = total sales taxes as a percentage of total tax revenues.

YP = per capita GDP

- CU_t = currency-deposit ratio (defined as total currency outside banks divided by total demand deposit).
- YR = the ratio of full employment private sector GDP over actual private GDP (business cycle variable).

OP = openness (defined as total exports divided by GDP)⁷

The empirical results are reported in Table 2.

Per capita income (YPt) is hypothesized to be a key determinant of total tax revenues. The results for TR_1 indicate that total tax ratio is highly correlated with per capita GDP. The coefficients for CU and YR are highly significant but their signs are contrary to the *a priori* hypothesis.⁸ Although β_4 , the coefficient for OP_t , carries the expected positive sign it is not statistically significant. It follows that, in case of South Korea, it is difficult to establish a direct link between the degree of economic development and total tax ratio during the last two

⁶Mason et al. (1980), pp.306-19 provide an excellent historical review of taxation trends in South Korea prior to 1975.

⁷When the linear models were estimated a high degree of multicollinearity was observed between pairs of variables. To correct for multicollinearity a double logarithmic model was estimated.

⁸All data used in this paper were collected from the most current issues of the IMF International Financial Statistics Yearbook, the IMF Government Finance Statistics Yearbook, the United Nations Statistical Yearbook, the United Nations Demographic Yearbook and the United Nations National Account Statistics: Main Aggregates and detailed Tables.

Table 2
SUMMARY REGRESSION ANALYSIS FOR ALTERNATIVE TAX RATIOS
(Corrected For Autocorrelation)

Dependent Variable	Constant (α)	YP_t (β_1)	CU_t (eta_2)	YR_t (β_3)	OP_t (β_4)	R ₂	D-W tatistics
TR ₁	-3.08	0.23** (3.78)	0.28* (2.61)	4.86** (2.88)	0.02 (0.24)	0.81	1.91 ^b
TR ₂	-3.50	0.32* (2.05)	0.37 (1.16)	-7.68 ^X (1.81)	-0.41 (1.67)	0.54	1.87ª
TR ₃	-4.35	0.38** (3.85)	0.34 (1.66)	-9.45** (3.55)	-0.68** (4.51)	0.85	2.35ª
TR ₄	-2.10	0.30* (2.54)	0.62**	6.35* (2.15)	0.63** (4.22)	0.74	1.89 ^b
TR ₅	-1.36	0.09 (1.06)	0.14 (0.90)	4.49 (1.69)	0.11 (0.92)	0.41	2.13 ^b

Note: 1. **: Significant at the 99 percent level of confidence.

- *: Significant at the 95 percent level of confidence.
- x: Significant at the 90 percent level of confidence.
- a: The original Durbin-Watson statistics. No corrections made.
- b: Based on the original Durbin-Watson statistics it was not possible to accept the null hypothesis of lack of autocorrelation. The models reported are corrected for autocorrelation.
- 2. Figures in parentheses are the t-statistics.

decades. This may be due to the significant structural changes in South Korea's tax system. This claim can be examined more fully by looking into the tax components of South Korea.

The results of personal income tax ratio (TR_2) indicate that, as expected, per capita GDP carries the hypothesized positive sign and it is statistically significant. The coefficient β_2 for currency deposit ratio, carries a positive sign but it is not significant. The coefficient β_3 for the business cycle variable, carries a negative sign as hypothesized, and is significant. The negative relationship indicates that with higher level of unemployment lower personal income tax would be collected. The openness variable, OP_t is insignificant and its coefficient carries a negative sign. It can be argued that the government of South Korea may have been able to produce sufficient tax revenue to meet its target revenue by diversifying its tax sources.

The regression equation for the corporation income tax ratio (TR_3)

provides the strongest support for the hypothesis that as the South Korean economy develops reliance on direct taxes, such as corporation income tax, continue to rise. The coefficient β_1 on per capita GDP (YP_0) is significant and positive as expected. The currency-deposit ratio is significant while its coefficient carries a positive sign, contrary to our *a priori* hypothesis. The business cycle variable (YR_0) is significant and carries the hypothesized negative sign. Thus it can be argued that the state of the economy's performance is an important determinant of the federal government corporate tax revenue in South Korea. The coefficient β_4 on openness (OP_0) is significant and negative. This negative sign implies that as South Korea's tax system has evolved more personal and corporate taxes are collected and less emphasis is placed on foreign trade taxes.

Based on individual coefficients obtained for TR_3 it would be safe to argue that corporate income taxes have experienced a relative increase during the past two decades as South Korea's industrialization has gained momentum.

The regression equation for the international trade tax ratio (TR_4) yields consistent results. The coefficient (β_1) for the variable YP_t is positive and significant indicating a direct relationship between the trade sector of the economy and internal economic conditions. The coefficient β_4 for the variable OP_t is, unlike the previous models, positive and highly significant. This indicates that international trade tax revenues are strongly associated with and highly sensitive to the openness of the economy.

The coefficient on the currency deposit ratio, β_2 , remains positive and significant in this model. The business cycle variable, YR_t , carries a positive and statistically significant sign. Although our *a priori* hypothesis implies a negative relationship for LDCs, the case is different for South Korea since there is a positive and strong link between TR_4 and YR.

The model for the sales tax ratio (TR_5) reveals an interesting relationship. Both coefficients on currency-deposit ratio and business cycle variable carry signs contrary to the hypothesized ones. The coefficient

 9 The result obtained here on CU may be due to cultural factors. It is possible that the South Koreans continue to maintain a large volume of cash transactions (hence a high CU ratio) despite the development of banking system and the pace of industrialization. In addition, this relationship can partly be due to the claim made in recent years that the relative size of the underground economy to the GDP in South Korea has grown during the period under study.

on per capita GDP, β_1 , is positive and insignificant, while the coefficient for openness, β_5 , is positive and insignificant. In effect these results are a confirmation of an implicit hypothesis that with economic development less stress is placed on indirect taxes and more emphasis is placed on direct taxes (corporations and individuals). In sum, in the last twenty years, South Korea has relied more and more on direct tax sources and less and less on trade and sales taxes. This trend is consistent with the results reported in previous studies.

In sum, the foregoing results indicate a definitely positive relationship between taxes and GDP per capita. The relationship between tax ratio changes and the currency-deposit ratio, when the coefficients are statistically significant, is positive. This is contrary to the hypothesized relationship. Two arguments may be put forth for this outcome. First, despite a rising income and the development of banking, people maintain their preference for cash transactions. This might mean that transaction demand for money retains its relative strength. Second, it is not possible to arrive at a conclusion without a detailed analysis of the term structure of interest rates and the speculative demand for money. The evidence on business cycle variable is mixed as is the evidence on international trade variable. The mixed results suggest that without a detailed analysis of South Korea's fiscal stance during the period under investigation, we cannot confirm or reject our hypothesized relationships. Thus, further research might clarify these apparently mixed findings.

III. Summary and Conclusion

The success of South Korea, a potential industrial giant, makes a study of its tax structure change imperative. In less than four decades, this nation has been transformed from one of war torn poverty to an emerging industrial state. Aside from cultural considerations and political stability which have contributed to South Korea's economic success, enlightened government policies cannot be ignored. Among these, one can enumerate factors such as land reform, investment in physical and social infrastructure (health and education), economic liberalization, and export-led growth policies.

The power to tax in South Korea is highly centralized. This is consistent with the country's political structure. Thus, it falls on the central government to spend on infrastructure and social services. Expen-

ditures on defense, infrastructure, and targeted economic sectors have been financed by a host of taxes such as corporate income taxes, personal income taxes, goods and services taxes, and foreign trade taxes. As in other industrializing economies, the tax structure has undergone changes in recent years. Gradually, there has been a shift of emphasis from indirect to direct taxes. As the tax machinery has improved, the government has placed more emphasis on personal and corporate income taxes. Also, to finance the social insurance program, enacted in the early 1960s, the government has adopted a system of social security taxes. These taxes have shown the highest rate of growth.

This paper attempted an empirical assessment of tax structure change in South Korea. Although the hypothesized relationship between tax ratio changes and some determinants (e.g., GDP per capita) of tax structure change were confirmed, the results were mixed for the remaining determinants. Thus, a detailed analysis of underlying economic conditions is in order. Further research is required to obtain a better picture of tax changes in South Korea.

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