Sectoral Favors in Corporate Income Taxation and Industrial Performance: International Comparison and Implications for Korea

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I. Introduction

This paper is an attempt to measure sectoral discrimination in corporate income taxation and analyze the effects of sectoral tax favors on sectoral as well as overall economic growth. For the purpose, we employ a large-scale international panel data of firm-level financial statements.

Discriminatory application of favorable depreciation rules, investment tax credits, and investment tax credits for R&D expenditures, widely-adopted policy option across countries, represents an industrial policy through taxation. Theoretically, the overall impact on economic growth is ambiguous. On the one hand, the policy will distort investment of capital across sectors, thus hampering growth. On the other hand, the policy may compensate for positive externalities from tax-favored sectors to the rest of the economy. A prerequisite for effectiveness of tax favors is the government's ability to identify appropriate industries and set tax favors at appropriate levels in the face of political pressures. To answer whether the policy promotes economic growth on balance calls for an empirical investigation.

In section 2, we begin by surveying various concepts of effective tax rate. The review also provides a summary of the literature on corporate tax burdens, investment, and economic growth. Section 3 discusses important features of corporate income taxation in Korea and how they have changed over time in comparison to international trends.

Section 4 measures effective marginal tax rates by sectors for countries around the world. Our approach captures the effective marginal tax rate in an industrial sector as the coefficient from a regression corporate income taxes on before-tax earnings of firms in a given sector. For the purpose, we employ OSIRIS, a large-scale international longitudinal database of corporate financial statements. OSIRIS traces financial information for over 30,000 business concerns in more than 120 countries.

Section 5 analyzes how the sectoral tax favors as estimated in section 4 affect subsequent sectoral growth, and section 6 studies their impact on overall economic growth. The analysis in section 6 combines estimates of effective tax rates from the OSIRIS database with aggregate data from the World Bank's World Development Indicators, and Worldwide Summary of Corporate Taxes from Price Waterhouse. Section 7 concludes with a discussion of policy implications from the findings.

2. Literature Review

Distortionary taxation in the corporate sector disturbs flow of investment, and is likely to reduce the pace of accumulation and growth in the overall economy. Despite this, empirical findings are mixed in the literature. King and Rebelo (1990) and Jones, Manuelli, and Rossi (1993) report that corporate income taxation thus reduce economic growth. Other studies, such as Lucas (1990) and Stokey and Rebelo (1995), suggest that the effects are either insignificant or may even work in the opposite direction. These are mostly calibration studies based on US data.

Ambiguity in results from calibration studies prompted studies that attempted to trace the impact of corporate income taxation in the framework of growth regression using an international cross section of countries. These studies include Skinner (1987), Koester and Kormendi (1989), Easterly and Rebelo (1993),

Dowrick (1996), Agell, Lindh, and Ohlsson (1997), bibbee, Leibfritz, and Thornton (1997), Mendoza, Milesi-Ferretti and Asea (1997). These studies suggest either negative or insignificant impact of corporate income taxation on economic growth. More recently, Lee and Gordon (2005) utilized a newly-available data on corporate income taxes to find a negative and significant effect of corporate income tax rates on economic growth. Not only were the results robust to the inclusion of other growth factors, but also their fixed effects estimates confirmed the basic results.

In contrast to the earlier studies,[1] this paper focuses on sectoral favors in corporate income taxation. This study supplements the existing literature, in that corporate taxation may affect overall growth not just through the aggregate tax rate but also through preferential treatment of certain industries. Favorable treatment of certain sectors may disturb equalization of before-tax rates of return across industries and thus hamper efficient accumulation of capital.

3. Corporate Income Taxation in Korea

Coroporate income taxes in Korea apply a higher marginal tax rate beyond a threshold. The overall tax rates have been gradually reduced, and the gap between the top and basic marginal tax rates has also been reduced. In early 1980s, the marginal tax rates were 20% upto KRW 50 million in before-tax profits and 30% beyond. In line with international trends, the top marginal rate has been cut to 25% in the aftermath of the financial crisis in late 1990's.

1) Yamarik(2000) points out that cross-state differentials in corporate income taxes may partly account for different growth rates across US states. But the study, unlike our own, does not consider the effects of asymmetric treatment of corporate income in different industries.

<Table 1> Trends in Corporate Income Taxation in Korea

years	general corporations			unlisted corprations			public corporations		
	tax base	MTR below	MTR above	tax base	MTR below	MTR above	tax base	MTR below	MTR above
1983-1988	5,000	20	30	5,000	20	33	-	5	5
1989-1990	8,000	20	30	8,000	20	33	30,000	10	15
1991-1993	10,000	20	34	same as general corporations			30,000	17	25
1994	10,000	18	32	same as general corporations			30,000	18	25
1995-1997	10,000	18	30	same as general corporations			10,000	18	25
1998-1999	10,000	16	28	same as general corporations			10,000	16	25
2000-2001	10,000	16	28	same as general corporations			same as general corporations		
2002-2004	10,000	15	27	same as general corporations			same as general corporations		
2005	10,000	13	25	same as general corporations			same as general corporations		

Source: Na and Jeon (2004). Details for the period since 2002 updated by the authors.

Kim, Park, and Ahn (2003) concluded that effective corporate tax burden is higher in Korea than in competitors overseas, and suggested that nomial corporate income tax rates will have to be cut further to about 20% to bring the effective corporate tax burden to a level par with that in overseas competitors, in the absence of changes in depreciation and other aspects of corporte taxation.

Depreciation allowance permits expensing part of the investment in capital goods considered used up for production in a given period, and is applicable to tangible and intangible fixed assets except land. The generosity of depreciation allowance depends on service life, scrap value, and depreciation method. The shorter the service life, and the smaller the scrap value, the larger will be the depreciation allowances. In Korean corporate income taxation, service life ranges between 20 to 40 years for buildings and structures, between 5, 8, 10, 12, and 20 years for business assets, 5, 10, 20, and 50 years for intangible fixed assets, and 3 to 5 years for assets designated for R&D. The theory of user cost of capital implies that more

generous depreciation allowances reduce the effective tax rate. The introduction of expedited depreciation in 1995 significantly reduced the effective tax rate for Korean business corporations.

Investment tax credit is usually employed for temporrary purposes to promote investment during a business downturn. In Korea, however, investment tax credit played little role in adjustment of business cycle effects since it was a virtual fixture, before its elimination in 1986. The credit was applicable to a wide range of industries in manufacturing and mining, construction, wholesale and retail distribution, electricity and communications, research and development, packaging, specialized designing, motion pictures, broadcasting, engineering, information processing and other computer-related businesses, tourism and international conventions, recycling, science and technology services, seeds, dairy products, public performance, computer training institutes, and others. The tax credit subtracted cost of investment up to 7 to 10 percent from corporate income taxes payable.

In addition to investment tax credits, Korean businesses could benefit from special tax reductions and exemptions for promotion of R&D and venture businesses and for other policy purposes.

4. Measuring Sectoral Tax Burden

The main data analyzed in the paper come from the OSIRIS database provided by Bureau van Dijk Electronic Publishing. OSIRIS reports financial data for 37,236 bsiness corporations from 1986 till 2003. Of the business corporations in the data set, 2,086 are banks, 502 insurance companies, and the remaining 34,648 businesses are from the other industries.

We estimate effective marginal tax rates by regressing corporate income taxes on before-tax corporate earnings. Koester and Kormendi (1989) adopted a similar method to estimate effective marginal tax rates by regressing government's tax revenue on GDP for a sample of countries. In this paper, we estimate effective marginal tax rates not just for countries but also for industries in a given country. To prevent outliers from exercising undue influence on our estimates,

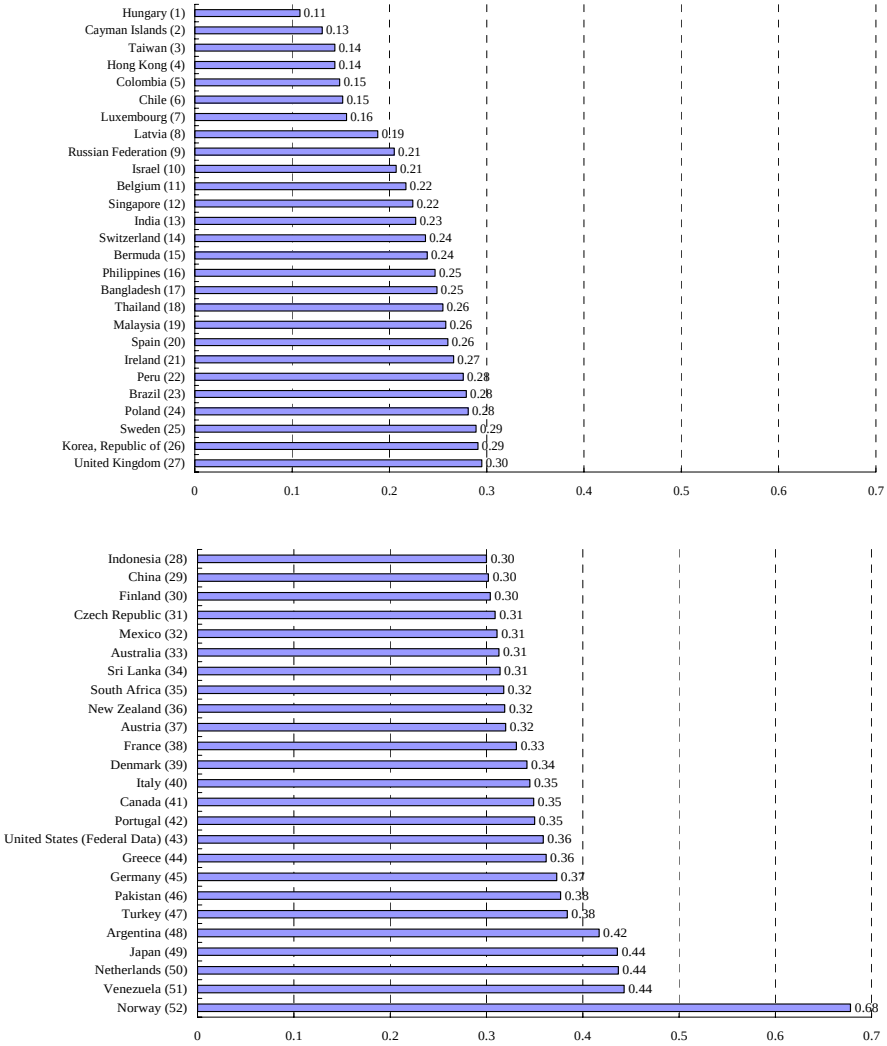
we adopt median regressions for our purpose. The regression coefficient for a given industry in a given country is interpreted as the effective marginal tax rate applicable to that sector.

Effective marginal tax rates reflect not just statutory marginal tax rates but also a myriad of provisions such as rules applying to depreciation allowances, investment tax credits and special tax exemptions. Our method is an attempt to capture the overall impact of the whole corporate income tax system on effective marginal tax rate. Application of this procedure to individual sectors allows us to evaluate also how effective tax rates diverge from statutory tax rates in different sectors.

Figures 1 and 2 present estimated effective marginal tax rates for a sample of 46 countries in the early 1990's and for a sample of 52 countries in the early 2000', respectively. The effective marginal tax rate for Korea is estimated to be about 33% for the early 1990s, placing Korea in the 33rd position when one ranks countries in terms of effective marginal tax rates in the ascending order. The estimated effective marginal tax rate comes down to about 29% for Korea in the early 2000's, its ranking moved to the 26th position in the international league table of effective corporate tax rates for a sample of 52 countries. This means that Korea has been reducing its corporate tax rates faster relative to the rest of the world. It is also noted that some of the East Asian economies, such as Taiwan, Hong Kong, Singapore, Thailand, and Malaysia, have substantially lower effective marginal tax rates than Korea as of early 2000's. Corporate tax rates are higher in the US, Japan, and most of the continental European countries.

[Figure 1] Effective marginal tax rates, early 1990's

[Figure 2] Effective marginal tax rates, early 2000's



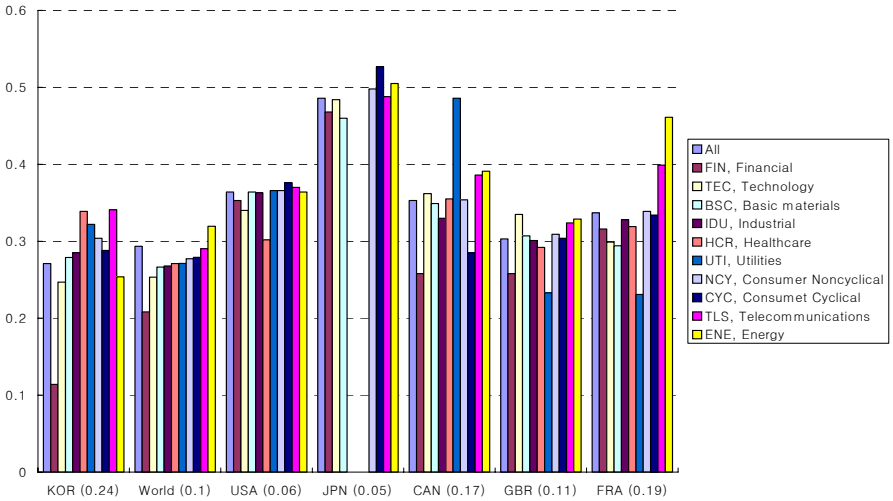
Figures 3-6 present estimated effective marginal tax rates (ETR) for industries for a set of countries. Each figure shows ETR for all industries first, and then ETR for each of nine industries: (1) financial, (2) technology, (3) basic materials, (4) industrial, (5) utilities, (6) consumer, non-cyclical, (7) consumer, cyclical, (8) telecommunications, and (9) energy. Numbers within parentheses for individual countries are coefficients of variation in ETR across the nine industries.

The results show that there is a substantial difference in the pattern of preferential treatment of certain sectors across the world. Overall, there is less sectoral variation among the advanced countries. The coefficients of variation are especially low in countries such as the US (0.06), Japan (0.05), UK (0.11), and Germany (0.11). Canada (0.17), France (0.19), and Italy (0.2) follow the leading group. In countries in Asia and Latin America, the inter-sectoral divergence is substantially larger. For instance, the coefficients of variation are 0.35 for China, 0.38 for Thailand, 0.57 for Taiwan, 0.28 for Mexico, 0.26 for Brazil, 0.47 for Chile.

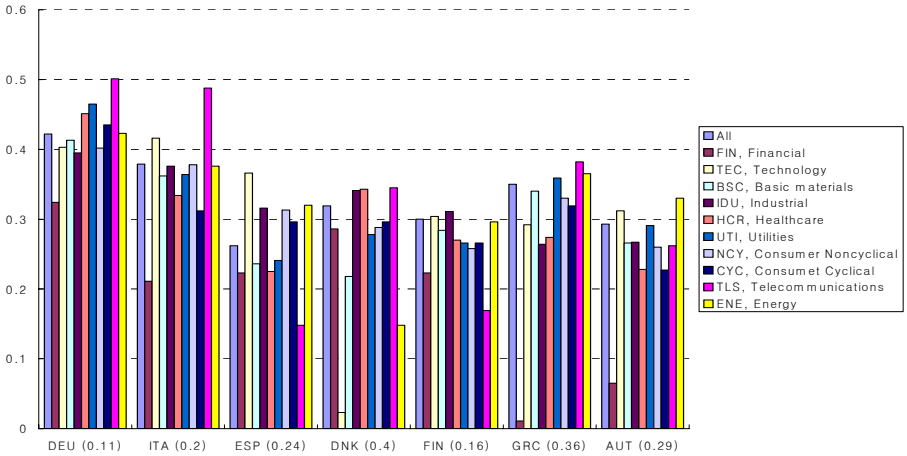
For Korea, the coefficient of variation is 0.24. This means that Korea tends to engage in industrial policy through taxation more actively than most advanced countries, while the extent of engagement is certainly more restricted than in many of the developing countries in Asia and Latin America.

To examine time trends, Figure 7 shows estimated ETR by industries for different time periods in Korea. The figure shows two sets of coefficients of variation for each time period within the parentheses, one for the overall economy and the other for the economy without the financial sector. The figure shows that the most significant source for Korea's relatively high CV compared to the advanced countries is the financial industry. Beginning from early 1980's, the values of CV for the 9 industries excluding the financial industry have been declining substantially. The values decrease from a high range around 0.21 in the 1980s and early 1990's to 0.18 in late 1990's and further down to 0.12 in early 2000's. Even in the financial sector, the estimated ETR had been catching up with those in the rest of the economy, with the trend to be reversed only in the early 2000's. This reversal most probably reflects government aid to the financial sector in the wake of the financial crisis in 1997.

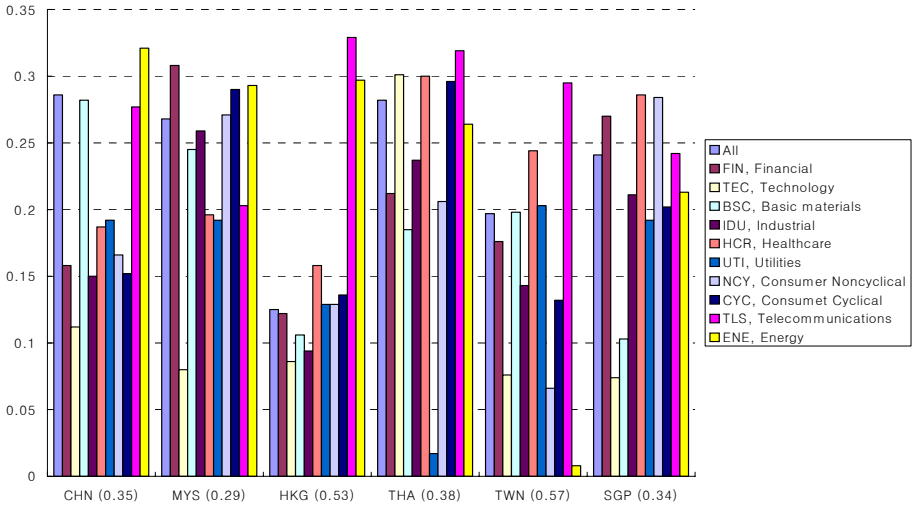
[Figure 3] Estimated Effective Marginal Tax Rates (ETR) by Industries: Korea, World as a whole, US, Japan, Canada, UK, and France



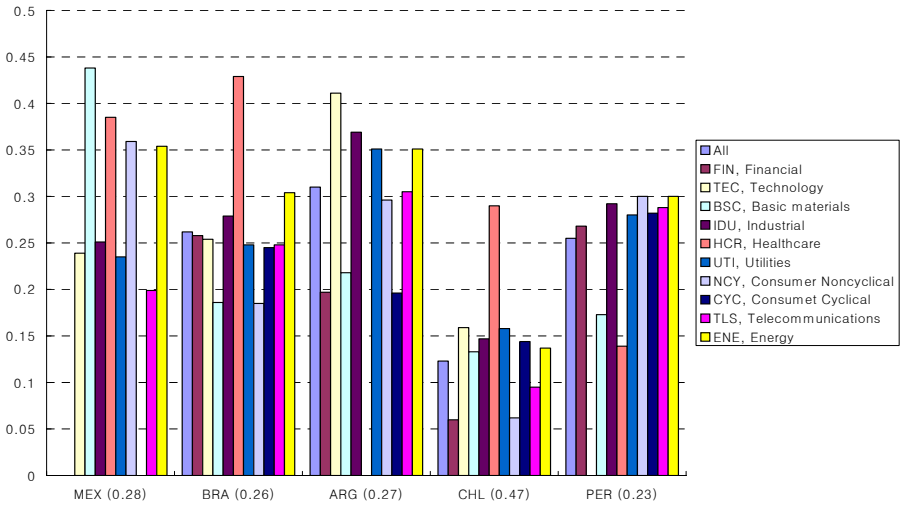
[Figure 4] Estimated Effective Marginal Tax Rates (ETR) by Industries: Germany, Italy, Spain, Denmark, Finlnd, Greece and Austria



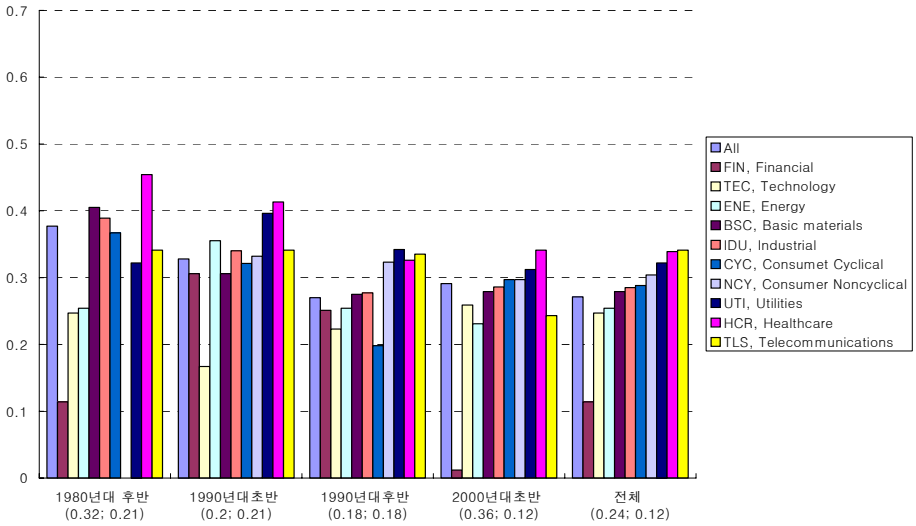
[Figure 5] Estimated Effective Marginal Tax Rates (ETR) by Industries: China, Malaysia, Hong Kong, Thailand, Taiwan, and Singapore



[Figure 6] Estimated Effective Marginal Tax Rates (ETR) by Industries: Mexico, Brazil, Argentina, Chile, and Peru



[Figure 7] Estimated ETR by Industries: Korea, different time periods



Note: Numbers within parentheses are coefficients of variation. The first number is the CV for all 10 industries; the second for 9 industries excluding the financial industry.

5. Preferential Tax Treatment and Growth by Sector

Do preferential treatments in taxation promote growth in the favored industries? How do targeted preferential treatments affect overall growth in the corporate sector as a whole? This section provides empirical results to answer these questions.

For estimation and calculation of ETR and industrial growth rates, we divide the sample period into three sub-periods: early 1990's (1990-1994), late 1990's (1995-1999), and early 2000's (2000-2004). Combined with classification of industries into 10 sectors, this gives us in total 1,470 period-industry cells for 49 countries. (1,470=3*10*49) For each and every cell, we estimate and calculate ETR and growth rates. Three industrial growth rate measures are considered: after-tax profits, before-tax profits, and net sales. Estimation of ETR by regression excludes businesses with zero or missing values for corporate income tax, while calculation of industry-by-industry growth rates includes these businesses, since their exclusion would bias our estimates for industrial growth.

Table 2 presents basic descriptive statistics for variables used in the analysis of the relationship between cross-industry differences in ETR and industrial growth. Table 3 presents regression results for our investigation of the relationship between ETR and industrial growth by sector. As one might expect, growth was faster in industries with lower values of ETR. When we control for industry and period effects, the results suggest that a 10 percent point reduction in ETR would increase growth rates for before-tax earnings, after-tax earnings, and net sales by 8.2%, 8.2%, and 4.6 percent, respectively.

That a low ETR promotes growth in the given industry does not necessarily mean that it promotes overall growth in the corporate sector as a whole. The additional growth in the favored sector is fueled partly by resources that would go to the less-favored sectors in the absence of tax preferences. If preferential treatment distorts efficient allocation of resources across industries, it would also hamper the overall growth.

To examine the effects of lower ETR and variation in ETR across industries, we regress the overall growth in the corporate sector on the mean of ETR and its standard deviation across industries. Table 4 presents descriptive statistics for variables employed in the analysis. The unit of observation here is a country. Table 5 presents regression results.

<Table 2> Descriptive Statistics for Growth Rates by Industry and ETR by industry

Variable	Notation	Obs	Mean	Std. Dev.	Min	Max
growth rate for before-tax profits	Ebtgr	665	0.153878	0.57049	-0.87304	6.294301
growth rate for after-tax profits	Eatgr	686	0.143687	0.54121	-0.9216	4.848219
growth rate for net sales	NSgr	790	0.109791	0.498144	-0.9084	8.441561
ETR	MET	790	0.280139	0.118288	0	0.765

<Table 3> ETR and industrial growth by sector: OLS results

	(1)	(2)	(3)	(4)	(5)	(6)
dependent variable	growth rate for after-tax earnings	growth rate for after-tax earnings	growth rate for before-tax earnings	growth rate for before-tax earnings	growth rate for net sales	growth rate for net sales
ETR	-0.614 (0.186)**	-0.821 (0.193)**	-0.676 (0.174)**	-0.819 (0.180)**	-0.297 (0.150)*	-0.459 (0.154)**
constant	0.329 (0.058)**	0.195 (0.104)+	0.337 (0.054)**	0.477 (0.097)**	0.193 (0.046)**	0.380 (0.088)**
dummies for industry and period	NO	YES	NO	YES	NO	YES
Obs.	665	665	686	686	790	790
Adjusted R^2	0.015	0.067	0.020	0.073	0.004	0.046

<Table 4> Descriptive Statistics for growth rates for the corporate sector as a whole and ETR variables

variable	Notation	Obs	Mean	Std. Dev.	Min	Max
growth rate for before-tax earnings	Eatgr	117	0.11	0.44	-0.89	2.78
growth rate for after-tax earnings	Ebtgr	118	0.12	0.55	-0.89	3.43
growth rate for net sales	NSgr	128	0.11	0.53	-0.87	3.89
mean of ETR	METmn	128	0.27	0.10	0.02	0.77
standard deviationof ETR	METsd	116	0.09	0.05	0.01	0.26

The results reported in Table 5 show that the mean ETR across industries is associated with a faster overall growth in the corporate sector, as might be expected. This result is consistent with Lee and Gordon (2005) that showed industrial growth is faster in countries with lower corporate income tax rates. The coefficients for the standard deviation in ETR across industries are negative, while not statistically significant. The result suggests that preferential application of tax favors may not induce the overall growth of the corporate sector as a whole, while it may foster growth in targeted industries.

<Table 5> The overall growth in the corporate sector and the mean and the standard deviation of ETR across industries

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	growth rate for after -tax profits	growth rate for after -tax proftis	growth rate for after -tax profits	growth rate for before-tax profits	growth rate for before-tax profits	growth rate for before -tax profits	growth rate for net sales	growth rate for net sales	growth rate for net sales
mean ETR	-1.027 (0.461)*	-1.036 (0.433)*	-1.214 (0.497)*	-0.949 (0.582)	-0.942 (0.548)+	-1.087 (0.629)+	-0.780 (0.447)+	-0.741 (0.421)+	-0.624 (0.564)
standard deviation ETR			-0.145 (0.911)			-0.563 (1.150)			-0.003 (1.015)
constant	0.390 (0.134)**	0.572 (0.141)**	0.635 (0.176)**	0.381 (0.169)*	0.547 (0.178)**	0.189 (0.220)	0.324 (0.130)*	0.038 (0.140)	0.453 (0.200)*
period dummies	NO	YES	YES	NO	YES	YES	NO	YES	YES
Obs.	117	117	110	118	118	111	128	128	116
Adjusted R^2	0.033	0.145	0.127	0.014	0.126	0.109	0.016	0.130	0.097

6. Sectoral Tax Favors and Economic Growth

Lower corporate income tax rates are likely to provide for faster economic growth by promoting entrepreneurship and investment. In fact, Lee and Gorden (2005) present strong evidence that economic growth is faster in countries with lower statutory corporate income tax rates. This section addresses how sectoral tax favors as well as lower corporate income taxes affect overall economic growth. Sectoral tax favors, as measured by dispersion in ETR across industries, are an indication of prevalence of industrial policy in a given country. The study reported in this section is thus an empirical study of how interventionist industrial policy affects economic growth.

Sectoral tax favors may in principle promote economic growth if they are appropriately targeted at industries with positive spillovers. If the government targeting misses the mark due to either incompetence or political pressures or both, however, the overall impact on economic growth should be negative.

Table 6 reports basic descriptive statistics for variables analyzed in the section. Table 7 reports regression results.

<Table 6> Descriptive Statistics for ETR and Economic Growth, n=49

	variable	mean	s.d.	min	max
per-capita GDP growth 1970-1997	D_G9770	2.20	1.84	-2.63	6.63
initial per capita GDP, log	lGDPpc70	8.11	1.48	4.79	10.48
statutory tax rate, average 1980s	RtItC8a	0.42	0.08	0.18	0.60
ETR, average 1990s	MET	0.29	0.09	0.07	0.54
CV of ETR, n=43	METcv	0.37	0.19	0.05	1.05
s.d. of ETR, n=43	METsd	0.09	0.04	0.02	0.24
openness	YrOpnA7	0.53	0.50	0	1
ICRG	CrGvBr8b	3.94	1.58	0.64	6.00
enrollment rate primary school, 1970	SE_Pg70	94.46	17.90	35.78	122.84
average inflation rate	InfC70d	76.82	209.35	3.75	1148.22

<Table 7> ETR and Economic Growth: Regression Analysis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	OLS	OLS	OLS	OLS	OLS	Weighted OLS	Weighted OLS	Weighted OLS	Weighted OLS	Weighted OLS	Weighted OLS	Weighted OLS
log GDP per capita	-0.189 (0.175)	-0.114 (0.188)	-1.378 (0.211)**	-1.299 (0.253)**	-1.442 (0.238)**	-1.150 (0.226)**	-1.350 (0.218)**	-0.258 (0.100)*	-0.366 (0.107)**	-0.356 (0.096)**	-0.595 (0.136)**	-1.372 (0.232)**
statutory corporate tax rate, 1980s average	-6.067 (3.077)+		-6.282 (2.199)**		-6.644 (2.299)**		-7.133 (2.389)**	-13.297 (2.728)**		-11.219 (2.723)**	-11.438 (2.817)**	-7.925 (2.614)**
mean ETR, average late 1990s		-2.178 (2.954)		-0.366 (2.165)	1.226 (2.072)	-3.299 (1.558)*	-0.989 (1.625)		-5.526 (2.200)*	-2.551 (2.134)	-0.531 (2.353)	-0.330 (1.791)
openness			1.848 (0.447)**	2.266 (0.470)**	1.879 (0.454)**	3.210 (0.384)**	2.661 (0.398)**					2.328 (0.489)**
quality of institutions			0.603 (0.182)**	0.434 (0.195)*	0.638 (0.193)**	-0.425 (0.177)*	-0.036 (0.208)					-0.003 (0.223)
primary school enrollment rate			0.033 (0.011)**	0.038 (0.012)**	0.034 (0.011)**	0.009 (0.010)	0.015 (0.010)					0.017 (0.011)
inflation			-0.004 (0.001)**	-0.003 (0.001)**	-0.004 (0.001)**	-0.002 (0.001)	-0.002 (0.001)					-0.003 (0.001)+
standard deviation of ETR											-11.559 (4.547)*	-5.267 (3.736)
Constant	6.269 (2.026)**	3.763 (1.546)*	9.843 (1.660)**	6.582 (1.324)**	9.895 (1.675)**	12.488 (1.679)**	14.494 (1.680)**	10.157 (1.448)**	7.261 (1.258)**	10.987 (1.392)**	13.432 (1.726)**	15.041 (1.821)**
Obs	49	49	49	49	49	49	49	54	58	53	44	43
Adjusted R-squared	0.053	-0.016	0.628	0.556	0.622	0.722	0.766	0.344	0.190	0.408	0.476	0.768

In the regressions reported in Table 7, the dependent variable is the growth rate of GDP per capita between 1970 and 1997. The unit of observation is an individual country for a sample of 49 to 58 countries, depending on the availability of data for right-hand-side variables in specifications considered.

Let us first consider OLS regression results reported in the first five columns, (1)-(5). The estimated coefficients for the initial level of income are always negative, suggesting a pattern of catching-up with initially poorer countries attaining faster economic growth. The usual factors for growth performance have anticipated signs for the coefficients. Openness, quality of institutions, investment in human capital are all associated with faster economic growth, as is lower inflation rates.

Statutory corporate income tax rates are significantly and negatively associated with economic growth. This result corroborates the main finding in Lee and Gordon (2005).

The effect of estimated ETR (MET in the left-most column) on growth is variable and statistically insignificant. This may reflect that our ETR variable measures the true ETR rather imprecisely. To address this issue, Table 7 also reports weighted OLS results (WOLS) in columns (6) through (12). The weight is the value of *t* statistic obtained in the estimation of ETR in the regression of corporate income taxes on before-tax earnings. This procedure gives a greater weight to observations where our ETR measure is estimated more precisely.

In the specifications (6) and (9), where we consider the effect of estimated ETR excluding the statutory corporate income tax rate, the estimated ETR is shown to significantly reduce the economic growth rate. The last two regressions in (11) and (12) add the standard deviation in estimated ETR across industries on the right hand side. The estimated coefficients are negative, and in the case of column (11) also statistically significant. This result suggests that interventionist industrial policy through preferential treatment in corporate income taxation fails to achieve the desired effect on average. This might reflect the lack of government capacity to pick industries appropriate for favors, or high-positive-spillover industries, or the proneness of the government to succumb to political pressures. In either case,

industrial policy through corporate income taxation would not be an appropriate policy tool, if the desired outcome is to promote overall economic growth, not merely the growth of the preferred sectors or industries.

7. Summary and Policy Implications

This paper used a firm-level data set of financial statements for a large sample of businesses around the world to estimate sector-specific effective tax rates (ETR) in corporate income taxation. We further investigated the effects of the estimated ETR on growth of the favored sectors and also of the economy as a whole. The key findings are summarized as follows, together with their policy implications.

First, the estimated ETR in Korea in the early 2000's is about 29%. This puts Korea at about the center in the international league table of ETR. Korea's estimated ETR is lower than those in the US, Japan, and most of continental European countries. Some of the East Asian economies, however, have lower ETR than Korea does, including Taiwan, Hong Kong, Singapore, Thailand and Malaysia.

Second, industrial policy through corporate income taxation seems to be used with relative restraint in Korea, and government reliance on this policy tool seems to have decreased over time since the early 1980s. Among the countries we considered in the paper, there is a wide variation in the dispersion of ETR across industries. While advanced countries such as the US, the UK, Germany, and Japan have largely abandoned the attempt to influence the pattern of industrial growth through sectoral favors, high dispersion in the distribution of ETR across industries is quite prevalent among developing countries in Asia and Latin America.

Third, industrial policy through preferential corporate taxation largely fails to promote overall economic growth, while the policy seems to be effective in promoting the growth of the favored industries. While our results are still preliminary, a wider dispersion in the distribution of ETR across industries is associated with slowing down of overall growth.

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