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Tax Policy Directions for Service Sector Growth and Job Creation

December 2014 | Hag-Soo Kim

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Introduction

It is an old tune that service sector should be fostered in order to make up the declining potential growth of Korean economy, largely depending on the growth of manufacturing sector. Since 1998 crisis, each government introduced different sets of instruments for the same old tune that is to make Korean service sector the new engine of growth and job creation. “Creative economy yielding many decent jobs through strategically fostering service sector” is a highly prioritized policy goal in the current regime. It seems also highly likely that succeeding governments in the future will also emphasize the growth and role of service sector since the export-led and manufacturing sector-oriented growth paradigm of Korean economy showed its limits.

Since the People’s Government under President Kim Dae-Jung, Korean policymakers have introduced a wide range of measures, aimed at enhancing the competitiveness and productivity of the Korean service sector, from deregulation to eliminating or lessening unfavorable financial and tax benefits to service sector. In spite of such efforts made by each government since 1998, however, the Korean service sector still lags behind other major OECD member countries in terms of its value-added share, employment weight, and level of productivity. In addition, the service sector’s contribution to the overall Korean economy hardly met the Korean peoples’ expectations.

The service sector’s share in GDP and its employment rate indicates that there is still much room for improvement in terms of sector productivity. The limits of the manufacturing sector-oriented growth paradigm have been amply discussed and well known. It is widely acknowledged that it is now really needed

to promote the service sector in order to create more jobs and enhance the potential growth of overall economy. At the beginning of the Park Geun-hye administration, she set a goal to raise the employment rate to 70% and the expansion of the service sector is truly necessary to achieve this goal.

The majority of existing studies related to fostering the service sector focused on deregulation as the key instrument, without giving enough considerations in tax measures as a possible tool. Some studies, however, confirm that the effective tax rates applied to businesses in service industries are higher than those applied to businesses in other industries. The difference in the effective tax rates by industry means that tax burdens are differently imposed by industry on the same amount of income generated, undermining the principle of horizontal equity. Moreover, the difference in the effective tax rates by industry also distorts the distribution of resources and thereby weakens the efficiency of the overall economy. Nevertheless, even at the cost of efficiency loss, Korean policymakers have long justified the use of different effective tax rates by industry for the purposes of fostering certain industries and boosting the business cycle. Little research has been done, however, on whether the benefits of such a preferential tax policy outweigh the efficiency cost that is resulted from the preferential tax policy. It is therefore quite important to identify and analyze how the patterns of preferential tax policy among industries have been evolved in Korea and the extent to which it has affected Korean industries and economy as a whole. We also discuss related issues and suggest for the direction of tax policy reform.

In Section II, this study delineates the current status of the Korean service sector and presents an international comparison with major industrialized economies. Section III provides a comparative analysis of the difference in effective tax rates by industry in Korea and 10 other countries. It will be also empirically evaluated what the likely economic impacts of widening difference in effective tax rates by industry would be. Section IV proposes the tax policy reforms that are needed to foster the service sector and, furthermore, overall economic growth and employment in Korea. The final section briefly summarizes main findings of this study and lays out its shortcomings.

Ⅱ

Korean Service Sector: International Comparison

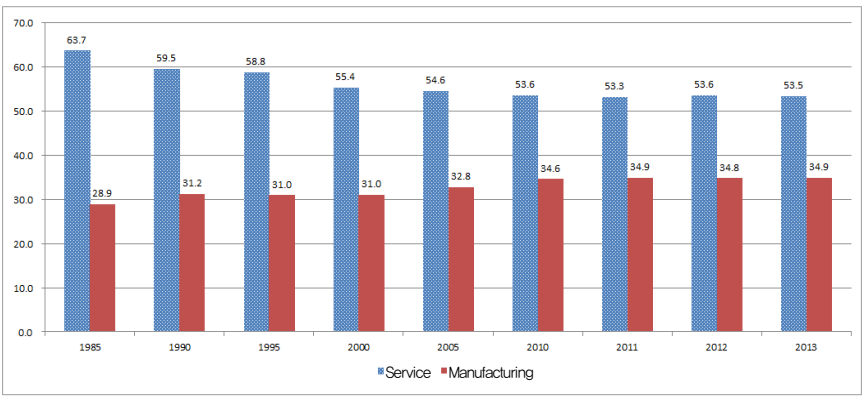
1 Korean service sector today

A. GDP share of service sector in Korea

In 1985 the service sector accounted for a considerable portion of Korea's GDP, around 63.7%. However, its share has been consistently reduced since then: to 58.8% in 1995, 54.6% in 2005, 53.5% in 2010, and 53.3% in 2013.

[Figure Ⅱ-1] **The Trend in the GDP share of Service Sector in Korea**

(Unit: %)



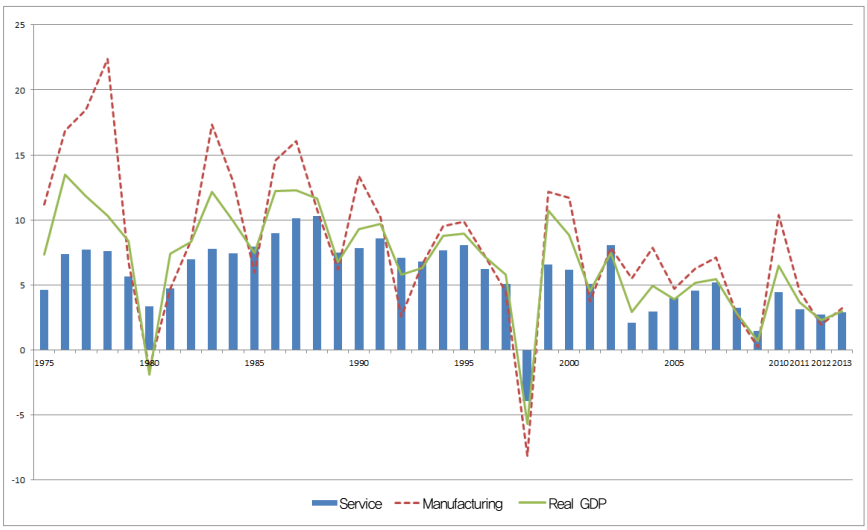
Source: Compiled by the author from the *World Development Indicators Database* (2014) of the World Bank.

This downward trend in the GDP share of service sector is in contrast to the steady rise in the one of the manufacturing sector and others, excluding the primary industries, which reached 34.9% in 2013. The reduced real GDP share of service sector is due to the relatively low growth rate of service sector than overall economy growth rate.

The annual growth rates of the Korean service sectors had shown some improvement on average until reaching its peak at 10.3% in 1988. After that year, it showed a trend of fall in the growth rates of service industry. Since the 1970s, the growth rates of the service sector have consistently hovered below the growth rates of the manufacturing sector and the overall economy, indicating that the service industry has hindered Korea's economic growth in terms of growth rates. Moreover, after the two major crises, the Asian Financial Crisis of the late 1990s and the global financial crisis in 2008, the growth rates of Korean service sector have not picked up the level before the crises.

[Figure II-2] **The Comparison of Growth Rates**

(Unit: %)



Source: Compiled by the author from the *World Development Indicators Database* (2014) of the World Bank.

Although the manufacturing sector picked up its pace of growth relatively quickly right after the Asian Financial Crisis in 1998, the service sector has been struggling to recover its trajectory of growth ever since. The latest global financial crisis in 2008 also slowed Korea's entire economy as it did other economies in the world. However, due to the limited recovery of the manufacturing sector and its limited influence on the national economy, couple with much more sluggish service sector, the overall Korean economy could not puck up its previous growth rates. This kind of phenomena has been continued since the Asian Financial Crisis of 1998. Korea's real GDP continued to grow at a rate of 5.6% each year until 2008, but has declined to 3.2% since then. While the growth rate of the manufacturing sector continues to be well above the real GDP growth rate, the growth rate of the service sector has consistently fallen short of the real GDP growth rate, remaining at around 2.9%, especially since the latest global financial crisis in 2008.

〈Table II-1〉 **Growth Rates Comparison by Periods**

(Unit: %)

	Service	Manufacturing, etc.	Real GDP
1980~1988	8.0	11.2	10.2
1988~1998	6.0	6.3	6.2
1998~2008	4.8	6.9	5.6
2008~2013	2.9	4.0	3.2

Source: Compiled by the author from the *World Development Indicators Database* (2014) of the World Bank.

On the contrary to most advanced economies that have been experienced the lower growth rates and the higher GDP shares of service sectors as the sizes of economies grew, Korean economy shows the lower GDP shares if service sector as its economy grows. The chronical low growth rate of Korean service sector, in turn, implies that expansion and growth of the service sector will also highly likely exert far-reaching impact on the overall Korean economy. This has been a major concern of policymakers in the past several Korean administrations including current regime, leading every one of them to introduce diverse new measures for promoting the growth of the service sector.[1)]

B. Employment share of service sector in Korea

The employment share of service sector in Korea began to exceed 60% at the beginning of 2000s.[2] Whereas the service sector hired only 37% of all employees in Korea in 1980, its employment shares has steadily and gradually increased since then. However, the increase in the service sector's employment share has decelerated noticeably since 2000.

Between 1980 and 1986, the employment share of the service sector grew from 37% by 1.25% points each year to reach 44.5% in 1986, but took a slight dip to 44.1% in 1987. However, it soon picked up pace again and continued to grow by 1.41% points yearly on average until 1999, thus amounting to 61%. However, the increase in the share is reduced to 0.77% points each year until 2008 or so. Having reached its peak at 69.5% in 2009, the employment share of the service sector remained stagnant for a while, until it finally reached 70% in 2013.

It should be emphasized that the growth of the service sector can significantly expedite the growth of the overall Korean economy. More importantly, the expansion and advancement of the service sector will also create more jobs. As the manufacturing sector and related technologies has been advanced, the manufacturing sector's labor-induced effect has been reduced while it's value-added has been increased. In order to make up the reduced labor-induced effect of manufacturing sector, the solution must be found in the ways to promote growth of the service sector. While a more detailed discussion of this matter will follow in Section III, it should be noted here that the employment share of the Korean service sector has consistently fallen short of the average employment share (70%) of OECD member states until very recently. The United States, Luxembourg, and England continue to keep the highest employment shares of service sectors (around 80%). As the experiences of these countries

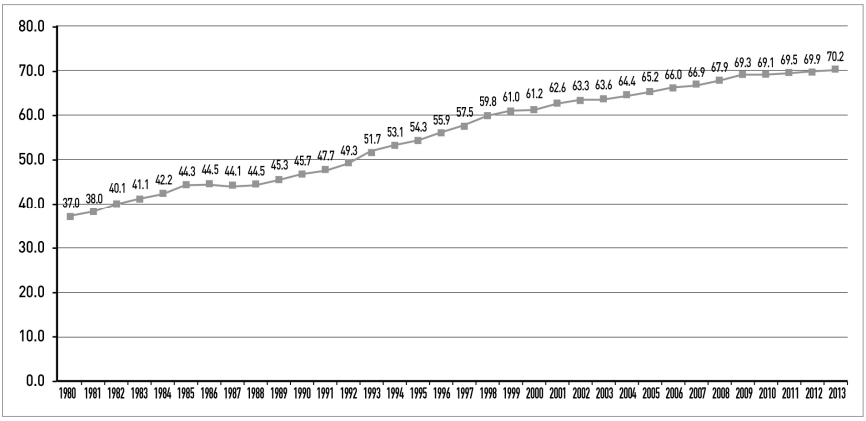
1) Each of the past four administrations began by identifying and selecting the promising areas of the service sector likely to generate high value-added. These administrations have together devised and announced dozens of service sector support policy measures since 2000.

2) Employment rate of service sector = 100 * (number of people employed in service sector / total number of people employed)

suggest, the growth of the service sector in Korea will likely compensate for the decrease in the labor-induced effect of the manufacturing sector.

[Figure II-3] **Employment share of the Service Sector**

(Unit: %)



Sources: 1. Compiled by the author from the *World Development Indicators Database* (2014) of the World Bank.
2. The data on the years starting from 2010 were compiled by the author from the Statistics Korea database on the number of employees by industry (http://kosis.kr/statisticsList/statisticsList_01_List.jsp?vwcd=MT_ZTITLE&parentId=B#SubCont).

2 An International Comparison

A. Comparison in GDP share

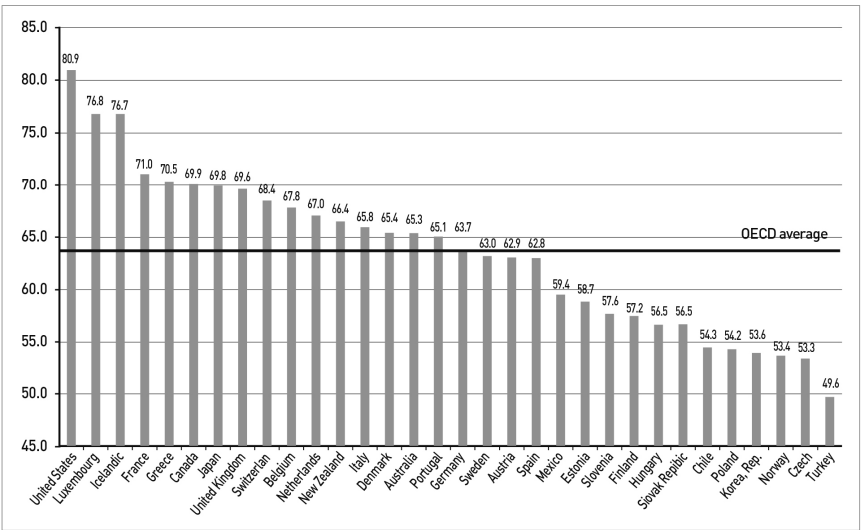
The average GDP share of the service sector in OECD member states was 63.5% in 2010, which was almost 10 % points higher than the Korean service sector's GDP share, 53.6% in 2012. In fact, the share of Korea's service sector was the fourth least of all OECD member states, higher than only three countries: Turkey (49.6%), Czech Republic (53.3%), and Norway (53.4%).

The US service sector's GDP share is 80.9% in 2010, which is the highest among the OECD members. The shares of service sectors in Luxembourg and

Iceland are also well above 75%, while those in France and Greece slightly exceed the 70%. The shares of Canada, Japan, and the United Kingdom account for around 69% of their own GDP, while those of Switzerland, Belgium, the Netherlands, and nine other member states are also higher than 60%.

[Figure II-4] Service Sectors' GDP Shares in OECD Member States (2010)

(Unit: %)



Source: Compiled by the author from the *World Development Indicators Database* (2014) of the World Bank.

The average share of the service sector in OECD member states rose from 59.7% in the 1980s to 61.3% in the 1990s, and again to 62.3% in the first decade of the 21st century, indicating a general tendency toward expansion. For the United States, whose vast economy relies overwhelmingly on its service sector, the share already reached at 73.3% in the 1980s, rose to 78.2% two decades later, and increased to 81.1% in 2011.

The GDP share of Korean service sector shows an opposite trend comparing with other major countries: the share for Korea was around 63% in the 1980s, which was actually slightly higher than the OECD average at the time, but it dropped to around 54% in 2013. As a result of the manufacturing-oriented growth

paradigm, the GDP share of the Korean service sector began to fall below the OECD average in the 1990s to 58.4%, and the gap between Korea and the OECD in this regard grew even wider in the 21st century.

Enlarged GDP shares of the service sector a kind of stylized fact of the growth of economies observed in the rest of OECD member states, except in Estonia, Poland, and Slovakia. The portion of the service sector in the Estonian GDP declined from 60.6% in the 1990s to 59.3% in the first decade of the 21st century, dropping further to 57.2% by 2013. The service sector share in Poland also took a slight dip from 57.7% in the 1990s to 56.6% in the first decade of the 2000s, while the decline was more pronounced in the case of Slovakia, from 59% in the 1990s to 54.6% in the first decade of the 2000s.

Service sector shares in Turkey and Norway may have been smaller than the one for Korea in 2010, but the service sectors in these countries have been steadily expanding since the 1980s. The Turkish and Norwegian shares, respectively, became 2.0% points and 3.7% points higher than their 1980's average. The Czech Republic, on the other hand, shows a tendency similar to Korea's, with its service sector shares dropping slightly from 55.7% in the 1990s to 53% in 2013.

〈Table II-2〉 **Trends in Service Sectors' GDP Shares**

(Unit: %)

	1980s	1990s	2000s	2010	2011	2012	2013
Australia	60.9	62.8	64.8	65.3	65.4	65.1	65.0
Austria	59.7	60.7	61.9	62.9	62.3	62.1	61.7
Belgium	–	66.1	67.0	67.8	68.2	68.5	68.7
Canada	61.9	64.4	67.5	69.9	–	–	–
Chile	52.8	50.4	49.9	54.3	54.9	55.1	55.2
Czech Rep.	–	55.7	54.1	53.3	52.6	52.9	53.0
Denmark	60.1	60.7	63.0	65.4	65.3	65.5	66.0
Estonia	–	60.6	59.3	58.7	56.6	56.7	57.2
Finland	57.4	59.2	56.9	57.2	57.5	58.6	58.8
France	67.1	68.8	69.6	71.0	71.2	71.6	71.9
Germany	–	59.8	63.3	63.7	63.4	63.8	64.0
Greece	–	–	68.4	70.5	71.7	71.6	71.9
Hungary	55.5	59.0	56.4	56.5	–	–	–
Iceland	–	73.0	74.8	76.7	76.8	76.5	–
Italy	61.8	62.7	64.4	65.8	66.0	66.5	67.1
Japan	–	69.0	70.4	69.8	70.4	71.3	–
Korea, Rep.	63.0	58.4	54.7	53.6	53.3	53.6	53.5
Luxembourg	–	72.8	74.5	76.8	77.1	76.3	76.3
Mexico	55.8	56.3	57.6	59.4	59.8	60.1	60.8
Netherlands	63.0	63.7	65.8	67.0	67.1	67.4	67.5
New Zealand	58.8	62.0	64.7	66.4	66.5	66.2	–
Norway	50.7	47.6	50.4	53.4	53.9	54.0	54.4
Poland	–	57.7	56.6	54.2	–	–	–
Portugal	–	59.8	62.4	65.1	65.5	66.5	66.9
Slovak, Rep.	–	59.0	54.6	56.5	–	–	–
Slovenia	52.1	55.2	55.7	57.6	–	–	–
Spain	–	58.0	59.2	62.8	63.8	64.8	65.3
Sweden	64.3	64.7	62.9	63.0	63.4	63.8	64.3
Switzerland	67.0	67.5	68.3	68.4	67.6	67.6	–
Turkey	47.5	47.1	49.5	49.6	49.3	49.5	49.5
United Kingdom	61.5	62.4	67.6	69.6	69.8	70.7	71.0
United States	73.3	74.3	78.2	80.9	81.1	–	–
Simple average	59.7	61.3	62.3	63.5	64.5	64.1	63.2

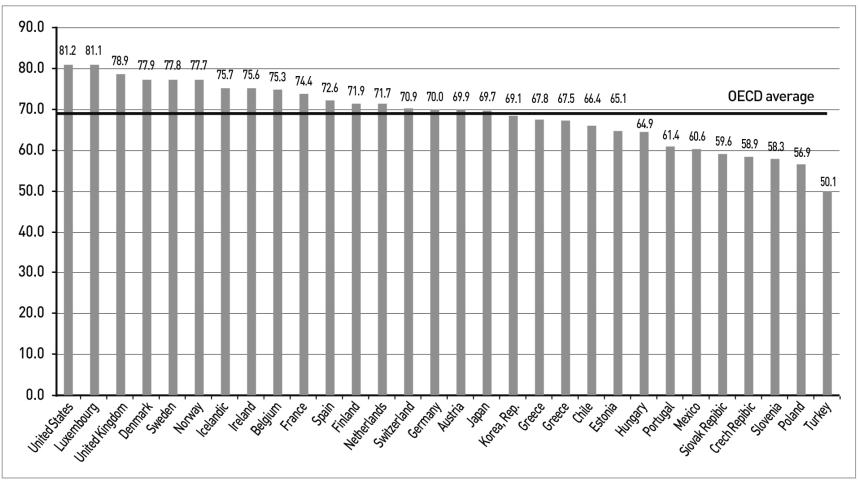
Source: Compiled by the author from the *World Development Indicators Database* (2014) of the World Bank.

B. Comparison in employment share

The employment share of the service sector in Korea stood at 69.1% in 2010, which was similar to the OECD average of 69.5%. Among the OECD member states, the countries with relatively high employment shares in 2010 were the United States (81.2%), Luxembourg (81.1%), the United Kingdom (78.9%), Denmark (77.9%), Sweden (77.8%), and Norway (77.7%). Fifteen of the OECD member states show the employment shares equal to or greater than 70%. Korea is ranked 18th, after these 15 countries plus Austria and Japan.

[Figure II-5] **Service Sectors' Employment Shares (2010)**

(Unit: %)



Sources: 1. Compiled by the author from the *World Development Indicators Database* (2014) of the World Bank.
2. Data on the years starting from 2010 were compiled by the author from the Statistics Korea database on the number of employees by industry (http://kosis.kr/statisticsList/statisticsList_01_List.jsp?vwcd=MT_ZTITLE&parentId=B#SubCont).

The employment share of the Korean service sector were pretty much below the OECD average in the 1980s and the 1990s, yet rose dramatically in the first decade of the 21st century to the point where the gap between Korea and the OECD average was almost eliminated. In particular, the employment share

for Korea was less than the OECD average by 13.4% points in the 1980s, but the gap was reduced to 6.6% points in the 1990s. During the first decade of the 21st century, the employment share for Korea service sector rose to 65.8%, which was about 1.6% points less than the OECD average. While not data for all countries are available for 2012, the employment share of the Korean service sector reached at 69.9% in 2012, which was the average of the 26 OECD member states whose data were available.

The service sectors' employment shares for almost each OECD member state have been steadily increased on average throughout the last three decades or so. This pattern bears important implications for Korea. As their service sectors grow, the growth in service sector can create more jobs and stabilize domestic demands at or above a certain level. However, the fact that the GDP share of service sector for Korea continues to shrink while its employment share increases implies that the Korean service sector has rather failed to increase its value -added mainly due to the low productivity and, as a result, the overall growth of Korean economy has been deterred.

Realizing this, Korean policymakers came to focus their attention on fostering the competitiveness of service industries, and devised and implemented so many new policy measures since the early 2000s. Despite such efforts, however, the growth rate of the service sector in Korea has rather slowed down, deterring the nation's economy. While the rise in the Korean service sector's employment share may create the illusion that the service sector has grown in importance over time, in reality what it shows is that the Korean service sector gets mired in a serious productivity problem, highlighted by its small GDP share—the fourth-smallest share among OECD member states.

〈Table II-3〉 **Trends in Service Sectors' Employment shares**

(Unit: %)

	1980s	1990s	2000s	2010	2011	2012
Australia	66.7	72.2	75.0	–	–	–
Austria	53.5	60.6	67.0	69.9	68.7	68.9
Belgium	66.0	69.2	73.6	75.3	75.5	77.1
Canada	69.9	73.9	75.4	–	–	–
Chile	59.0	58.3	64.0	66.4	66.4	–
Czech Rep.	–	52.6	56.6	58.9	58.6	58.8
Denmark	65.6	69.0	74.2	77.9	77.6	77.5
Estonia	42.3	54.1	61.6	65.1	62.9	64.1
Finland	57.7	65.2	69.5	71.9	72.4	72.7
France	61.8	67.9	72.3	74.4	74.6	74.9
Germany	55.5	60.6	67.4	70	70.1	70.2
Greece	44.6	56.2	64.8	67.8	69.8	70.3
Hungary	39.4	57.1	62.3	64.9	64.4	64.9
Iceland	63.9	66.0	72.2	75.7	75.7	75.8
Ireland	57.5	62.2	68.1	75.6	76.5	76.9
Israel	65.3	69.1	75.4	–	–	–
Italy	55.9	60.4	65.3	67.5	67.8	68.5
Japan	56.7	60.6	66.7	69.7	–	–
Korea, Rep.	43.5	55.2	65.8	69.1	69.5	69.9
Luxembourg	62.3	72.4	80.3	81.1	82.7	84.1
Mexico	48.4	53.5	59.0	60.6	61.9	–
Netherlands	67.3	69.9	72.6	71.7	71.5	–
New Zealand	63.2	66.2	70.0	–	–	–
Norway	66.5	71.8	75.4	77.7	77.3	77.4
Poland	34.1	45.6	53.7	56.9	56.7	57
Portugal	43.2	54.2	57.3	61.4	62.7	63.8
Slovak. Rep.	–	52.5	56.7	59.6	59.5	59.2
Slovenia	–	47.9	54.4	58.3	59.5	60.3
Spain	51.1	60.5	66.1	72.6	74	74.9
Sweden	65.8	71.1	75.7	77.8	77.7	77.9
Switzerland	59.9	68.1	71.3	70.9	71.1	72.5
Turkey	43.5	35.0	46.2	50.1	49.4	50.4
United Kingdom	64.2	69.9	76.3	78.9	79	78.9
United States	69.1	73.1	78.0	81.2	–	–
Simple average	56.9	61.8	67.4	69.3	69.1	69.9

Sources: 1. Compiled by the author from the *World Development Indicators Database* (2014) of the World Bank.
2. Data on the years starting from 2010 were compiled by the author from the Statistics Korea database on the number of employees by industry (http://kosis.kr/statisticsList/statisticsList_01_List.jsp?vwcd=MT_ZTITLE&parentId=B#SubCont).

Ⅲ

Preferential Taxation and Economic Growth

Since 2001, the Korean government has been emphasizing the service sector as a new growth engine for the Korean economy, releasing dozens of new policy plans and measures aimed at promoting its expansion. Although some visible outcomes and successes have come about as a result of these measures, the Korean service sector has not only remained stagnant but has even worsened in some parts. Until now, Korean policymakers have focused on promoting competition, lowering entrance barriers, and encouraging the expansion and specialization of service corporations in an effort to enhance the competitiveness of Korean service industries.

While some of these efforts have borne some fruits, particularly in the form of the raised employment share of the Korean service sector and the disappearance of unwieldy regulations, they have nonetheless largely failed to improve the labor productivity of the Korean service sector at a fundamental level. The value-added of the Korean service sector has slowed down noticeably since the Asian Financial Crisis of 1998, and the service trade balance has consistently recorded a deficit since 2000, indicating that much of the domestic demand for services is satisfied by suppliers outside Korea. Nor is the Korean service sector a particularly successful exporter.

While it would certainly be a worthwhile exercise to explore every single policy measure that the Korean government has adopted since 2001 to foster the service sector, the goal of this study lies in summarizing the tax policy measures that each of the past four administrations has implemented for service industries. The aim is to reveal the chronical tax discrimination that has been

perpetrated against the service sector in Korea by the government's policy of prioritizing support for the manufacturing and primary sectors.

Despite a few major attempts that have been made since 2001 to address and bridge the preferential taxation between the service sector and other sectors in Korea, the relative differences in average tax rates among industries has rather been widening. The effective tax rates applied to different industries in effect impose differing amounts of tax burdens on businesses that generate the same amounts of income or revenue. This phenomenon runs directly contrary to one of the fundamental principles of taxation, i.e., the principle of horizontal equity. The Korean government until now has justified the violation of this principle by arguing that this kind of preferential taxation policy has been necessary to foster certain industries crucial to economic development and boost the overall business cycle.

How exactly differing tax rates on different industries affect a given economy is a matter of empirical analysis rather than of theoretical speculation. However, there are a few hypotheses we can begin with. First, different tax rates distort the distribution of resources and thereby undermine economic efficiency. This, in turn, compromises the growth prospects of that economy, and may inflict other positive repercussions as well. The theory, however, is that the cost of different tax rates imposed on disadvantaged industries may be justified by the greater amount of benefits from the advantaged industries, so that the overall outcome of such a policy can effectively compensate for the distortion it has caused to economic efficiency.[3)]

In order for different tax rates on different industries to induce positive outcome and growth for the whole economy, the government must be able to identify the industries that can produce the greatest amount of positive externalities, and the optimal tax rates to apply. In reality, however, we can hardly determine, once and for all, whether the government has decided rightly to support certain industries over others, or whether the tax rates it has chosen

3) However, we should question whether the point of the positive externalities of different tax rates outweighing the negative effects of distorted resource distribution is indeed enough to legitimize the violation of horizontal equity. Policymakers must keep in mind that privileging certain industries and economic actors above others for the benefit of the entire economy may not always be justifiable.

to apply are indeed optimal. One may always criticize such heavy government involvement in the market, arguing that it is private-sector economic actors and not the public sector that really know which industries are profitable and which are not. Numerous studies, including Kim (2013), have so far pointed out the fact that the current Korean corporate tax system, with its excessive favor on manufacturing, in fact creates differences in effective tax rates. It is now time for us to analyze the actual impact of such differences in effective tax rates on the entire Korean economy, and to identify the policy implications thereof.

1 Measuring the preferential taxation among different sectors

Using corporate tax reports and data indicated in *The Annals of National Tax Statistics*, this study measures the degree of the preferential tax regimes found in Korea since 2000. This study then compares the degree of the preferential tax regimes in Korea to those in other countries.[4] The degree of preferential taxation in corporate taxes among industries is measured by using the coefficient of variation for each year of the average effective tax rates for each sector. The coefficient of variation indicates by how much the effective tax rates on different sectors differ from one another, and thereby enables us to standardize and make comparisons of the degree of the preferential tax regimes across countries.

The coefficient of variation, in general, indicates how large the standard deviation of industrial average effective tax rates for each year is relative to the given average tax rates for all industries. The equation used to determine the coefficient of variation in the average effective corporate tax rate is expressed below.

4) The effective tax rate for each sector is determined by comparing the total amount of corporate taxes imposed on the businesses in the given sector to the total amount of taxable income the same businesses. See Kim (2013) for more details.

Equation (1): $$CV\_n = 100 * \frac{\sqrt{(n-1)^{-1}\sum_{i=1}^{n}(ETR_i - ETR)^2}}{ETR}$$

Note that ETR stands for the average effective tax rate of each industrial sector ("i"), while ETR stands for the average effective tax rate for all sectors.

If we were to apply Equation (1), we would soon discover that each sector would exert equal impact on the coefficient of variation irrespective of its weight in the whole economy. In this case, the larger the deviation between the average effective tax rate of a sector from the average effective tax rate of the whole economy, the more significant that sector's influence on the coefficient of variation. Accordingly, standard deviations should be estimated by applying the weighted average of each sector (CV_w), as shown in the equation below.

Equation (2): $$CV\_w = 100 * \frac{\sqrt{\sum_{i=1}^{n} w_i (ETR_i - ETR)^2}}{ETR}$$

Here, w_i indicates the weight of the given sector in the tax revenue, while ETR_i and ETR, as above, stand for the average effective tax rate of each industrial sector and the average effective tax rate for all sectors, respectively.

The calculation and analysis of the coefficient of variation in the effective tax rate for each sector in Korea will be discussed in detail in following sections comparing with the coefficients of variation for 10 major OECD member states. For now, note that this study used two different systems for dividing industries: 1) calculating one coefficient of variation (CV_w1) for each of the four sectors; and 2) calculating another coefficient of variation (CV_w2) for each of the 13 industries sorted according to *The Annals of National Tax Statistics*, with the goal of determining the trend from 2000 onward.

〈Table III-1〉 **Industrial Classifications for Calculating Coefficient of Variation**

Industrial classification for CV_w1	Industrial classification for CV_w2
Primary sector	Agriculture, forestry, and fishery
	Mining
Manufacturing	Manufacturing
Finance and insurance	Finance and insurance
Other (service)	Electricity, gas, and water services
	Construction
	Retail
	Food and beverage, and accommodations
	Shipping, storage, and communications
	Real estate
	Service
	Healthcare
	Other

In the following section, we will compare the coefficient of variation in the effective corporate tax rates in Korea to those for other major economies, i.e., the United States, Canada, Australia, the United Kingdom, Japan, Denmark, Germany, Hungary, Norway, and Spain. The unavailability of official statistics on some of these countries on their government websites and in Korean libraries made it necessary for the author to request relevant statistics from the tax services, statistics services, and/or financial ministries of these countries, and to compile a new database on the industrial corporate tax trends in these countries.

In contrast, statistics on corporate taxes in the United States, Canada, and Australia were readily available from the websites of the respective tax and revenue services of these countries, while the information on Japan's case was found in the *National Tax Service Statistics Annual Reports* from Japan that are archived in Korean libraries. As for Germany, Denmark, Hungary, Norway, Spain, and the United Kingdom, the author contacted officers in charge at the respective tax services or financial ministries of these countries, and obtained the requisite data in the form of either e-books or Excel spreadsheets.[5] Using

5) I requested the corporate tax data required for this study from the ministries of finance, statistics services,

these data, this study measured the CV_w1 of each of the four main categories of industrial sectors for each of the 10 countries and compared the outcomes to Korea. Some of these countries, except for Denmark, Australia, Germany, and Hungary, did not provide information on corporate tax trends in some of the 13 industrial categories during the period from 2000 to 2010. For instance, the Norwegian government was unable to provide tax data on these 13 categories until 2002, and did not start to separate the food/beverage and accommodation industries from the healthcare industries until 2008. The Spanish government did not provide corporate tax data on agriculture/forestry/fishery, mining, food/beverage and accommodation, healthcare, and other industries with respect to either certain years, or all the years.

Given the different industrial classification systems in use among countries, the author of the present study had to re-sort the industries in other countries in a manner most approximate to Korea's 13-category system before measuring their coefficients of variation. Accordingly, coefficients of variation were measured based on 9 to 13 industrial categories for each country. Five countries had the 13-category system, i.e., Korea, Australia, Denmark, Germany, and Hungary. The CV_w2 of three countries, i.e., Austria, Canada, and the United States, were measured on the basis of the 12-category system. As for Japan and Norway, 11 industrial categories were used, while 10- and 9-category systems were applied, respectively, to Spain and the United Kingdom.

2 Trends in coefficients of variation in the effective tax rates for Korea

While the average effective tax rates applied to the primary and manufacturing sectors have consistently been lower than the all-industry average

and tax services of all 29 OECD member states, aside from the United States, Canada, Australia, and Japan. Only the officials of the six countries named here sent back meaningful replies. Thus I would like to convey my appreciation to the government officials of these countries. Without their help, this study would not have been possible.

from the starting point of analysis, those applied to the finance-insurance and other service industries have always higher than the all-industry average. Although the decrease in statutory tax rate since 2000 caused the overall average effective tax rates, the decline in the average effective tax rates for the primary sector was most pronounced. In the meantime, the average effective tax rates for the finance and insurance industry, even in the trend of decline in the overall average effective tax rates, remained higher than those for other industries.

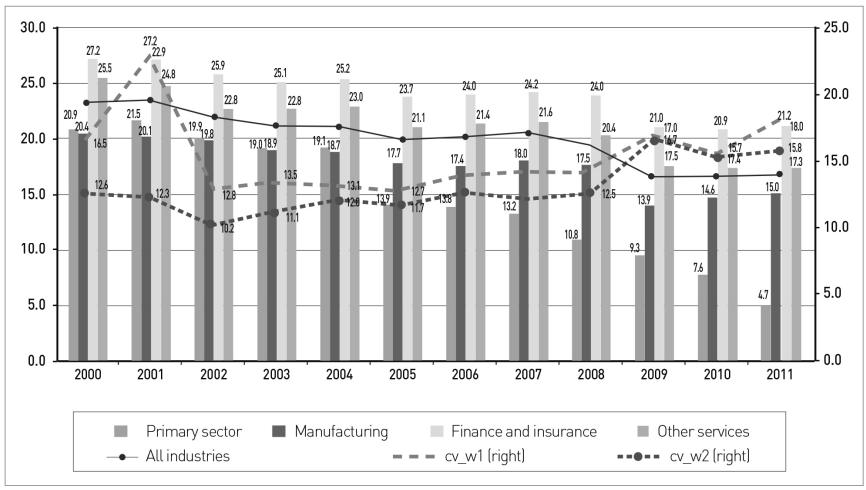
The coefficients of variation in the effective tax rates for Korea's four industrial classifications reveal that the differences in average tax rates among these industries steadily expanded from 10.2% in 2002 to 16.7% in 2009 and have remained more or less the same since. The coefficients of variation in the effective tax rates for the 13 categories of industries show a similar pattern, indicating that the preferential tax regimes among industries in Korea have been consistently enhanced since 2002.[6)]

The fact that the coefficients of variation for Korea have been rising steadily suggests that the Korean corporate tax system is much more beneficial to certain industries such as the primary and manufacturing sectors and less so to other industries. Moreover, such preferential tax regimes have been enhanced since 2000. Although no one can dispute the central importance of the primary and manufacturing sectors in the Korean economy, the positive externalities of preferential tax benefits given to the primary and manufacturing industries must outweigh the cost—i.e., economic inefficiency—that is caused from the current tax system preferential to some industries if the current tax system is to be considered legitimate and remain in place. However, considering that the primary and manufacturing sectors are exerting increasingly less positive impact on the overall Korean economy today, we should seriously question whether the current corporate tax system should be retained without any change.

6) Though not presented in this report for the brevity, the weighted average of the amount of taxable income in each industry also shows patterns quite similar to those presented in this report.

[Figure III-1] **The degree of preferential tax regime in Korea**

(Unit: %)



3 International comparison of the degree of preferential tax regime

A. Comparison under the classification of 4 industries

The degree of preferential tax regime among Korea's industries—assuming four industries classification—has been steadily increasing and, as a result, by 2010 it was the fourth largest among other countries, following after those of the United States, Hungary, and Australia. However, of the 11 countries surveyed, only the United States showed an increasing trend in the degree of preferential tax regime. For a more detailed comparison, the patterns observed in these countries have been divided into three types: expanding, shrinking, and no specific trend.

1) Expanding trend

The countries which have shown the expanding pattern like Korea's since 2000 are the United States, Denmark, Germany, and the United Kingdom. In

the United States, the degree of preferential corporate tax regime, as measured by coefficients of variation in the average effective corporate tax rates applied to different industries, reached its height in 2002 and entered a gradual downward pattern over the next few years, until soaring again in 2006. In 2010, the degree of preferential taxation in the United States amounted to 28.7%, far higher than Korea's slightly-less-than 17%. This is because in the United States the average effective corporate tax rate for the primary sector is much higher than that on the manufacturing sector, whose effective tax rate is the lowest. The effective tax rate on manufacturing in Korea was 14.6% in 2010, not that different from the 15.0% observed in the United States. Considering that the maximum federal corporate tax rate is 35% and the maximum combined (federal and local) corporate tax rate is 39.1% in the United States, the 15% applied to the manufacturing sector in US is considerably low.

While the degree of preferential taxations in Denmark and Germany have been expanding somewhat each year, in both these countries the coefficients of variation are smaller than those observed in Korea. The degree of preferential taxation in Denmark has certainly been widening since the latest global financial crisis, but the coefficient of variation in the average effective corporate tax rate applied to all its industries was a mere 6.7% in 2010, which was 8.7% points lower than that of Korea. In Denmark, the effective corporate tax rate for the primary sector hovers well above the average effective rate applied to all sectors. However, the effective tax rate for the finance and insurance industries remains significantly lower than the average rate applied to the manufacturing sector.

On the other hand, the coefficient of variation in the effective tax rate applied to German industries abruptly rose to 6.2% in 2007, before dipping to 4.5% in 2009 again.[7] As in Korea, the average effective tax rate for the German primary sector is the lowest, mainly because the average effective tax rate applied

7) The degree of preferential taxation in Germany may not have been expanding consistently as in the case of the United States or Korea, but Germany is grouped as a country with an expanding degree of preferential taxation nonetheless because its degree of preferential taxation, measured in 2007, was larger than the one observed in the early 2000s. Although the degree of preferential taxation in Germany shows a reverse-U shape after the mid-2000s along with a pattern of abrupt shrinkage, its degree of preferential taxation measured in the last year of the analysis still remains significantly larger than the gap observed in the first year.

to mining was just short of 10% in 2007. Unlike Korea where the average effective tax rate applied to agriculture/fishery/forestry is 9% points lower than the average rate of 16.6% for all industries, the tax rate for the same industries in Germany remains more or less the same as the all-industry average. It should be noted that except for mining, the effective tax rates applied to all industries in Germany stay close to the all-industry average.

The degree of preferential taxation in the United Kingdom, having reached its height of 13.2% in 2008, plummeted to 6.4% in 2009 and further to 6.1% in 2010. Considering that the country's degree of preferential taxation reached 5.1% or so as late as 2004, even the lowered degree of preferential taxation observed in 2010 remains higher than the degree of preferential taxation found earlier years. On the other hand, the average effective tax rate on manufacturing, which was lowered to 14.7% in 2008, spiked to 18.3% in 2009 and again to 23.7% in 2010, indicating that the corporate tax burden on the manufacturing sector is significantly increasing. The average effective tax rate applied to the primary sector in the United Kingdom also hovers above the average rate applied to its manufacturing sector, while the average effective tax rates for the finance and insurance sectors have stayed slightly and consistently lower than the all-industry average since 2008.

2) Shrinking trend

Though the degree of preferential taxations in Australia, Canada, Hungary, Japan, and Spain fluctuate to some extent each year, they have generally been on a decreasing pattern. In particular, the degree of preferential taxations in Australia, Canada, and Japan, having reached their peaks in the early 2000s, has been consistently shrinking.

The degree of preferential taxation in Australia plummeted from 44.1% in 2002 to 17.6% in 2003, and kept steadily shrinking until 2008. However, the degree of preferential taxation doubled from 9.0% in 2008 to 18.2% in 2010. The changes in Australia's degree of preferential taxation closely track those in the effective tax rate applied to the country's finance and insurance industries. Whereas the Australian government has maintained effective tax rates for all other industries at around 25% since 2003, the tax rates for finance and insurance

have always fallen short of the all-industry average, while the tax rates for other service industries have remained higher. Interestingly, the effective tax rates for the Australian primary sector also remain significantly higher than those for the manufacturing sector.

On the contrary, the degree of preferential taxation in Canada has been steadily shrinking since 2000. The coefficient of variation in the all-industry average effective tax rate in Canada dropped from 12.1% in 2000 to 7.9% in 2010, indicating the relative success the Canadian government has had in enhancing the horizontal equity of corporate tax rates imposed on different industries. The effective tax rates for Canada's primary and manufacturing sectors remain more or less the same as the level of all-industry average, while the effective tax rates for all service industries have remained consistently the lowest since 2005, except in the case of the finance and insurance industries that have traditionally had the highest effective tax rates.

The degree of preferential taxation in Japan similarly shrank from 8.2% in 2000 to 5.8% in 2010. While the average effective tax rate for the Japanese primary sector remains only one-half or so of the all-industry average, this is only because the effective tax rate applied to the mining industry is exceptionally low. Unlike in Korea, the effective tax rates for Japan's agriculture/forestry/fishery industries have remained more or less the same as the all-industry average, as have the tax rates for Japan's finance and insurance industries.

Hungary, Spain, and the United Kingdom are also countries whose degree of preferential taxations have been steadily decreasing since the mid-2000s, drawing reverse U-shaped curves. The degree of preferential taxation in Hungary, which reached 36.8% in 2003 and 33.9% in 2005, radically decreased to 18.5% by 2010. The degree of preferential taxation in Spain, after reaching its peak at 10.2% in 2005, also plummeted to 2.8% by 2010.

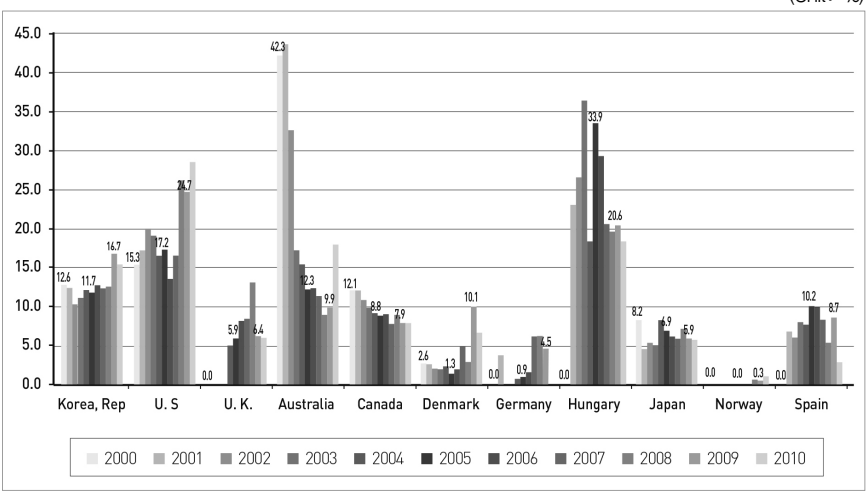
3) No specific trend

Norway is a country whose degree of preferential taxation has remained almost the same from 2000 to 2010, at below 1%. The Norwegian government applies a uniform corporate tax rate of 28% to all industries, and there are no additional local sources of corporate tax burdens. The author found this

phenomenon rather curious, and sought to inquire into the matter by requesting additional information from an official at the Norwegian tax service, unfortunately to no avail. The author therefore lacks the information needed to explain the exceptionally small degree of preferential taxation in Norway.

[Figure III-2] **Comparison of Degree of preferential taxations under the 4 industries classification**

(Unit: %)



Source: Compiled by the author, on the basis of published materials and other data provided by the governments of the 11 countries.

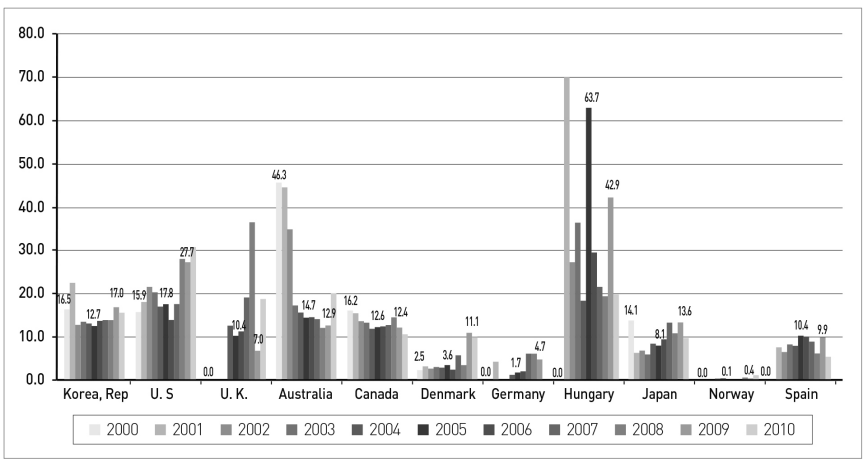
B. Comparison under the classification of 13 industries

See Figure III-3 for the full list of the 13 industrial categories used in this section. The degrees of preferential taxations in the 11 countries analyzed in this study that apply the 13 industries classification system are very similar to the degree of preferential taxations analyzed when the 4 industries classification system (Figure III-2) is applied. The countries with expanding or shrinking degree of preferential taxations are the same under both category systems. However, applying the 13 industries classification system reveals greater changes in coefficients of variation in the effective tax rates.

Moreover, using the 13 industries classification system also brings Korea down a notch, from fourth to fifth place, when the 11 countries are ranked in descending order of degree of preferential taxations. The 13-category system also reveals the coefficient of variation in the effective tax rate applied to all industries in the United Kingdom as 19% in 2010, which is higher than Korea's 15.7%. Under the 13 industries classification system, the United States, Australia, Hungary, the United Kingdom, and Korea were the countries with the largest degree of preferential taxations in 2010.

[Figure III-3] **Comparison of Degree of preferential taxations under the 13 industries classification**

(Unit: %)



Source: Compiled by the author, on the basis of published materials and other data provided by the governments of the 11 countries.

C. Comparison of tax exemption and reduction rates across industries

The effective average tax rates that businesses face are determined by multiple factors such as the amounts of taxable income, the statutory corporate tax rates as well as the various other exemptions and reductions provided by the law. We can compare the tax burdens on businesses in different countries by considering the weight of corporate taxes in each country's GDP, and each

country's nominal corporate tax rates and/or average effective tax rates. Effective tax rates can be defined as the ratio of the amount of corporate tax to the amount of taxable income, and reflect the tax-reducing effects of the exemption and reduction programs in place. As the governments of different countries impose corporate tax burden with different statutory corporate tax rates and tax exemptions and reductions, a simple comparison of the effective tax rates in these countries provides little insight.

As Kim(2010) argues, greater understanding can be gained not by making a simple comparison of effective tax rates, but by comparing corporate tax exemptions and reductions and the maximum statutory corporate tax rates, as the difference between these two indicates how the given country's tax exemption and benefit programs reduce the amount of tax burdens on businesses. As the corporate tax exemption and reduction rate equationted by Kim(2010) is already measured against the maximum statutory corporate tax rate in the given country, it provides a handy tool for comparing the degree of tax reductions and exemptions across various countries. Kim(2010) defines the corporate tax exemption and reduction rate as follows:

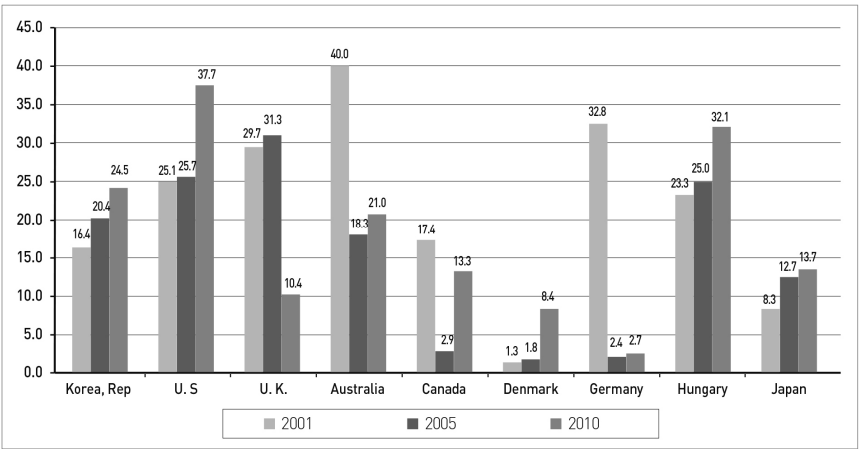
> Assuming the statutory tax rate to be %, and no exemptions or reductions under the corporate tax law or any other laws of the given country, each unit of increase in the income earned by the businesses in that country will translate into-units of increase in the amounts of tax burdens they must bear. However, let us assume that the actual amount of taxes that businesses pay for each unit of increase in the amount of their taxable income is under the depreciation system and/or other tax exemption and reduction system. Then the amount of corporate tax that the businesses pay less will be for a unit of taxable income, while the ratio of the corporate tax exemption and reduction rate to the statutory tax rate will be(Kim, 2010, 187).

We can utilize the effective tax rates by nation and industry used earlier to determine which industries benefit from tax exemption and reduction programs and by how much, when measured against the statutory tax rates in their

respective countries. In particular, the difference between the all-industry average for the tax exemption and reduction rate and the tax exemption and reduction rates for specific industries can be a good indicator of how much a given country's tax exemption and reduction system favors the specific industries. The difference, moreover, may reveal part of the strategies that different governments have for fostering certain industries over others.[8] In other words, if the difference between the exemption and reduction rate for a specific industry and the all-industry exemption and reduction rate is positive, the given industry is particularly favored under the existing exemption and reduction system in that country, or vice versa.

[Figure III-4] Comparison of All-industry Average Tax Exemption and Reduction Rates

(Unit: %)



Source: Compiled by the author, on the basis of maximum possible tax rates, published materials and other data provided by the governments of the 11 countries.

8) A country may apply the same tax exemption and reduction rate to its service and manufacturing sectors alike, but how much each sector will benefit from it may differ depending on sector-specific characteristics and circumstances. However, some of the 11 countries surveyed have managed to keep the effective tax rates applied to their service sectors either on a par with or lower than those applied to their manufacturing sectors. This is because the governments of these countries have successfully reined in and controlled degree of preferential taxations among their industries by employing effective tax exemption and reduction programs.

Of the 11 countries surveyed, Korea ranked at the third-highest corporate tax exemption and reduction rate at 24.5% as of 2010, next only to the United States and Hungary. The all-industry average corporate tax exemption and reduction rate in Korea has been steadily increasing since 2001, when it was 16.4%. Other countries showing a similar pattern include the United States, Denmark, Hungary, and Japan. The United States and Hungary, in particular, show exemption and reduction rates well in excess of 30%, while the rates in Denmark and Japan were 8.4% and 13.7%, respectively, as of 2010, far below Korea in the same year. It would be fruitful here to compare the all-industry average and industry-specific tax exemption and reduction rates across the 11 countries since doing so will have important policy implications for Korea.

1) Tax exemption and reduction rates for manufacturing

The average tax exemption and reduction rate for the manufacturing sector in Korea is almost 10% points higher than the all-industry average. More specifically, Korea's was higher than the average by 11.8% points in 2001, 8.8% points in 2005, and 9.1% points in 2010. This indicates that Korea's tax exemption and reduction systems have been designed and used in ways that heavily favor the manufacturing sector over other sectors and industries.

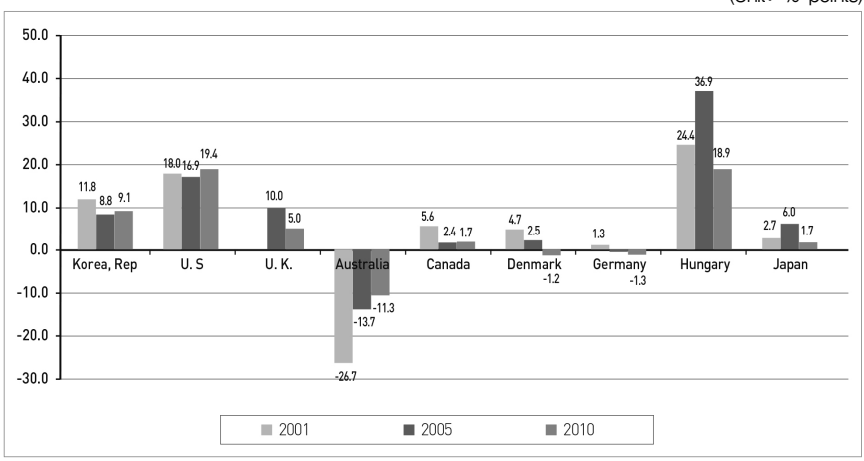
Favoring the manufacturing sector with tax exemptions and reductions is the norm in all countries except for Australia, but the difference between rates for the manufacturing sector and other sectors in most of these countries is not as dramatic as seen in Korea. Of course, the United States and Hungary provide far greater tax exemptions and reductions for their manufacturing sectors than does Korea for its manufacturing sector, but the difference between manufacturing and other sectors is less than 5% points in the United Kingdom, Canada, Japan, and elsewhere. The gaps in Denmark and Germany, in particular, steadily decreased, reaching less than 1% point by 2010.

Given the industrial structure of Australia, the Australian government has had little incentive to favor manufacturing with tax exemption and reduction programs, which is why the tax exemption and reduction rate for manufacturing is considerably lower than the country's all-industry average. However, the exemption and reduction gap between manufacturing and other industries in Australia steadily shrank, from -26.7% in 2001 to -11.3% in 2010. Japan has

one of the strongest manufacturing sectors in the world. Nevertheless, the difference between the exemption and reduction rate for its manufacturing sector and the all-industry average amounted to a mere 1.7% points in 2010. Although the gap did widen to 6% points in 2005, the Japanese government has consciously reduced the gap, to a level even lower than the 2.7% points observed in 2001.

[Figure III-5] Comparison of Corporate Tax Exemption and Reduction Rates: Manufacturing vs. All Industries

(Unit: % points)



Source: Compiled by the author, on the basis of maximum possible tax rates, published materials and other data provided by the governments of the 11 countries.

2) Tax exemption and reduction rates for finance and insurance

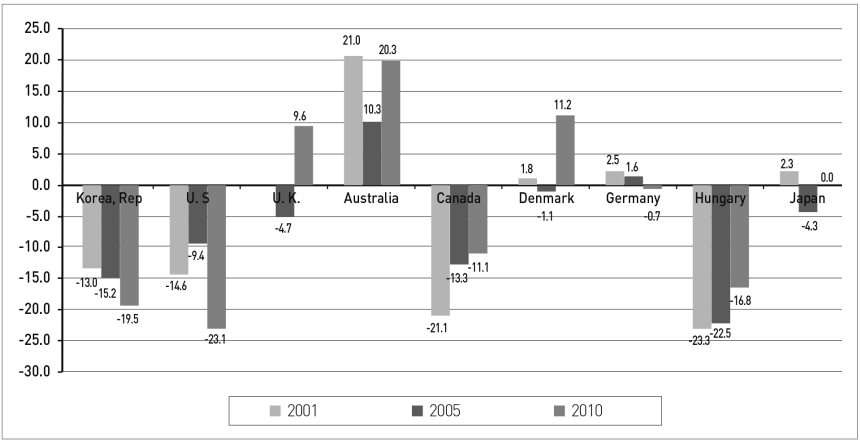
The corporate tax exemptions and reduction rates for the finance and insurance industries in Korea was 19.5% points lower than the all-industry average as of 2010. The gap, in fact, had been steadily increasing since 2001. Although the United States, Canada, and Hungary similarly showed consistently lower tax exemption and reduction rates for their finance and insurance sectors than for other industries, only the United States, like Korea, showed a steadily increasing gap, whereas Canada and Hungary's had been decreasing for some time.

There is no noticeable gap between finance and insurance and other industries when it comes to tax exemptions and reduction rates in Germany and Japan.

The United Kingdom and Denmark managed to keep the gap nonexistent or the exemption and reduction rate for the finance and insurance industries higher than those for other industries until 2005 or so. However, the gap between the exemption and reduction rate applied to finance and insurance compared to other industries in these two countries increased dramatically by 2010 to 9.6% points in the United Kingdom and 11.2% points in Denmark. In Australia, the finance and insurance industries are more heavily favored, enjoying a tax exemption and reduction rate that is on average 10.3% points higher than the all-industry average.

[Figure III-6] Comparison of Corporate Tax Exemption and Reduction Rates: Finance and Insurance vs. All Industries

(Unit: % points)



Source: Compiled by the author, on the basis of maximum possible tax rates, published materials and other data provided by the governments of the 11 countries.

3) Tax exemption and reduction rates for other service industries

The average tax exemption and reduction rates applied to service industries in Korea other than finance and insurance were 5, 4.8, and 3.6% points lower than the all-industry average in 2001, 2005, and 2010, respectively. The slow decrease in the gap reflects in part Korean policymakers' conscious efforts to reduce discriminatory practices against the service sector in the nation's tax

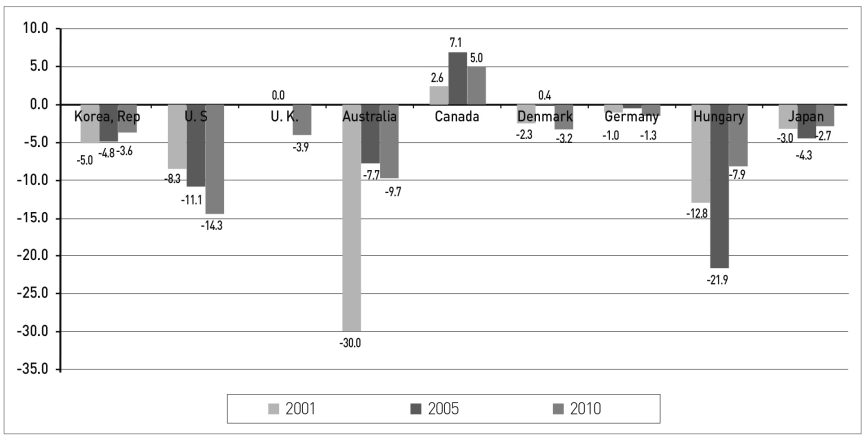
system.

The tax exemption and reduction rates applied to service industries in other countries, except Canada, all fall short of all-industry averages. In Canada, service industries enjoy a tax exemption and reduction rate that is, on average, 5% points higher than the all-industry average. In Denmark, Germany, Japan, and the United Kingdom, though the tax exemption and reduction rates applied to service industries are lower than the all-industry averages of those countries, it is only by a small margin (around 3% points).

However, the tax exemption and reduction rates for service industries in the United States, Australia, and Hungary fall significantly behind the all-industry averages of those countries. Whereas the tax exemption and reduction gaps between service industries and other sectors have been decreasing in Australia since 2001 and 2005, respectively, the gap has been noticeably increasing in the United States.

[Figure III-7] Comparison of Corporate Tax Exemptions and Reduction Rates: Other Service Industries vs. All Industries

(Unit: % points)



Source: Compiled by the author, on the basis of maximum possible tax rates, published materials and other data provided by the governments of the 11 countries.

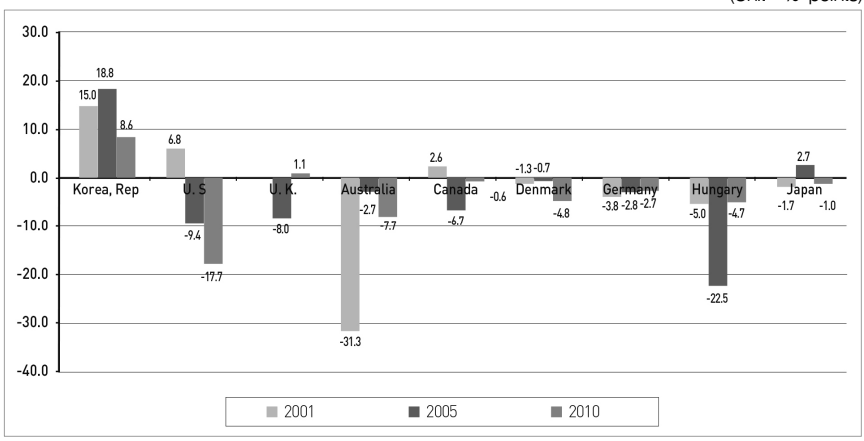
4) Tax exemption and reduction rates for the primary industry

The tax exemption and reduction rate applied to the primary industry in Korea was 15% points higher than the all-industry average in 2001, and briefly expanded to 18.8% points in 2005, before being halved to 8.6% points in 2010. Korea is the only country among the 11 surveyed whose agriculture/ forestry/ fishery industries enjoy an average tax exemption and reduction rate far above the all-industry average. In other countries, the tax exemption and reduction rate for agriculture/forestry/fishery either falls short of or is more or less the same as the all-industry average.

In the United States, though agriculture/forestry/fishery enjoyed a tax exemption and reduction rate that was at least 6.3% points higher than the all-industry average in 2001, the gap has since been growing in the opposite direction. Even in Australia, where agriculture and livestock farming occupy central importance, the exemption and reduction rate applied to these sectors falls short of the all-industry average. However, in Australia, unlike in the United States, the gap has been shrinking over time.

[Figure III-8] **Comparison of Corporate Tax Exemption and Reduction Rates: Agriculture /Forestry/Fishery vs. All Industries**

(Unit: % points)



Source: Compiled by the author, on the basis of maximum possible tax rates, published materials and other data provided by the governments of the 11 countries.

4 Empirical analyses of the degree of preferential taxation among industries and its economic impact

A. Overall economic growth and employment rate

The legitimacy of the preferential taxation policy, which expands degree of preferential taxations among industries, can be found only when the positive externalities spilled over from the favored industries outweigh the negative effect of distorted distribution of resources. It is therefore of vital interest to us to analyze and identify how Korea's preferential taxation policy has been affecting the growth of the national economy and the employment rate.

If the degree of preferential taxations, represented by increases in CV_w1 and CV_w2, indeed promotes the growth of the national economy and increase the employment rate, the greater tax exemptions and reductions bestowed upon certain industries and not others may be justifiable. But to determine this, empirical research and analysis, not theoretical or philosophical speculations, are required.

Many studies have focused on the correlation between taxation policies and economic growth, including a seminal study by Hall and Jorgenson(1967). However, few ever directly address how the degree of preferential taxation among industries affects the overall economy. The only empirical study on this subject the author could find is Lee et al.(2008), which concludes that tax benefits that favor certain industries over others ultimately compromise the growth prospects of the overall economy, particularly in OECD member. The study conducts a five-year regression analysis on the effective marginal tax rates of various industries in 70 countries, using corporate financial statements as its basis. It confirms that, the greater the standard deviation of an industry's effective tax rate from the all-industry average, the lower the rate of the given country's economic growth.

Contrary to Lee et al.(2008), the present study estimates the effective tax rates on various industries in 11 countries using as its basis information on actual corporate taxes paid, while measuring the degree of preferential taxations in terms of coefficients of variation. Equating the standard deviation in the

effective tax rates of different industries to the degree of preferential taxation, as in Lee et al. (2008), leaves the degree of preferential taxation susceptible to changes in tax rates and therefore complicates the task of international comparison. In order to facilitate international comparison, this study instead uses coefficients of variation—i.e., the ratio of standard deviation to the all-industry average effective tax rate of each country—to track degree of preferential taxations among industries in 11 countries.

This study then conducts a regression analysis, positing the growth rate of the real GDPs of the given countries and their employment rates as dependent variables, i.e., indicators of how the degree of preferential taxations in these countries affect their overall economies. Each country's economic index freedom, rate of increase in gross fixed capital formation, statutory corporate tax rate, and degree of preferential taxations (i.e., CV_w1 and CV_w2) were used as explanatory variables. To control for the initial economic conditions of each country, this study also additionally incorporates the natural logarithm of each country's real GDP.[9)]

The estimates presented in <Table III-2> indicate that the larger the degree of preferential taxation, the lower the corporate tax rate and the higher the economic freedom index; and that the greater the rate of increase in gross fixed capital formation, the higher the rate of real GDP growth. The rate of real GDP growth was also inversely related to the size of a given economy. Estimation equations (1) and (3) in the table, which specify the real GDP growth rate as the dependent variable and the economic freedom index as the explanatory variable, show that there is a statistically significant correlation between economic freedom and economic growth.

Equation (3), which uses the degree of preferential taxation, CV_w2, under the 13-category system, shows that the estimated coefficient of the degree of preferential taxation is significant at the 10% level, and therefore bears a significant negative relation to economic growth. In other words, the higher the

9) The economic freedom index, a major explanatory variable, is taken from the Fraser Institute's *The Economic Freedom of the World Index*. Dependent variables and the rate of increase in gross fixed capital formation are based on the World Bank's *World Development Indicators*, while the maximum corporate tax rates are found in the OECD Tax Database. Real GDPs were calculated on the basis of OECD Statistics and in US dollars (USD) assuming a fixed purchasing power parity (PPP).

degree of preferential taxation among industries, the less likely it is for the given economy to experience growth. Equations (2) and (4), which specify the rate of increase in gross fixed capital formation, instead of the economic freedom index, as the explanatory variable, show that the estimated coefficient of the degree of preferential taxation (CV_w2) is significant at the 5% level. This indicates that the compromise of economic efficiency under a preferential tax system produces a cost greater than the benefits and positive externalities generated by the favored industries.

Deregulation will ultimately remove obstacles lying in the way of economic actors and thereby improve the economic freedom of each given country. The higher the economic freedom index, the more active the economic actors and the greater the amount of investment they make, all of which conspire to promote economic growth. In order for the Korean economy to escape its current low growth swamp, the government needs to harness its will to eliminate excessive regulations one-by-one and reduce the degree of preferential taxation among industries.

〈Table III-2〉 **Impact of Degree of preferential taxation among Industries on Economic Growth Prospects**

	Real GDP growth rate							
	(1)		(2)		(3)		(4)	
	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value
Economic freedom index	4.6840	0.0277			4.0829	0.0996		
Rate of increase in gross fixed capital formation			0.2660	0.0000			0.2722	0.0000
Statutory corporate tax rate	−0.0194	0.0746	−0.2229	0.2574	−0.0499	0.0668	−0.2429	0.5328
CV_w1	−0.1087	0.5703	0.0291	0.4840				
CV_w2					−0.1385	0.0952	−0.1230	0.0342
Size of economy	−10.5236	0.0816	−5.8700	0.0938	−10.6540	0.0880	−4.9962	0.3787
N	68		63		63		63	
adj-R^2	0.29		0.7		0.29		0.65	

Notes: 1. Each estimation equation includes the national fixed-effect dummy variables.
2. These estimates were obtained by applying the 2SLS estimation method to the time variables in periods 1 through 4.
3. "CV_w1" and "CV_w2" are the coefficients of variation obtained under the 4-category and 13-category systems, respectively.

The explanatory variables used for tracing the impact of the degree of preferential taxation among industries on the employment rate of a given economy include the economic freedom index, labor market regulations, the rate of increase in gross fixed capital formation, the statutory corporate tax rate, and the degree of preferential taxation. The more economic freedom in an economy, the lower the level of labor market regulations, the greater the investment being made, and the lower the corporate tax rate, the higher its employment rate. And the smaller the degree of preferential taxation among industries, the higher its employment rate.[10)]

The estimation results presented in <Table III-3> show that the estimated coefficients coincide with as a priori except the statutory corporate tax rate. The estimated coefficient for the statutory corporate tax rate is significant at the level of only 10% in equation (4). Under other estimation equations, the variable did retain its negative influence, but not significant at the ordinary level.[11)] The outcomes in <Table III-3>, in other words, confirm the hypotheses that the more economic freedom in an economy, the lower the level of labor market regulations and the greater the amount of investment being made, the higher the employment rate. And the smaller the degree of preferential taxation among industries, the higher the employment rate. All the estimated coefficients for the economic freedom index are significant at the 1% level, while the most estimated negative coefficients for the degree of preferential taxation also retained a significance level of 1%. These results strongly suggest that in order for the Korean government to achieve its current goal of raising the employment rate to 70%, it must first and foremost reform its regulatory regime and reduce the degree of preferential taxation among industries.

10) The Fraser Institute uses labor market regulations as a sub-indicator of the economic freedom index. As a composite index in itself, combining the cost of layoff, regulations on service contract periods, the minimum wage, and other various indicators, labor market regulations are designed to produce higher scores for lower levels of regulation. The expected signs of the estimates for the 11 countries here are therefore positive (+).

11) Given the limited size of the sample used in this study, information from a greater number of countries is needed in future studies to ensure statistical significance.

〈Table III-3〉 **Impact of Degree of preferential taxation among Industries on the Employment Rate**

	Employment rate											
	(1)		(2)		(3)		(4)		(5)		(6)	
	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value
Economic freedom index	13.7360	0.0000					13.9243	0.0000				
Labor market regulations			11.2625	0.0000					10.6949	0.0000		
Rate of increase in gross fixed capital formation					0.1930	0.0112					0.3760	0.0594
Statutory corporate tax rate	−0.2125	0.1622	−0.1216	0.1122	−0.2820	0.1073	−0.3561	0.0907	−0.0853	0.3183	−0.1904	0.3358
CV_w1	−0.4124	0.0009	−0.2036	0.0004	−0.1267	0.0018						
CV_w2							−0.4736	0.0000	−0.2235	0.0004	−0.4064	0.0814
N	96		96		90		96		96		96	
adj-R^2	0.61		0.72		0.90		0.45		0.70		0.67	

Notes: 1. Each estimation equation includes the national fixed-effects dummy variables and year dummy variables.
2. These estimates were obtained by applying the 2SLS estimation method to the time variables in period 1.
3. "CV_w1" and "CV_w2" are the coefficients of variation obtained under the 4- and 13-category systems, respectively.

B. Growth of the service sector

<Tables III-4> and <Tables III-5> indicate the results of empirical analyses on how the economic freedom index and the degree of preferential taxation among industries in a given economy affect the growth and share of employment in that economy's service sector.

The underlying hypotheses regarding the correlation between the service sector and the growth of real GDP are, (1) that the freer an economy, the greater the contribution of the service sector to the GDP growth rate; and (2) that the growth of the manufacturing sector will likely not exert a statistically significant

positive impact on the growth of the service sector. Equation (3) reveals that the higher the maximum corporate tax rate, the lower the growth of the service sector. Equations (1) and (3), which specify the economic freedom index as the explanatory variable, show that the degree of preferential taxation-related indicators is statistically insignificant. However, Equations (2) and (4), which employ the growth rate of the manufacturing sector as the explanatory variable, that the degree of preferential taxation among industries is significant at the level of 10% and thus exerting a considerable negative impact on the growth of the service sector.

The equations also revealed that the freer an economy and the lower the level of labor market regulations, the greater the share of employment in the service sector.[12] The estimated coefficients on these two variables are significant at levels of 1% and 5%, respectively. The estimated coefficients of the degree of preferential taxation among industries are also significant at levels of 5% or 10%, except under Equations (2) and (3). In other words, the higher the degree of preferential taxation, the smaller the employment share of the service sector. As this study is concerned primarily with 11 advanced and industrialized member states of the OECD, the growth rate of the manufacturing sector did not exert a significant impact on the growth of the service sector in the analysis. However, the estimated coefficients of the corporate tax rate are significant at levels of 1 to 10%, except (2) and (4) that specify the level of labor market regulations as the explanatory variable. The analysis, in other words, revealed lowering the corporate tax rate as important for fostering the service sector.

These estimation results indicate that the growth of the service sector crucially depends upon increasing the freedom of a given economy, lowering the corporate tax rate, and reducing the degree of preferential taxation among industries. Moreover, they suggest that it is hard to expect that the growth of the manufacturing sector do have strong positive impact on the growth of the service sector in advanced and large economies like the OECD member states.

12) The lower the level of labor market regulations, the greater the value of this variable. Assuming that the estimated coefficients of labor market regulations are positive for all 11 countries, the smaller the value of the variable, the more likely the service sector is to grow.

〈Table III-4〉 **Impact of the Degree of preferential taxation among Industries on Service Sector Growth**

	Real GDP growth rate							
	(1)		(2)		(3)		(4)	
	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value
Economic freedom index	4.4227	0.0767			4.0047	0.0384		
Manufacturing growth rate			0.0276	0.6465			0.0256	0.6889
Statutory corporate tax rate	−0.5892	0.1548	−0.5462	0.2137	−0.6329	0.0826	−0.5322	0.2231
CV_w1	−0.0350	0.8109	−0.1737	0.0843				
CV_w2					−0.0402	0.1959	−0.0705	0.0695
Size of economy	−16.599	0.0117	−20.643	0.0036	−17.955	0.0119	−20.907	0.0037
N	57		57		57		57	
adj-R^2	0.47		0.36		0.44		0.37	

Notes: 1. Each estimation equation includes the national fixed-effects dummy variables.
2. These estimates were obtained by applying the 2SLS estimation method to the time variables in periods 1 through 5.
3. "CV_w1" and "CV_w2" are the coefficients of variation obtained under the 4- and 13-category systems, respectively.

〈Table III-5〉 **Impact of the Degree of preferential taxation among Industries on the Employment Weight of the Service Sector**

	Employment weight											
	(1)		(2)		(3)		(4)		(5)		(6)	
	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value
Economic freedom index	8.9926	0.0000					6.3176	0.0000				
Manufacturing growth rate			1.2789	0.0158					1.5664	0.0009		
Labor market regulations					−0.0095	0.8678					−0.0607	0.3061
Statutory corporate tax rate	−0.8629	0.0610	0.1132	0.6869	−1.2745	0.0062	−1.0217	0.0479	0.0389	0.8893	−1.2639	0.0046
CV_w1	−0.1509	0.0955	−0.1578	0.4234	−0.0087	0.9630						
CV_w2							−0.0598	0.0322	−0.1809	0.0819	−0.0790	0.0707
N	57		57		57		57		57		57	
adj-R^2	0.29		0.24		0.27		0.29		0.25		0.27	

Notes: 1. Each estimation equation includes the national fixed-effects dummy variables and year dummy variables.
2. These estimates were obtained by applying the 2SLS estimation method to time variables in periods 1 through 5.
3. "CV_w1" and "CV_w2" are the coefficients of variation obtained under the 4- and 13-category systems, respectively.

Ⅳ

Policy Recommendations for Increasing the Weight of the Service Sector in the Korean Economy

The key to fostering the service sector in Korea and increasing its share in the overall national economy lies in enhancing the competitiveness of the service sector itself. The past four administrations in Korea, starting with the People's Government, introduced diverse measures to this end while also making attempts to gradually eliminate the discriminatory practices in the current taxation regime that favored the manufacturing sector. Granted, the same amounts and types of tax exemptions and reductions can induce different effects in different industries and sectors. However, the Korean government still needs to reform the tax support system that heavily favors primary and manufacturing sectors at the expense of the service sector.

As a matter of fact, the degree of preferential taxation among industries in Korea remains significantly larger than those in other advanced economies worldwide. The widening degree of preferential taxation serves to undermine the growth prospects of the overall national economy and the project of raising the employment rate in the long run. The first and foremost step toward enhancing growth prospects, the employment rate, and the overall weight of the service sector in the national economy lies in regulatory reforms that promote economic freedom. The government, however, can also boost the effect of regulatory reforms by adopting new tax policies for the service sector, particularly by lowering the statutory corporate tax rate.

1 Tax revenue-neutral ways to lower the corporate tax rate

The Korean government in recent decades has made several well-meaning attempts to reform the tax system that is heavily skewed in favor of the manufacturing sector, such as including prospective service industries in the pool of target beneficiaries of certain tax support programs, and opening up the temporary investment tax exemption program to the service sector as well. Nevertheless, the degree of preferential taxation among industries in Korea has been steadily widening since 2000. The current situation indicates that these past attempts have only served to decrease the total amount of tax revenue that the Korean government can collect while failing to contract the degree of preferential taxation which, if realized, would foster the service sector and improve the economy on the whole. Clearly it is time for Korea to adopt a new taxation policy paradigm.

〈Table IV-1〉 **Tax Expenditure share by Industry (2012)**

(Unit: %)

Industries/sector	% of corporate tax spending	% of reporting businesses
Agriculture/forestry/fishery	0.4	1.6
Mining	7.9	0.2
Manufacturing	70.8	21.8
Electricity/gas/water services	1.0	0.3
Construction	3.2	16.8
Wholesale/retail	5.2	23.4
Food/beverage and accommodations	0.1	1.0
Shipping/storage/communications	3.3	5.9
Finance/insurance	1.0	3.4
Real estate	0.3	4.7
Other services	6.9	19.3
Healthcare	0.1	0.3
Other industries	0.0	1.3

Source: Compiled by the author from *The Annals of National Tax Statistics* (2013) of the National Tax Service.
Notes: 1. The % of corporate tax spending refers to the ratio of (a) the difference between the estimated tax amount and the actual total tax amount of each industry to (b) the difference between the estimated tax amount and the actual total tax amount of all industries.
2. The % of reporting businesses indicates the share of tax-reporting businesses per industry in the total number of tax-reporting businesses.

Given the current fiscal environment, the Korean government cannot afford to decrease corporate tax rates. Including some service industries in the pool of tax-exempt beneficiaries may work to a certain extent, but the downsides to this are that it may not produce the same positive effects in all industries and may even serve to reduce the overall amount of tax revenue. The Korean government therefore needs to overhaul the current corporate tax exemption and reduction system in ways that significantly cut the size of tax expenditures, and thereby make some financial room to reduce corporate tax rates in revenue-neutral ways.

Corporate tax spending in 2012 amounted to KRW 7.3 trillion in total. Considering that the total estimated revenue from corporate taxes in 2012 amounted to KRW 45.9 trillion (not counting tax exemptions and reductions), and that the total amount of corporate tax revenue in the absence of all tax exemptions and reductions amounted to KRW 53.2 trillion, the Korean government lowered the tax burdens on businesses by 16% or so in the form of tax expenditures. Using *The Annals of National Tax Statistics*, we can infer the shares of tax exemptions and reductions for each industry or sector as shown in <Table IV-1>.[13] The table shows that while manufacturing businesses make up only 21.8% of all tax-reporting businesses in Korea, the amount of corporate tax expenditures on these manufacturing businesses amounts to 70.8% of the total. Nothing could more clearly indicate how heavily partial to manufacturing the Korean tax expenditure system is.

If we were to abolish all existing corporate tax exemptions and reductions today, the estimated and actual total tax amounts would be identical to each other, resulting in a drastic reduction in the degree of preferential taxation among industries to 5.2% or so. Should the degree of preferential taxation be lowered as such from the current 17%, the real GDP in Korea would begin to grow by 1.4% points each year, according to Equations (3) and (4) as indicated in

13) The actual total tax amount is obtained by subtracting tax exemptions and reductions from the estimated total tax amount, and adding to the balance the amounts of surtaxes and additional taxes paid on exemptions. The amounts of surtaxes and additional taxes paid on exemptions, however, made up a mere 0.6% of the total amount of tax exemptions and reductions as of 2012. Therefore, the difference between the estimated total tax amount and the actual total tax amount in each industry indicates the amount of tax exemptions and reductions applied to that industry.

<Table III-2>. According to Equations (4) through (6) in the same table, the employment rate would also begin to increase by 2.6 to 5.3% points. In other words, the elimination of discriminatory tax support can dramatically improve the efficiency of the entire Korean economy.

Moreover, the increase in tax revenue that is generated by reducing the degree of preferential taxation from 17% to 5% would mean that the Korean government could lower the statutory corporate tax rate by 3% points or so in a revenue-neutral way.[14] With the corporate tax rate lowered as such, the service sector in Korea can grow at rate 1.8% points higher than the current one according to the estimation equations in <Table III-4>, while the reduction in the degree of preferential taxation would also increase the service sector growth rate by at least 0.8% points. The estimation equations of <Table III-5> also suggest that the revenue-neutral discount on the corporate tax rate can increase the employment share of the service sector by 2.5 to 3.8% points, while reducing the degree of preferential taxation can further increase it by 0.7 to 1.8% points.

2 Reducing tax exemptions and reductions, while expanding the range of target beneficiaries

"The broader tax base, the lower tax rate" is one key principle to be kept in efforts to minimize tax distortions. The principle therefore must be upheld in the tax exemption and reduction system as well. In this case, the principle would mean fewer exemptions and reductions, on the one hand, and a greater range of target beneficiaries, on the other. Policymakers can open up the range of beneficiaries only by enumerating the types of taxpayers or taxpaying organizations that *cannot* benefit from the given exemptions and reductions. In numerous tax exemption and reduction programs in Korea, including the special

14) The corporate tax spending of KRW 7.2 trillion, indicated on the Tax Spending Budget of 2012, amounts to approximately 3 % of the KRW 240 trillion to be collected from tax-reporting businesses according to 2012 taxation standards. It therefore represents a 3 % revenue-neutral discount that can be made on the tax rate.

tax reductions on small and medium businesses, the Korean government does the opposite, enumerating the types of businesses that *can* benefit from the given exemptions and reductions. This practice, however, will likely keep the Korean tax regime out of date with the rapidly changing international business environment.

In order to benefit all hard-working people and organizations and foster the growth of all healthy industries, these exemption and reduction programs should be open to all businesses and taxpayers except for the few that are specifically enumerated, such as gambling and some unsound consumption industries. A good example in this regard is the tax exemption and reduction program on research and development expenses. This program strives to benefit all industries and sectors (with the exception of gambling and some unsound consumption industries). By adopting this kind of negative system indicating some industries that could not get benefits from the tax expenditure program, Korean policymakers can save the significant amounts of time they are already wasting on discussing and deciding which entities will benefit and which will not.

3 Introducing new tax benefits for the service sector

The main assertion of this study is that the current tax support system in Korea, which has been designed to foster certain industries and sectors above others, undermines the growth and employment prospects of the overall national economy over and beyond hurting the service sector in particular. The existing tax support system in Korea, skewed as it is toward certain sectors and industries, distorts the distribution of resources and compromises the efficiency of the overall economy more than it benefits the intended beneficiaries.

The empirical analyses that form part of this study reveal and confirm that the degree of preferential taxation among industries in Korea is not only limiting the growth of the service sector, but also exerting repercussions throughout the national economy. In other words, the cost of the current discriminatory taxation system outweighs any benefit. Korean policymakers should not make this problem worse by introducing additional tax exemption and reduction programs

for service industries that may result in further distorting the distribution of resources.[15)]

If, however, policymakers still seek to introduce new tax exemptions and reductions for service industries, and/or otherwise extend the scopes of existing programs to service industries, they should focus on supporting the development of human capital over physical capital in the service sector. In particular, investment in knowledge-based capital should increase if the ideal of a creative economy is to be realized.[16)]

The representative types of such positive investment include investment and spending on research and development and other activities of innovation. The current Korean system of tax exemptions and reductions for the development of research and specialized workforces and the acquisition of related equipment and facilities is already of a world-class quality. Policymakers therefore need to ensure that the current system functions as intended. They may additionally introduce tax exemptions and reductions that encourage businesses to develop novel approaches to market databases, architectural design, advertising campaigns, consulting programs, and market research.

These items until now have been regarded largely as business expenses since the Korean government has neglected to encourage them systematically by providing appropriate tax benefits. However, new tax benefits for these business expenses and activities will benefit the service sector more than the manufacturing sector, and thereby help to narrow the degree of preferential taxation. However, policymakers need to also carefully research and review how introducing these new tax benefits will affect tax revenue prospects, and whether the current Korean fiscal environment is capable of withstanding short-term revenue losses. The Korean government may find alternative sources of funding

15) It may be possible to reduce the degree of preferential taxation by introducing new tax exemptions and reductions specifically for service industries. These measures, however, will reduce the amount of revenue that the government can collect in the short run, and thereby seriously hurt the fiscal environment; however, they might, in the long run, successfully bridge the degree of preferential taxation and increase the amount of revenue. Given the current fiscal environment, though, it will be quite difficult for Korean policymakers to garner enough social consensus to support the introduction of such new exemptions and benefits.

16) For a detailed typology of knowledge–based capital, see Andrews and Criscuolo (2013).

for these new tax benefits by radically abolishing the special tax reduction program for small and medium businesses, which benefits businesses of certain sizes irrespective of their levels of innovation or performance. However, human capital, being intangible unlike physical capital, may also be abused through transfer pricing as an instrument for avoiding taxes. Policymakers therefore need to take into account these and other risk factors before deciding and introducing new tax benefits.

V

Conclusion

This study locates the key to promoting the growth of the Korean economy and increasing the employment rate in Korea in reducing the degree of preferential taxation. By comparing the degree of preferential taxation in Korea to those of other major industrialized economies around the world, this study confirms that the degree of preferential taxation among industries in Korea has in fact been widening since 2000, and has remained significantly larger than those found in other countries.

Based on empirical analyses, this study proposes carrying out regulatory reforms that have the potential to enhance Korea's economic freedom, and lowering the corporate tax rate, as the two primary solutions for ensuring the growth and employment capacity of the Korean service sector. This study, moreover, concludes that the growth of the manufacturing sector does not necessarily have a positive correlation with the growth of the service sector in advanced economies like those of the OECD member states. In the meantime, this study also provides empirical evidence for the claim that, the larger the degree of preferential taxation among industries, the lower the service sector's growth and capacity for employment, and the greater the harm to the overall economic growth and employment rate.

We need policy measures and programs in Korea that enhance the freedom of the national economy through regulatory reforms, lower the corporate tax rate in revenue-neutral ways, and ultimately reduce the degree of preferential taxation among industries. Such measures and programs will require an overhaul of the current tax benefit regime that is skewed in favor of the manufacturing

sector, and the introduction of new tax benefits catering to all industries. There are myriad political factors that complicate the prospects for success of these proposed reform measures. One way for Korean policymakers to avoid these political risks while still boosting the service sector is to introduce a limited range of new tax benefits suited specifically to service industries. These new benefits may reduce tax revenue that the Korean government may collect in the short run. Nevertheless, so long as Korean policymakers can overcome social criticisms and concerns, they should consider introducing new tax benefits that support the formation of human and knowledge-based capital in the service sector.

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