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## Article

# Decrease in the growth of domestic demand in Korea

### Provided in Cooperation with:

Korea Institute for International Economic Policy (KIEP), Sejong-si

*Reference:* Moon, Seongman Decrease in the growth of domestic demand in Korea.

This Version is available at:

<http://hdl.handle.net/11159/455>

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## Decrease in the Growth of Domestic Demand in Korea\*

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This paper investigates a link between the significant decline in the growth of domestic demand and the dampened ripple effects from the export sector in Korea since the East Asian financial crisis. The dampened ripple effects are closely linked to the changed investment behaviors of the Korean large-sized exporting firms since the crisis: they do not invest in their export earnings any more to create new industries; they tend to use more foreign value added contents for their exports and to increase outward direct investment by actively participating in global value chains. The paper also examines a link between the growth of domestic demand and the growth of household disposable income and presents reasons for the decline in the growth of household disposable income since the East Asian financial crisis.

*Keywords:* Domestic Demand, Dampened Ripple Effects, Household Income, Structural Problems, East Asian Financial Crisis

*JEL classification:* E01, E21, F62

### I. INTRODUCTION

This paper investigates why the domestic demand growth in Korea has significantly slowed down after the East Asian financial crisis in 1997. The average growth rate of the Korean real GDP is about 9.4% in 1981-1995 before the East Asian financial crisis but about 3.7% in 2003-2014 after the crisis as

\* This paper is developed from Chapter 2 of 2015 KIEP Annual Report, "Why has Korean economic growth and domestic demand slowed down since the Asian financial crisis?". The author wishes to thank the anonymous referees and the Editor for helpful comments and suggestions which substantially improved our paper. This paper was supported by research funds of Chonbuk National University in 2015.

well as the credit card lending boom period of 1999-2002.<sup>1</sup> The average growth rate is about 2.5 times greater in the former period than in the latter period. Coincidentally, the average growth rate of the Korean real domestic demand on domestic goods is about 8.9% but -0.3%, respectively, in the corresponding periods. This long-lasting dramatic decline cannot be attributed to the elements that are closely linked to short run economic fluctuations. Instead, some domestic and/or foreign structural factors would induce the significant decline in the growth of the two variables. This paper intends to identify those structural problems of the Korean economy.

We consider two structural problems of the Korean economy since the crisis<sup>2</sup>: one is the dampened ripple effects from the export sector and the other is the decrease in the growth of household real disposable income. We broadly define the ripple effects from the export sector: As firms export more and more, they would use more production inputs such as capital and labor, resulting in increase in investment and employment. In addition, the earnings from exports can be invested in other industries for expanding their business group, which contributes to generating many job opportunities (e.g., refer to Korean large-sized firms' investment behavior in the past and Google's investment in automobile industry). In this sense, the ripple effects are closely associated with firms' investment behavior.

Our starting point for the identification of the structural problems is to pay a particular attention to the link between the GDP growth and the domestic demand growth: both growth rates have significantly declined after the crisis; but the magnitude of the lost growth rates in the latter period is different between the two variables. The average growth rate of domestic demand is much lower than that of GDP in the latter period, while their growth performance is quite similar in the former period. The inspection on the growth pattern of the Korean export

<sup>1</sup> The statistics in this section are calculated using the data obtained from the economics statistical system (ECOSYS) managed by the Bank of Korea. For the sake of simplicity, we do not mention the same data source for the other statistics discussed in this section.

<sup>2</sup> See Ko et al. (2007) and Park et al. (2008a, 2008b) for assessment and evolution of the Korean Economy since the East Asian financial crisis. Recently, Park (2013) studied two structural problems of the Korean economy, in particular since the global financial crisis: wageless growth and high corporate saving rates. Both Park (2013) and ours consider the decrease in the growth of household disposable income as one of the structural problems of the Korean economy.

provides a clue to the reasons for this difference since GDP is the sum of domestic demand on domestic goods and foreign demand on domestic goods (export). The average growth rate of export is about 12.8% but 9.5%, respectively, in the above corresponding periods, suggesting that the performance of the export sector has not been much worse, unlike the two variables. Further, the decomposition of the GDP growth rate reveals that the Korean economic growth in the latter period is entirely due to the growth in the export sector, while both domestic demand and export contribute to the GDP growth in the former period<sup>3</sup>: the contributions of domestic demand and export to the GDP growth rate are -0.3% points and 4% points, respectively, in the latter period, and 7.5% points and 1.9% points in the former period. As discussed in detail later, this dramatic change between the two periods is closely related to the dampened ripple effects from the export sector associated with the decrease in investment growth. Understanding what causes these dampened ripple effects and how they affect the Korean economy is one of the main objectives of the present paper.

We also pay attention to the decrease in the growth of household disposable income. Its real growth rate is about 10.3% which is slightly greater than the GDP growth rate in the former period but about 2.3% which is less than the GDP growth rate in the latter period. This decrease in the growth of households income leads to the decrease both in consumption growth and household saving rate (defined by household saving/national disposable income): the real consumption growth rate is 8.4% but 2.4%, respectively, and the household saving rate is 16.7% but 7.6%, respectively, in the corresponding periods. In addition, the decrease in the disposable income will contribute to the increase in household debts, and thus to the increase in the amount of debt service (the sum of principal plus interest). This would further restrict consumption and thus lead to the decrease in domestic demand growth. That is, the Korean economy may be plunged in a vicious cycle unless this structural problem is resolved. Understanding what causes the decrease in the growth of household disposal income and how it affects the Korean economy is another objective of the present paper.

To analyze these structural problems of the Korean economy, we use an unconventional approach: We look into the expenditure side of the national

<sup>3</sup> See equation (2) in Section II for the calculation of the contributions of domestic demand and export to the GDP growth rate.

income account. Although it is a conventional wisdom to consider the supply-side of the economy in order to investigate determinants of long run economic growth, the analysis on the demand side helps us to identify the structural problems in Korea: the dampened ripple effects from the export sector are closely related to the decrease in the growth of domestic investment, and the decrease in the growth of household disposable income is closely linked to the decrease in the consumption growth.

## II. METHODOLOGY

To identify current structural problems in the Korean economy, we develop a demand-side growth accounting analysis using the decomposition of the national income account.<sup>4</sup>

Aggregate demand in the national income account is the sum of consumption ( $C$ ), investment ( $I$ ), government expenditure ( $G$ ), and net export ( $NX$ ), and can be decomposed in the following way:

$$Y = C^d + I^d + G^d + EX, \quad (1)$$

where  $Y$  is the market value of domestically produced all final goods and services (GDP),  $C^d + I^d + G^d$  is domestic demand on domestic production, and  $EX$  is foreign demand on domestic production (export). Conventionally, domestic demand includes demand for not only domestic goods but also foreign goods. But in this paper, we abuse the definition and call domestic demand on domestic production ‘domestic demand’. Using this decomposition, one can derive a relation that shows how much each of domestic demand and export contributes to the GDP growth, respectively,

$$d\ln Y = (1 - \alpha)d\ln(C^d + I^d + G^d) + \alpha d\ln EX, \quad (2)$$

where  $\alpha$  is the share of export in the GDP and  $0 < \alpha < 1$ . For deriving equation (2), we first take logs of both sides of equation (1) and then take total

<sup>4</sup> Our approach has, in a sense, the same sprits of the wage-led growth theory recently developed by ILO. For instance, see Lavoie and Stockhammer (2013).

derivatives.<sup>5</sup> Although we do not observe the growth rate of domestic demand on domestic goods directly, we can indirectly compute its growth rates using the above decomposition. From equation (2), we can define the contribution of export to the GDP growth by  $\alpha d\ln EX$  and the contribution of domestic demand to the GDP growth by  $(1 - \alpha)d\ln(C^d + I^d + G^d)$ . Equation (2) also indicates that the domestic demand growth is mainly determined by investment and consumption growths.

### III. STYLIZED FACTS ON THE KOREAN ECONOMY

Table 1 presents stylized facts about the Korean economic growth obtained from our demand-side growth accounting. All the numbers in the table are five-year averages.<sup>6</sup> We focus on these five-year averages to control for the effects of business cycles.

The followings are the summary of the stylized facts:

- 1) The GDP growth has significantly slowed down since the East Asian financial crisis.
- 2) The growth in domestic demand also has slowed down since the crisis.
- 3) Investment and consumption growths have slowed down after the crisis, in particular after the burst of the credit card lending boom.
- 4) The export growth has been high but slightly decreased in the last ten years.

Table 1. Stylized Facts on the Korean Economic Growth

(Unit: %)

	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14
GDP	7.5	10.1	8.5	5.8	5.7	3.6	3.7
Domestic Demand ( $C^d + I^d + G^d$ )	7.0	9.6	8.0	3.0	2.7	0.6	-0.5
Investment	4.2	14.6	11.0	2.8	6.4	0.2	4.8

<sup>5</sup>  $d\ln(C^d + I^d + G^d + EX)$  can be rewritten in the following way:  $d\ln(C^d + I^d + G^d + EX) = \frac{d(C^d + I^d + G^d) + dEX}{C^d + I^d + G^d + EX} = \frac{C^d + I^d + G^d}{Y} \frac{d(C^d + I^d + G^d)}{C^d + I^d + G^d} + \frac{EX}{Y} \frac{dEX}{EX}$ .

<sup>6</sup> We use yearly data obtained from ECOSYS for the calculation (See Table 1 for the data source). We first calculate yearly growth rates and then obtain five-year averages.

Consumption	5.8	8.9	8.3	4.4	4.7	3.1	2.6
Export	11.2	13.4	11.2	16.1	12.5	7.9	8.0

Source: ECOSYS (Bank of Korea), <http://ecos.bok.or.kr> (accessed November 10, 2015): We obtained yearly data from “10.2.2.4 Expenditure on GDP (not seasonally adjusted, chained 2010 prices, annual)” in ECOSYS.

The first and second facts imply that both GDP and domestic demand have a similar growth path. To further examine the link between GDP and domestic demand growths, we draw the yearly growth paths of those series in Figure 1. The substantial negative growth rates in 1998 are due to the East Asian financial crisis. Noticeably, the growth in domestic demand (as well as in GDP) is strictly positive and sizable between 1999 and 2002: the yearly growth rates are above 5%. This sizable positive growth is mainly due to the credit card lending boom which was induced by the policies on relaxing credit restrictions and by the severe competition of credit card issuers; and the venture capital investment boom. Note that the credit card lending boom leads to the significant increase in consumption and the venture capital investment boom leads to the significant increase in investment in the information technology industry. After the burst of the credit card lending boom as well as the venture capital investment boom, however, the growth rates on domestic demand have been close to zero or even negative.

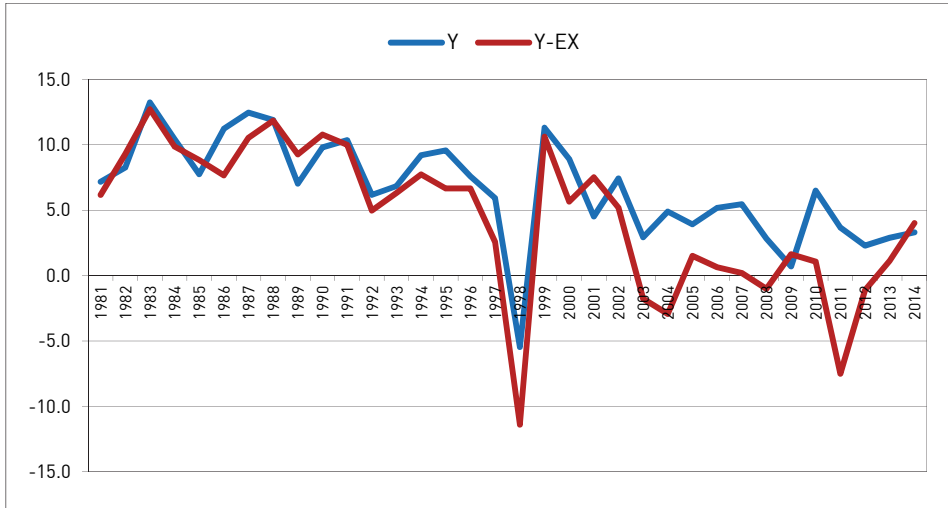
The third fact confirms the second fact in the sense that household consumption and firm investment mainly determine domestic demand. Regarding investment, its growth rate is much higher than that of GDP (and domestic demand) before the mid-1990s, while it is lower than or close to the GDP growth in the last ten years. The high investment growth before the financial crisis is linked to one of the characteristics of the Korean economic growth: investment-driven economic growth. On the other hand, as will be discussed later, the low investment growth after the crisis can be related to the changed investment behavior of large-sized firms: they tend to increase outward direct investment participating in global value chains and do not invest in creating new industries any more in order to create their business group.

Regarding consumption, its growth path is similar to the GDP growth path. One difference is that consumption growth rates are lower than GDP growth rates with variation in magnitude over all sample period. This implies that the consumption to GDP ratio (or average propensity to consume at the aggregate

level) has been declining. As will be discussed later, the decline in the consumption to GDP ratio can be related to the high household saving rate before the crisis but to the decrease in the household income growth after the crisis.

Figure 1. Growth Rates of GDP and Domestic Demand in Korea

(Unit: %)



Note: Domestic demand is calculated using the formula  $Y - EX = C^d + I^d + G^d$ .

Source: See data source in Table 1.

Unlike the growth rates of the four variables such as GDP, domestic demand, investment, and consumption, export growth rates have been high in the last 30 years: It is on average higher than 10%. Although they have decreased to 8.0% in the last ten years, export growth rates are still high. Overall, the large magnitude of export growth confirms one of the well-known characteristics of the Korean economic growth: export-driven economic growth.

In sum, these stylized facts suggest that one of the main sources for the Korean economic growth is from the export growth. Further, this export-driven economic growth is closely linked to the investment-driven economic growth before the East Asian financial crisis. But this link appears to be broken after the crisis.

#### IV. REASONS FOR THE DECLINE IN THE GROWTH OF DOMESTIC DEMAND

We have shown that the significant decline in the domestic demand growth is closely linked to that of the GDP growth. This may imply that if we understand the causes for the decline in the growth of the domestic demand, we may have a clue to the causes for the decline in the GDP growth. By definition, domestic demand is the sum of private demand and public demand on domestic production. Since government expenditure is exogenously given outside economic models, looking into the determinants of private demand such as consumption and investment will provide a clue to understanding the significant decline in the growth of domestic demand. We consider those determinants at the aggregate level based on economic theories and empirical evidence. Although the list is not complete, we view that the following factors significantly affect domestic investment: participation in global value chains, population ageing, the real interest rate relative to the world interest rate, and terms of trade (or real exchange rate). And the following factors significantly affect consumption: household income (or labor income share), household debts, population ageing, and terms of trade (or real exchange rate). Of them, we view that the real interest rate relative to the world interest rate and terms of trade (or real exchange rate) are mainly related to short run economic fluctuations, while participation in global value chains, population ageing, labor income share, and household debts are related to the structural factors of the economy. For our objective, we mainly concern how these structural factors affect domestic demand.

Of these four structural factors, we argue that participation in global value chains is closely associated with the dampened ripple effects from the export sector and postpone our analysis until Section IV.1. Consumption depends mainly on national income at the aggregate level in the macroeconomic models with the representative agent. However, recent studies find that labor income share which measures the degree of income inequality is positively related to aggregate demand or domestic demand.<sup>7</sup> Theoretically, labor income share has two opposite effects on domestic demand. On the one hand, the effect of the increase in the

<sup>7</sup> See, for example, Onaran and Galanis (2012, 2013) for the positive effect of labor income share on aggregate demand and Moon and Whang (2015) for the positive effect on domestic demand.

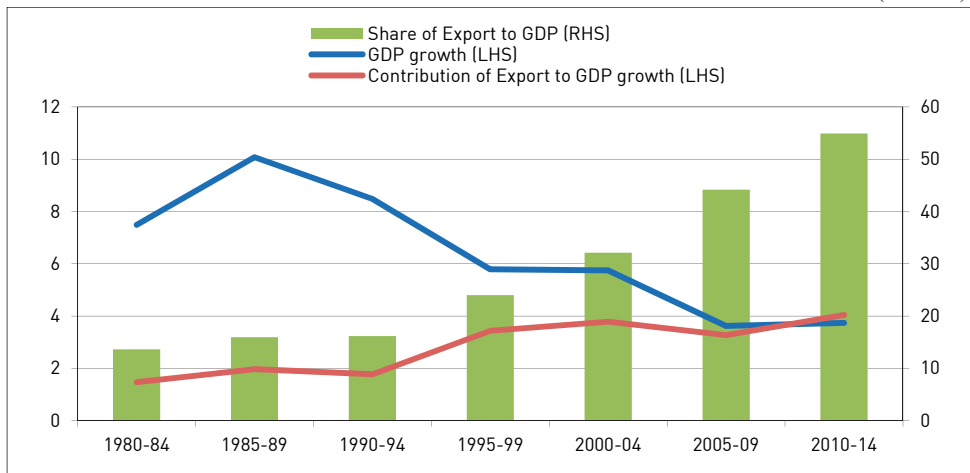
labor income share on consumption is positive because workers have a higher marginal propensity to consume than capital owners to the extent that capital owners' income is greater than workers. On the other hand, the effect of the increase in the labor income share on investment is negative because lower return from investment is likely to induce investment to decrease. By decomposing national income into household income and firm income, we analyze how the decrease in the growth of household income affects domestic demand and household debts in Section IV.2. Finally, we leave the effect of population ageing for the future study, although population ageing is an important element that affects not only domestic demand but also economic growth.<sup>8</sup>

Based on this economic reasoning, we now examine the two reasons for the decline in the growth of domestic demand in Korea one by one in detail and then discuss the link between them.

### *1. Dampened Ripple Effects from the Export Sector*

Figure 2. Contributions of Domestic Demand and Export to the GDP Growth in Korea

(Unit: %)



Source: See the data source in Table 1.

<sup>8</sup> See, for example, Kim and Rhee (2007) for the effects of population ageing on saving and current account in East Asia.

Figure 2 demonstrates the dampened ripple effects from the export sector since the East Asian financial crisis. The blue line is the path of five-year average growth rates of GDP and the red line shows the contribution of export to GDP growth rates. The difference between these two is the contribution of domestic demand to GDP growth rates. The difference was large before the crisis, while it becomes smaller after that: the contribution of domestic demand to the GDP growth is about 7 percentage points before the financial crisis but it is close to zero or even negative in the last ten years. On the other hand, the contribution of export to the GDP growth is slightly less than 2 percentage points before the financial crisis but about 4 percentage points after the crisis, suggesting that the direct of contribution of the export sector on the GDP growth has improved.

The ripple effects from the export sector imply that a high export growth contributes to boosting the domestic demand growth through increasing in investment and employment. To this extent, these statistics associated with the decline in the investment growth (see Table 1) suggest that a channel which generates the ripple effects from the export sector appears to be broken after the financial crisis.

We consider two reasons for the dampened ripple effects: (i) Large-sized exporting firms do not invest any more in creating new industries after the crisis; (ii) Large-sized exporting firms have been actively participated in global value chains.

### **1) Less Investment in Creating New Industries since the Crisis**

To look into the first reason, it may be helpful to examine the characteristics of the Korean economic growth. Before the crisis, Korea experienced a high export growth which directly contributes to boosting economic growth: for example, the average growth rate of export is about 16.8% and that of GDP is about 9.3% in 1970-1996. This phenomenon is called the export-driven economic growth. Specifically, the calculation reveals that the average of the direct contribution of export to the GDP growth is about 1.9 percentage points, which take place about one fifth of the Korean GDP growth.

More importantly, this impressive performance in the export sector is not limited to its direct contribution and generates ripple effects on the domestic sector. Let us give an extreme example to explain this vividly. In the past, large-sized exporting firms such as Hyundai, Samsung, and Daewoo used earnings from their exports to expand their business group: they sold less sophisticated or advanced goods such

as labor intensive goods in foreign countries and then, with the earnings from those sales and with the help of policies subsidizing or encouraging creation of new industries, they created semi conduct industry, car industry, steel industry, and petro-chemistry industry, resulting in creating plenty of new jobs and thus increasing in consumption. Indeed, Korea achieved full employment during the 1980-90s which had been a base of the so called lifetime employment system. This system guarantees job securities and induces the firms to subsidize their workers by lending house mortgage loans as well as the education costs of workers' children at much lower interest rates than market rates. All these things were possible at the time since the firms were growing and expanding their business group. We call this phenomenon the investment-driven economic growth. In this sense, the Korean economic growth before the East Asian financial crisis can be characterized by both export-driven and investment-driven economic growths. In particular, we view that this investment-driven economic growth is closely linked to the ripped effects of the export sector which result in the significant growth in domestic sector as shown in Figure 2.

These two channels are, however, not jointly working anymore after the crisis. Korea still experiences the high export growth. Nevertheless, this high growth is not any more closely linked to a channel which contributes to boosting the domestic demand growth. One apparent reason can be found that large-sized exporting firms do not invest their export earnings in creating new industries any more. For example, Samsung Electronics made a huge amount of export revenue by selling semi-conduct products, mobile phones, and color TVs since 2000: for example, the ratio of its export sales to the Korea's export is about 25.2% in 2002 and 39.2% in 2009. Nevertheless, Samsung Electronics did not much invest their retained earnings in creating new industries to expand its business group. Of course, this phenomenon is not limited to Samsung Electronics. Most large-sized exporting firms behave in a similar way since the crisis.<sup>9</sup>

Although more rigorous analysis on the reasons for the changed behavior of large-sized exporting firms is needed, we view that one reason can be related to the structural adjustment of large-sized firms since the crisis. Note that creating new industries is very risky. Most business groups had experienced difficulties due to their expanded investment during the East Asian financial crisis. For

<sup>9</sup> See, for example, Park (2013) for the detailed evidence.

example, Samsung Motors created by Samsung business group in 1995 was sold out to a foreign company during the financial crisis. Daewoo business group which was the second largest conglomerate in Korea was dismantled in 1999. So, this large scale failure may make them refrain from their aggressive investment after the crisis.

## **2) Active Participation in Global Value Chains**

Another reason for the changed investment behavior is related to the rapid development of global value chains (GVCs) over the world. A country's export can be divided into domestically produced value added and imported foreign value added. Further, exports can be used as either final consumption in foreign country or as intermediate inputs in foreign country to be exported again to third countries (or back to the original country). In this sense, the analysis of GVCs takes into account both foreign value added in exports (the upstream perspective) and exports value added incorporated in third country exports (the downstream perspective). Of these two, we view that the upstream perspective of GVCs mainly affects domestic demand.

There are two offsetting effects of the proportion of foreign value added contents (FVA) of export on the domestic demand: one is the displacement effect and the other is the productivity effect. On the one hand, as exporting firms use more and more foreign value-added contents for their exports (that is, as they replace domestic contents with foreign contents for their exports), investment and employment in domestic sectors decrease, eventually resulting in the decrease in household income and in domestic demand. On the other hand, exporting firms use more efficiently their production inputs by participating in global value chains and thus improve in their productivity, resulting in the increase in their exports and thus domestic production inputs. This would contribute to increasing in domestic demand. Investigating which effect dominates is an empirical question.

Instead of conducting our own empirical study, we take recent empirical evidence presented by Moon and Whang (2015).<sup>10</sup> They use country level panel data of 155 countries from 1990 to 2012 and find that the proportion of FVA in

<sup>10</sup> Unfortunately, previous studies mainly concern with examining GVCs' productivity enhancing effect. To the best of our knowledge, Moon and Whang (2015) is the only study to investigate these offsetting effects of FVA in export on domestic demand.

exports is negatively related to the growth of domestic demand, while controlling for the effects of other components (labor income share, population ageing, real exchange rate, and real interest rate) on domestic demand. Their result suggests that the displacement effect dominates the productivity effect. They also find that inward direct investment by foreign countries is positively related to the growth of domestic demand. Based on this evidence, we now investigate how the evolution of the proportion of FVA in export affects domestic demand in Korea.

Table 2. Foreign Value-added Share of Gross Exports of Korea by Industry

	(Unit: %)						
	1995	2000	2005	2008	2009	2010	2011
<b>TOTAL</b>	<b>22.3</b>	<b>29.8</b>	<b>33.0</b>	<b>41.8</b>	<b>37.5</b>	<b>39.2</b>	<b>41.7</b>
<b>1) Agriculture, Hunting, Forestry and Fishing</b>	<b>8.4</b>	<b>11.5</b>	<b>13.9</b>	<b>21.3</b>	<b>19.8</b>	<b>21.0</b>	<b>20.6</b>
<b>2) Mining and Quarrying</b>	<b>8.0</b>	<b>10.5</b>	<b>14.9</b>	<b>17.7</b>	<b>15.8</b>	<b>18.9</b>	<b>20.3</b>
<b>3) Total Manufactures</b>	<b>27.4</b>	<b>35.3</b>	<b>38.1</b>	<b>48.0</b>	<b>43.1</b>	<b>44.3</b>	<b>47.0</b>
- Food Products, Beverages and Tobacco	16.5	18.9	22.1	31.6	30.3	31.3	35.6
- Textiles, Textile Products, Leather and Footwear	21.3	23.9	27.1	36.2	32.7	36.5	35.3
- Wood, Paper, Paper Products, Printing and Publishing	16.9	21.8	23.3	30.2	26.8	32.3	28.9
- Chemicals and Non-Metallic Mineral Products	32.0	48.3	51.9	65.9	57.8	60.5	64.5
- Basic Metals and Fabricated Metal Products	32.5	34.9	39.5	51.5	44.5	47.0	50.3
- Machinery and Equipment, nec	31.2	31.8	33.5	42.2	38.3	39.7	40.9
- Electrical and Optical Equipment	27.8	37.1	37.3	43.9	41.8	41.0	41.8
- Transport Equipment	26.6	29.0	32.2	39.6	35.9	36.7	38.0
<b>4) Electricity, Gas and Water Supply</b>	<b>18.2</b>	<b>29.7</b>	<b>36.2</b>	<b>56.7</b>	<b>46.5</b>	<b>45.9</b>	<b>53.4</b>
<b>5) Construction</b>	<b>18.5</b>	<b>22.2</b>	<b>23.0</b>	<b>31.1</b>	<b>28.7</b>	<b>29.5</b>	<b>30.9</b>
<b>6) Total Business Sector Services</b>	<b>10.1</b>	<b>14.6</b>	<b>15.7</b>	<b>20.9</b>	<b>17.8</b>	<b>20.1</b>	<b>20.9</b>

- Wholesale and Retail Trade; Hotels and Restaurants	7.0	9.2	11.4	14.7	14.3	16.1	16.7
- Transport and Storage, Post and Telecommunication	14.5	22.3	23.2	30.7	25.7	30.3	33.7
- Financial Intermediation	5.5	7.4	5.9	10.5	10.2	8.2	7.3
- Real Estate, Renting and Business Activities	6.2	7.5	10.2	13.3	12.8	14.4	14.3
<b>7) Community, Social and Personal Services</b>	<b>6.4</b>	<b>9.4</b>	<b>13.5</b>	<b>16.9</b>	<b>15.6</b>	<b>16.7</b>	<b>16.7</b>
- Public Administration and Defence; Compulsory Social Security					12.5	12.4	13.2
- Education	3.8	5.4	5.7	7.7	7.6	8.2	9.1
- Health And Social Work	11.1	15.5	15.7	19.4	17.9	18.8	19.4
- Other Community, Social and Personal Services	6.4	9.4	13.7	17.6	16.1	17.9	18.7

Source: OECD Statistics. 2015. Trade in Value Added (TiVA) – June 2015.

<https://stats.oecd.org/index.aspx?queryid=66237> (accessed July 28, 2015).

Table 2 shows how much the proportion of foreign value added components of export has evolved in Korea since 1995: It clearly illustrates an upward trend. It was about 22% in 1995 and about 40% in 2010. This phenomenon is not limited to certain industries but common across industries, suggesting that the ripple effects of exporting firms on domestic production have declined to the extent that the increase in the replacement of domestic value added contents with foreign value added contents in exports is related to the decrease in domestic investment, despite the high export growth in Korea. On the other hand, as displayed in Figure 2, the share of export to GDP has significantly increased after the East Asian financial crisis, confirming previous studies' finding that the extensive use of foreign value added in exports improves in firms' productivities and thus induces increase in the amount of exports.

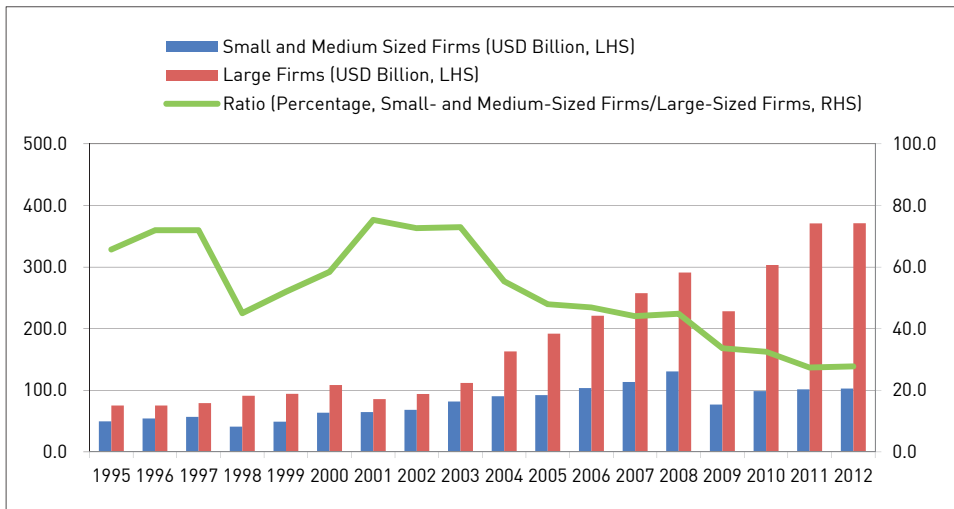
In addition, the productivity enhancing effect of GVCs on the Korean export appears to be asymmetric between small- and medium-sized firms and large-sized firms as demonstrated in Figure 3. The proportion of the exports of small- and medium-sized firms to those of large-sized firms has been significantly decreased in particular since the early 2000s. For example, the proportion was

about 72.6% in 2002 but just about 27.7% in 2012. And the average growth rate of the exports of small- and medium-sized firms is about 6.0% during 2002-2012, while that of large-sized firms is about 15.5%.

This relative performance in export sector can be related to the productivity difference between the two groups. Wagner (2007) surveyed studies that used firm-level data in a particular country in order to investigate the relation between exporting and productivity. Those studies cover many countries (see, for example, Hahn (2004) for the case of Korea). The overall conclusion is that (1) exporting firms are more productive than non-exporting firms, (2) the more productive firms tend to export, and (3) the effect of export-by-learning is relatively small. At the aggregate level, we also find a close link between export performance and productivity: According to the data from the Financial Statement Analysis issued by the Bank of Korea, the average ratio of value added per worker in small and medium-sized firms to that in large-sized firms between 2002 and 2006 is around 39.4% and the average ratio decreased to around 34.5% between 2007 and 2010. That is, large-sized exporting firms have higher labor productivity and export more than small- and medium-sized firms in Korea.

Figure 3. Exports of Small- & Medium-sized and Large-sized Firms in Korea

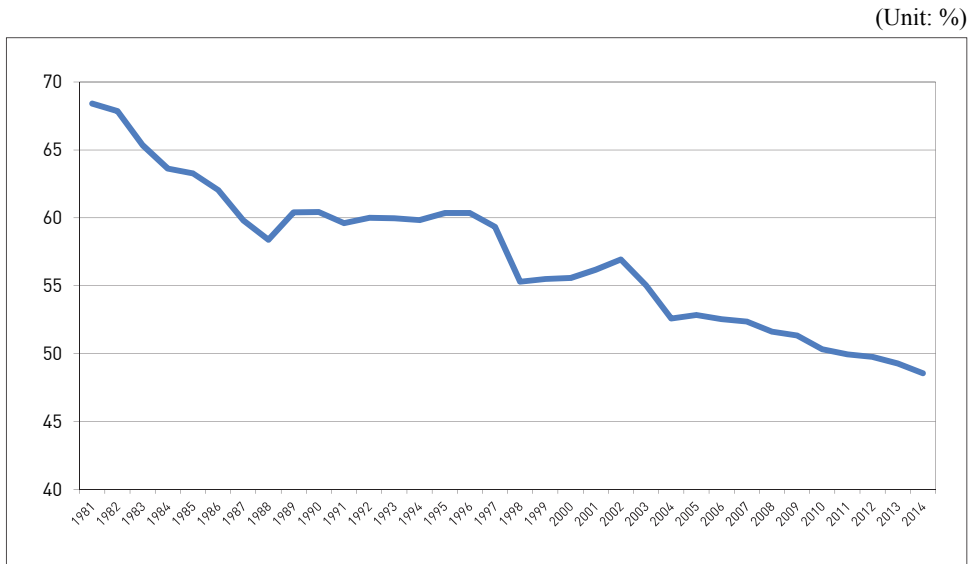
(Unit: (LHS) - USD Billion, (RHS) - %)



Source: Korean Small and Medium Business Export Statistics (KOSIS).

[http://kosis.kr/statHtml/statHtml.do?orgId=142&tblId=DT\\_B10065&conn\\_path=I3](http://kosis.kr/statHtml/statHtml.do?orgId=142&tblId=DT_B10065&conn_path=I3) (accessed July 31, 2015).

Figure 4. Share of Private Consumption to GDP



Source: See data source in Table 1.

In sum, we view that the changed investment behavior of large-sized exporting firms dampens the ripple effects from the export growth after the East Asian financial crisis: First, large-sized exporting firms have not aggressively invested in creating new industries any more; Second, those firms have been able to use foreign value added components more extensively by participating in the global value chains after the crisis. On the other hand, small and medium sized firms have not been extensively involved in global value chains due probably to their relatively lower labor productivities and their size disadvantages.

## 2. Decrease in the Growth of Household Disposable Income

We now discuss the other factor that contributes to the decline in the growth of domestic demand.<sup>11</sup> Figure 4 shows how the ratio of private consumption to

<sup>11</sup> Park (2013) conducted a comprehensive study about the structural problem of the Korean economy since the Global financial crisis. He presented two reasons for the lower GDP growth: wageless growth and paradox of corporate thrift. In particular, the implications from the analysis on the effect of wageless growth are quite similar to ours from the analysis on the effect of the decrease in the growth of household disposable income on domestic demand. For the other

GDP evolves since 1981.<sup>12</sup> In the beginning of the 1980s, the ratio was about 70%. However, it had declined to around 60% until late 1980s. Since then, the ratio was stable until the East Asian financial crisis during which it declined again. The credit card lending boom made the ratio being stagnated for a while. After its burst, however, the ratio has continuously decreased and there has been no sign that the trend turns its direction. For example, the ratio is even less than 50% in 2014.

The downward trend of the consumption to GDP ratio implies that consumption growth rates have been lower than GDP growth rates. That is, the average propensity to consume at the aggregate level is not constant but has been decreased.<sup>13</sup> Considering the definition of national saving rates,  $100(\%) * (Y - C - G)/Y$ , this downward trend further implies the increase in national saving rates, holding government expenditure constant.<sup>14</sup>

To see why the national saving rate has increased after the financial crisis, we decompose it into three: household saving rate, firm saving rate, and government saving rate. Figure 5 displays the ratios of individuals saving, non-financial corporations saving, and general government saving to the national disposable income, respectively, since 1981.<sup>15</sup> The ratio of individuals saving to the national disposable income which approximates household saving rates has significantly decreased after the financial crisis. Recently, the ratio is even less than 10%. On the other hand, the ratio of non-financial corporations saving to the national disposable income which measures firm saving rates has significantly increased after the crisis. Finally, the ratio of government saving to the national disposable income does not change much over time. Therefore, the decomposition of

countries, Onaran and Galanis (2012, 2013) presented evidence that labor income share is positively related to aggregate demand using the panel data set of 80 countries which cover 80% of the world GDP.

<sup>12</sup> See also Park (2013, Figure 4 in p.15).

<sup>13</sup> Unlike the Korean economy, the average propensity to consume has been constant in the US economy. Although it is beyond the scope of the present paper, it may be interesting to relate this declining trend to a secular stagnation hypothesis.

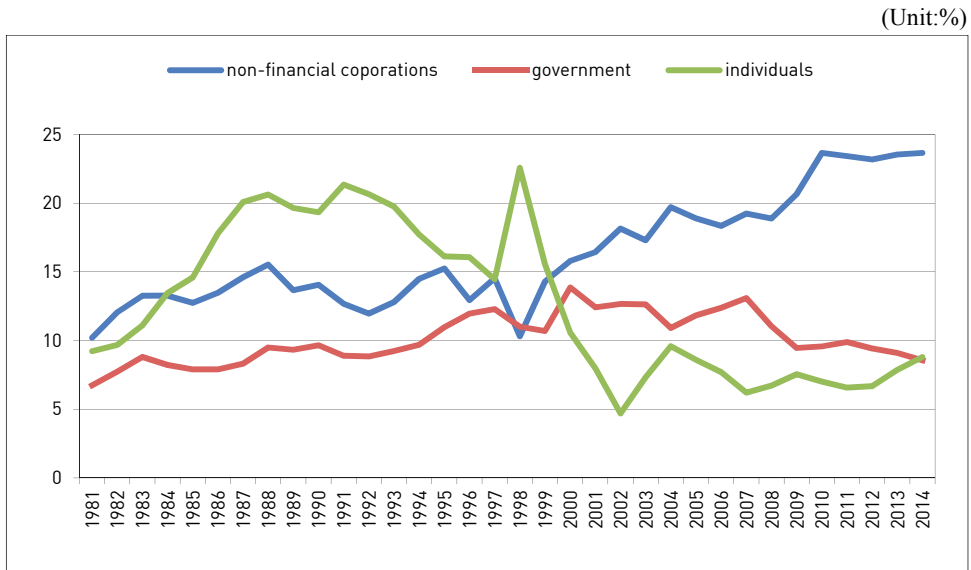
<sup>14</sup> One may think that the increase in national saving rates may be related to the rapid transition to an ageing society in Korea. However, economic theories and evidence suggest the negative relation between saving rates and dependency rates. See, for example, Kim and Rhee (2007) and references there in.

<sup>15</sup> See also Park (2013, Figure 2 in p. 9).

national saving rates suggests that increase in national saving rates is mainly due to the significant increase in firm saving rates.<sup>16</sup>

Consumption growth rates have decreased after the crisis as reported in Table 1. Then, when do both household consumption and saving decrease? These two things are likely to happen simultaneously when household income decreases. Indeed, as shown in Figure 6, the growth rates of real household disposable income (nominal household disposable income is deflated by the CPI inflation rate) have significantly decreased after the financial crisis.<sup>17</sup>

Figure 5. Saving Rates



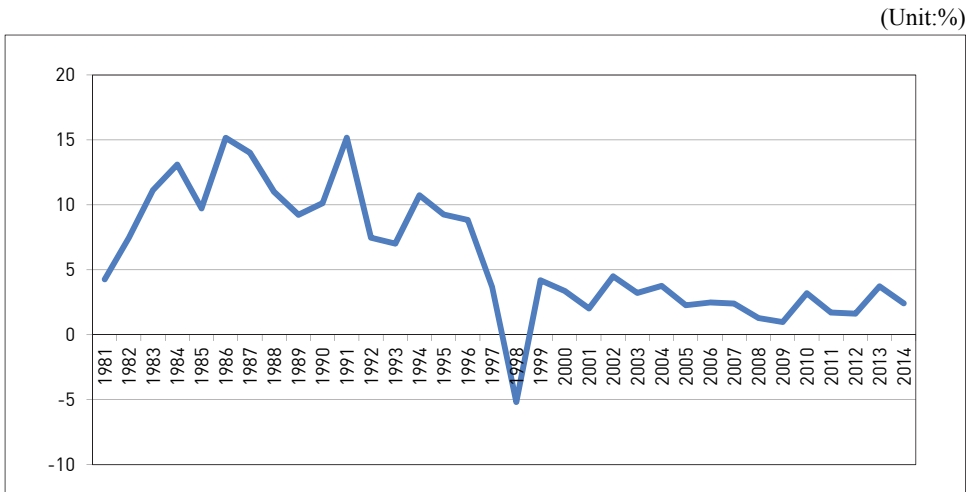
Note: Savings in the present of national disposable income and see also Lee (2015).

Source: ECOSYS (Bank of Korea), <http://ecos.bok.or.kr> (accessed November 10, 2015).

<sup>16</sup> See Park (2013) for the effects of firm saving rates on the Korean economy.

<sup>17</sup> We also find very similar trends even when we are using micro level household income data from the Household Expenditure and Income Survey of the Statistics Korea: For all income groups including workers and non-workers groups, the growth of the real disposable income significantly decreases after the crisis.

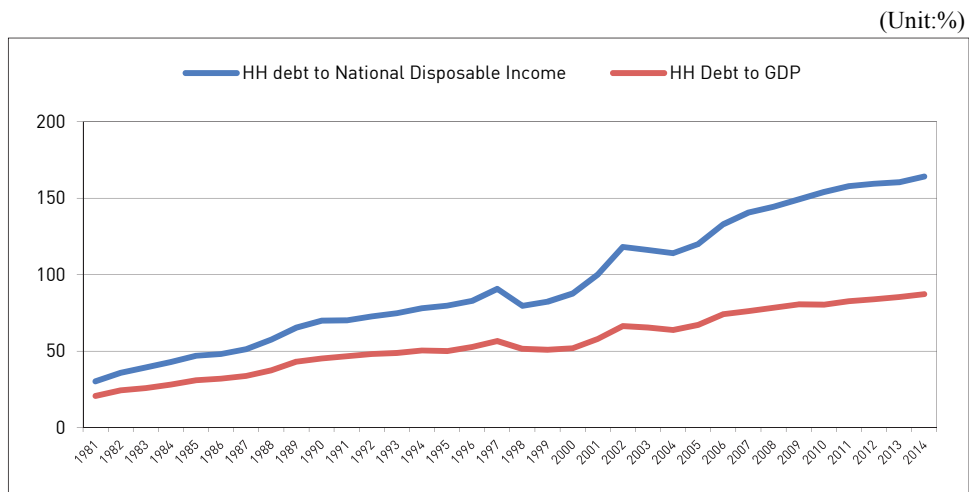
Figure 6. Real Household Disposable Income Growth



Source: ECOSYS (Bank of Korea), <http://ecos.bok.or.kr> (accessed November 10, 2015).

Further, the five-year average growth rates of real household disposable income are 3.4, 1.9, and 2.5%, respectively, in the last fifteen years of 2000-2014. These numbers are smaller than consumption growth rates as reported in Table 1: the corresponding consumption growth rates are 4.7, 3.1, and 2.6%, respectively. Although caution is needed for comparing these numbers directly because the data sources are different, these lower household disposable income growth rates can be linked to the significant increase in household debts after the financial crisis. For example, Figure 7 displays that the ratio of household financial debt to household disposable income has been growing since 1981. In particular, after experiencing the East Asian financial crisis, the ratio has increased substantially, implying that households have been accumulating their debts much faster than their disposable income. In addition, the level of the ratio itself becomes very large. Rising household debts beyond a certain threshold level will negatively affect consumption expenditure because the increase in the debt service will further reduce the disposable income and those households with a debt which is beyond a certain threshold level are likely to face a borrowing limit or to have a higher probability of default risks.

Figure 7. Household Debt of Korea



Source: CEIC and ECOSYS (Bank of Korea).

We now discuss what causes the significant decrease in the household disposable income growth since the East Asian financial crisis.<sup>18</sup> Although more rigorous analysis is necessary, we consider three potential reasons<sup>19</sup>: (i) the low income growth of necessity-driven entrepreneurs may contribute to the decrease in the growth of household disposable income; (ii) the low income growth of non-regular workers relative to regular workers may also contribute to the decrease in the disposable income growth; (iii) The low income growth of workers in small- and medium-sized firms relative to workers in large-sized firms may also contribute to the decrease in the household income growth. All these reasons are related to the labor market reforms since the crisis. We provide our detailed discussion on each of the three reasons below.

During the East Asian financial crisis, large-sized business groups fired a large number of workers who were hired during the full employment period of 1970-

<sup>18</sup> In a sense, the decrease in the household disposable income growth can be related to the world wide phenomenon of decreasing in the labor income share. See, e.g., Stockhammer (2013) and Karabarbounis and Neiman (2014).

<sup>19</sup> Park (2013) looked into four reasons for the decrease in household income: decrease in interest income, in dividend income, in necessity-driven entrepreneurs' income, and in real wage. In particular, he showed that real wage has a negative growth in 2007-2012.

90s, while carrying out a large-scale restructuring. For example, the unemployment rates in Korea were 7.0% and 6.3% in 1998 and in 1999, respectively, while the average unemployment rates were about 3.1% during the period of 1981-1996 and about 3.3% during the period of 2000-2014, respectively.<sup>20</sup> Specifically, the age group of 40-59 was more significantly affected than other age groups. As shown in Figure 8, the proportion of the unemployed whose age is between 40-59 to the total unemployed significantly increased in 1998-1999 relative to the period of 1980-1997, while the proportion of the unemployed whose age is between 20-39 was rather decreased in the corresponding period. To make it worse, most of the unemployed from the age group of 40-59 were never reemployed even after the crisis. Rather, they were forced to enter the service sector such as food, beverage, and convenient-store franchise industries as self-employed because business operation in those franchise industries does not require a special type of human capital or entrepreneurship. Ironically, this low entry barrier made a large number of franchises spring up everywhere, and generated severe competition among them which leads to the decrease in real price of the goods from those industries. However, the decrease in the real price is not due to increase in productivity in those industries but rather due to lowering wage cost (or labor compensation) of those self-employed and thus resulting in the decrease in the income of those self-employed. Note that many self-employed, in general, hire their family members, work more than 10 hours per day, and work more than five days per week. Therefore, their wage per hour could be very small and may even smaller than the minimum wage. In this sense, we call them necessity-driven entrepreneurs. Necessity-driven entrepreneurs have occupied about 25% of all paid workers in Korea since the crisis. Therefore, their low income contributes to the decrease in the growth of household disposable income. For example, the calculation using the data from the Household Income and Expenditure Survey by Statistics Korea shows that the average growth rate of non-workers' income is smaller than that of workers during 2003-2014: the former is about 4.0%, while the latter is about 4.4%.<sup>21</sup>

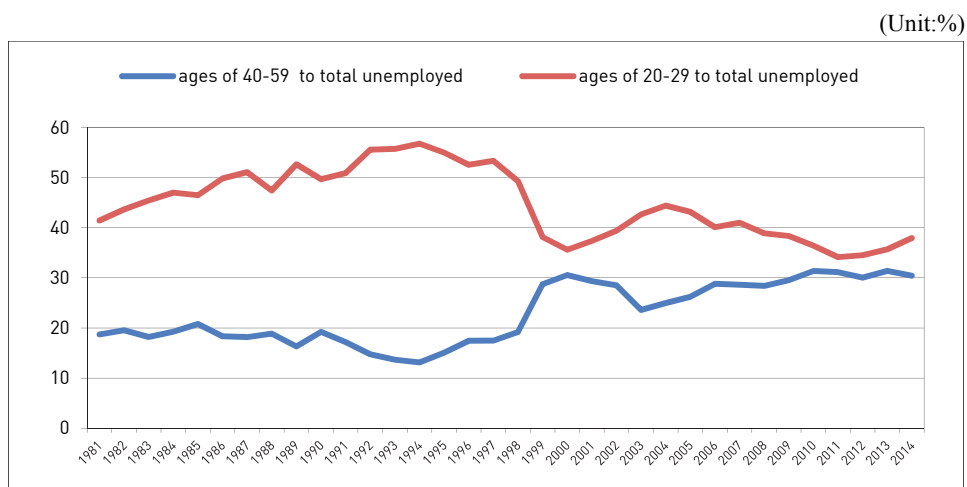
Second, several policies aimed at increasing labor market flexibility were carried out during the East Asian financial crisis following the demand of IMF

<sup>20</sup> Economically Active Population Survey (KOSIS).

<sup>21</sup> See also Park (2013).

and World Bank as part of their rescue packages. These policies contribute to generating and deepening labor market segmentation since the crisis: a sizable share of non-regular workers to total paid workers has been generated.<sup>22</sup> For example, the share of non-regular workers is about 32.4% as of August, 2014.<sup>23</sup> As shown in detail in Ha and Lee (2013, Table 5.), most of these non-regular workers belong to vulnerable workers group such as women, youth, old-aged, unskilled, and low educated workers. Further, these non-regular workers receive wages less than regular workers for a given firm size. For example, according to Ha and Lee (2013), non-regular workers have wages about 70% of regular workers in firms with 100-299 employees in 2011. The wage differences have appeared in all types of firms and increased since the crisis.<sup>24</sup> Therefore, these low wages of non-regular workers contribute to the decrease in the growth of household disposable income.

Figure 8. Relative Unemployment by age



Source: Household Income and Expenditure Survey (KOSIS).

<sup>22</sup> According to the agreement by tripartite committee in July 2002, the definition of “non-regular workers” was established mainly by employment type and includes (i) contingent workers, (ii) part time workers, and (iii) non-typical workers (which include temporary agency workers, independent contract workers in special types of employment, at-home workers, and daily (on-call) workers). See Ha and Lee (2013) for the further detail.

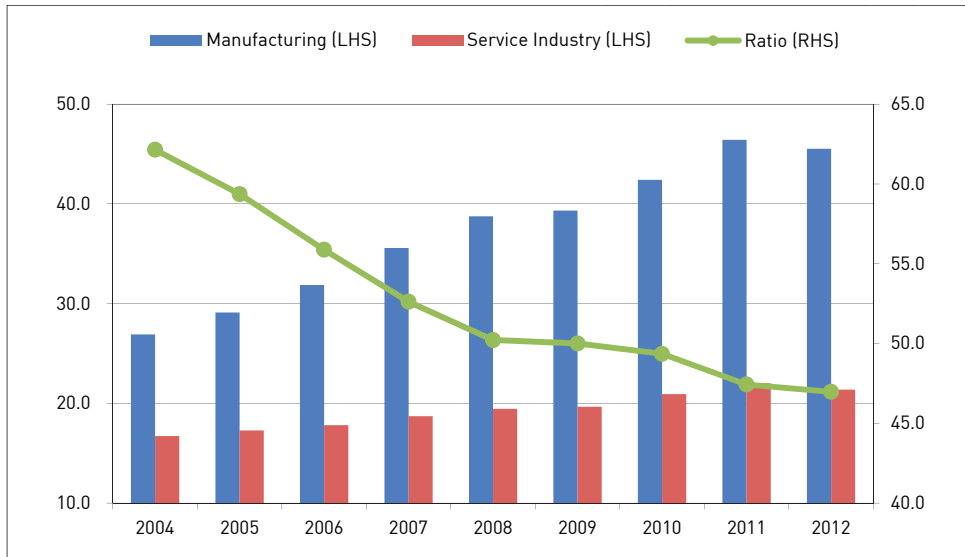
<sup>23</sup> Economically Active Population Survey (KOSIS).

<sup>24</sup> See Ha and Lee (2013).

Finally, as already discussed, the labor productivity difference between small- and medium-sized firms and large-sized firms has widened since the crisis. This productivity difference will be directly linked to the wage difference between the two groups. Considering the fact that the share of employment in small- and medium-sized firms (firms with 1-299 employees) to total employment has been within 87-90% since 1999, the wage difference between two groups also contributes to the decrease in the growth of household disposable income.<sup>25</sup>

Figure 9. Average Labor Productivity by Industry in Korea

(Unit: (LHS) - USD , PPP (RHS) - %)



Source: Korea Productivity Center.

Note: (LHS) represents average labor productivity.

These three reasons for the decrease in the growth of household disposable income also imply the increase in income inequalities. Further, the fact that the growth rate of household disposable income has been lower than GDP since the financial crisis suggests that the growth rate of firm income is greater than that of the household disposable income.<sup>26</sup> This may also contribute to the increase in

<sup>25</sup> Statistics of small and medium enterprises (Korea Federation of Small and Medium Business).

<sup>26</sup> The difference in growth rates between household real disposable income and GDP can be easily seen by comparing the ratio of household debt to the disposable income to that of household

income inequalities. This increase in income inequality will negatively affect consumption expenditure to the extent that the marginal propensity to consume for high income households is smaller than for low income households.<sup>27</sup>

### 3. *A Link*

The labor productivity gap between small- and medium-sized and large-sized firms is likely to be reflected in the labor productivity gap between service and manufacturing industries because the service industry mainly consists of many small- and medium-sized firms. As shown in Figure 9, the ratio of the labor productivity of the service sector relative to the manufacturing sector decreased from 62% in 2004 to 47% in 2012.<sup>28</sup>

Low labor productivity in the service sector can be linked to the decrease in the growth of domestic demand. As already mentioned, many workers fired during the crisis entered low productivity franchise industries, rather than being reemployed after the crisis, contributing to lowering labor productivity in the service industry. In addition, a large number of non-regular workers generated since the crisis contribute to lowering labor productivity in the service industry.<sup>29</sup>

debt to GDP in Figure 7. Considering that national income (GDP) is the sum of household income plus firm income, this implies that firm income has been growing much faster than household income after the financial crisis.

<sup>27</sup> See, Stockhammer (2013), Karabarbounis and Neiman (2014), and Moon and Whang (2015).

<sup>28</sup> This phenomenon is not limited to Korea. Most OECD member countries have experienced similar phenomenon. However, Korea has had the smallest relative labor productivity difference between the two industries in the last 15 years among the OECD member countries and the gap has been even increased.

<sup>29</sup> Several studies present empirical evidence that an increase in the share of the non-regular workers in the nation's total employment can potentially harm firm's productivity. See, e.g., Boeri and Garibaldi (2007) and Sanchez and Toharia (2000). Dolado et al.(2013) developed a simple theoretical mechanism: as a firing cost gap between regular (permanent) and non-regular (temporary) workers increases, firms tend to less likely convert non-regular workers to regular workers and thus to reduce the investment for non-regular workers such as the on-job-training investment. By knowing this, non-regular workers tend to make less efforts on their job performance. This results in decrease in firm's total factor productivity which is mainly determined by regular and non-regular workers' productivities and efforts. To exploit this hypothesis, Ahn (2015) used data from the Korea Workplace Panel Survey from Korean manufacturing firms and presented evidence that firms with more temporary workerstend to have lower productivity.

On the other hand, as already discussed, incomes of workers in small- and medium-sized firms, of nonregular workers, and of necessity-driven entrepreneurs have been low and contributed to the decrease in the growth of domestic demand. And these low incomes are associated with their low productivity.

Low labor productivity in the service sector can also be linked to the dampened ripple effects from the export sector. As already discussed, the Korean export growth is mainly driven by large-sized firms in the manufacturing industry since the East Asian financial crisis. Further, the service value-added components of the Korean export are relatively small among the OECD member countries. Therefore, the labor productivity gap between manufacturing and service industries may induce the ripple effects from the manufacturing industry (the export sector) on the service industry (the domestic demand sector) to be small.

## V. CONCLUSION

We showed that the domestic demand growth has significantly declined since the East Asian financial crisis: In particular, the growth rate has been close to zero in the last ten years. We considered two structural problems: the dampened ripple effects from the export sector and the decrease in the growth of household disposable income. We discussed two potential reasons for the dampened ripple effects from the export sector after the crisis, which are closely related to the changed investment behaviors of the Korean large-sized exporting firms: large-sized exporting firms do not invest in their export earnings any more to create new industries; and they tend to use more foreign value added contents for their exports and to increase outward direct investment by actively participating in GVCs. We also discussed three potential reasons for the decrease in the growth of household disposal income, which are related to the labor market reforms after the crisis: a large number of necessity-driven entrepreneurs and of non-regular workers contribute to the decrease in household income growth; and the wage difference between large-sized firms and small- and medium-sized firms contributes to the decrease in household income growth.

Korean export growth has been mainly driven by large-sized firms after the financial crisis. However, its ripple effects are significantly dampened. Following the financial crisis, large-sized firms have been successfully restructured, adjusting labor and investing abroad by actively participating in global value chains, and

thus gained competition in world markets. Consequently, large-sized firms have substantially increased their sales in foreign markets. However, their increased sales are mainly backed by the significant use of foreign value added components and by the increase in outward direct investment. On the other hand, small- and medium-sized firms which account for about more than 80% of total employment in Korea have had relatively lower labor productivity than large- sized firms. This productivity gap contributes to dampening the ripple effects from the export sector which consists of large-sized manufacturing firms.

We broadly propose policy recommendations which intend to tackle the structural problems. In principle, policies should aim at increasing household income, amplifying the ripple effects from the export sector, and increasing in domestic investment of large-sized firms. Those policies should contribute to improving in labor productivities in small- and medium-sized firms as well as in the service sector. A package of the tax policies proposed in 2014 which was intended to raise household income and to reduce firm saving partially is the beginning of a long journey to resolve the structural problems of the Korean economy.<sup>30</sup>

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<sup>30</sup> See Park (2014) for the detail of these tax policies.

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First version received on 29 November 2015

Peer-reviewed version received on 21 December 2015

Final version accepted on 30 December 2015