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# **Status of Korean SMEs and Policy Tasks for the Implementation of SME-centered Economy**

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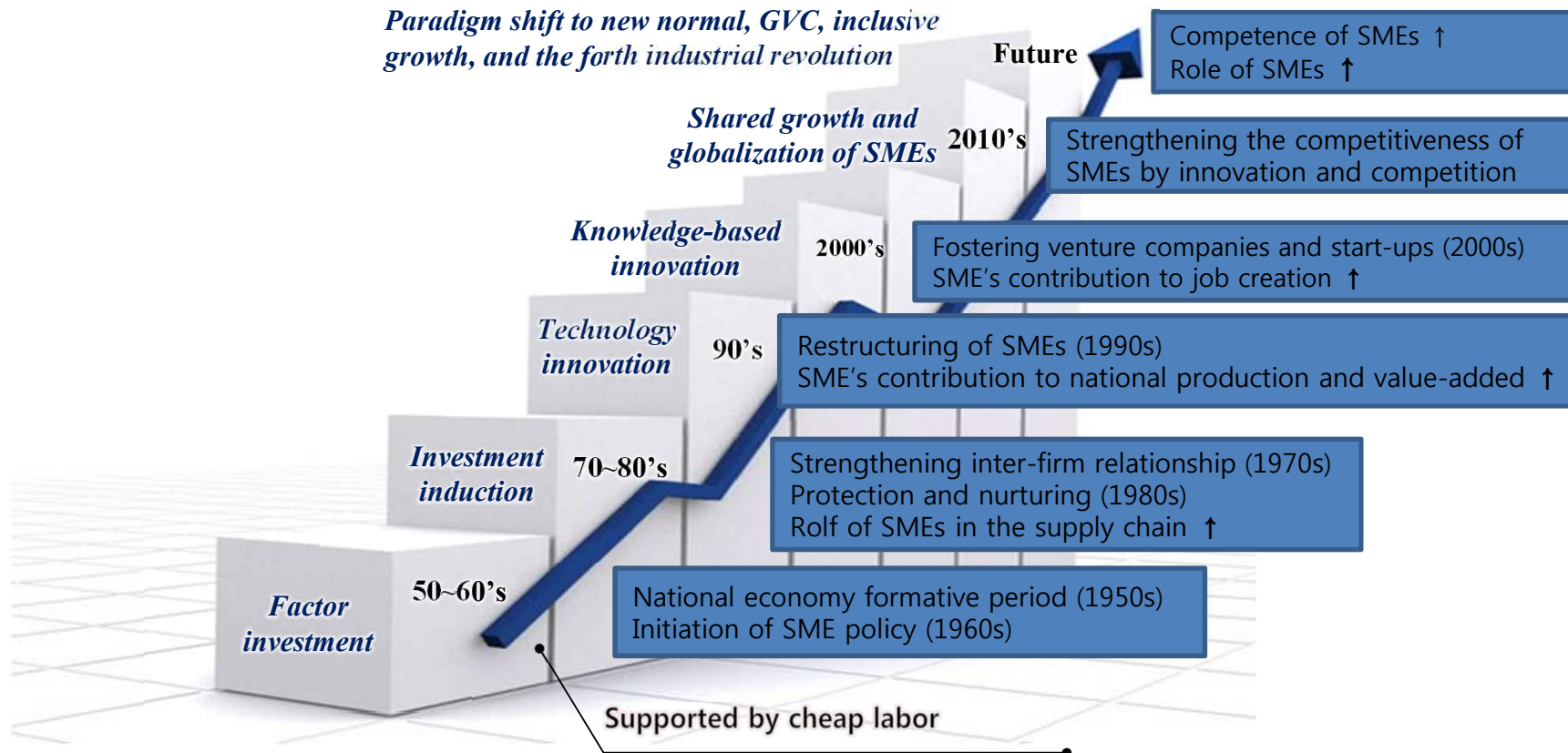
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# 1. Changes in the economic paradigm and the role of SMEs

- The advent of the New Normal era characterized by low growth, low price level, low interest rate, and high unemployment rate
- The deepening of the 'global value chain' (GVC) structure
- The Fourth Industrial Revolution promoting the convergence of industries and the disappearance of industrial boundaries (2016 World Economic Forum)
- Inclusive growth has become an irreversible trend since 2012.
- The trend of the U.S.-centered protection trade

## 2. SMEs and Korean economy

### Role of SMEs in the process of Korean economic development



- ❖ GDP: \$1.3 billion (1953) → \$1.4 trillion (2016) (ranked 11th in the world)
- ❖ Per Capita Income: \$82 (1961) → \$27,600 (2016) (ranked 45th in the world)
- ❖ Export : \$22 million (1957) → \$495.6 billion (2016) (ranked 8th in the world)

## 2. SMEs and Korean economy (Contd.)

- 60's : Contribution to economy was lower than that of Les.
- 70~80's : SMEs' role began to be important and its contribution to economy began to increase.
  - SMEs' role as suppliers in the supply chain began to be important to support large exporting enterprises.
- 90's : SMEs' contribution to national production and value-added generation began to be larger than that of Les.
- 00's : SMEs' contribution to national job creation began to increase at a high speed.
  - Boom of venture companies based on new technologies such as IT
- 10's: SMEs' role is increasing as their competence is secured because of governmental supports for globalization and others.

### Proportion of Korean SMEs' contribution to major economic indicators

	60's	70's	80's	90's	00's	10-13	1962~2013
# of enterprises	94.0	94.8	99.4	102.2	101.0	99.8	99.6
# of employees	38.1	47.1	81.9	△6.8	128.7	93.9	78.8
Production	26.5	32.2	45.7	50.3	47.8	52.9	47.0
Value-added	27.7	35.7	47.7	50.5	50.8	69.7	47.4

Source: Korea Federation of SMEs (2015).

## 2. SMEs and Korean economy (Contd.)

### Comparison of major indicators between SMEs and LEs (2014)

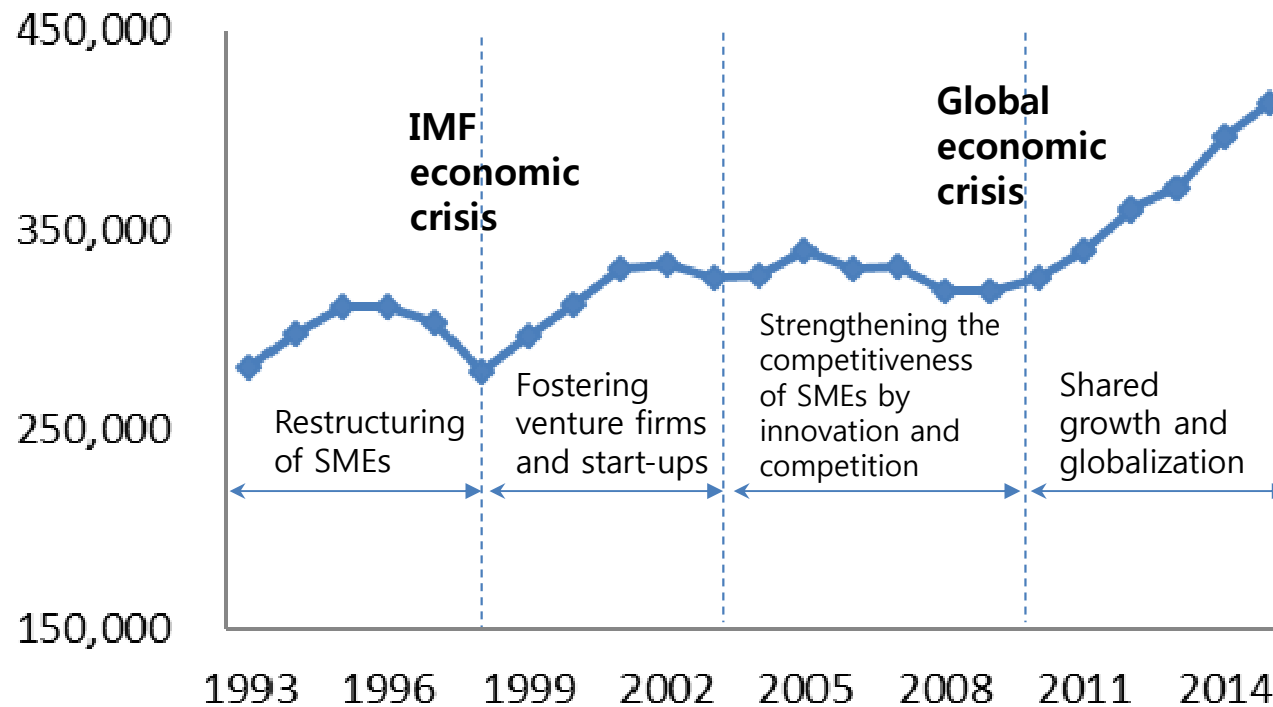
	Categories	SMEs	LEs	Share of SMEs(%)	Share of LEs(%)
Total industries	No. of employees	14,027,636	1,935,109	(87.9)	(12.1)
	No. of establishments	3,542,350	3,123	(99.9)	(0.1)
	Export (hundred million USD)	987.1	3,961.9	(19.9)	(79.9)
Manufacturing industries	Production (hundred million KRW)	7,482,101	8,001,532	(48.3)	(51.7)
	Added value (hundred million KRW)	2,600,115	2,480,735	(51.2)	(48.8)
	SMEs' per capita productivity based on value added (thousand KRW)	109,313 (32.5% compared to LEs)			
	SMEs' per capita annual income (thousand KRW)	31,970 (56.5% compared to LEs)			

Note: 1) Based on the enterprises employed 1 and more workers for total industries, and 5 and more workers for manufacturing industries.; 2) Export is for 2016.

Source: Korea Federation of SMEs, SME Statistics 2016 (where export is from the database of Korea Small Business Institute.)

### 3. Survival, employment and management status of Korean SMEs

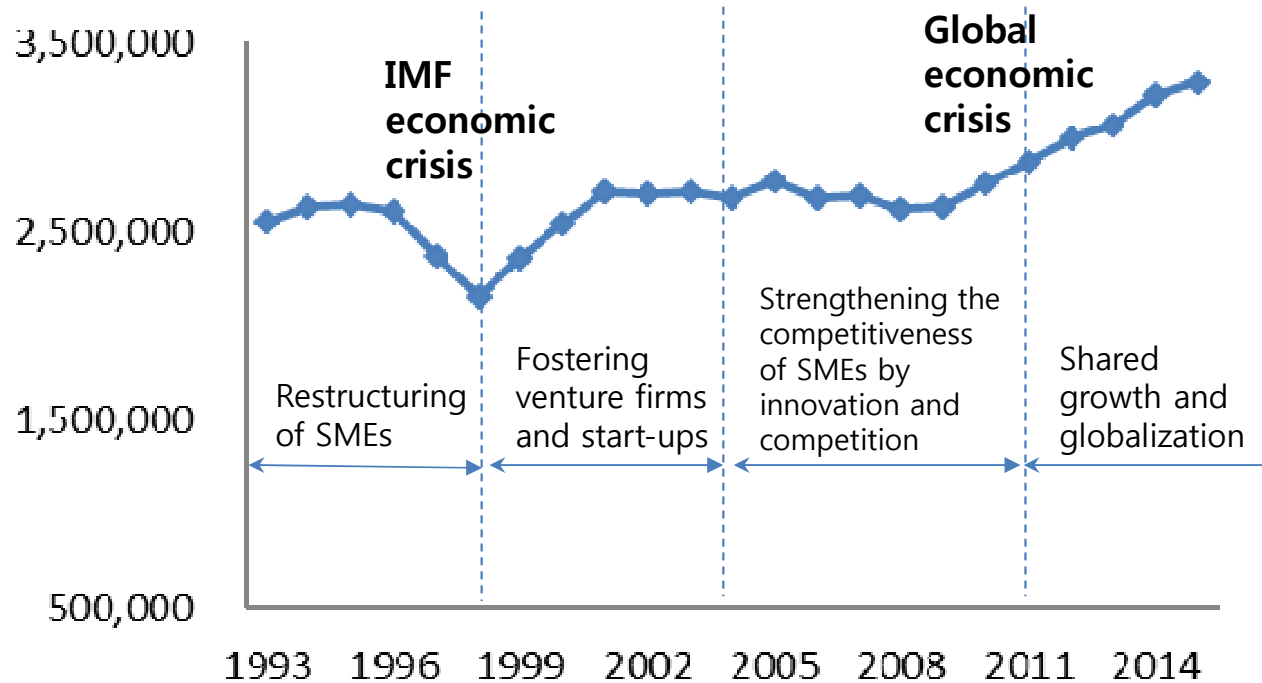
The number of businesses of Korean manufacturing SMEs



Source: Statistics Korea, *National Business Survey* (Based on establishments with less than 300 employees)

### 3. Survival, employment and management status of Korean SMEs (Contd.)

**The number of employees of Korean manufacturing SMEs**



Source: Statistics Korea, *National Business Survey* (Based on establishments with less than 300 employees)

### 3. Survival, employment and management status of Korean SMEs (Contd.)

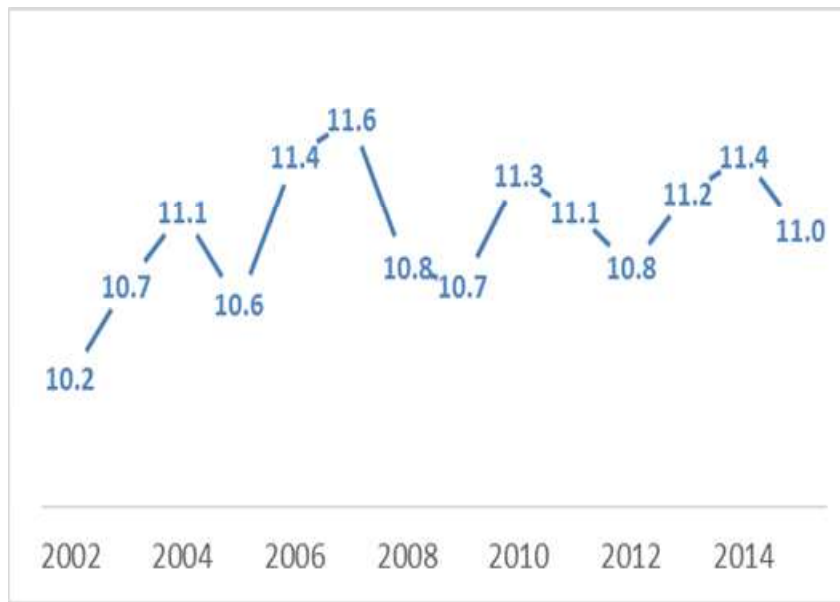
#### Number of employees, self-employed (2011-2016, thousand people)

Year	Number of employees				Number of self-employed
	Sub-total	1 - 4	5 - 299	300 and above	
2011	24,244	9,593	12,662	1,990	5,594
2012	24,681	9,809	12,826	2,045	5,718
2013	25,066	9,847	13,060	2,159	5,651
2014	25,599	9,952	13,371	2,276	5,652
2015	25,936	9,786	13,781	2,369	5,563
2016	26,236	9,663	14,106	2,467	5,570

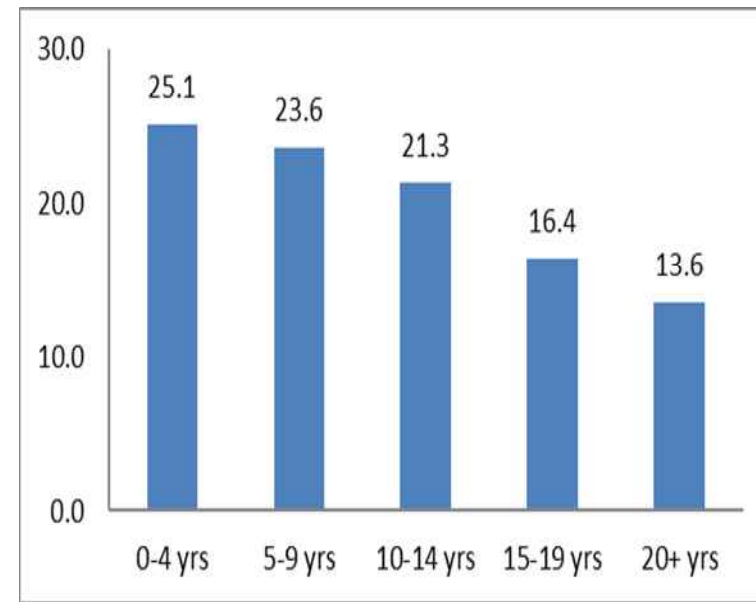
Source : Statistics Korea, *Economically Active Population Survey*

### 3. Survival, employment and management status of Korean SMEs (Contd.)

**Average firm-age of small and medium manufacturers (years)**



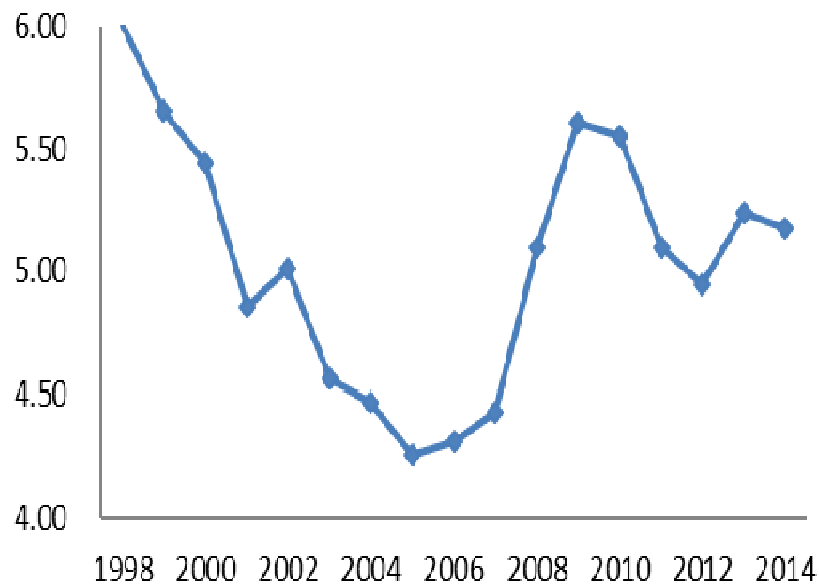
**Distribution of firm-age of small and medium manufacturers (as of 2014, %)**



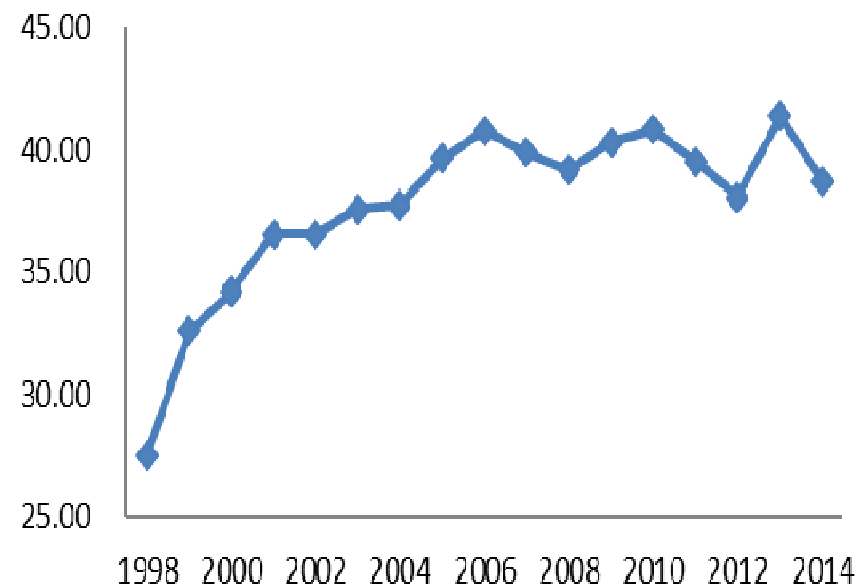
Source: Korea Small Business Institute, database.

### 3. Survival, employment and management status of Korean SMEs (Contd.)

**Profitability (Operating profit to sales, %)**



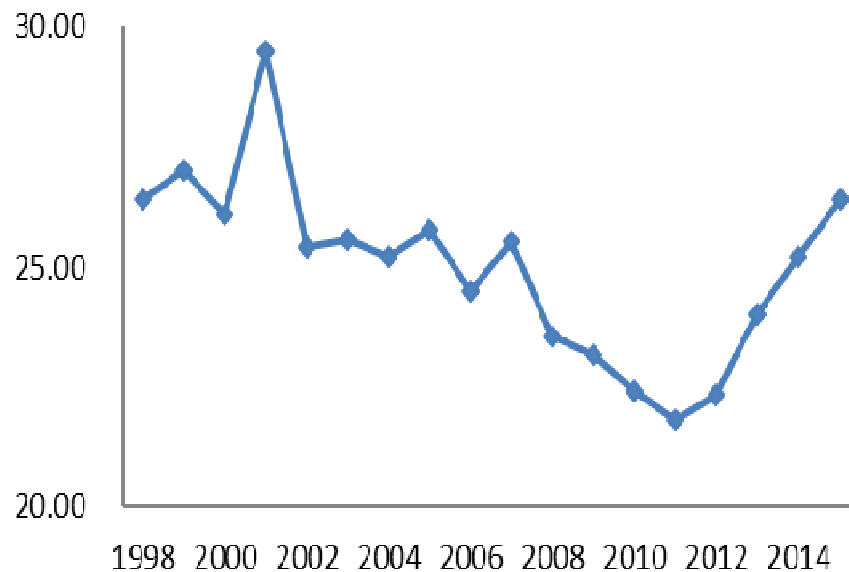
**Stability (Ratio of equity to total assets, %)**



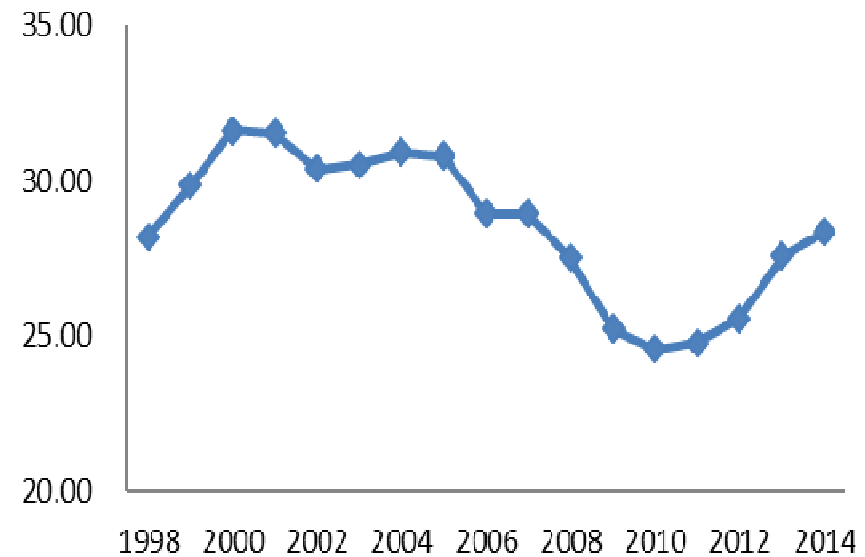
Note: Based on small and medium manufacturers of 5 or more and less than 300 employees.  
Source: Korea Federation of SMEs, *SME Management Index*, each issue.

### 3. Survival, employment and management status of Korean SMEs (Contd.)

Productivity (Value added ratio to sales, %)



Productivity (Value added to capital, %)



Note: Based on small and medium manufacturers of 5 or more and less than 300 employees.  
Source: Korea Federation of SMEs, *SME Management Index*, each issue.

### 3. Survival, employment and management status of Korean SMEs (Contd.)

#### Export by establishment scale (2011-2016)

Year	Total (USD billion)	SMEs		HPEs		LEs	
		Amount (USD billion)	Ratio (%)	Amount (USD billion)	Ratio (%)	Amount (USD billion)	Ratio (%)
2011	555.21	101.56	18.3	81.89	14.7	371.02	66.8
2012	547.87	102.87	18.8	72.83	13.3	371.22	67.8
2013	559.63	95.49	17.1	88.25	15.8	374.97	67.0
2014	572.66	103.29	18.0	90.10	15.7	378.35	66.1
2015	526.76	96.23	18.3	92.85	17.6	336.67	63.9
2016	495.43	99.52	20.1	86.79	17.5	308.04	62.2

Source: Ministry of SMEs and Startups, *Statistics of Korean SMEs* (<http://www.mss.go.kr>)

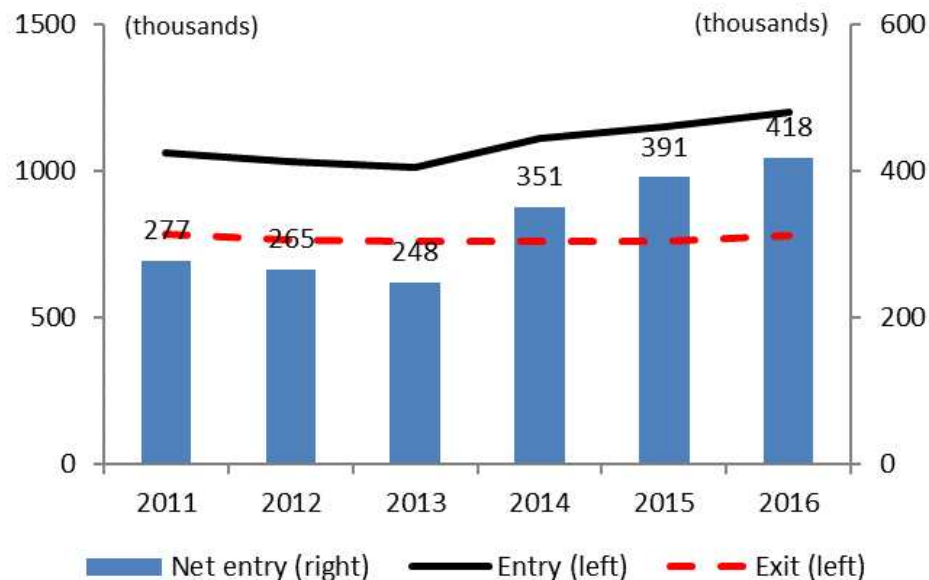
#### ※ Number of export firms

	2009	2012	2016
SMEs	77,819	85,897	91,819
HPEs	1,381	2,204	2,125
LEs	661	715	772

Source: Ministry of SMEs and Startups, *Statistics of Korean SMEs* (<http://www.mss.go.kr>)

# 4. Entrepreneurial and business environment in Korea

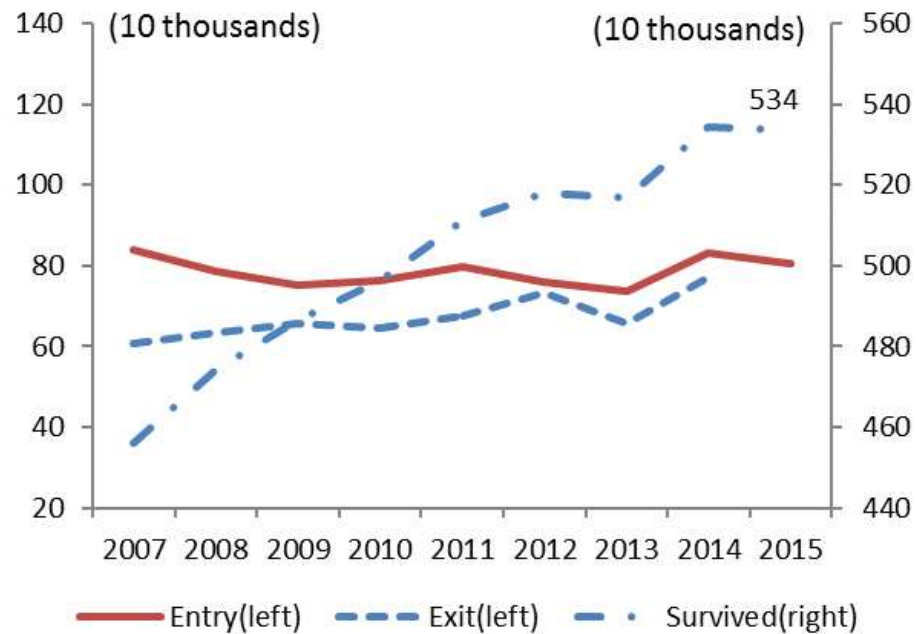
## Birth and death of enterprises in Korea



Note: Entry and exit means, respectively, the number of taxpayers starting a new business and those closed.  
Source: National Tax Service, *Statistical Yearbook of National Tax*, each year.

## 4. Entrepreneurial and business environment in Korea (Contd.)

### Birth and death of micro-enterprises in Korea



Source: Korea Employment Information Service, Employment insurance database (Recite KOSBI database).

# 4. Entrepreneurial and business environment in Korea (Contd.)

## Changes in employment by firm size (2015)

(Thousands people, %)

No. of employees	Net establishment (A+ B)	Establishing- Closing (A)	Expansion- Reduction (B)	Ratio of net establishment (%)	Ratio of (expansion- reduction)(%)
0-4	254	125	129	64.1	98.5
5-9	48	47	1	12.1	0.8
10-29	36	42	-6	9.1	-4.6
30-99	16	27	-11	4.0	-8.4
100-299	10	15	-5	2.5	-3.8
300+	32	9	23	8.1	17.6
Total	396	265	131	100	100

Source: Korea Employment Information Service, Employment insurance database (Recite Lee et. al., 2017)

## 4. Entrepreneurial and business environment in Korea (Contd.)

- **Korea's "starting a business environment" index by World Bank**

Categories	2008	2010	2012	2014	2017	OECD average of 2017
Ranking	126th	60th	24th	17th	9th	-
Steps	10	8	5	3	2	4.9
Time (days)	17	14	7	4	4	8.5
Cost to GNI (%)	16.9	14.7	14.6	14.5	14.6	3.1
Minimum capital to GNI (%)	53.8	0.0	0.0	0.0	0.0	8.7

Note: GNI = Gross National Income

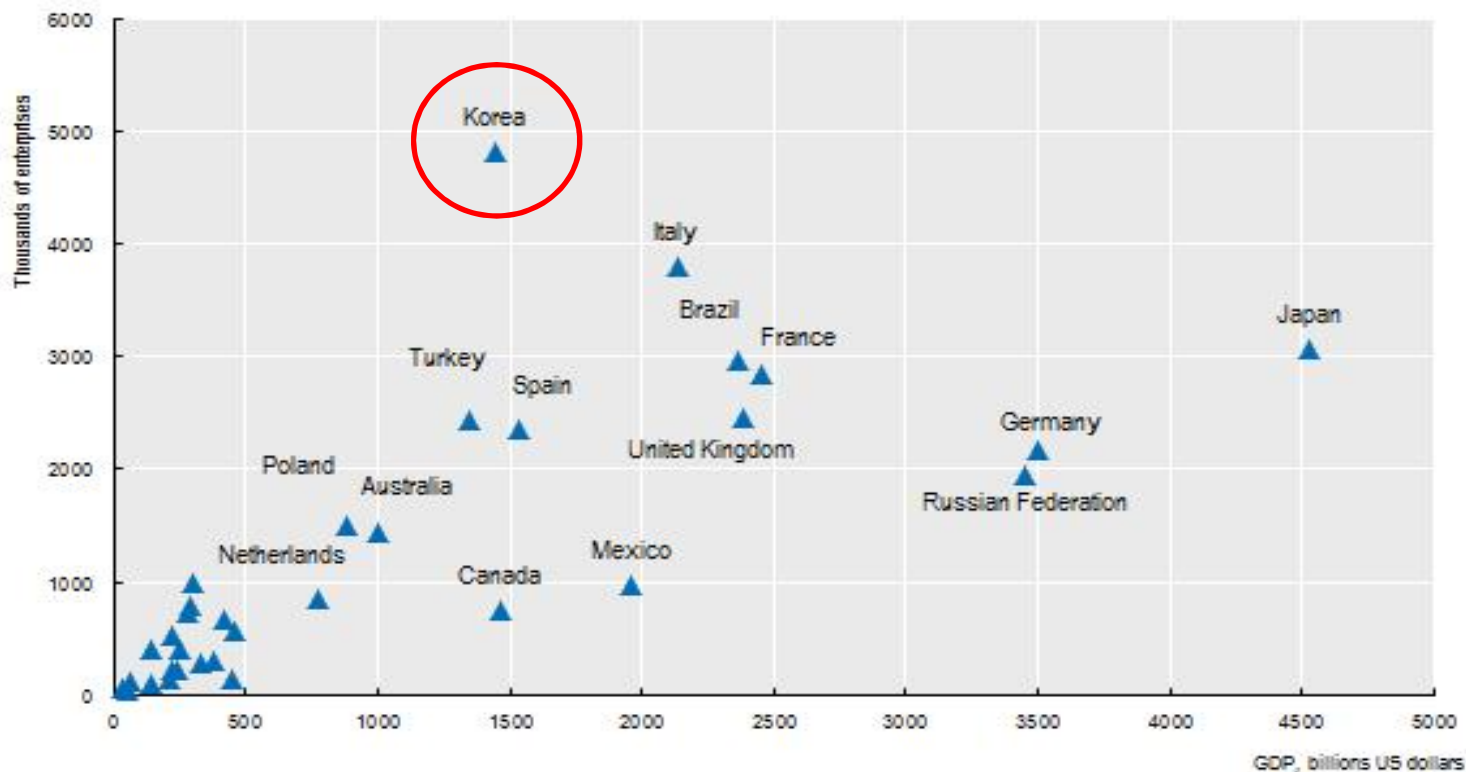
Source: World Bank (2014, 2017)

## 4. Entrepreneurial and business environment in Korea (Contd.)

- **'Entrepreneurship at a glance' by OECD(2017)**
  - Korea's employment structure with high proportion of small self-employed
    - The number of self-employed in Korea as of 2016 was 398.2 million, ranking 4th among 38 OECD countries.
      - The proportion of the self-employed in Korea to the population is 8%, the highest among 38 OECD countries.
    - A large number of businesses compared to the GDP level
      - In particular, the proportion of businesses with 1-9 employees is 43.4% in Korea, while OECD average is 29.11%.

## 4. Entrepreneurial and business environment in Korea (Contd.)

### Number of businesses and GDP in OECD countries (2012)



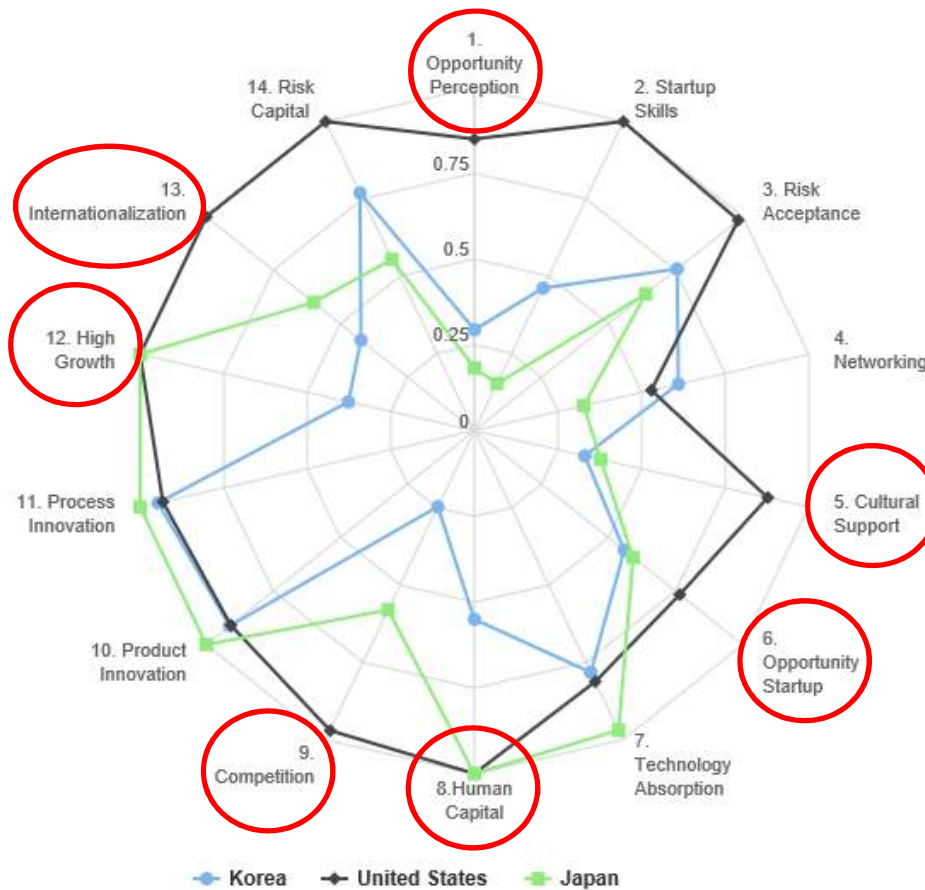
Source: OECD (2015), *Entrepreneurship at a Glance 2015*

## 4. Entrepreneurial and business environment in Korea (Contd.)

- **Global entrepreneurship monitor(GEM,2017)**
  - Korea's 'total early-stage entrepreneurial activity' (TEA) index was 6.7% in 2016, ranked 52<sup>nd</sup>/64.
    - China (10.3%), U.S. (12.6%), Israel (11.3%) and India (10.6%)
  - "Opportunity-driven entrepreneurial activity" was 75.3% which is lower than major developed countries.
    - U.S.(87.5%), Britain(83.2%), France(85.5%), Germany(75.6%), Italy(85.7%), Sweden(89.0%), Canada(79.9%)
  - Overall entrepreneurial activity is low.
    - The ratio of the start-up population by age group:  
18-24 (1.8%), 25-34 (4.7%), 35-44 (6.3%), 45-54 (10.6%), 55-64 (7.6%)
  - The percentage of entrepreneurs in the 25-34 age group:
    - Korea (4.7%), Sweden (9.4%), Britain (9.8%), U.S. (15.6%), Canada (22.3%), China (15.3%), Israel (10.4%), Taiwan (12.9%).

# 4. Entrepreneurial and business environment in Korea (Contd.)

## Comparison of GEI (global entrepreneurship index) in Korea, U.S., and Japan



Source: GEDI (2017)

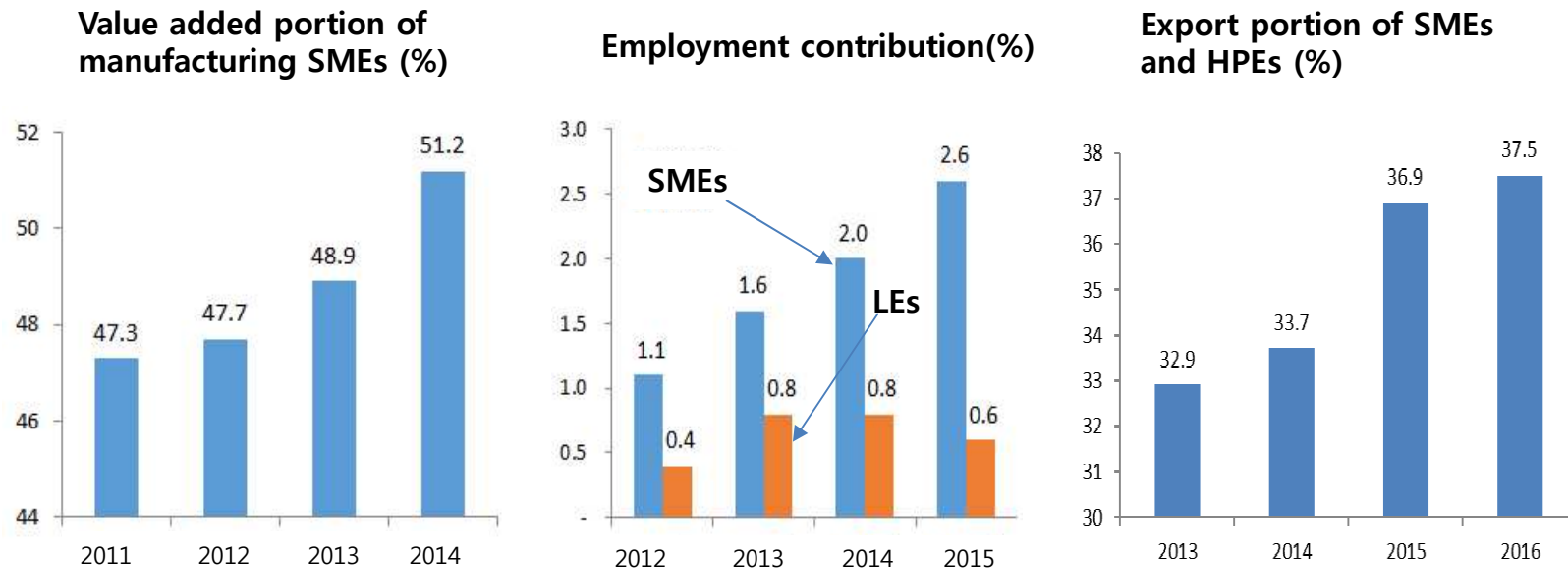
## 5. Is it possible to move to an SME-centered economy?

### Doubt about the trickling-down effect of LEs

- LEs' off-shoring; jobless growth; unfair trade; the stagnation of innovation
  - ✓ The proportion of overseas manufacturing production (based on sales) of LEs was 17.2% in 2010, but increased to 22.1% in 2014.
  - ✓ The share of domestic value added of LEs dropped from 52.6% in 2010 to 48.8% in 2014.
- Sluggish export of LEs
  - ✓ Exports (by customs clearance) of 2015 and 2016 showed continuous negative growth of -8% and -5.9% respectively due to sluggish export volume of LEs' main export goods.

# 5. Is it possible to move to an SME-centered economy? (Contd.)

## Doubt about the trickling-down effect of LEs (Contd.)



Source: Kora Federation of SMEs; KOSBI

## 5. Is it possible to move to an SME-centered economy? (Contd.)

### Doubt about an SME-centered economy

- But low productivity and low export competitiveness
  - Labor productivity gap between LEs and SMEs in Korea

Year	Total manufacturing		LEs		SMEs		(S/L)*100 (%)
	Labor productivity (mn. KRW)	Growth rate of labor productivity (%)	Labor productivity (mn. KRW) (L)	Growth rate of labor productivity (%)	Labor productivity (mn. KRW) (S)	Growth rate of labor productivity (%)	
2001	103	-	190	-	70	-	36.6
2005	133	2.4	254	0.5	89	5.9	35.2
2013	171	-2.4	364	-0.8	107	-0.9	29.4

Note: Labor productivity means per capita value-added at constant price of 2010.

Source: Korea Productivity Center (2015)

## 5. Is it possible to move to an SME-centered economy? (Contd.)

### Doubt about an SME-centered economy (Contd.)

- But low productivity and low export competitiveness (Contd.)
  - Comparison of nominal labor productivity between LEs and SMEs in major OECD countries (manufacturing in 2012)

Countries	LEs (L)	SMEs (S)	(S/L)*100 (%)
Italy	77	54	70.1
France	79	55	70.0
Britain	77	47	61.2
Germany	84	51	60.4
Japan	57	21	37.8
Korea	372	109	29.5

Note: 1) Nominal labor productivity of other countries except Japan means nominal per capita value-added, and nominal shipment value in Japan. Based on Euro for EU countries, and domestic currencies for Korea and Japan.

2) Korea is based on a establishment, and other countries are an firm standard.

3) The criteria for LEs are more than 250 employees in Europe and more than 300 in Korea and Japan.

Source: OECD, *Structural and Demographic Business Statistics*; Japan, *Industrial Statistics Survey*; Statistics Korea, *Mining and Manufacturing Survey*.

## 5. Is it possible to move to an SME-centered economy? (Contd.)

### Doubt about an SME-centered economy (Contd.)

- But low productivity and low export competitiveness (Contd.)
  - Rank of productivity and efficiency indicators of Korean SMEs was 55<sup>th</sup> among 63 countries (World Competitiveness Yearbook, 2014, IMD)
  - Rank of proportion of added-value to the total of Korean SMEs was 15<sup>th</sup> among 33 countries (Entrepreneurship at a glance, 2015, OECD)
  - Proportion of SMEs' contribution to the total export of Korea is not growing at a low level (18.3%(2011) → 18.0%(2014) → 20.1%(2016))

## 5. Is it possible to move to an SME-centered economy? (Contd.)

### Doubt about an SME-centered economy (Contd.)

- The wage gap between LEs and SMEs is a serious problem.
  - It causes restraining the influx of workers into SMEs and social polarization.
  - It means the limit of the expansion of the independent technology development and market expansion of SMEs.

#### Comparison of wage differences by firm size in Korea, U.S., and Japan

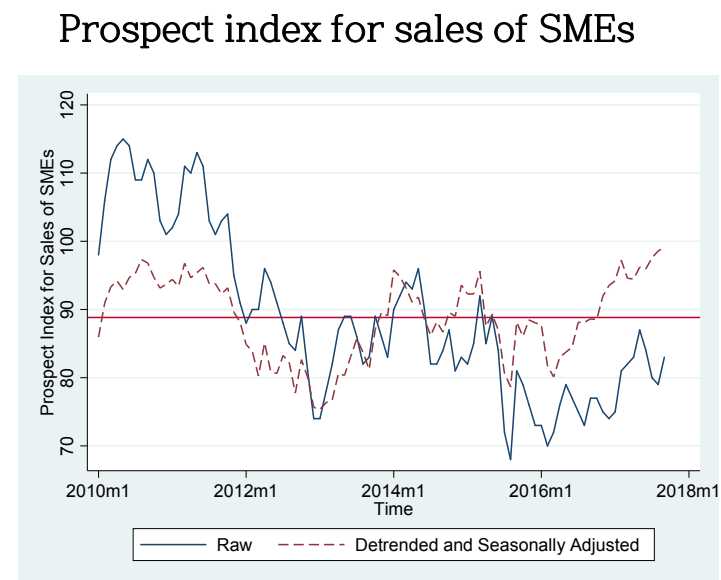
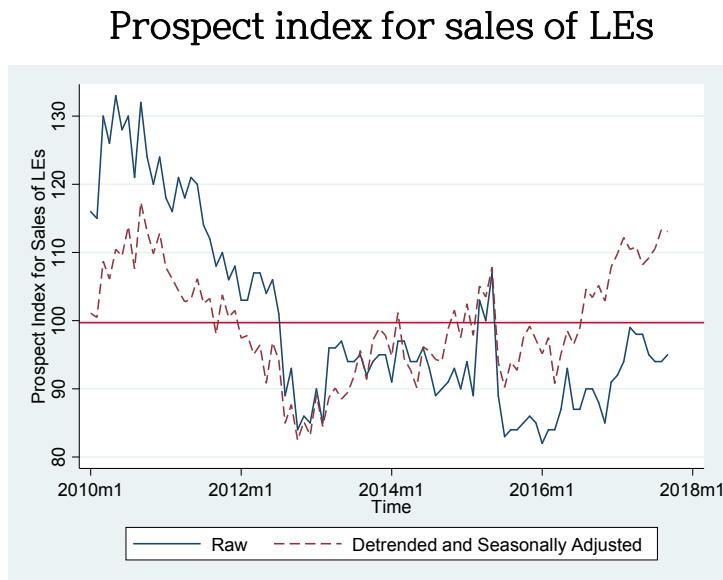
Firm size	Korea (2016)		U.S. (2014)		Japan (2015)	
	Average monthly wage (USD)	Compared to LEs with 500 or more employees (%)	Average monthly wage (USD)	Compared to LEs with 500 or more employees (%)	Average monthly wage (USD)	Compared to LEs with 500 or more employees (%)
1-4 employees	1,894	<b>31.3</b>	3,532	<b>76.5</b>	2,497	<b>62.7</b>
5-9 employees	2,795	<b>46.2</b>	2,987	<b>64.7</b>	2,967	<b>74.5</b>
10-99 employees	3,301	<b>54.6</b>	3,382	<b>73.2</b>	3,160	<b>79.4</b>
100-499 employees	3,988	<b>65.9</b>	3,920	<b>84.9</b>	3,432	<b>86.2</b>
500 and more employees	6,048	<b>100.0</b>	4,618	<b>100.0</b>	3,982	<b>100.0</b>
Total	3,164	<b>52.3</b>	4,089	<b>88.5</b>	3,416	<b>85.8</b>

Note: Monthly average wages are converted into U.S. dollars by applying PPP exchange rates of OECD Stats.

Source: Survey on work status by employment type (for Korea), Statistics of U.S. Business (for U.S.) and Survey on private-sector wage statistics (for Japan) (Recite from Noh, 2017)

## 5. Is it possible to move to an SME-centered economy? (Contd.)

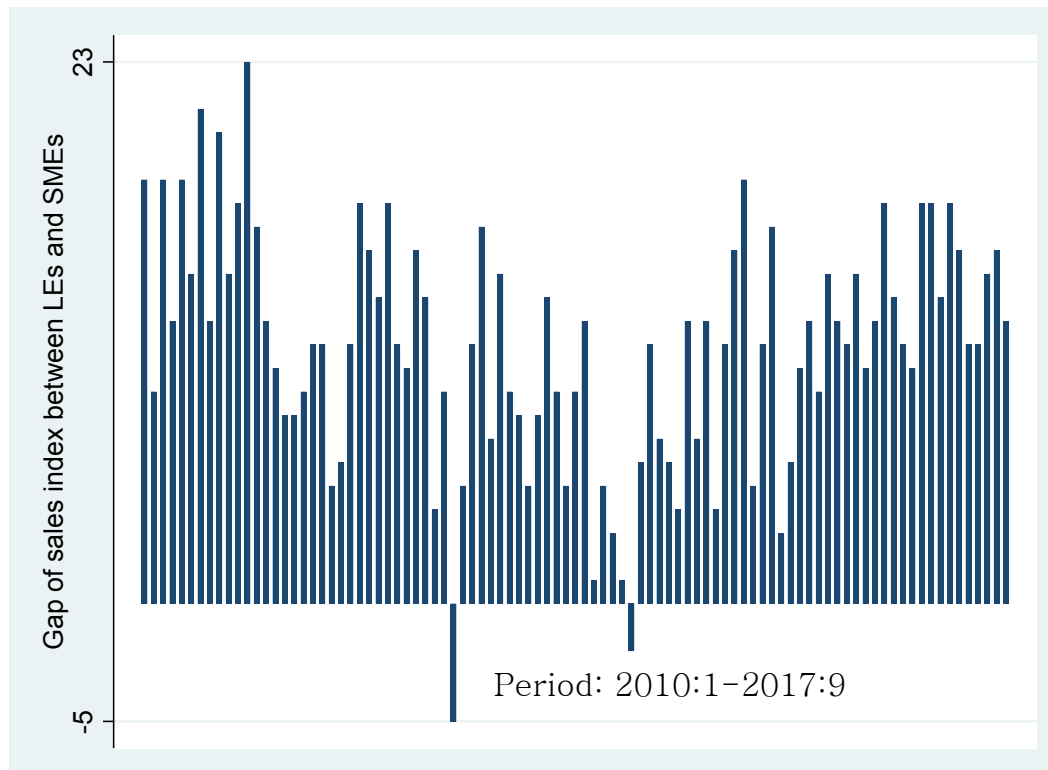
### More evidence on the volatility of SME sales



Monthly 'prospect index for sales' of SMEs and LEs in Korea is on a long-term declining trend since 2010.

## 5. Is it possible to move to an SME-centered economy? (Contd.)

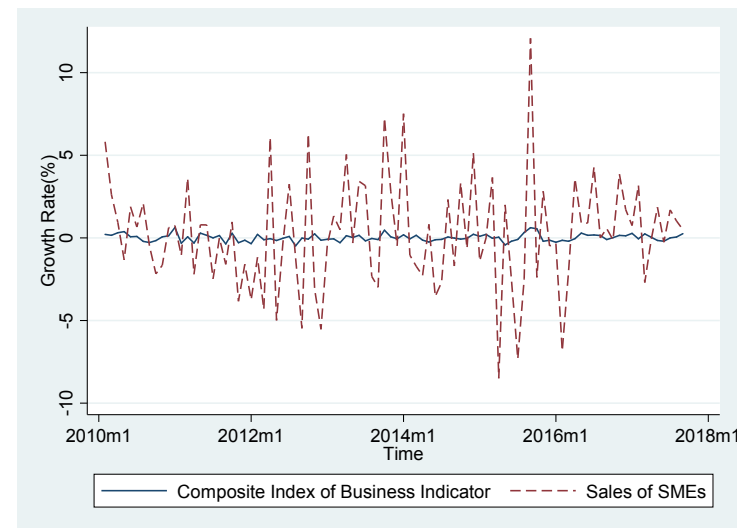
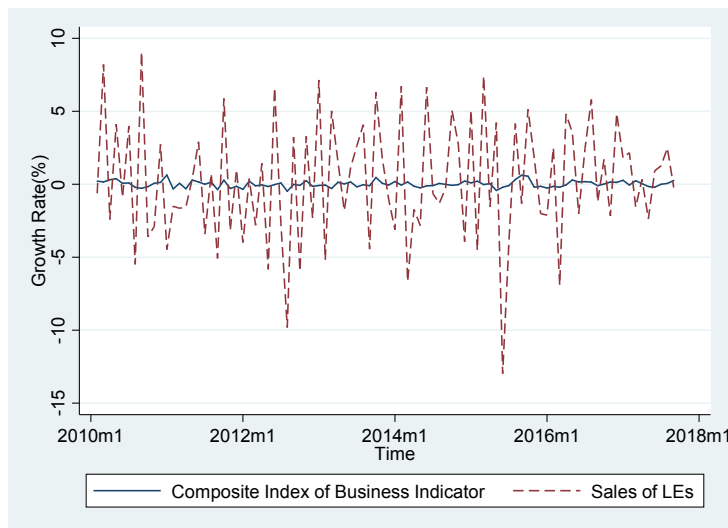
### More evidence on the volatility of SME sales (Contd.)



SMEs have a negative view on the economic situation, compared to LEs.

## 5. Is it possible to move to an SME-centered economy? (Contd.)

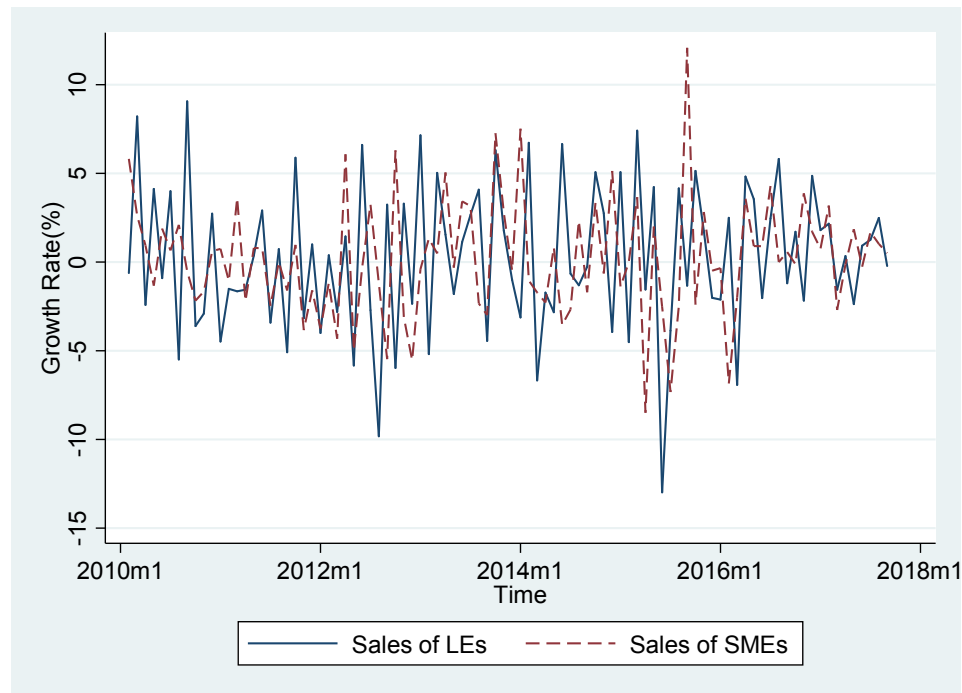
### More evidence on the volatility of SME sales (Contd.)



Monthly growth rate of 'prospect index for sales' of SMEs and LEs is cyclically varied, and is larger than the business fluctuation denoted by the monthly growth rate of 'coincident composite index of business indicators'.

## 5. Is it possible to move to an SME-centered economy? (Contd.)

### More evidence on the volatility of SME sales (Contd.)

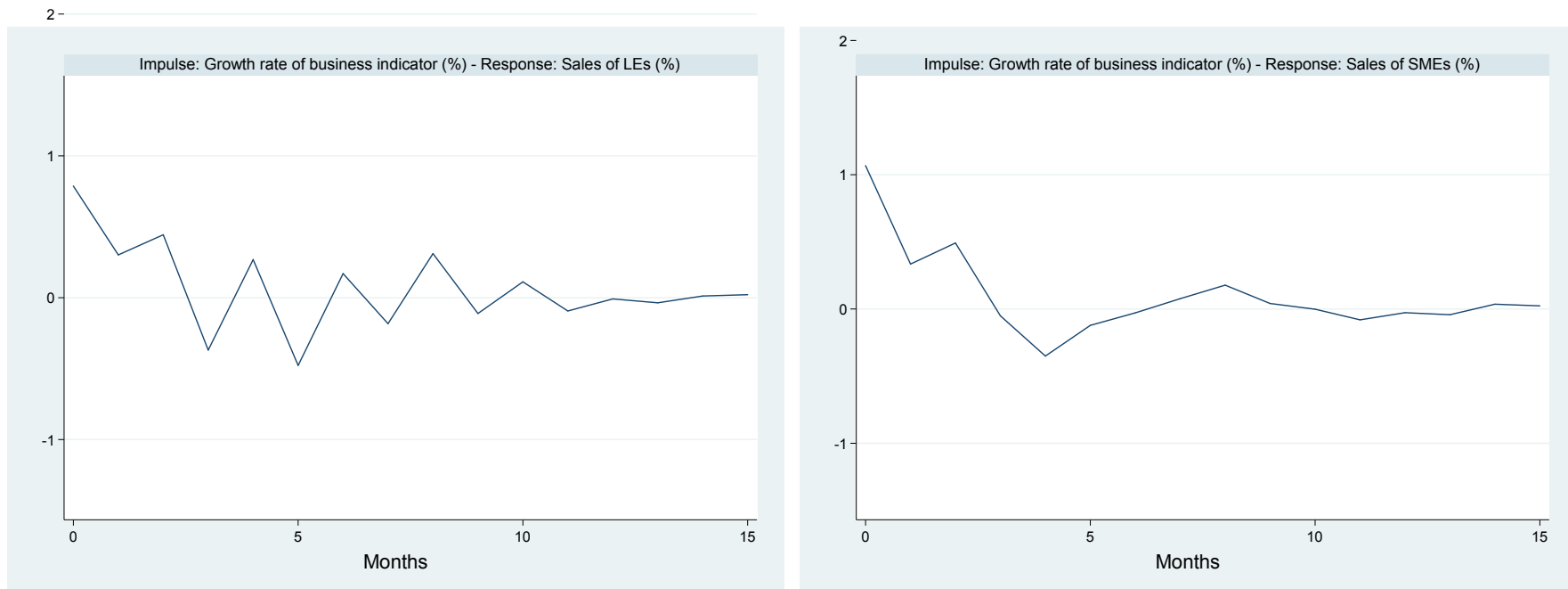


The prospective sales growth rate of the LEs in manufacturing industry showed more volatility than the increase rate of prospective sales of manufacturing SMEs.

## 5. Is it possible to move to an SME-centered economy? (Contd.)

### More evidence on the volatility of SME sales (Contd.)

Orthogonalized impulse-response functions (OIRF)

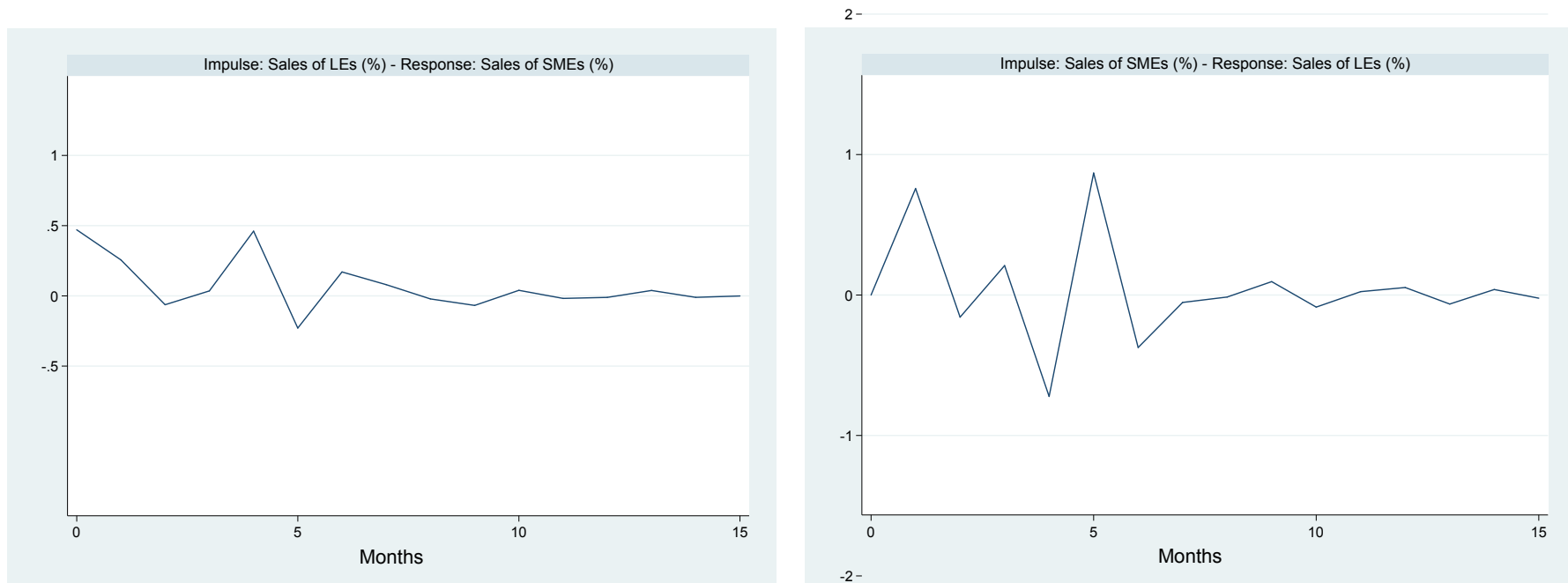


The impact of economic growth on the prospects for manufacturing SMEs sales can be evaluated as relatively short-term and strong compared to LEs.

## 5. Is it possible to move to an SME-centered economy? (Contd.)

### More evidence on the volatility of SME sales (Contd.)

Orthogonalized impulse–response functions (OIRF)



The impact of SMEs on LEs is larger than that of LEs on SMEs.

## 5. Is it possible to move to an SME-centered economy? (Contd.)

### More evidence on the volatility of SME sales (Contd.)

Granger causality test (lag=4) – associated with a previous VAR model

Equation (Caused variables)	Excluded (Causing variables)	Test statistics ( $\chi^2$ -value)	P-value
Growth rate of business indicator	Growth rate of sales of LEs	2.5742	0.631
Growth rate of business indicator	Growth rate of sales of SMEs	5.0895	0.278
Growth rate of sales of LEs	Growth rate of business indicator	5.1415	0.273
Growth rate of sales of LEs	Growth rate of sales of SMEs	10.1970	<b>0.037</b>
Growth rate of sales of SMEs	Growth rate of business indicator	11.9880	<b>0.017</b>
Growth rate of sales of SMEs	Growth rate of sales of LEs	4.3633	0.359

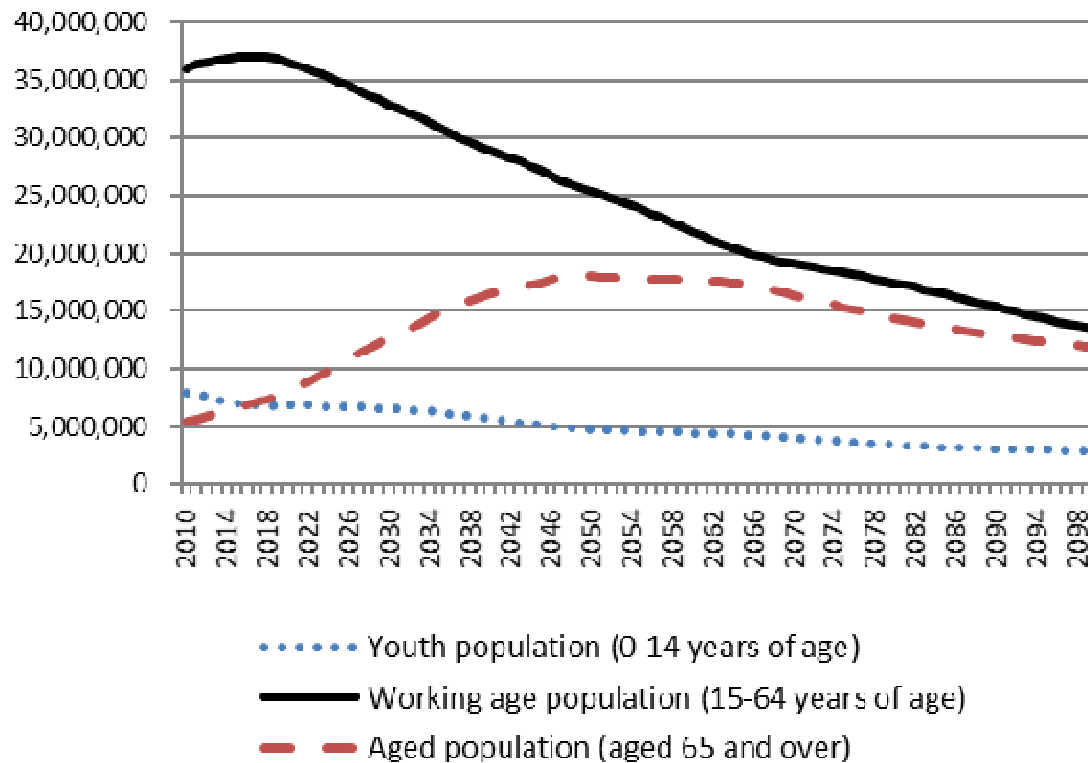
## 6. Concluding remarks

### Focusing on the dynamism and sustainable growth potential of SME ecosystems

- To secure self-sustaining power of SMEs,
  - ✓ Making themselves more competitive
  - ✓ Achieving commercialization through innovative ideas
  - ✓ Taking initiative in responding to changes in business environment.
  - ✓ Strengthening global competitiveness through advanced production factors and high value added through manufacturing innovation
  - ✓ Seeking open innovation and R&D
- Shifting away from the quantitative and universal financial support
  - ✓ Strategic approaches are needed to support innovation, sustainable growth, and healthy business ecosystem building, such as technology, exports, and start-ups.

## 6. Concluding remarks (Contd.)

### Estimated working age population of Korea



Note: Death rate and international movement are the same as in 2014, assuming that the total fertility rate remains at 1.42.

Source: Korea Institute for Health and Social Affairs

## 6. Concluding remarks (Contd.)

### Policy issue #1.

### Cultivating technology-based high-growth SMEs

- Through/for supporting prospective SMEs that increase sales, exports, and employment,
  - Transforming existing SMEs into innovative enterprises
  - Improving non-price competitiveness of innovative SMEs
  - Preparing for an export support system for SMEs and HPEs.
  - Strengthening non-financial incubating structure associated with the provision of the business consulting and the networking various market participants.

## 6. Concluding remarks (Contd.)

### Policy issue #2.

### Establishing an opportunity-seeking start-up ecosystem

- In order to activate the potential labor force participation in the market through start-up
  - Financial supporting for start-up enterprises, and building infrastructures for supporting start-up, such as property rights, accounting, law, institutions and business networks.
  - Strengthening the support for high value-added start-ups associated with the creation of jobs with fast growth
  - Actively supporting the emergence of VC enterprises
  - Nurturing innovative youth entrepreneurs

## 6. Concluding remarks (Contd.)

### Policy issue #3.

### Reexamination of the R&D policy

- R&D *underinvestment* problem → Government intervention
  - The Constitution of the Republic of Korea declares:
    - "protecting and fostering SMEs" (Article 123)
    - "developing science and technology"(Article 127)
- As of 2016, proportion of 'technology sector' in Korea's budget for SME support is 17.4% (KOSBI, 2016)
  - the central government at KRW 2.5 trillion
  - the local governments at KRW 361.9 billion
- As of 2015, 42 thousands R&D SMEs
  - but the proportion of SME sales related to technology development is low at 27.2%
  - the average number of researchers of R&D SMEs is 5.7 in 2013, of which the proportion of masters and doctorates is low at 21% (Noh, 2014)

## 6. Concluding remarks (Contd.)

### Reexamination of the R&D policy (Contd.)

- Government R&D expenditure
  - It is possible to have a selective support on the business with high social benefits.
  - It requires the expertise.
  - High administrative costs but few beneficiaries
  - Temporary support
  - Problems of overlapped / repeated participants and similar projects
- R&D tax expenditure
  - Technology cycle is shortened and unpredictable.
  - Tax credit for encouraging voluntary R&D activities
  - Beware of becoming vested rights.
  - Biased towards subsidizing labor costs rather than support for investment in research facilities.
  - Needs to diversify the support that is concentrated in the research investment stage to the support at the start-up stage or technology transfer stage.

## 6. Concluding remarks (Contd.)

### Policy issue #4.

### The pursuit of inclusive growth for a sustainable economy

- Compensation for workers against total added value of manufacturing industry is 28% for LEs and 50% for SMEs
- The share of SMEs' wage compared to LEs in Korea is 41.3%.
- Should find an inclusive solution, rather than economic efficiency perspective, for micro-enterprises who occupy a quantitative majority of the national economy.
- The maintenance and creation of employment, through the use of policy finance, are still important.

**- End of presentation -**