Global Economic and Social Trends in OECD & G20 Countries

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1.1 Background

- Changing conditions in Korea
  - Economic growth: per capita income is over $20,000 (market rate) or nearly $30,000 (PPP)
  - Perception of well-being: satisfaction with life has declined over the period of rapid economic growth

- Serious challenge
  - Weakening econ-social vitality
  - Increasing social conflicts

- Need a new development strategy to improve well-being with economic performance
  - Evaluate where Korea stands
  - Identify Korea's strength and weakness
  - Suggest long-term strategies

1.1 Background

▸ The ESDI (Economic and Social Development Indicator) study

- Develop an indicator that reflects comprehensive socio-economic progress and overcomes problems raised in the SSF Report

- Comparative analysis using panel data of 39 countries (OECD+G20) over nineteen years (from 1990) in order to figure out how Korea has changed.
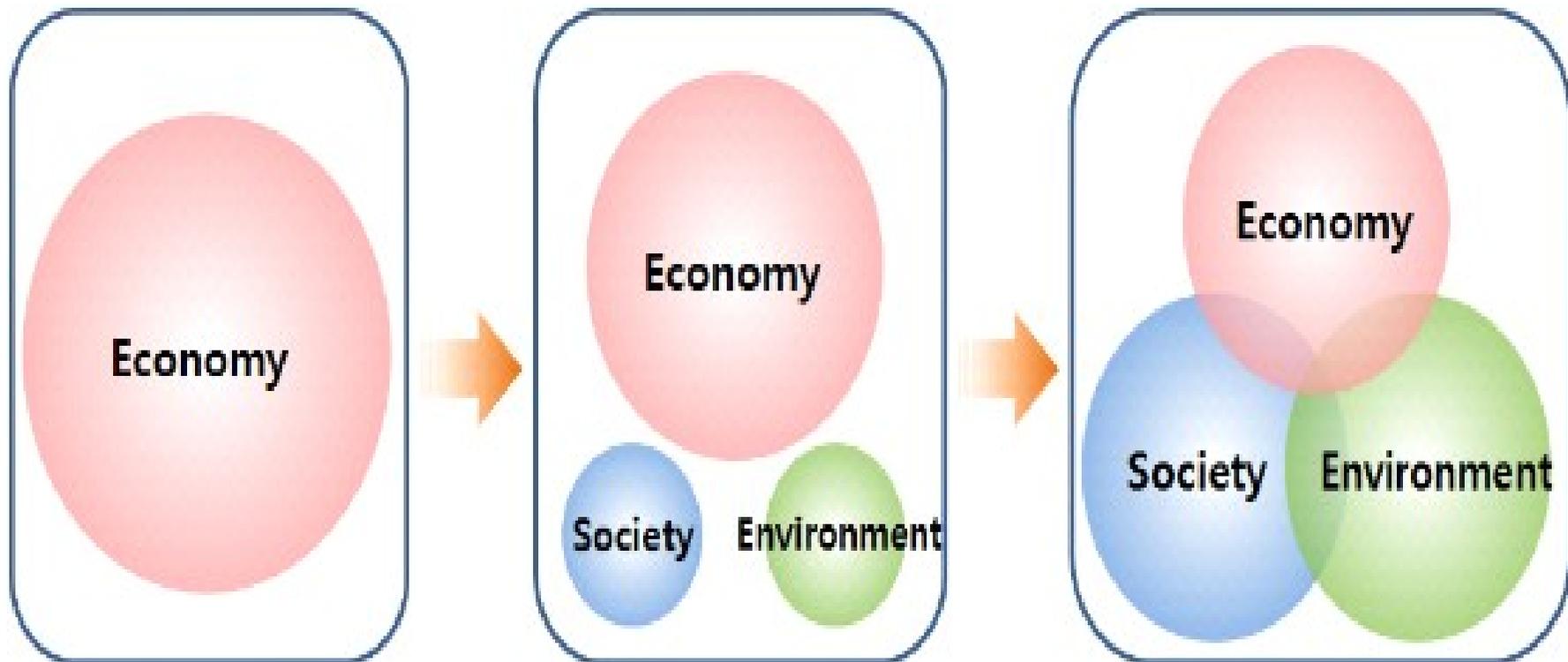
▸ The ESDI study began in 2009

- Annually update with minor revisions in methodologies

- 2009: included only 30 OECD countries

- 2010: 39 countries (OECD and G20)

- 2011: same as 2010 and a few extensions

1.2 Motivation

▶ Measure of economic and social development

- In the past: only economic concern
- Increasing concern of social progress and environment
- Now, the indicator needs to reflect the widespread social, environmental concerns in tandem with economic growth

1.2 Motivation

<Figure 1> The Evolution of Development Indicators

2. New Indicator of Economic and Social Development

2.1 Data property and source

- Indicator system
  - Three dimensions: growth engine, social cohesion, environmental improvement
  - Six domains: two domains in each dimension
  - Nineteen sub-classes: 7 in growth engine, 8 in social cohesion, 4 in environmental improvement

- Analysis
  - Global trend for each dimension
  - Trend of individual countries for each dimension
  - Where Korea stands

2.1 Data property and source

<Table 1> Indicator system

Category	Class	Sub-class	Description
Growth Engine	Stable Growth	income	per capita GDP, PPP, $, constant 2005
		macroeconomic stability	Inflation, GDP deflator (annual %)
			Central government debt, total(% of GDP)
		financial development	Liquid Liabilities/GDP + Stock Market Capitalization/GDP
			Private Credit by Deposit Money Banks and other financial institutions/GDP + Stock Market Total Value Traded/GDP
		Economic openness	Trade (% of GDP)
			Foreign direct investment, net inflows (% of GDP)
	Industrial Competitiveness	informatization	Internet users (per 100 people)
			Mobile cellular subscriptions (per 100 people)
			Personal computers (per 100 people)
		technological innovation	Researchers in R&D(per million people, FTE)
			Number of Patents Granted(All Patent Types)
		human capital	Employment to population ratio, 15+, male (%)
			Employment to population ratio, 15+, female (%)
			GDP per person employed (constant 1990 PPP $)
			Percentage of population, 25-34, total, completed tertiary
			Public spending on education, total(% of GDP)

2.1 Data property and source

Category	Class	Sub-class	Description
Social cohesion	**Individual freedom and life security**	freedom	Index of Economic Freedom
			Freedom of the Press
		security	Unemployment, total(% of total labor force)
			Public and mandatory private Expenditures: Old age (percentage of GDP)
			Employment rates for age group 55-64
			Road fatalities per million inhabitants
			Health expenditure, total (% of GDP)
			Suicides, deaths per 100,000 population
			Crimes recorded in criminal statistics, Grand total(rates per 100,000 inhabitants)
		empowerment	Labor participation rate, total(% of total population ages 15+)
			Freedom Index
		welfare, distribution	Public social expenditure as a percentage of GDP
			Gini Index
		fertility/aging	Fertility rate, total
			Population ages 65 and above (% of total)
	Social tolerance and government accountability	social capital	Trust in people
			Institutional confidence
			Civic engagement
		Social tolerance	Protection of disabled workers
			degree of tolerance
			Stocks of foreign population
		government accountability	Government Effectiveness
			Rule of Law Index
			CPI (Corruption Perception Index)
			Net ODA Ratio to GNI

2.1 Data property and source

Category	Class	Sub-class	Description
Environmental Improvement	Environmental condition	resource efficiency	Total Primary Energy Consumption
			Total gross water abstractions
		environmental hazard	CO2 emissions
			PM10, country level
			Total amount generated of municipal waste
	Regenerative capability	renewable energy	Total Renewable Electricity Net Generation
		water, sewage	Proportion of the population using improved drinking water sources

2.1 Data property and source

<Table 2> Data description

Description	Main source	Property	Countries with missing data value
GDP per capita	World Bank WDI	Hard	
Inflation		Hard	
Proportion of government debts	World Bank WDI, CIA Factbook	Hard	
Financial current liabilities /GDP + Aggregate market value of listed stocks /GDP	World Bank, Financial Structure Dataset	Hard	China
Private credit of financial institutions /GDP + stock exchange volume /GDP		Hard	China
Trade volume ratio	World Bank WDI	Hard	
FDI(inflow) ratio		Hard	
Proportion of Internet users		Hard	
Proportion of mobile phone subscribers		Hard	
PC penetration rate		Hard	
Proportion of workers in research & development	UNESCO	Hard	
No. of U.S. patent registrations	USPTO	Hard	
Male /female employment rate	World Bank WDI	Hard	
Labor productivity		Hard	
Higher education completion rate	World Bank, Education Statistics	Hard	
Proportion of educational expenditure	UNESCO	Hard	
Economic freedom index	Heritage Foundation	Survey	
Press freedom index	Freedom House	Survey	
Unemployment rate	World Bank WDI	Hard	
Social expenditure for the aged.	OECD stats	Hard	Chile, non-OECD
Senior employment rate	ILO	Hard	China

2.1 Data property and source

Description	Main source	Property	Countries with missing data value
Road fatality rate	UNECE	Hard	Brazil, China, Saudi Arabia
Proportion of health expenditure	WHO	Hard	
Suicide rate		Hard	Indonesia, Saudi Arabia
Crime rate	UNODC	Hard	Brazil
Labor participation rate	World Bank WDI	Hard	
Democracy of political system	Freedom house	Survey	
Welfare expenditure	OECD Factbook	Hard	Chile, non-OECD
Gini coefficient	UN University	Hard	Saudi Arabia
Ratio of birthrate to aged population	World Bank WDI	Hard	
General trust / institutional trust	World Values Survey	Survey	
Citizen participation index		Survey	Saudi Arabia
Number of laws on workers with disabilities	ILO	Hard	
Tolerance of others	World Values Survey	Survey	
Proportion of foreigners	World Bank WDI	Hard	
Government effectiveness index	World Bank, Worldwide Governance Indicators	Survey	
Rule of law index	The World Justice Forum	Survey	
Corruption perception index	Transparency International	Survey	
Official Development Assistance	OECD stats	Hard	
energy consumption /GDP	EIA	Hard	
Extracts from fresh water/GDP	FAO	Hard	
CO2 emissions/GDP	World Bank WDI	Hard	
Concentration of fine dust		Hard	
waste disposal/GDP	OECD stats	Hard	Indonesia, Saudi Arabia
renewable energy use/ total energy use	EIA	Hard	
Proportion of population using tap water and sewage distribution to population	UN Millennium Development Goals Database	Hard	

2.2 Standardization

The standardization of Linear Scaling Method (LSM)
– Osberg and Sharpe (2005)

Standardization = (Value-Min)/(Max-Min)

Max = global Max + |global Max * 10%|,

Min = global Min - |global Min * 10%|

3. Data analysis and Application

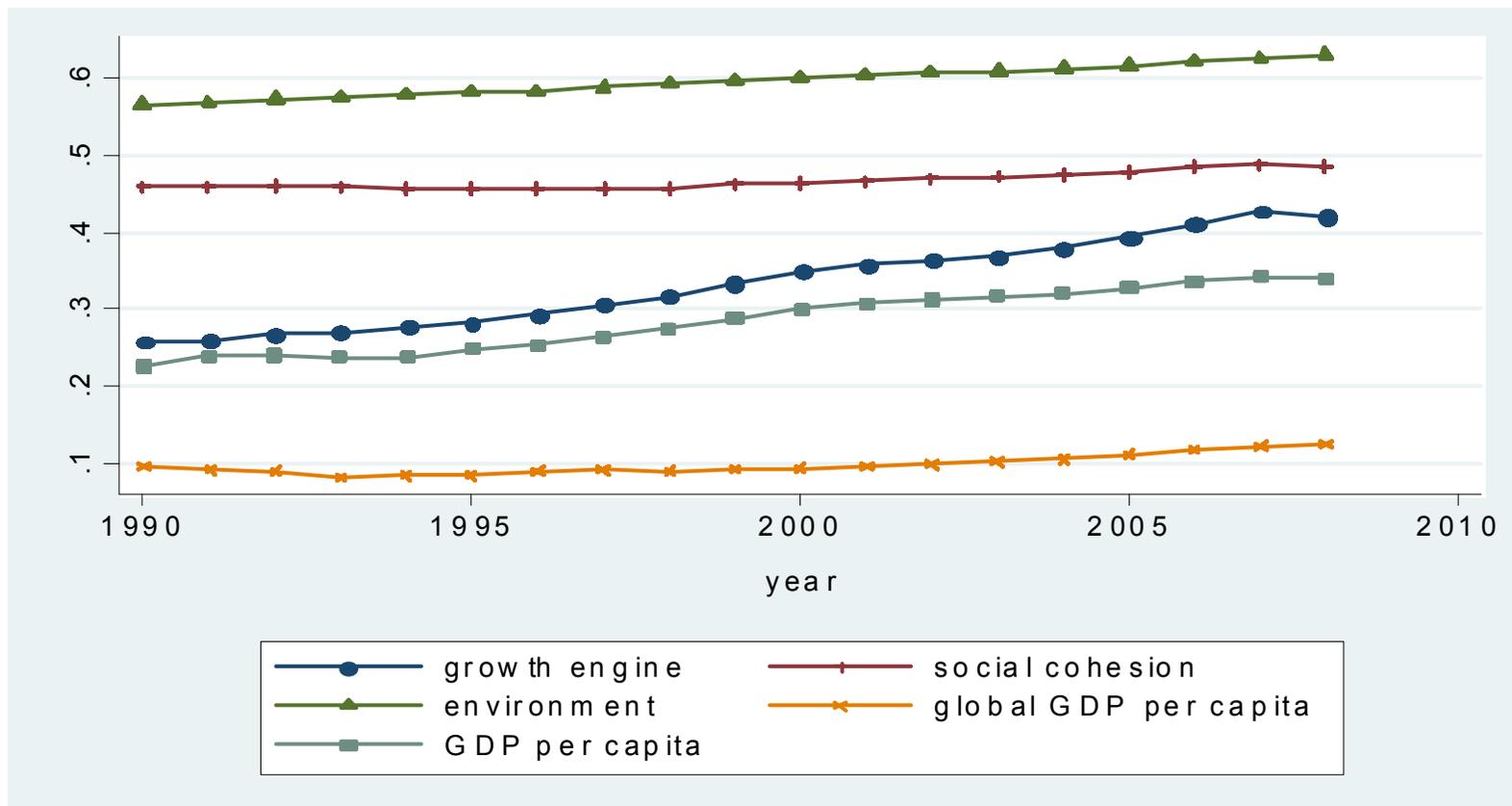3.1 Global trend analysis

3.2 Korea's relative standing

3.1 Global trend analysis:
(1) Basic trend

▶ The growth engine has shown the fastest improvement.

▶ The social cohesion has changed little.

▶ Continuous improvement in the environment

3.1 Global trend analysis:
(1) Basic trend

<Figure 3> Global trend of indices

3.1 Global trend analysis:
(2) Analysis of distributional variation

▸ **Coefficient of variation**

  - Standard deviation divided by mean

  - Examine distributional changes among countries in each dimension

▸ **In the case of growth engine, the coefficient of variation has gradually become smaller since 1990**

  - It began to increase in 1997, but then decreased gradually again in the mid-2000s.

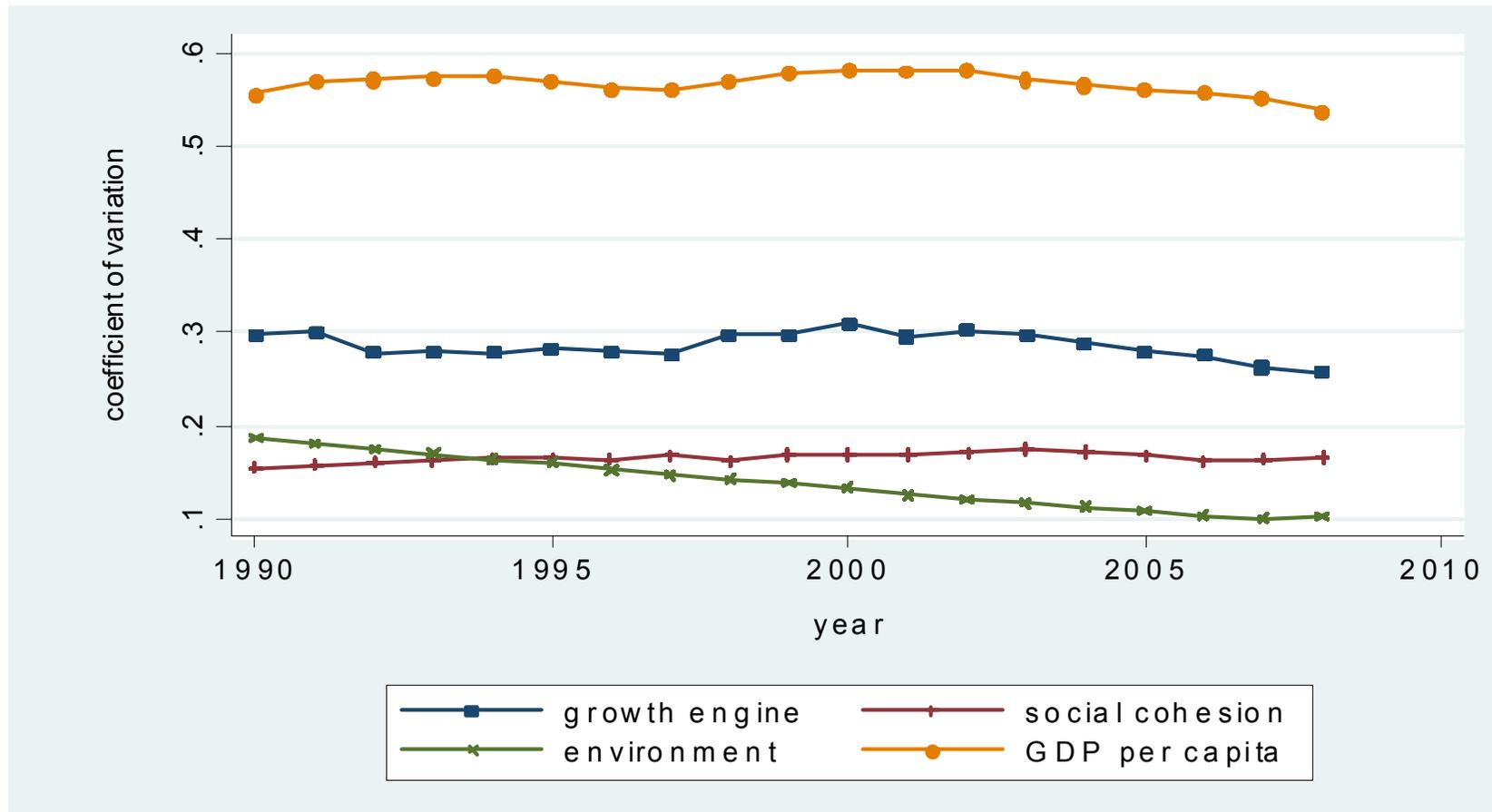# 3.1 Global trend analysis:
(2) Analysis of distributional variation

▸ The coefficient of variation in environment exhibited the most remarkable decrease.

- The environmental gaps among the counties reduced rapidly.

▸ Only the coefficient of variation in social cohesion shows an increase, albeit very slight.

- It suggests that the gaps among 39 countries in social cohesion worsened, over the past two decades, in spite of the world's continuous economic growth.
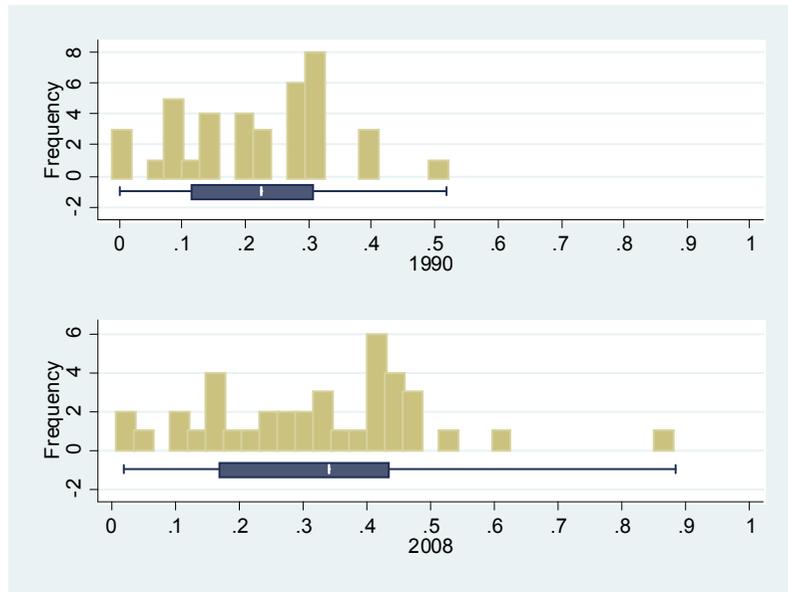
3.1 Global trend analysis:
(2) Analysis of distributional variation
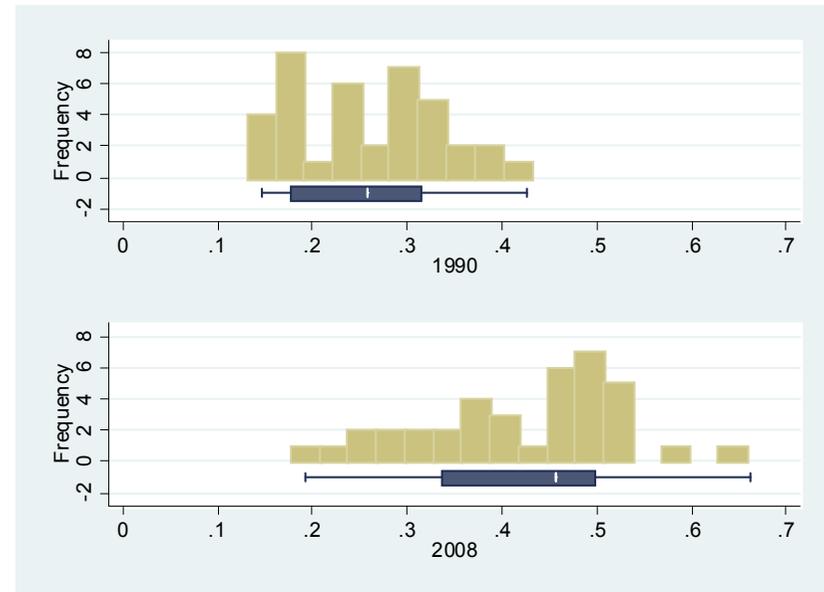
<Figure 4> Coefficient of variation

3.1 Global trend analysis: (2) Analysis of distributional variation

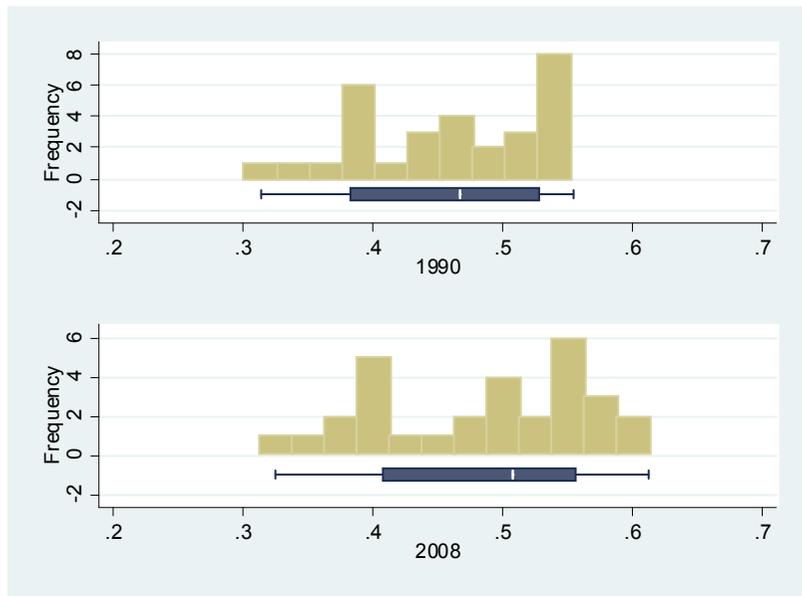**<Figure 5> Distribution of GDP per capita**

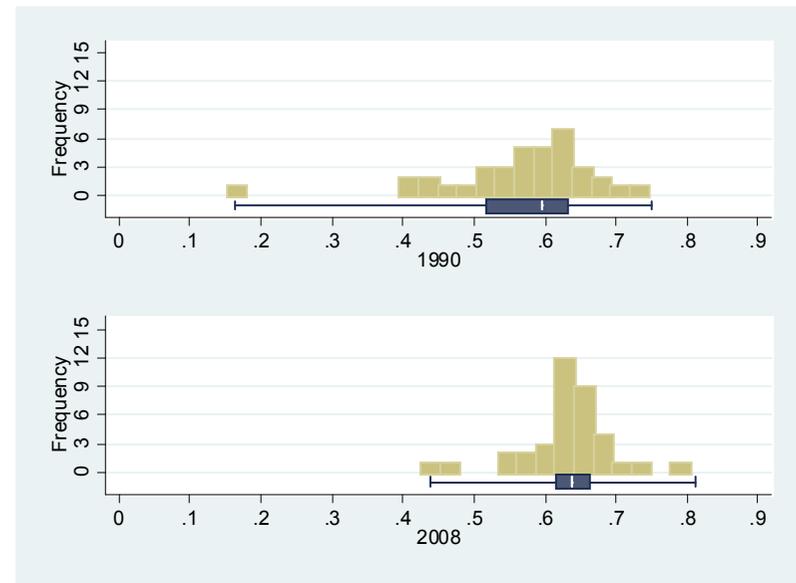

<Figure 6> Distribution of growth engine

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3.1 Global trend analysis:
(2) Analysis of distributional variation

<Figure 7> Distribution of social cohesion

<Figure 8> Distribution of environment

3.2 Korea's relative standing

▸ Korea has improved in growth engine

- Korea was ranked 21st in 1990 and 18th in 2008
- Improvement rate has slowed in 2000s, compared to 1990s

▸ In social cohesion and environment, somewhat improved in 2000s but still low

- Social cohesion: ranked 24th in 1990 and 23rd in 2008
- Environment: ranked 30th in 1990 and same in 2008

▸ Implication: Korea's development process

- More focus on social cohesion and environment since 2000s
- Slow in growth and more improvement in social cohesion and environment since 2000s

3.2 Korea's relative standing

<Table 12> Korea's average annual growth rate by category area (1990-2008)

		Index average		Index growth rate	
		Total	**Korea**	**Total**	**Korea**
Growth engine	**1990s**	0.30	0.31	3.11	4.10
	2000s	0.38	0.42	2.33	2.76
	Average	0.34	0.37	2.76	3.50
Social cohesion	**1990s**	0.46	0.38	0.12	-0.12
	2000s	0.47	0.39	0.57	0.74
	Average	0.47	0.39	0.32	0.26
Environment	**1990s**	0.58	0.53	0.60	0.69
	2000s	0.62	0.58	0.60	1.32
	Average	0.60	0.55	0.60	0.97
GDP per capita	**1990s**	0.24	0.13	2.16	5.49
	2000s	0.29	0.22	2.11	4.12
	Average	0.27	0.30	2.13	4.88

3.2 Korea's relative standing

<Table 13> Korea's relative standing

Category	Class	Sub-class	1990	1995	2000	2005	2008	1990	2008
Growth engine (38)			21	20	20	19	18	Middle	Middle
	Stable growth (38)		21	22	19	17	17	Middle	Middle
		Income (39)	**29**	**25**	**25**	**23**	**22**	**Low**	**Middle**
		macroeconomic stability (39)	**22**	**19**	**17**	**3**	**8**	**Middle**	**High**
		Economic openness (39)	21	25	24	24	15	Middle	Middle
	Industrial competitiveness (39)		20	20	19	17	16	Middle	Middle
		Informatization (39)	21	21	11	15	18	Middle	Middle
		Technological innovation (39)	**15**	**17**	**20**	**12**	**5**	**Middle**	**High**
		Human capital (39)	21	20	20	20	19	Middle	Middle
Social cohesion (30)			24	22	23	24	23	Low	Low
	Individual freedom and life security (30)		27	23	25	27	25	Low	Low
		Freedom (39)	20	20	24	25	26	Middle	Middle
		security (30)	29	23	27	29	29	Low	Low
	Fertility /aging (39)		**11**	**11**	**11**	**15**	**16**	**High**	**Middle**
	Social tolerance and trustworthy government (38)		25	21	25	22	24	Middle	Middle
		Social capital (38)	17	16	16	13	16	Middle	Middle
		Tolerant society (39)	33	35	36	33	34	Low	Low
		Government(39)	27	27	26	23	23	Middle	Middle
Environment (37)			30	30	31	31	30	Low	Low
	Environmental conditions (37)		24	24	26	26	22	Middle	Middle
		Resource efficiency (39)	**28**	**26**	**28**	**27**	**27**	**Low**	**Middle**
		Environmental hazard (37)	25	26	26	25	20	Middle	Middle
	Regenerative capability (39)		31	34	34	34	33	Low	Low
		Renewable energy (39)	28	36	36	37	38	Low	Low
		Supply of water & sewage (39)	31	31	33	31	28	Low	Low

4. Conclusion

4.1 Finding
4.2 Policy Implication

4.1 Findings

▶ Finding 1: slowdown in growth engine and relative progress in social cohesion and environment

- This global trend may have resulted from the series of global economic crises.
  - Particularly, it can be pointed out that the two economic crises in the late 1990s and in the late 2000s weakened the driving force of growth engine.

- It is also attributed to an emergence of a diverse global agenda on environmental protection and efforts to improve the quality of life and achieve sustainable development

4.1 Findings

▸ Finding 2: convergence trend in growth engine and environment areas among countries

- In the growth engine, leading countries showed a slowdown in the improvement, while low-ranked countries attained remarkable improvement so that the mean of growth engine indicator is increased and the gap among countries is reduced.

- In the environment area, low-ranked countries showed big improvement. This progress greatly contributed to increasing the mean of environmental indicators and reducing the gap among countries.

4.1 Findings

▸ Finding 3: expansion of a new global social inequality

● In contrast to growth engine and environment, the difference in social cohesion among countries has continuously increased since the 1990s.

● While some leading countries achieved growth in tandem with increased social capabilities, such as individual freedom, life security and social tolerance, low-ranked failed to nurture such capabilities.

4.1 Findings

▸ Finding 4: overall, Korea shows similar patterns to global trend

- Slowdown in growth engine and relative progress in social cohesion and environment

- But still very low in social cohesion and environment

4.2 Policy Implication

▶ Global level

- Need to revitalize growth engine
- Need to mobilize the international efforts to resolve the global social inequality

▶ Korea

- Need to revitalize growth engine
- Need to further improve social cohesion and environment

Thank you!