



The Recent Upturn in Korea's Exports: Background and Implications

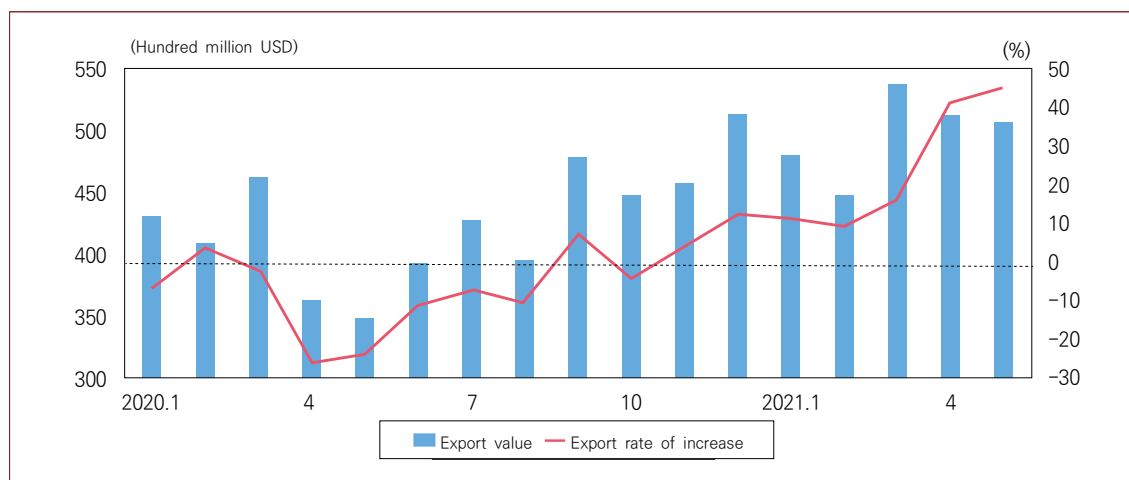
- Korea's exports recorded a 23.4 percent increase over last year, up through May 2021.
- This upturn is considered to be the result of the recovery and rebound from the COVID-19-induced recession. Factors that have contributed to this upturn include the activity in the so-called "untact" (contact-free) economy, the reflexive benefits of heightened environmental concern, and the potential for realizing growth utilizing new economic growth engines.
- Though the rebound effect from the global recovery following the COVID-19-induced recession is significant, the increase in Korea's exports has outpaced even this rebound.
- With heightened activity in the untact economy, as consumers are increasingly eager to embrace contact-free activities in the wake of the COVID-19 pandemic, there has been a spike in exports of Korea's most internationally competitive products such as semiconductors, displays, wireless communications devices, and other IT-related products.
- With heightened interest in climate change mitigation and environmental protection, international environmental regulations have grown more stringent. This has had the reflexive outcome of increasing demand for eco-friendly automobiles, LNG-fueled ships, and other high value-added products.
- Healthy performance in the areas of biohealth, rechargeable batteries, and other new export growth engines are contributing greatly to the positive trend in exports. Though exports are expected to remain steady this year, the second half of 2021 is expected to show a relative slowdown due to the base effect of the previous year and reduced demand for products that benefited from the untact economy.
- In order to sustain the positive trends in exports we must preemptively act in anticipation of changing global trade structures as the world shifts to a post-COVID environment.

■ **A continued upturn in Korea's exports**

- Korea recorded 248.4 billion USD in exports in May 2021, a 23.4 percent increase over the same period the previous year. This figure also exceeded exports for the same period in 2018, which was most recently the highest value yet recorded (245.6 billion USD). The second quarter (Q2) of 2020 saw a sharp, 20 percent decline in exports due to the spread of COVID-19. There was a noticeable recovery in the second half of the year and the magnitude of decline shrunk by 5.5 percent.
- In 2020, the COVID-19 pandemic caused the economic gap between export product categories to widen, leading to polarization between different industries. However, almost all market segments showed improved exports.
- With the growth of the untact market, semiconductors, computers and other IT products performed well while petroleum products and petrochemicals performed sluggishly as global demand slowed, causing a sharp decline in oil prices. However, traditional industries such as general machinery and steel recovered from last year's stagnation and even petroleum and petrochemicals, which underperformed last year, began to see growth in Q1 of 2021.
- If we look at the contribution ratio of increased exports for January through May of 2021 for each product category, analysis shows that all product categories recorded a positive (+) figure.¹⁾
- Semiconductors, petrochemicals, and automobiles, the top three product categories, led the upturn in exports with the export contribution ratio of these categories accounting for 40 percent of the total increase in exports.

1) Contribution rate = $\left(\frac{x_t^i - x_{t-1}^i}{X_t - X_{t-1}}\right) \times 100\%$ ($X_t = t$ period total export, $x_t^i = t$ period i product export)

Figure 1. Exports on the upswing



Source: KITA and Ministry of Trade, Industry and Energy.

Note: Figures for May 2021 are estimates

Table 1. Growth rates for flagship exports

Unit: %

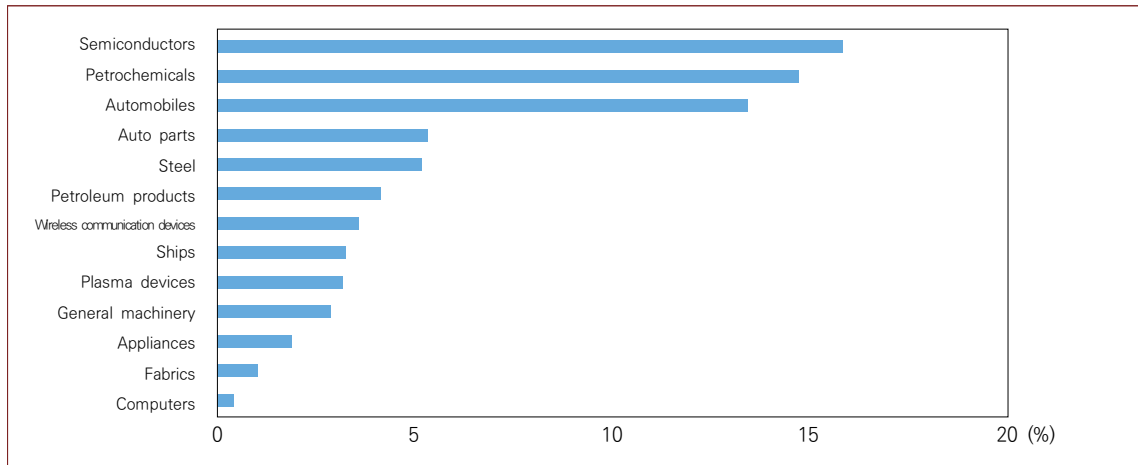
	2020					2021		
	Annual	Q1	Q2	Q3	Q4	Q1	May	Jan. - May
Semiconductors	5.6	0.6	-3.0	6.9	18.7	14.0	24.5	19.2
Computers	57.2	71.1	89.8	82.4	8.5	2.8	7.5	3.7
Appliances	0.5	-6.2	-26.2	16.4	18.9	15.7	89.3	36.1
Ships	-2.0	9.8	-30.6	-8.2	32.1	28.2	-14.9	18.2
Wireless communication devices	-6.4	-1.3	-22.7	-14.4	11.8	21.6	41.4	34.9
Fabrics	-13.3	-2.2	-34.8	-7.6	-6.5	-8.4	57.5	10.7
Plasma devices	-12.3	-20.7	-28.5	-17.7	17.8	16.3	38.7	24.9
Auto parts	-17.3	-2.5	-54.2	-15.7	3.8	5.6	182.5	35.1
Steel	-14.4	-11.5	-26.7	-12.6	-6.5	7.6	62.9	22.4
General machinery	-8.8	-0.2	-18.8	-11.0	-5.1	-1.1	25.9	6.8
Automobiles	-13.1	-11.6	-41.5	1.6	1.1	31.5	93.7	47.5
Petrochemicals	-16.4	-13.4	-27.8	-16.5	-7.7	26.7	94.8	47.6
Petroleum products	-40.6	-12.6	-59.2	-43.8	-44.7	-16.6	164.1	17.6

Source: KITA and Ministry of Trade, Industry and Energy

Note: 1) Rate of increase for the same period of the previous year

2) Figures for May 2021 are estimates.

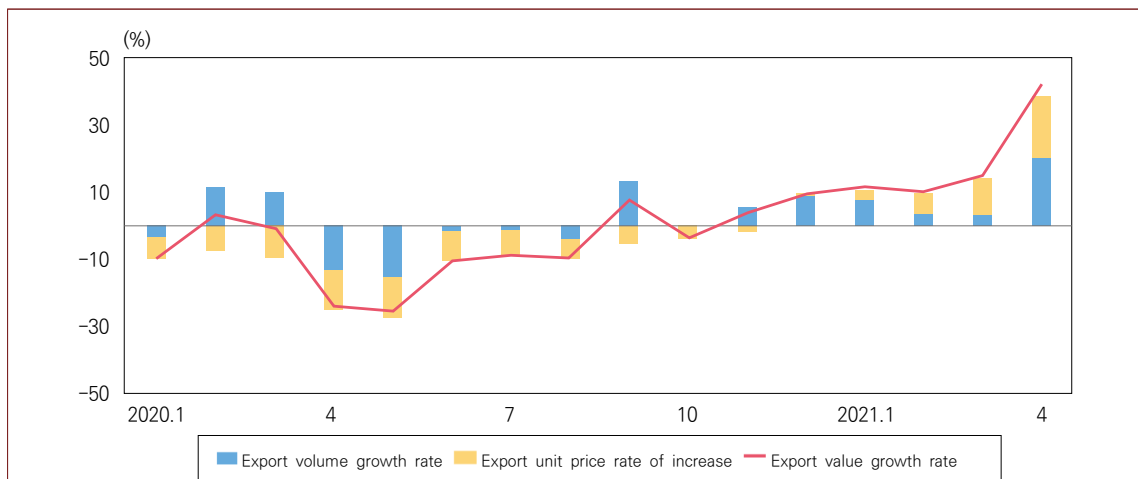
Figure 2. Contribution ratio for 13 flagship exports (Jan. – May 2021)



Source: Authors' estimates based on KITA and Ministry of Trade, Industry and Energy data
 Note: Figures for May 2021 are estimates

- With the recovery of the global economy, rebounds were seen in exports of petrochemicals and automobiles, among other product categories, while growth slowed for products that had benefited from the pandemic, such as computers and appliances. Export volume began to increase in the second half of 2020 and export unit prices, which had plummeted earlier in the year, rebounded.

Figure 3. Unit price and volume trends



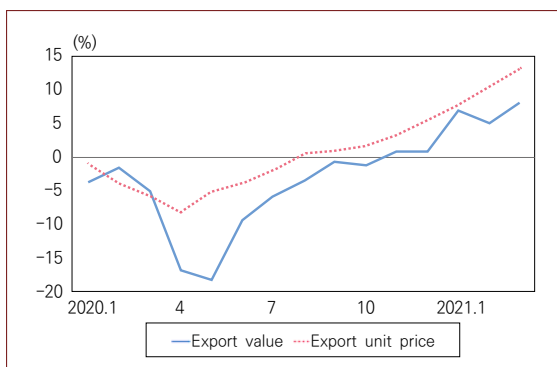
Source: Bank of Korea
 Note: The Export Unit Price Index was calculated by dividing the export value index by the export volume index.

- Export unit prices had continued to slip due to falling oil prices and global demand through the end of 2020, before a turnaround. Export values dropped dramatically in the second quarter of 2020 as major countries went into pandemic lockdown, followed by a continued recovery after the third quarter of 2020.

■ Korean exports performing well compared to major countries

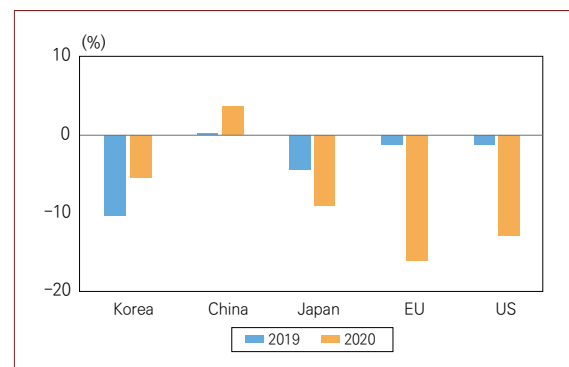
- In 2020, the decline in Korean exports (-5.5 percent) was less than the decline in global exports (-9.6 percent). Korea's export rate was second only to China's (3.7 percent), demonstrating a relatively healthy performance. Exports took a hit in the EU and the U.S., where the impacts of COVID-19 were drastic while countries such as Korea and China that were not as severely impacted by COVID-19 performed well in comparison.

Figure 4. Rate of change in global export values and export unit prices



Source: CPB world trade monitor

Figure 5. Rate of change for exports in key countries



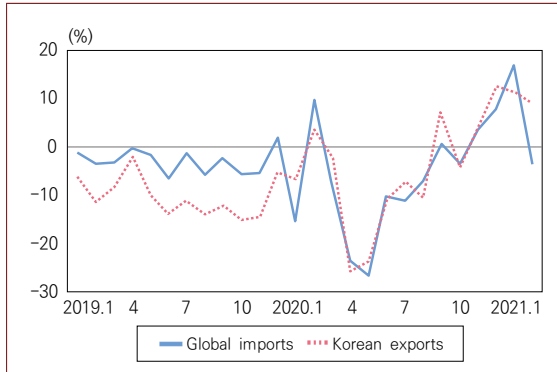
Source: WTO

- In Korea's case, suppression of the COVID-19 virus early on in the pandemic prevented negative impacts on production stemming from manufacturing facility closures. In addition, IT products account for a significant portion of exports and are among the business segments that benefited from the pandemic.

■ **Behind the upturn 1: The rebound effect from the COVID-19 recovery**

- Last year, global imports declined by 7.2 percent but Korea's exports performed relatively well, falling by just 5.5 percent. Before COVID-19 was declared a pandemic disease in March 2020, the global import growth rate outpaced Korea's export growth rate. However, starting in September 2020, Korea's export growth rate exceeded the global import growth rate. Compared to major economies such as the U.S., the EU, and Japan, Korea's decline in exports was relatively modest and was followed by a speedy recovery.
- Looking at export trends from the past two years, exports have been performing better than expected since October 2020. As of April 2021, export trends are outperforming forecasts. Notwithstanding the rebound effect from the recession of 2020, Korea's exports are performing well above expectations. The unexpectedly early recovery of export unit prices was able to usher in Korea's export uptick during a time when it was difficult to expect drastic growth in export volume.
- This growth in export volume mainly stems from the increase in demand due to the global economic recovery, increased prices of petroleum products and petrochemicals following rising global oil prices, and semiconductor price recovery based on increased demand from new sources. Oil prices maintained a growth trend following the base effect of last year's plunge and the OPEC-led oil producing countries' plans to limit additional crude oil production. Semiconductor export unit costs have continued to grow due to increased domestic and international demand.

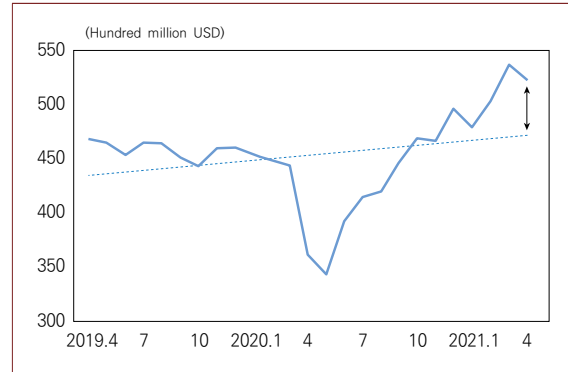
Figure 6. Comparison: Global import growth rate vs. Korean export growth rate



Source: WTO

Note: The sum of each country's monthly import data is used to estimate global import figures

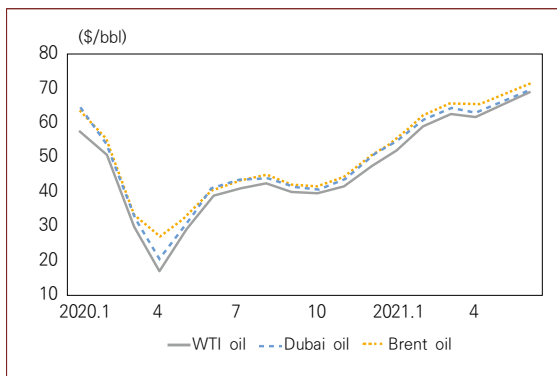
Figure 7. Trends in value of Korean exports



Source: Bank of Korea

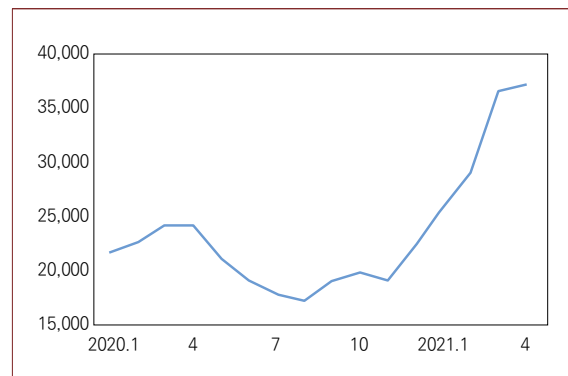
Note: Seasonally-adjusted export data used.

Figure 8. Recent Oil Price Trends



Source: Korea National Oil Corporation

Figure 9. Recent DXI Trends



Source: DRAMeXchange

Note: DXI is an index that shows the price changes in key computer memory products. It is calculated as an average of key chip prices.

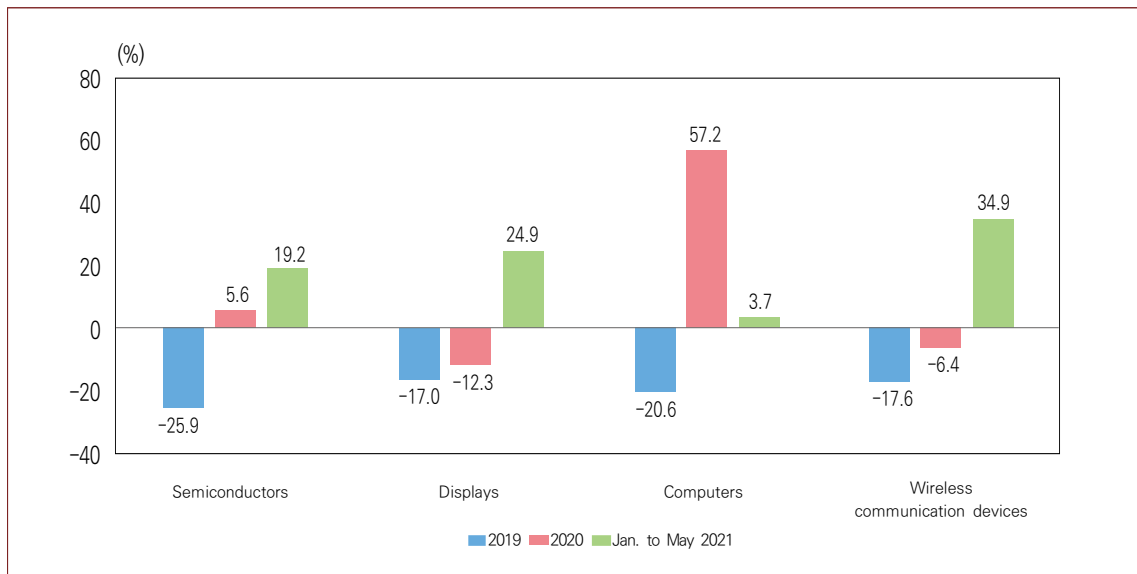
■ **Behind the upturn 2: Growth of the untact (contact-free) market due to the COVID-19 pandemic**

- The accelerated growth in the untact market positively benefitted Korea's export figures as IT products make up a large portion of Korean export products. The sudden change in lifestyles brought on by the pandemic, such as remote learning, teleconferencing, and remote medical treatment, as well as an expansion in the number of workers working from home, boosted the use of big data and transitioned many offline businesses to online businesses. These changes drove exports in

semiconductors, computers, displays, communications devices, and other IT industry exports.

- The value of semiconductor exports reached 99.2 billion USD due to new investment in data centers and a sharp increase in demand for servers, the second-highest on record following the 126.7 billion USD in exports recorded in 2018. There was a sharp uptick in demand for computer memory-related semiconductors, an industry which Korea dominates in the global market.
- There was an oversupply in displays prior to the pandemic but exports expanded with the growth of the untact market, which caused a sharp increase in global demand for TVs and IT products. This, in turn, led to an increase in exports, with organic light-emitting diode (OLED) products at the forefront. The OLED export growth rate was -0.5 percent in 2019 but 37.9 percent in Q4 of 2020, with the protracted pandemic leading to steep increases in demand. OLED products accounted for 69 percent of display exports.

Figure 10. Growth in the IT industry



Source: KITA and Ministry of Trade, Industry and Energy

Note: Figures for May 2021 are estimates.

■ Behind the upturn 3: Reflexive benefits due to heightened interest in the environment

- Recently, the heightened interest in climate change mitigation and environmental protection has led to more stringent international environmental regulations. This has had the reflexive outcome of increasing demand for certain exports, including automobiles and ships.
- Eco-friendly automobiles accounted for 14.6 percent of total automobile exports, up from 10.8 percent in the previous year following the expanded distribution of eco-friendly automobiles, especially electric cars. In 2020, even after the start of the COVID-19 pandemic, exports of eco-friendly cars continued to increase. Exports during Q1 of 2021 even surpassed those of Q1 of 2020.

Table 2. Trends in eco-friendly automobile exports

Unit: 1,000 vehicles, %

	2019	2020					2021	
	Annual	Annual	Q1	Q2	Q3	Q4	Q1	Jan. - Apr.
Eco-friendly cars (ratio)	259 (10.8)	271 (14.6)	58 (12.3)	69 (20.0)	70 (13.9)	78 (13.9)	87 (15.9)	119 (16.5)
Electric cars	76	121	20	35	32	34	28	40
Total	2,401	1,887	475	346	508	558	546	721

Source: Korea Automobile Manufacturers Association

Note: Eco-friendly cars are defined as including Hybrid Electric Vehicles (HEV), Electric Vehicles (EV), Plug-in Hybrid Electric Vehicles (PHEV), and Fuel Cell Electric Vehicles (FCEV).

- Exports of electric cars to the EU accounted for 77.1 percent of automobile exports from January to April 2021.²⁾ This is closely related to the expansion of environmentally-friendly policies, such as increased purchase subsidies for electric and high-efficiency cars.³⁾

2) Korea Automobile Manufacturers Association (2021. 5), "Korea Automobile Industry (April 2021)" p. 8. 2021.

3) Through measures such as expanding electric car subsidies and increasing the budget to establish electric car infrastructure, most countries including the U.S. and Europe are actively pursuing policies to accelerate the supply of eco-friendly cars.

Table 3. Trends in planned construction of dual-fuel ships

Unit: No., %

		2018	2019	2020	2021	2022	2023
Dual fuel ships	(Ten thousand CGT)	340 (43.7)	276 (28.9)	317 (35.9)	541 (52.7)	400 (49.4)	654 (70.8)
Conventional fuel ships		437	682	566	485	409	269
Total		777	958	883	1,026	809	924
Dual fuel ships	(ships)	42 (21.3)	39 (16.6)	43 (20.0)	82 (36.4)	77 (38.1)	119 (59.8)
Conventional fuel ships		155	196	172	143	125	80
Total		197	235	215	225	202	199

Source: Clarksons WFR (as of June 8, 2021)

- Ships that can run on environmentally-friendly fuel, such as dual fuel vessels or Liquid Natural Gas (LNG) cargo ships and other high-value-added ships, led the increase in exports.
- A phased strengthening of International Maritime Organization (IMO) environmental regulations has led to the need for a sharp reduction in greenhouse gas (GHG) emissions from ships. This has caused an increase in demand for ships that can satisfy the regulatory requirements.⁴⁾ As a result, exports of very large crude carriers (VLCC), container ships, and other dual engine ships have caused an increase in exports in the LNG vessel market, in which Korea is dominant. Dual fuel ships comprised 52.7 percent of all ships built, contributing to the export of environmentally-friendly ships.

■ Behind the upturn 4: Key products of new export growth engines on the horizon

- The pandemic has had a relatively small effect on the export of key products of new export growth engines. Exports of new growth engine products increased 12.4 percent in 2020, which contrasts with the 5.5 percent decrease in overall exports. This performance during a downturn, both domestically and internationally, serves as proof of the excellent export competitiveness of new growth engine products.

⁴⁾ In 2018, the International Maritime Organization (IMO) announced its GHG strategy which calls for the reduction of overall GHG emissions by 50 percent and a 70 percent reduction of CO2 emissions from 2008 levels by 2050.

Table 4. Export growth of new growth engine key products

Unit: %p, %

	Before COVID-19		After the outbreak of COVID-19			
	2019		2020		Jan. - May 2021	
	Contribution ratio ⁵⁾	Growth rate	Contribution ratio	Growth rate	Contribution ratio	Growth rate
Biohealth	1.1	(6.0)	9.5	(52.4)	7.1	(31.1)
Rechargeable batteries	0.4	(2.6)	0.2	(1.3)	2.9	(21.1)
Cosmetics	0.5	(4.3)	2.0	(15.6)	4.8	(35.9)
Agricultural and marine products	0.7	(4.3)	0.8	(4.4)	2.4	(14.7)
Plastic goods	0.9	(4.5)	0.01	(0.03)	3.4	(18.1)
Precision chemical raw materials	-1.1	(-6.7)	-0.1	(-0.4)	5.3	(38.6)
Robots	-0.1	(-8.8)	-0.04	(-3.5)	0.5	(41.0)
Export growth rate new growth engine products	2.4		12.4		26.4	
Export growth rate of 13 flagship products	-12.8		-9.2		23.9	
Overall export growth rate	-10.4		-5.5		23.4	

Source: Authors' estimates based on KITA and Ministry of Trade, Industry and Energy data

Note: 1) Classification of new growth engine products are based on Ministry of Trade, Industry and Energy press release.

2) Figures for May 2021 are estimates

- While new growth engine products do not make up a large portion of overall exports, they continued to perform well while flagship exports were sluggish. This demonstrates that new growth engine products have the potential to strengthen Korea's export competitiveness. In particular, biohealth, which had the highest contribution rate out of all of the new export growth engine products, recorded over 10 billion USD in exports last year, with strong exports of COVID-19 test kits last year. For the first time, biohealth entered the top 10 list of export product categories with pharmaceuticals and medical equipment both achieving record exports.

5) If we factorize the new growth engine export growth rate by the sum of the contribution rate for each market segment, it is as follows:

$$\frac{X_t - X_{t-1}}{X_{t-1}} = \sum^i \left[\frac{(x_t^i - x_{t-1}^i)}{x_{t-1}^i} \times \frac{x_{t-1}^i}{X_{t-1}} \right], \quad X_t = t \text{ is a period's total exports, } x_t^i = t \text{ is a period's } i \text{ product's exports,}$$

with $X_t = t$ being a period's total exports of new growth engine products .

■ **Slower but still-healthy growth expected in second half of 2021**

- Forecasts show that exports will continue to grow steadily this year due to the global economic recovery and base effects. The International Monetary Fund (IMF) raised its forecast for the global economic growth rate for 2021, from 5.5 to six percent, indicating that the economic recovery is taking place faster than had been expected.
- With continued economic recovery plans in place in major countries and with widespread COVID-19 inoculation campaigns underway, it appears that the global economy has entered a recovery phase. Global oil prices are expected to show limited growth following the global economic recovery amid increased demand, which is expected to have a positive impact on Korea's exports. However, the base effect from the upturn in exports at the end of 2020, slowing demand for products that had benefited from untact demand, the renewed spread of COVID-19 in Europe as well as in emerging economies, changes in macroeconomic policy stemming from inflation fears and other uncertainties are expected to limit the scope of export growth rates.
- The recent upturn in exports is based on a combination of the base effect of COVID-19, which is temporary, and structural factors such as a shifting industrial structure. Considering the global economic recovery and increased prices for Korea's flagship exports, we can expect the country's exports to maintain their healthy growth for the time being. Changes in the industrial structure based on factors such as the boost in the untact economy and strengthened environmental regulations are advantageous for a number of Korean exports. These include IT products, eco-friendly cars and batteries, LNG-fueled ships, and other high-value-added products. It is expected that exports of these products will continue to increase as a result of changes currently underway in the industrial structure.

■ Policy requirements and recommendations

- It is vital to establish internal and external export policies to continue these positive trends in exports. In order to sustain the recent upturn, we must preemptively address the reorganization of the global trade structure that will arise in the post-COVID-19 period by transitioning the structure of Korean export products and strengthening industrial competitiveness. We must shift the industrial structure to position OLED products, system semiconductors, and other high-value-added products among Korean flagship exports.
- It is time to build an export policy that suits the post-pandemic acceleration of the untact economy and more stringent environmental regulations. Attempts to diversify export products and actively promote new industries must be made by expanding investment in technology-intensive industries such as IT, biohealth, and rechargeable batteries. Considering forecasts showing heightened competition in high-value-added products such as eco-friendly cars and LNG-fueled ships, we must work toward securing the lead over Korea's competitors.
- We need policy measures that will be effective in increasing exports in an unfavorable, protectionist trade environment. Contraction in the global trade and investment environments have made it likely that countries will further expand protectionist policies. As such, eased regulations and measures to support exports that reflect the policy needs of Korea's export enterprises must be expanded. There is also a possibility that the U.S.-China trade conflict will worsen. We must consider these and other political and economic factors and build strategies to address possible scenarios.

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