

EXPORT DIVERSIFICATION: LESSONS FROM KOREAN EXPERIENCE

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Export Diversification: Lessons from Korean Experience

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1. Introduction

Growth and inequality are two basic dimensions concerning most economic variables, and export is not an exception. Increase in export plays a key role to economic growth. But if one or two products occupies the commanding share of export or export is concentrated on a few markets, the large amount of export might cause vulnerability to external shock. Export diversification can ameliorate this problem. However, as portfolio diversification in the corporate finance literature suggests, efforts to diversify export might need to sacrifice growth of export. Furthermore, unlike the growth, as diversification has various dimensions, the cost of implementing diversification and its impact can vary.

The goal of this paper is to explore this complicated relation between growth of export and various dimensions of export diversification in the context of Korean experience. Korea has achieved rapid economic growth for last five decades, and export is one of the most important contributors to this success. Then, what has been the diversification of Korean export like, what were the major determinants of this pattern? How have the export diversification interacted the growth of export, and ultimately growth and stability of domestic economy?

After exploring theoretical issues related to the export diversification (Section 2), I will review the long-term pattern of export diversification of Korea, and try to answer to the above questions (Section 3). And then conclusion will be given (Section 4).

2. Theoretical Considerations on Export Diversification

Suppose that a country exports two goods A and B. For simplicity, let us assume that the world prices of both goods are 1 and that the country exports X_1 more than X_2 , that is,

$$X_1 \geq X_2$$

We can define an index of export diversification such as

$$\delta = \frac{X_1 - X_2}{X_1 + X_2}$$

Given $X_1 \geq X_2$, the index δ is bound between 0 and 1 ($0 \leq \delta \leq 1$). If the share of two goods are the same ($X_1 = X_2$), $\delta = 0$. The larger the size of X_1 relative to X_2 would be, δ will approach to 1.¹

Now suppose that the world market of X_1 is shrinking. This external shock will cause more negative impact on the country if δ is higher. Therefore, export diversification, or lower δ can contribute to economic stability of the country. This is why export diversification is discussed as a crucial issue.

¹ There are various sophisticated indexes for implementing the idea represented as δ . For example, Hwang, Kwon, and Ju (2004) used inequality measures.

But before pursuing higher level of export diversification, policymakers should consider two problems. First is to identify policy variable, that is, how a country can increase export diversification. Second is to do a cost/benefit analysis, that is, what cost a country should bear to obtain higher level of export diversification, and to figure out whether the benefit from diversification indeed exceeds the cost.

According to the definition, export diversification means reduction of δ , and two basic approaches can be utilized for this goal. One is to decrease the amount X_1 given X_2 fixed, and the other is to increase X_2 given X_1 . The former implies that the country bears cost of reducing total amount of export. This definitely reduces the vulnerability, but few policymakers would consider this approach seriously. It means that most policymakers in the real world would think that cost of obtaining lower δ in this way is higher than the benefit.

More reasonable and more realistic would be to obtain lower δ by increasing relative share of X_2 . Then, question is how policymakers can increase X_2 . It will be possible if the producer of X_2 can lower its price through enhancing productivity or improving its quality. Second, if the firm already had competitive product but cannot export well due to lack of information on new markets or due to difficulties in market access, the government can accommodate their promotion activities.

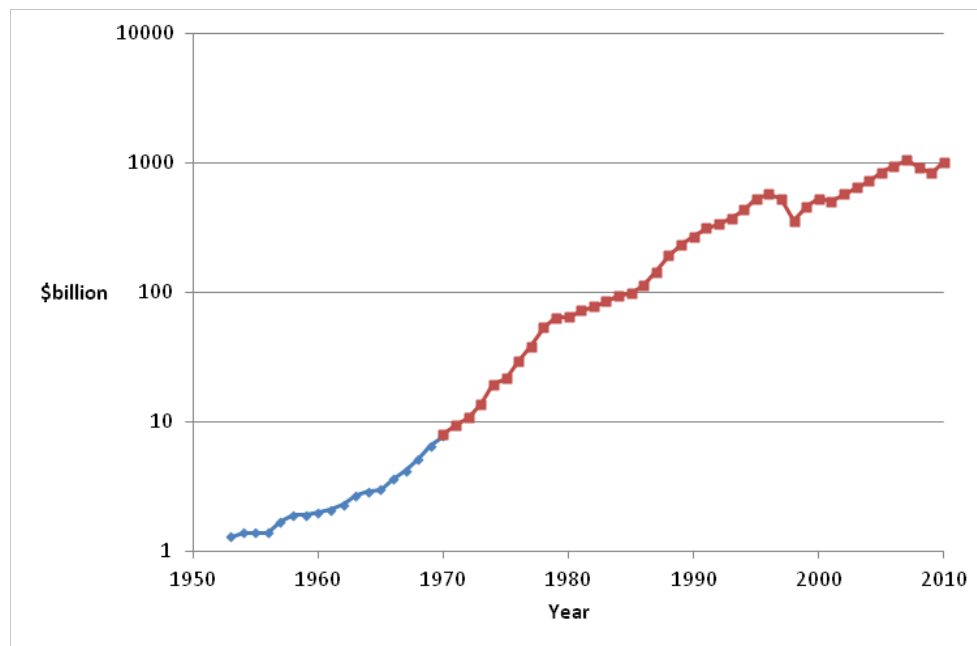
Above discussion highlights two policy implications. First is that any policy directly aiming at increasing export diversification might not be desirable. As the theory of corporate finance shows, lower risk can be obtained at the expense of return in the competitive market. Second, the better approach for increasing diversification is, therefore, to enhance competitiveness of the exporting goods, or to ameliorate informational problem that exporting firms suffer from, or to remove entry barrier of trading partners.

3. Pattern of Export Diversification: Korean Case

(1) Economic Growth and Trade

In this chapter, we will deepen our understanding of the export diversification by exploring the Korean experience. The Korean economy has performed high growth since the 1960s (Figure 1). In 1953 when the Korean War was over, the nominal GDP of Korea was 1.3 billion dollar. It has grown quite rapidly for last six decades, and it became 1,014 billion dollar in 2010.

Figure 1 GDP of Korea (Nominal, \$billion)



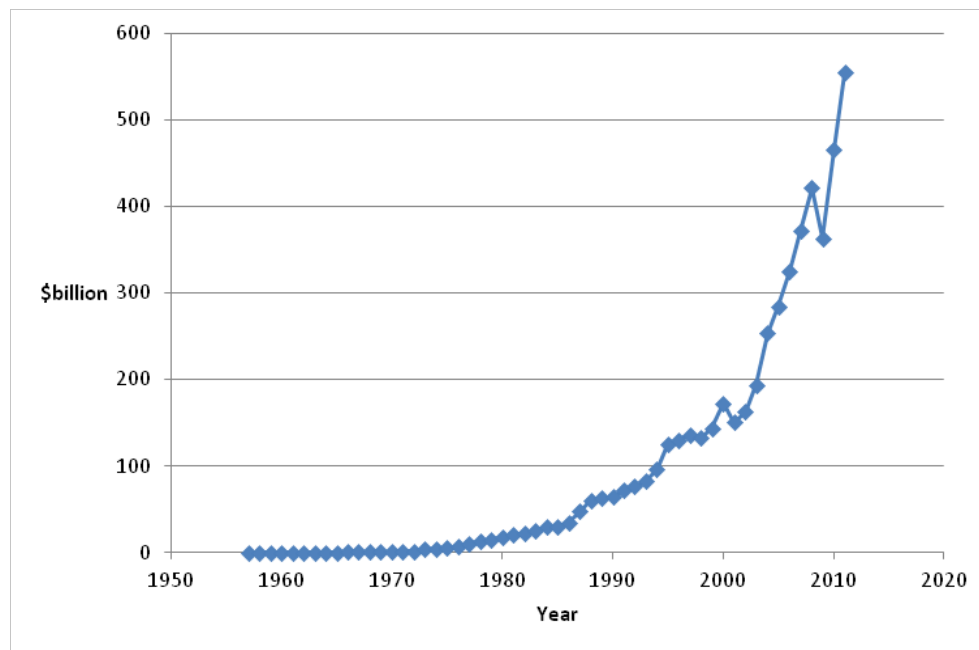
Sources: Statistics Korea

This growth went together with, and arguably was caused by export (Figure 2 A). Export has grown from 20 million dollar to 555 billion dollar in 2011. Until the 1980s, Korea experienced trade deficit. Korea first experienced trade surplus in the late 1980s, and then after late 1990s, she has continued trade surplus (Figure 2 B).

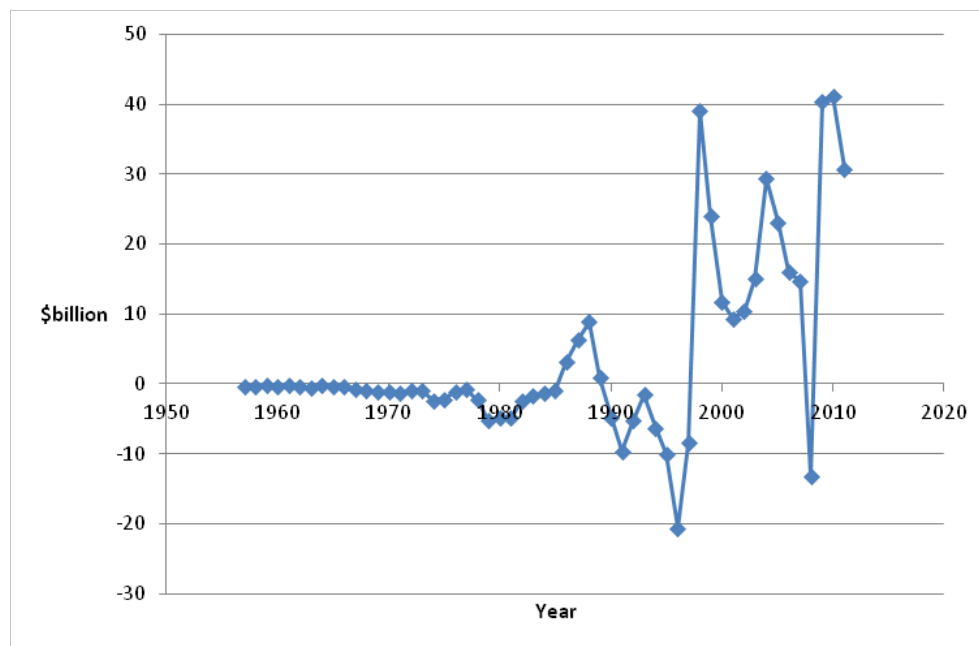
Exporting goods has changed significantly during this period. Before 1970, major export was mining ore or agricultural product. At the early stage of industrialization, Korea exported textile goods and other labor intensive products. From the mid-1970s, Korea started to produce and export electronic goods and ships, and exporting goods becomes more and more sophisticated. From the 1990s, high-tech goods such as semiconductors and automobiles becomes the major exporting goods.

Figure 2 Export and Trade Surplus, Korea

A. Total Export



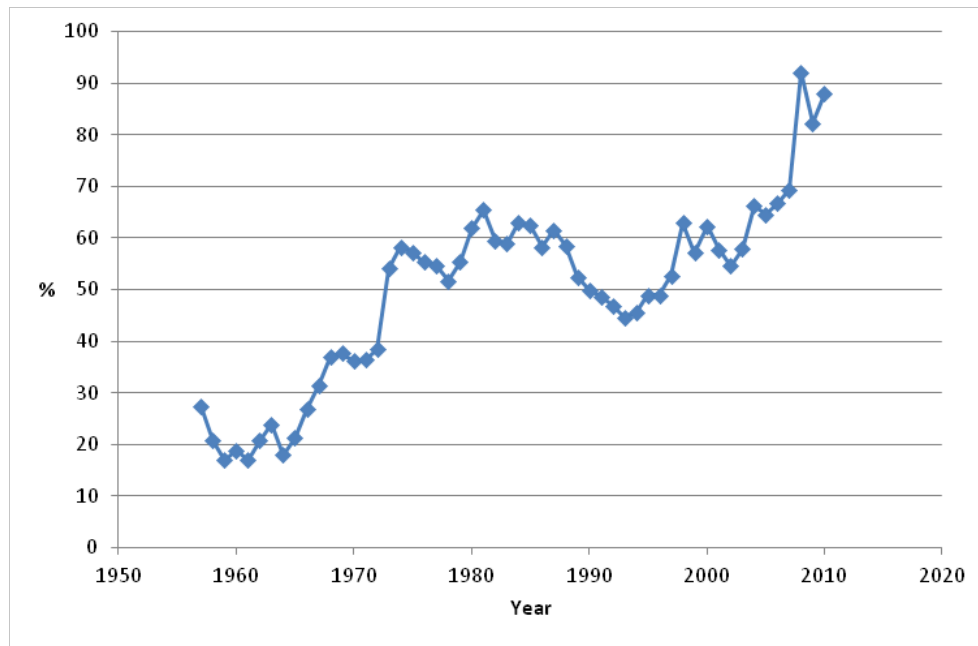
B. Trade Surplus



Sources: Korea International Trade Association.

More and more the Korean economy becomes successful in the foreign markets, she got highly dependent on foreign sectors. Until the mid-1965, the ratio of total trade (sum of export and import) to GDP remained around 20%. However, from the mid-1960s when export becomes the engine of the growth, the ratio started to grow fast. The level maintained about 50-60% from the mid-1970s to early-2000s. But from the mid-2000s, it started to grow rapidly, and it approaches to 90% in 2011.

Figure 3 Ratio of Total Trade to GDP



Sources: Korea International Trade Association; Statistics Korea

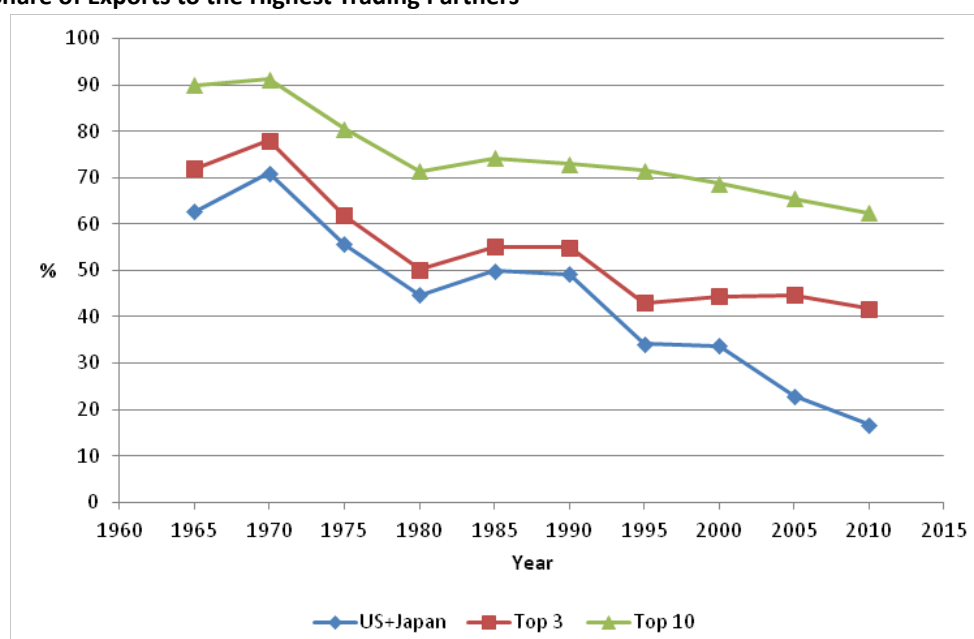
Korean government and scholars have long worried that this high dependence have made Korean economy highly vulnerable to external shock and this weakness could cause a fatal impact. Two approaches for resolving this problem have been popularly and frequently alluded. One is to increase the domestic consumption; they consider whether various income redistribution policies can increase domestic consumption and ultimately reduce the dependence to the foreign market. The other is to diversify exports.

In the following, we will examine two basic aspects of export diversification, that is, diversification of the markets and that of exporting goods. Based on these patterns, I will speculate on what the patterns imply.

(2) Diversification of Markets

The share of export to the largest trading partners is a common index for measuring export diversification. If we look at the share of export to ten largest markets, the diversification has improved significantly from around 1970 to the present (Figure 4). The share of the top ten countries was around 90% until 1970, but since then it has declined continuously to 60% in 2010.

Figure 4 Share of Exports to the Highest Trading Partners



Source: Korea International Trade Association, various years.

Generally speaking, this pattern is an outcome of expanding to new markets. Until 1990, the United States and Japan were the two largest markets, and the share of export to these two countries occupied over 50% of the total exports. This pattern, however, start to change rapidly from the early 1990s due to the export to China. From the early 2000s, China has been the largest market for Korean producers. The success of exporting to the largest emerging market contributed significantly to the increase of export diversification.

China is not the only emerging market where Korea was successful. As Appendix 1 shows, representative newly emerging markets such as Vietnam and India are included as the top ten markets of Korean export in 2010. Given no decrease in the total export of existing markets, success in these new markets has increased the level of export diversification as well as total export. In summary, export diversification has accompanied export growth.

(3) Diversification of Commodities

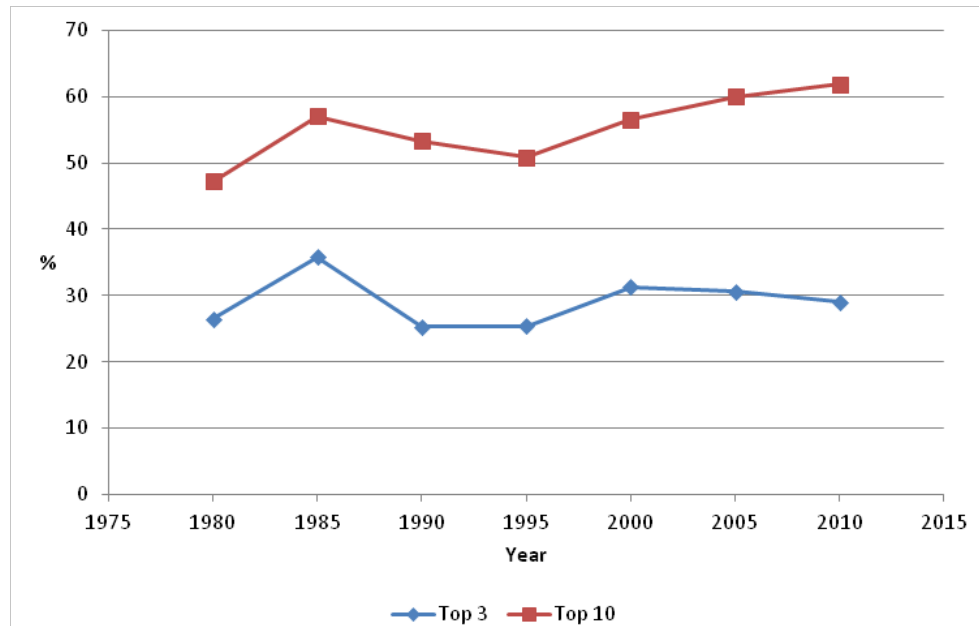
Due to the classification problem, studying commodity diversification is involved with much more complicated issues than analyzing the market diversification. For this reason, I measured the ratio of top 3 and top 10 products to total export using two different classification standards (Figure 5), and it turns out that general pattern is not sensitive to the classification methods.

The distinctive pattern is that the share of major products out of total exports got increased. For example, Figure 5 A shows that the share of top ten goods was 47% in 1980, but it reached 62% in 2010. Similar pattern is confirmed from Figure 5 B.

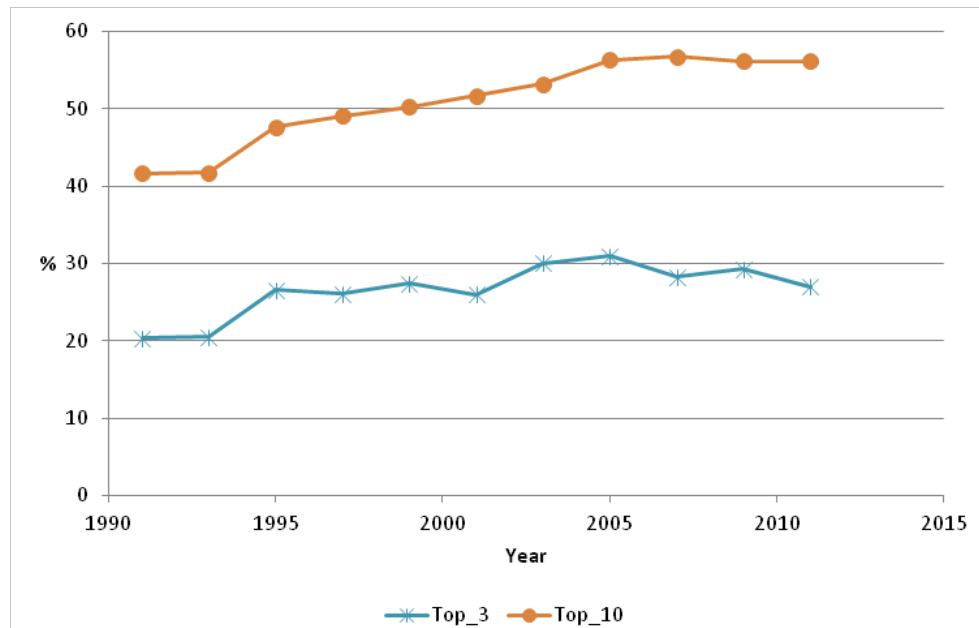
This pattern originates from significant changes in the composition of exporting goods. As Appendix 1 shows, products from labor intensive process have occupied the top ten exporting goods. This pattern still continues even in 1990 when garments/clothes were the largest exporting goods. However, at this year, semiconductor became the second largest exporting goods, and since then, capital intensive goods or products requiring sophisticated technologies has become the major exports of Korea. This shift of product composition seems to contribute significantly to the lower diversification of exporting goods.

Figure 5 Ratio of Top 3 and Top 10 Exporting Goods to Total Export

A. MTI Classification



B. SITC Classification



Sources: KITA

(4) Summary

The above analysis shows that along with the rapid growth of exports for last five decades the Korean exports has got more dispersed across markets but concentration to major product has increased. It is inferred from the theoretical consideration that higher competitiveness has generated these patterns.

4. Conclusion

Korea has achieved a successful economic growth for last five decades, and people unanimously agree that foreign trade played a key role for this performance. In reckoning on this success, scholars and policymakers have considered export diversification in two ways, active and passive. On one hand, export diversification is regarded as a way of expanding the foreign market or increasing variety of exporting goods. On the other hand, some people focus on the aspect that export diversification can contribute to lowering dependency, and this can bring about higher stability.

Long term pattern of Korean export seems to be consistent with the former rather than the latter, and the driving determinant of level of diversification was competitiveness of exporting firms. A critical issue such as how much the Korean government contributed in removing informational problems of foreign markets or removing entry barrier is not explored this paper, and this will be the next project to be examined.

Appendix 1 Top Ten Markets of Korean Export, 1970-2010

1970		1980		1990		2000		2010	
Country	Value	Country	Value	Country	Value	Country	Value	Country	Value
US	475	US	4,606	US	19,360	US	37,600	China	116,838
Japan	238	Japan	3,039	Japan	12,638	Japan	20,500	US	49,816
Vietnam	70	Saudi Arabia	946	Hong Kong	3,780	China	18,500	Japan	28,176
Hong Kong	39	West Germany	876	West Germany	2,881	Hong Kong	10,700	Hong Kong	25,294
West Germany	27	Hong Kong	823	Singapore	1,805	Taiwan	8,000	Singapore	15,244
Canada	16	UK	573	UK	1,750	Singapore	5,600	Taiwan	14,830
Singapore	14	Indonesia	366	Canada	1,731	UK	5,400	India	11,435
Netherland	13	Netherland	350	Taiwan	1,249	Germany	5,200	Germany	10,702
UK	12	Canada	343	France	1,119	Maleisia	3,500	Vietnam	9,652
Sweden	13	France	291	Indonesia	1,079	Indonesia	3,500	Indonesia	8,897
Top 3	783	Top 3	8,592	Top 3	35,778	Top 3	76,600	Top 3	194,830
Top 10	916	Top 10	12,213	Top 10	47,392	Top 10	118,500	Top 10	290,884
Total Export	1,004	Total Export	17,105	Total Export	65,016	Total Export	172,300	Total Export	466,384

Appendix 2 Top Ten Exporting Goods: MTI 3 Classification

1980		1990		2000		2010	
Commodity	Value	Commodity	Value	Commodity	Value	Commodity	Value
garments/clothes	2,778	garments/clothes	7,600	semiconductor	26,006	semiconductor	50,707
Steel flate-rolled products	945	semiconductor	4,541	computer	14,687	vessel, ocean structure and part of vessel, ocean	49,112
footwear	908	footwear	4,307	automobile	13,221	automobile	35,411
vessel, ocean structure and part of vessel, ocean	620	video apparatus	3,627	articles of petroleum	9,055	Flat display and sensor	32,589
audio apparatus	593	vessel, ocean structure and part of vessel, ocean	2,829	vessel, ocean structure and part of vessel, ocean	8,420	articles of petroleum	31,531
man-made filament fabrics	564	computer	2,549	Wireless Communication apparatus	7,882	Wireless Communication apparatus	27,621
articles of rubber	503	audio apparatus	2,480	synthetic resin	5,041	part of automobile	18,963
wood	485	steel flate-rolled products	2,446	steel flate-rolled products	4,828	synthetic resin	17,051
video apparatus	446	man-made filament fabrics	2,343	garments/clothes	4,652	steel flate-rolled products	16,589
semiconductor	434	automobile	1,971	video apparatus	3,667	computer	9,116
Top 3	4,631	Top 3	16,448	Top 3	53,914	Top 3	135,230
Top 10	8,276	Top 10	34,693	Top 10	97,459	Top 10	288,690
Total	17505	Total	65016	Total	172,268	Total	466384

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