



THE IMPACT OF JAPAN-INDONESIA EPA ON JAPAN'S DIRECT INVESTMENT IN INDONESIA AND INDONESIA'S EXPORT IN AUTOMOTIVE AND AUTOMOTIVE PARTS INDUSTRIES

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ABSTRACT

Ten years have passed since Japan and Indonesia signed the Japan-Indonesia Economic Partnership Agreement (JIEPA). This paper reports the findings of a study examining the impact of JIEPA on Japanese outward FDI position in Indonesia and Indonesia's export value in automotive and automotive parts industries. Data used in this study is limited to the available statistical data from year 2005 to year 2016. The export values examined in this paper are limited to the export values of HS 8703, HS 8704, HS 8708, HS 8711, and HS 8714. Specific export target countries examined in this paper are limited to Japan, and the 5 major ASEAN countries. The results show the significant impact of JIEPA on the Japanese investment in Indonesia and Indonesia's export in automotive and automotive parts industries, but with some exceptions.

Keywords: EPA, FDI, international trade, automotive and automotive parts industries

1. Introduction

With more than 250 million people earning on average more than US\$ 3,900 per year, Indonesia is a huge market. Japan and Indonesia have signed economic partnership agreement (EPA) in August 2007. The scope of Japan-Indonesia EPA (JIEPA) is very wide. In the previous work, the author has analysed the Japan-Indonesia FTA coverage rate in year

2014, where the results show that in the case of bilateral trade matter, JIEPA benefits Japan more than Indonesia [1].

On the other hand, JIEPA has provided room to smoothen Japanese direct investment in Indonesia. In year 2016, Japan is Indonesia's second biggest investor. As shown in Table 1, at the end of year 2016, Japanese outward foreign direct investment (FDI) position in Indonesia has reached more than ¥ 3.1 trillion, and Indonesia ranks 11th as Japan's outward direct investment target countries.

FDI and export volume are highly correlated in developing Asia [2]. One of the motives behind Japanese outward FDI in Asia is to set up an export base [3]. In other words, if JIEPA contributes to the increase of Japanese outward FDI in Indonesia, it will also contribute to the increase of Indonesia's export value.

Table 1: Japan's Outward Direct Investment Position
(Top 10 Target Countries+Indonesia, Year 2012-2016)
(in hundred million JPY)

Rank	Target Countries	2012	2013	2014	2015	2016	(%) 2016	Change (%) 16-15
	WORLD	898,128	1,177,265	1,389,780	1,480,664	1,536,091	100	3.7
1	United States of America	247,332	349,237	453,150	498,077	522,728	34.0	4.9
2	England	46,574	71,379	89,125	103,815	133,951	8.7	29.0
3	China	80,463	103,402	124,458	129,629	126,468	8.2	-2.4
4	Netherlands	81,524	101,631	112,401	120,276	111,710	7.3	-7.1
5	Australia	52,952	57,018	73,170	80,648	76,842	5.0	-4.7
6	Thailand	30,247	46,975	61,784	60,274	62,725	4.1	4.1
7	Singapore	31,130	38,512	53,753	58,993	46,433	3.0	-21.3
8	Republic of Korea	22,093	31,453	38,172	37,872	37,421	2.4	-1.2
9	Cayman Islands	51,607	50,948	15,201	18,508	34,994	2.3	89.1
10	Hongkong	15,868	20,884	26,820	28,809	32,237	2.1	11.9
11	Indonesia	15,906	20,850	28,421	29,419	31,264	2.0	6.3

Source: Bank of Japan (processed)

In this study, the author aims to examine the impact of the JIEPA on Japanese outward FDI position in Indonesia and Indonesia's export in automotive and automotive parts industries. Automotive and automotive parts industries are chosen in this study since

Japanese brands control more than 90% of car market in Indonesia. So it can be assumed that Indonesia's export value in automotive and automotive parts industries may well be related to Japanese manufacturers. To limit the scope of this study, the author uses available statistical data from year 2005 to year 2016. Year 2005 is the year when Japan and Indonesia started their EPA negotiation meeting. Specific export target countries examined in this paper are limited to Japan, and the 5 major ASEAN countries, which are Malaysia, Philippines, Singapore, Thailand, and Vietnam.

Previous work that examined the impact of Japan's EPA on automotive industry's trade in Indonesia, Malaysia, and Thailand, only examined data from year 2000 to year 2008 [4]. However, though signed in August 2007, JIEPA came into effect in July 2008, so the previous work was not able to see the impact of JIEPA on the automotive industry in Indonesia.

The structure of this paper is as follows. Section 2 shows data of the Japanese outward FDI position in Indonesia in all industries and in automotive and automotive parts industries, and data of Indonesia's export value in automotive and automotive parts industries from year 2005 to year 2016. Section 3 analyzes the impact of JIEPA on Japanese outward FDI position in Indonesia and Indonesia's export value in automotive and automotive parts industries. Section 4 states the conclusions of this paper.

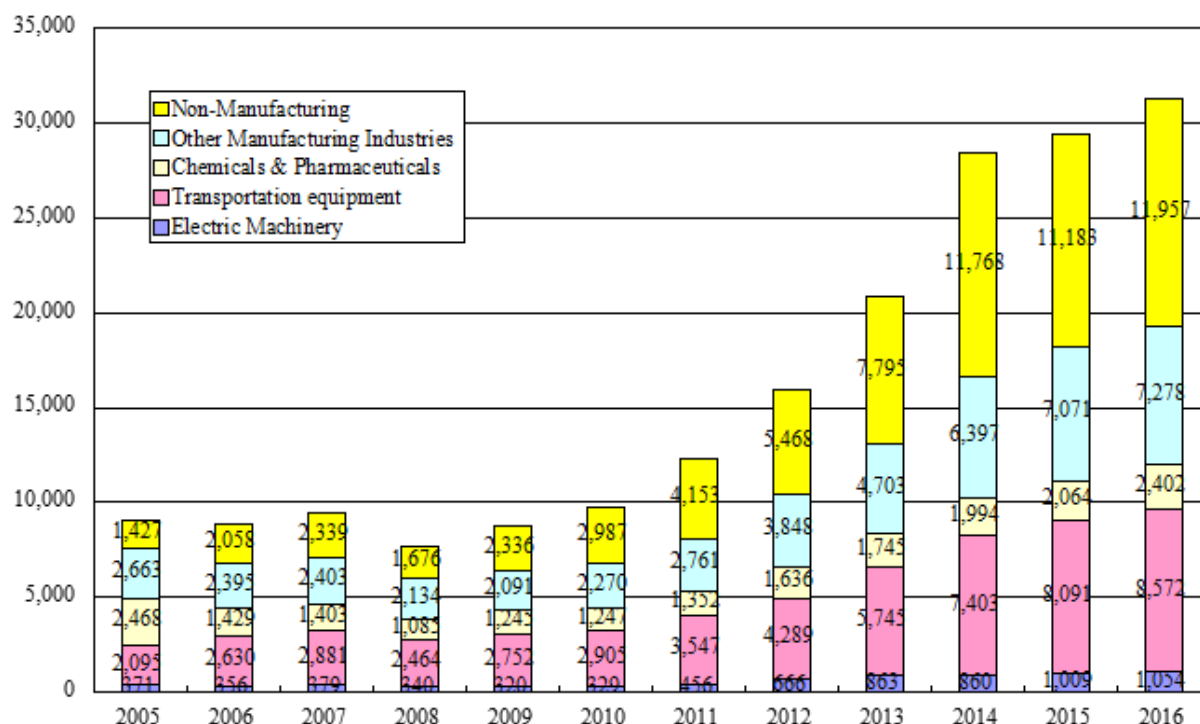
2. Japanese Outward FDI Position in Indonesia and Indonesia's Export Value in Automotive and Automotive Parts Industries

2.1 Japanese Outward FDI to Indonesia

Figure 1 shows the Japanese outward FDI position in Indonesia from the end of year 2005 to the end of year 2016. As shown in Figure 1, the Japanese outward FDI position in Indonesia at the end of year 2008 showed a decline from the previous year. This is due to the Lehman Shock in September 2008 [5]. However, since year 2009, the Japanese direct investment in Indonesia has kept increasing. As shown in Table 2, Japanese outward FDI position in all industries in Indonesia at the end of year 2016 has grown 246.5% from year 2005.

On the other hand, as also shown in Figure 1, transportation equipment industry has become the top investment target since year 2006. Investment in the transportation equipment industry can be seen as representing the investment in the automotive and automotive parts industries. As shown in Table 2, Japanese outward FDI position in Indonesia's automotive

and automotive parts industries at the end of year 2016 shows a 309.1% rise from the end of year 2005. It has reached more than ¥ 857 billion, or 27,4% of the total amount of the Japanese outward FDI position in Indonesia at the end of year 2016.



Source: Bank of Japan (processed)

Figure 1: Japanese Outward FDI Position in Indonesia
(End of Year 2005 to End of Year 2016)
(in hundred million JPY)

Table 2: Japan's Outward FDI Position in Transportation Equipment Industry of Indonesia

Industry	Year 2005 (in 100 million JPY)	Year 2015 (in 100 million JPY)	Year 2016 (in 100 million JPY)	Change (2016-2005) (%)	Change (2016-2015) (%)
All	9,023	29,419	31,264	246.5	6.3
Transportation equipment	2,095	8,091	8,572	309.1	5.9

2.2 Indonesia's Export Value in Automotive and Automotive Parts Industries

Table 3 shows the export value of HS 87 (Vehicles other than railway or tramway

rolling stock, and parts and accessories thereof) products from the top 10 exporters and ASEAN countries to the world. Indonesia ranks 27th in the world with export value that has reached more than US\$ 5.8 billion in year 2016, a 8.3% rise from the previous year. Since year 2013, Indonesia ranks 2nd as the ASEAN's largest exporters of HS 87 products.

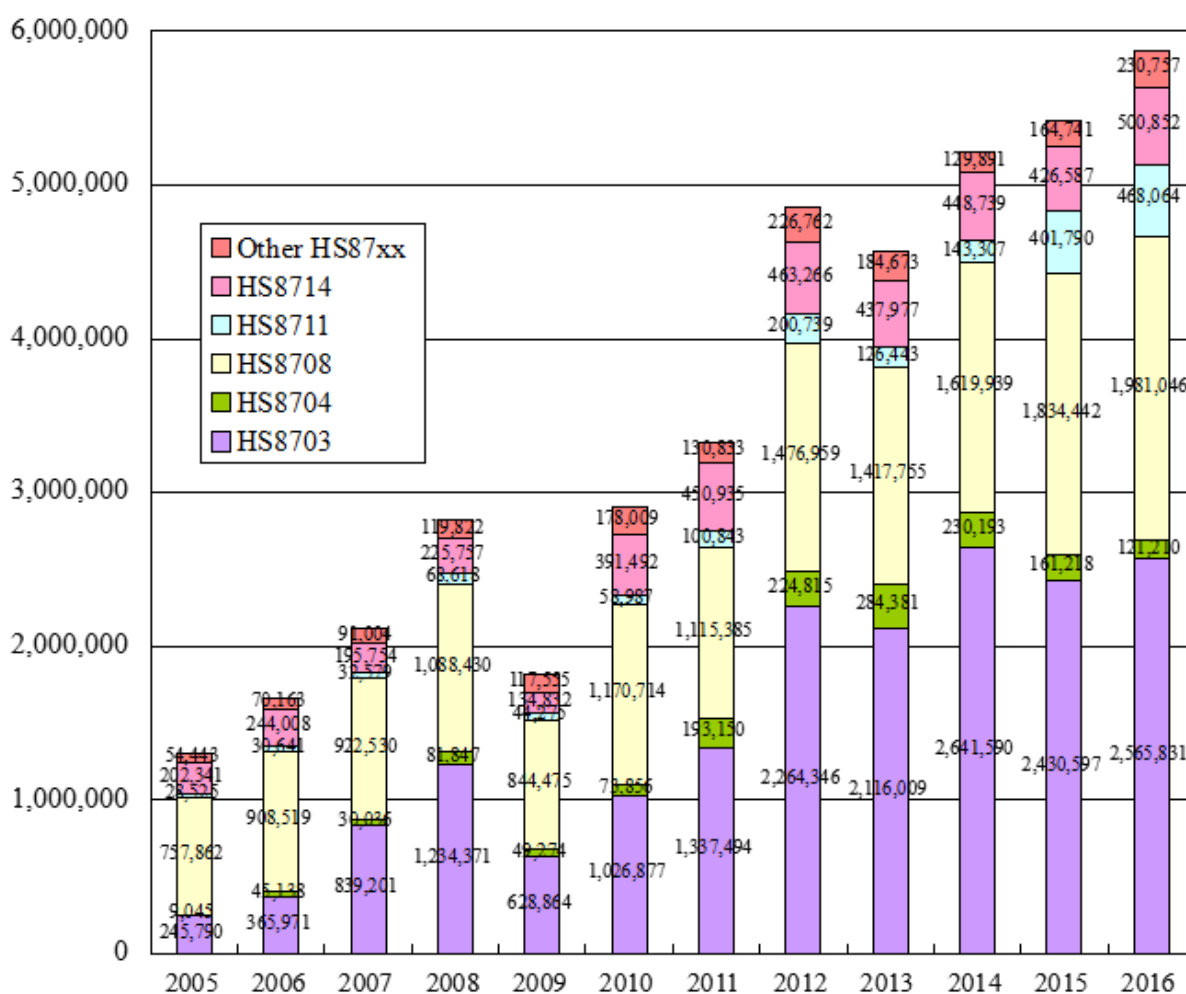
Table 3: Export Value of HS 87
(Top 10 Exporters + ASEAN Countries, Year 2012-2016)
(in thousand USD)

Rank	Exporters	2012	2013	2014	2015	2016	(%) 2016	Change (%) 16-15
	WORLD	1,308,735,238	1,355,175,969	1,396,219,472	1,325,473,933	1,346,016,994	100	1.5
1	Germany	235,525,858	243,244,304	259,423,134	241,905,546	244,399,689	18.2	1.0
2	Japan	162,912,237	148,549,339	142,513,899	134,041,243	141,798,538	10.5	5.8
3	United States of America	133,078,053	134,084,552	135,972,388	127,396,968	124,256,371	9.2	-2.5
4	Mexico	70,272,844	77,192,992	85,955,743	90,363,239	88,081,769	6.5	-2.5
5	Canada	61,297,640	59,276,391	59,993,114	60,300,586	64,289,830	4.8	6.6
6	Korea, Republic of	70,074,094	72,771,813	73,343,530	69,023,583	62,654,796	4.7	-9.2
7	China	55,117,129	58,549,754	64,192,713	62,600,002	60,145,135	4.5	-3.9
8	Spain	42,223,161	48,438,827	51,639,220	49,701,780	53,916,923	4.0	8.5
9	United Kingdom	47,533,882	50,994,806	54,409,455	50,740,491	52,198,730	3.9	2.9
10	France	47,435,092	46,542,937	47,618,292	43,720,973	45,382,766	3.4	3.8
	ASEAN							
14	Thailand	24,290,550	26,169,901	26,022,818	26,546,808	27,217,057	2.0	2.5
27	Indonesia	4,856,887	4,567,238	5,213,659	5,419,375	5,867,760	0.4	8.3
31	Singapore	5,519,692	4,389,070	4,249,740	3,792,556	3,539,143	0.3	-6.7
39	Vietnam	1,320,439	1,598,857	1,913,136	1,909,916	2,124,091	0.2	11.2
41	Malaysia	1,811,051	1,870,661	1,948,084	1,783,509	1,698,169	0.1	-4.8
43	Philippines	1,927,821	1,597,524	1,659,815	1,429,168	1,417,528	0.1	-0.8
59	Cambodia	229,925	363,050	4,941	281,295	354,214	0.03	25.9
95	Lao People's Democratic Republic	880	3,166	18,574	287,291	23,307	0.002	-91.9
97	Brunei Darussalam	6,668	3,017	2,811	6,997	23,148	0.002	230.8
127	Myanmar	-	-	-	-	4,940	0.0004	-

Source: International Trade Center (online)

Figure 2 shows Indonesia's export value of HS 87 products from year 2005 to year 2016. Export value of HS 87 products from Indonesia to the world in year 2016 is US\$ 5.86776 billion, a 352% rise from year 2005, and a 8.27% rise from the previous year.

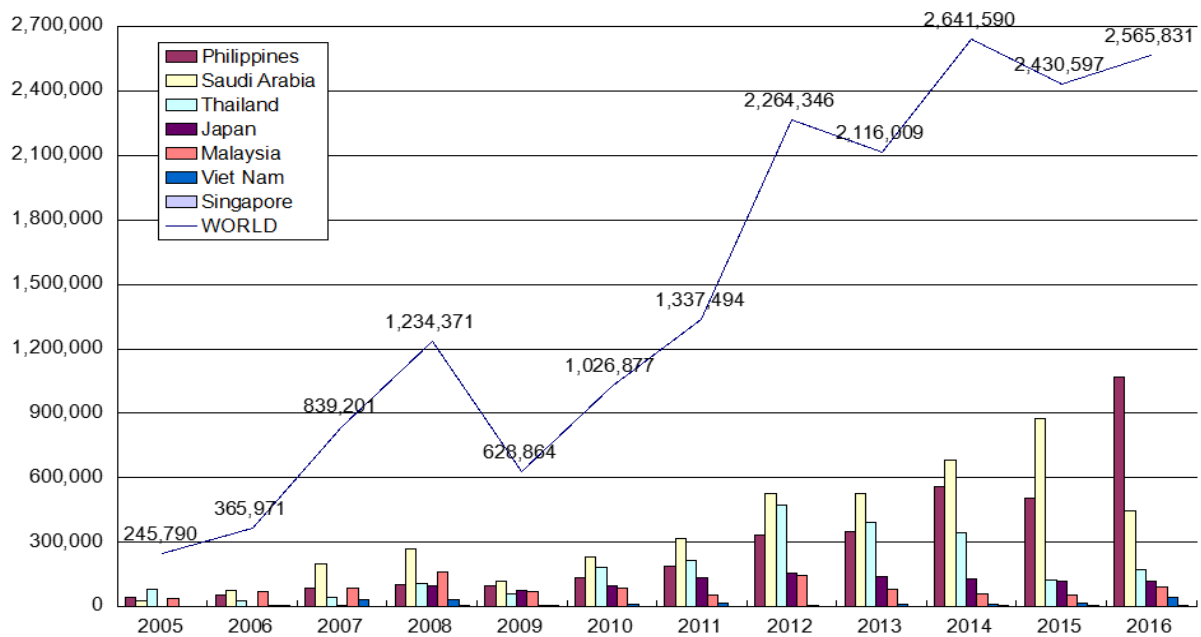
The total export value of the following 5 products accounts for more than 96% of the overall Indonesia's export value of HS 87 products in year 2016: (1) HS 8703 (Motor cars and other motor vehicles principally designed for the transport of persons, incl. station wagons and racing cars (excluding motor vehicles of heading 8702), export value in year 2016: more than US\$ 2.56 billion; (2) HS 8704 (Motor vehicles for the transport of goods, incl. chassis with engine and cab), export value in year 2016: US\$ 121,2 million; (3) HS 8708 (Parts and accessories for tractors, motor vehicles for the transport of ten or more persons, motor cars and other motor vehicles principally designed for the transport of persons, motor vehicles for the transport of goods and special purpose motor vehicles of heading 8701 to 8705, n.e.s.), export value in year 2016: more than US\$ 1.98 billion; (4) HS 8711 (Motorcycles, incl. mopeds, and cycles fitted with an auxiliary motor, with or without side-cars; side-cars), export value in year 2016: US\$ 468 million; (5) HS 8714 (Parts and accessories for motorcycles and bicycles and for carriages for disabled persons, n.e.s.), export value in year 2016: US\$ 500.85 million. The Indonesia's export values examined in this study are limited to the export values of the above 5 HS-4 digit level products.



Source: International Trade Center (processed)

Figure 2: Indonesia's Export Value of HS 87 Products
 (Year 2005 to Year 2016)
 (in thousand USD)

Figure 3 shows the export values of HS 8703 products from Indonesia to the world, the 5 main export target countries, and other major ASEAN countries from year 2005 to year 2016. As shown in Table 4, the export value of HS 8703 products from Indonesia to the world in year 2016 is US\$ 2.5658 billion, a 943.9% rise from year 2005, and a 5.6% rise from the previous year. Japan ranks 4th as Indonesia's main export target of HS 8703 products. The export value of HS 8703 products from Indonesia to Japan in year 2016 is US\$ 115,8 million, a 7,971.4% rise from year 2005, but a 0.9% decline from the previous year.



Source: International Trade Center (processed)

Figure 3: Indonesia's Export Value of HS 8703 Products
 (Year 2005 to Year 2016)

Table 4: Export of HS 8703 Products from Indonesia

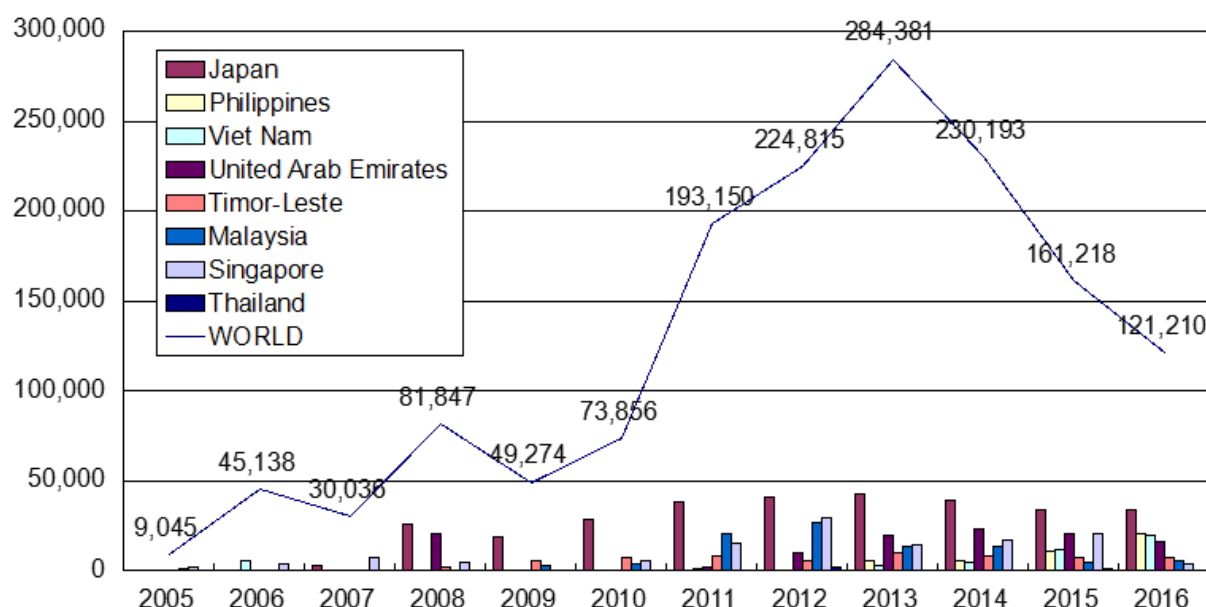
(in thousand USD)

Rank	Exporters	2005	2015	2016	% in 2016	Change (2016-2005) (%)	Change (2016-2015) (%)
	WORLD	245,790	2,430,597	2,565,831	100	943.9	5.6
1	Philippines	42,730	503,857	1,071,193	41.7	2,406.9	112.6
2	Saudi Arabia	29,220	873,467	447,870	17.5	1,432.8	-48.7
3	Thailand	79,308	122,745	174,255	6.8	119.7	42.0
4	Japan	1,435	116,934	115,824	4.5	7,971.4	-0.9
5	Malaysia	40,288	54,234	93,390	3.6	131.8	72.2
	Other Major ASEAN Countries						
9	Viet Nam	2,275	17,756	45,712	1.8	1,909.3	157.4
26	Singapore	2,106	4,432	5,889	0.2	179.6	32.9

Source: International Trade Center (processed)

As shown in Table 4, Philippines ranks 1st as Indonesia's main export target of HS 8703 products in year 2016. The export value of HS 8703 products from Indonesia to Philippines in year 2016 is US\$ 1.07 billion, a 2,406.9% rise from year 2005, and a 112.6% rise from the previous year. It covers 41.7% of the total export value of HS 8703 products from Indonesia to the world in year 2016.

Figure 4 shows the export value of HS 8704 products from Indonesia to the world, the 5 main export target countries and other major ASEAN countries from year 2005 to year 2016. As shown in Table 5, the export value of HS 8704 from Indonesia to the world in year 2016 is US\$ 121.21 million, a 1,240.1% rise from year 2005, but a 24.8% decline from the previous year. Japan ranks 1st as Indonesia's main export target of HS 8704 products. The export value of HS 8704 products from Indonesia to Japan in year 2016 is US\$ 34.08 million, a 7,260.9% rise from year 2005, and a 0.8% rise from the previous year. It covers 28.1% of the total export value of HS 8704 products from Indonesia to the world in year 2016.



Source: International Trade Center (processed)

Figure 4: Indonesia's Export Value of HS 8704 Products
(Year 2005 to Year 2016)
(in thousand USD)

As shown in Table 5, the export value of HS 8704 products from Indonesia to Philippines in year 2016 is US\$ 20.6 million, a 87.1% rise from the previous year, and accounts for 17% of the total export value of HS 8704 products from Indonesia to the world in year 2016. Philippines was not Indonesia's HS 8704 products export target country in year 2005. The export value of HS 8704 products from Indonesia to Viet Nam in year 2016 is US\$ 19.8 million, a 3,587.6% rise from year 2005, and 71.2% rise from the previous year. It accounts for 16.3% of the total export value of HS 8704 products from Indonesia in year 2016. In year 2016, Thailand was not Indonesia's HS 8704 products export target country

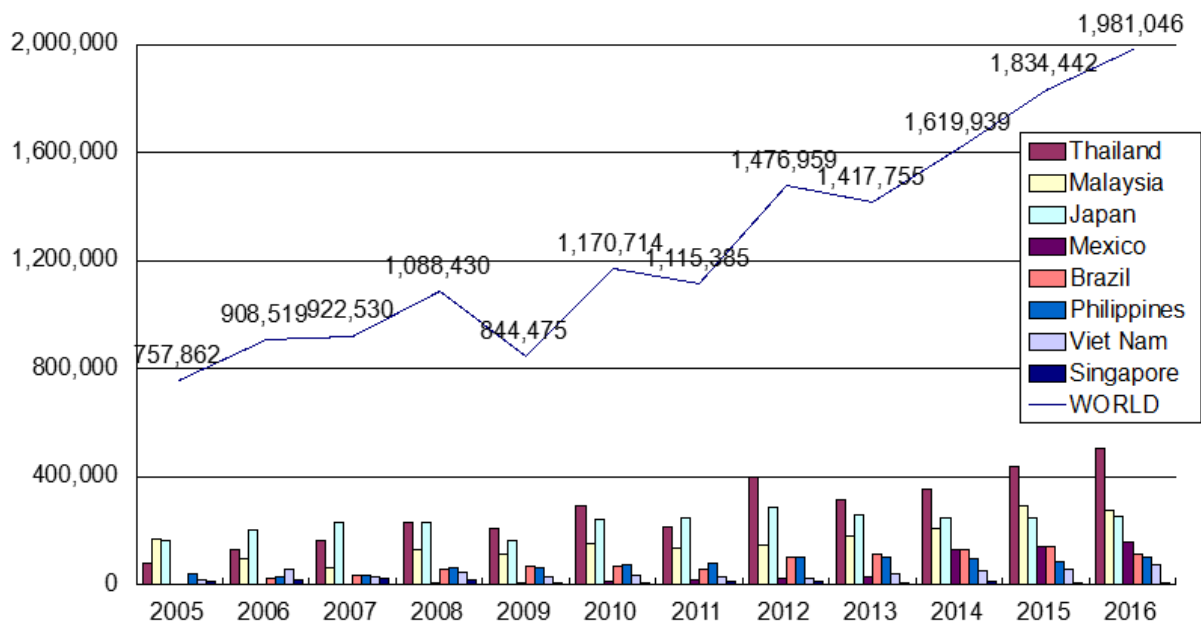
Table 5: Export of HS 8704 Products from Indonesia
(in thousand USD)

Rank	Exporters	2005	2015	2016	% in 2016	Change (2016-2005) (%)	Change (2016-2015) (%)
	WORLD	9,045	161,218	121,210	100	1,240.1	-24.8
1	Japan	463	33,797	34,081	28.1	7,260.9	0.8
2	Philippines	0	11,030	20,636	17	-	87.1

3	Viet Nam	537	11,567	19,803	16.3	3,587.7	71.2
4	United Arab Emirates	0	20,680	15,953	13.2	-	-22.9
5	Timor-Leste	168	7,766	7,654	6.3	4,456	-1.4
	Other Major ASEAN Countries						
6	Malaysia	965	5,127	6,009	5	522.7	17.2
7	Singapore	2,162	21,052	4,056	3.3	87.6	-80.7
-	Thailand	0	1,019	0	0	0	-100.0

Source: International Trade Center (processed)

Figure 5 shows the export value of HS 8708 products from Indonesia to the world, the 5 main export target countries and other major ASEAN countries from year 2005 to year 2016. As shown in Table 6, the export value of HS 8708 products from Indonesia to the world in year 2016 is US\$ 1.98 billion, a 161.4% rise from year 2005, and a 8% rise from the previous year. Japan ranks 3rd in year 2016. The export value of HS 8708 products from Indonesia to Japan in year 2016 is US\$ 255.8 million, a 57.1% rise from year 2005, and a 2.1% rise from the previous year. It covers 12.9% of the total export value of HS 8708 products from Indonesia to the world in year 2016. Thailand ranks 1st in year 2016. The export value of HS 8708 products from Indonesia to Thailand in year 2016 is US\$ 506,489 million, a 514.7% rise from year 2005, and a 15.7% rise from the previous year. The export value to Thailand accounts for 25.6% of the total export value of HS 8708 products from Indonesia to the world in year 2016. Malaysia ranks 2nd in year 2016, and the export value to Malaysia accounts for 14% of the total export value of HS 8708 products from Indonesia in year 2016. The export value to Malaysia in year 2016 is US\$ 277.9 million, a 61.1% rise from year 2005, but a 4.8% decline from the previous year. The export value to Singapore in year 2016 is US\$ 7.28 million, a 35.2% decline from year 2005, and a 25.2% decline from the previous year.



Source: International Trade Center (processed)

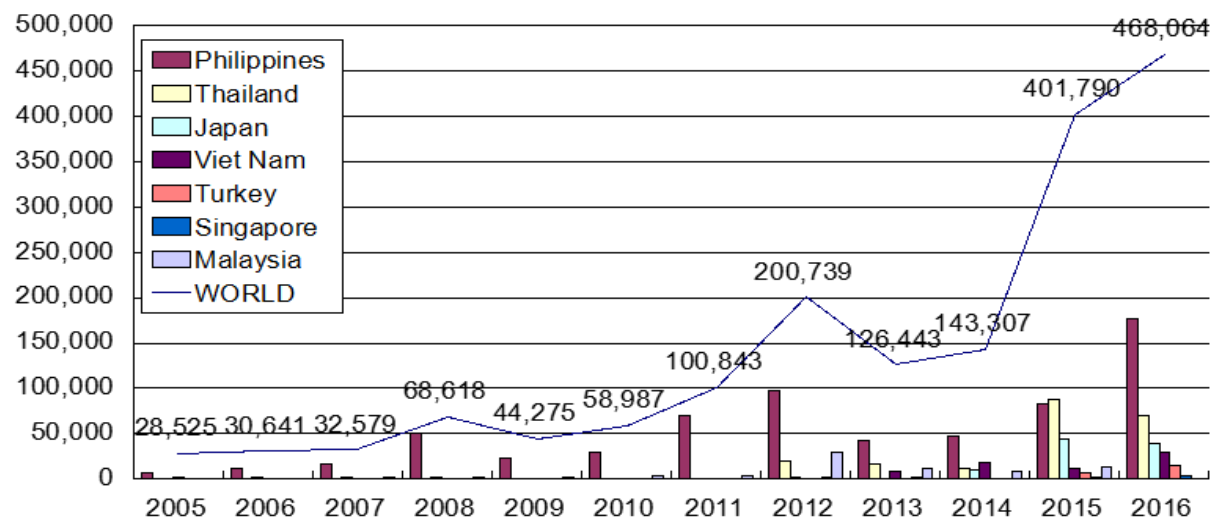
Figure 5: Indonesia's Export Value of HS 8708 Products
(Year 2005 to Year 2016)
(in thousand USD)

Table 6: Export of HS 8708 Products from Indonesia
(in thousand USD)

Rank	Exporters	2005	2015	2016	% in 2016	Change (2016-2005) (%)	Change (2016-2015) (%)
	WORLD	757,862	1,834,442	1,981,046	100	161.4	8.0
1	Thailand	82,398	437,871	506,489	25.6	514.7	15.7
2	Malaysia	172,541	292,110	277,946	14	61.1	-4.8
3	Japan	162,815	250,674	255,848	12.9	57.1	2.1
4	Mexico	101	142,025	156,977	7.9	155,322.8	10.5
5	Brazil	1,063	143,683	114,036	5.8	10,627.8	-20.6
	Other Major ASEAN Countries						
6	Philippines	40,715	87,824	101,256	5.1	148.7	15.3
8	Viet Nam	18,348	59,787	74,991	3.8	308.7	25.4
21	Singapore	11,245	9,729	7,282	0.4	-35.2	-25.2

Source: International Trade Center (processed)

Figure 6 shows the export value of HS 8711 products from Indonesia to the world, the 5 main export target countries and other major ASEAN countries from year 2005 to year 2016. As shown in Table 7, the export value of HS 8711 products from Indonesia to the world in year 2016 is US\$ 468.06 million, a 1,540.9% rise from year 2005, and a 16.5% rise from the previous year. Japan ranks 3rd as Indonesia's export target of HS 8711 products. The export value of HS 8711 products from Indonesia to Japan in year 2016 is US\$ 39.5 million, a 3,592.6% rise from year 2005, but a 9% decline from the previous year.



Source: International Trade Center (processed)

Figure 6: Indonesia's Export Value of HS 8711 Products
(Year 2005 to Year 2016)
(in thousand USD)

Table 7: Export of HS 8711 Products from Indonesia
(in thousand USD)

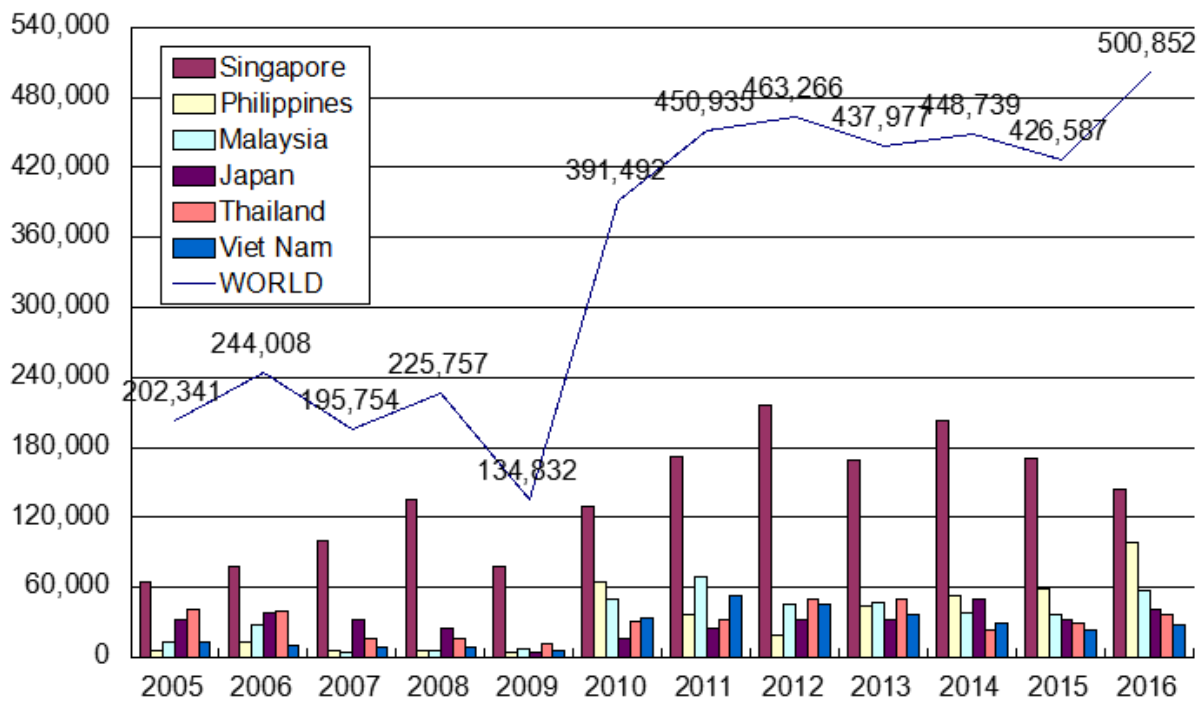
Rank	Exporters	2005	2015	2016	% in 2016	Change (2016-2005) (%)	Change (2016-2015) (%)
	WORLD	28,525	401,790	468,064	100	1,540.9	16.5
1	Philippines	7,443	82,438	176,319	37.7	2,268.9	113.9
2	Thailand	139	87,030	70,660	15.1	50,734.5	-18.8
3	Japan	1,071	43,443	39,548	8.4	3,592.6	-9.0
4	Viet Nam	1,555	12,114	30,169	6.4	1,840.1	149.0
5	Turkey	0	6,275	14,701	3.1	-	134.3
	Other Major ASEAN Countries						

19	Singapore	57	1,278	3,637	0.8	6,280.7	184.6
39	Malaysia	163	14,167	471	0.1	189.0	-96.7

Source: International Trade Center (processed)

As shown in Table 7, Philippines ranks 1st in year 2016. The export value of HS 8711 products from Indonesia to Philippines in year 2016 is US\$ 176.3 million, a 2,268.9% rise from year 2005, and a 113.9% rise from the previous year. It covers 37.7% of the total export value of HS 8711 products from Indonesia to the world in year 2016. Thailand ranks 2nd in year 2016, and the export value to Thailand accounts for 15.1% of the total export value of HS 8711 products from Indonesia to the world in year 2016. The export value of HS 8711 products from Indonesia to Thailand in year 2016 is US\$ 70.66 million, a 50,374.5% rise from year 2005, but a 18.8% decline from the previous year. The export value to Viet Nam in year 2016 is US\$ 30.169 million, a 1,840.1% rise from year 2005, and a 149% rise from the previous year. The export value to Singapore in year 2016 is US\$ 3.6 million, a 6,289.7% rise from year 2005, and a 184.6% rise from the previous year. The export value to Malaysia in year 2016 is US\$ 0.47 million, a 189% rise from year 2005, but a 96.7% decline from the previous year.

Figure 7 shows the export value of HS 8714 products from Indonesia to the world, the 5 main export target countries and other major ASEAN countries from year 2005 to year 2016. As shown in Table 8, the export value of HS 8714 products from Indonesia to the world in year 2016 is US\$ 500.85 million, a 147.5% rise from year 2005, and a 17.4% rise from the previous year. Japan ranks 3rd in year 2016. The export value of HS 8714 products from Indonesia to Japan in year 2016 is US\$ 40.5 million, a 27.6% rise from year 2005, and a 24.5% rise from the previous year. The export value to Japan accounts for 8.1% of the total export value of HS 8714 products from Indonesia to the world in year 2016.



Source: International Trade Center (processed)

Figure 7: Indonesia's Export Value of HS 8714 Products
(Year 2005 to Year 2016)
(in thousand USD)

As shown in Table 8, Singapore ranks 1st in year 2016, and the export value to Singapore accounts for 28.8% of the total export value of HS 8714 products from Indonesia to the world in year 2016. The export value to Singapore in year 2016 is US\$ 144 million, a 123.3% rise from year 2005, but 15.9% decline from the previous year. The export values of HS 8714 products from Indonesia to Philippines, Malaysia, and Viet Nam in year 2016 show a significant rise from year 2005, however export value from Indonesia to Thailand in year 2016 shows a 10.3% decline from year 2005.

Table 8: Export of HS 8714 Products from Indonesia
(in thousand USD)

Rank	Exporters	2005	2015	2016	% in 2016	Change (2016-2005) (%)	Change (2016-2015) (%)
	WORLD	202,341	426,587	500,852	100	147.5	17.4
1	Singapore	64,487	171,179	144,028	28.8	123.3	-15.9
2	Philippines	6,374	59,339	98,431	19.7	1,444.3	65.9
3	Malaysia	13,117	36,444	56,463	11.3	330.5	54.9

4	Japan	31,739	32,541	40,509	8.1	27.6	24.5
5	Thailand	41,155	29,210	36,935	7.4	-10.3	26.4
	Other Major ASEAN Country						
6	Viet Nam	12,689	23,531	27,720	5.5	118.5	17.8

Source: International Trade Center (processed)

3. The Impact of JIEPA on Japanese Outward FDI Position in Indonesia and Indonesia's Export Value in Automotive and Automotive Parts Industries

3.1 The Analysis of the Impact of JIEPA on Japanese Outward FDI Position in All Industries and the Automotive and Automotive Parts Industries in Indonesia

Table 9 shows the growth rates of the Japanese outward FDI position in Indonesia from the end of year 2006 to the end of year 2016. When the JIEPA came into effect in year 2008, the growth rate of the Japanese outward FDI position in all industries in Indonesia at the end of year 2008 shows a 18.1% decline from the end of the previous year, and the FDI position in the transportation equipment industry shows a 14.5% decline from the previous year. As mentioned in the section 2.1, it was due to the Lehman Shock. From the end of year 2009 to the end of year 2014, the growth rates of the Japanese outward FDI position in all industries in Indonesia are above 10%. The growth rate for the transportation equipment industry was only 5.6% in year 2010, but it reached 33.9% in year 2013. As shown in Table 2, the Japanese outward FDI position in all industries in Indonesia at the end of year 2016 shows a 246.5% rise from the end of year 2005, and the Japanese outward FDI position in the transportation equipment industry in Indonesia at the end of year 2016 shows a 309.1% rise from the end of year 2005. So it is obvious that the impact of the JIEPA on the growth of the Japanese outward FDI position in all industries and the automotive and automotive parts industries in Indonesia is significant.

However, the growth rates of the Japanese outward FDI position in all industries and the transportation equipment industry in Indonesia were lower than 10% since year 2015. So, it also can be said that the impact of JIEPA on the Japanese outward FDI position in all industries and the automotive and automotive parts industries in Indonesia has become weaker since year 2015.

Table 9: Growth Rates of the Japanese Outward FDI Position in Indonesia for All Industries and the Transportation Equipment Industry

Industry	Change (2006-2005)	Change (2007-2006)	Change (2008-2007)	Change (2009-2008)	Change (2010-2009)	Change (2011-2010)	Change (2012-2011)	Change (2013-2012)	Change (2014-2013)	Change (2015-2014)	Change (2016-2015)
All	-1.7%	6.1%	-18.1%	13.6%	11.4%	26.0%	29.6%	31.1%	36.3%	3.5%	6.3%
Transportation Equipment	25.5%	9.6%	-14.5%	11.7%	5.6%	22.1%	20.9%	33.9%	28.9%	9.3%	5.9%

3.2 The Analysis of the Impact of JIEPA on the Indonesia's Export Value in Automotive and Automotive Parts Industries

As shown in Figure 2, the export value of HS 87 products from Indonesia to the world in year 2016 shows a significant increase compared to the export value in year 2005. As shown in Table 4 to Table 8, the export values of HS 8703, HS 8704, HS 8708, HS 8711, and HS 8714 products from Indonesia to the world in year 2016 show a significant increase compared to the export values in year 2005. As shown in Figure 5 and Figure 6, the export values of HS 8708 and HS 8711 products are increasing in the recent 3 consecutive years. As shown in Figure 3 and Figure 8, the export values of HS 8703 and HS 8714 products do not increase steadily in the recent 5 years. On the other hand, as shown in Figure 4, the export values of HS 8704 products are declining in the recent 3 years.

Table 10 shows the growth rates of the export values of automotive parts and products from Indonesia to Japan. The export values of HS 8703, HS 8704, and HS 8711 products from Indonesia to Japan in year 2016 show a significant increase compared to the export values in year 2005, while the export values of HS 8708 and HS 8714 products from Indonesia to Japan in year 2016 do not show a significant increase compared to the export values in year 2005. On the other hand, the export value of HS 8703 products from Indonesia to Japan in year 2013 shows a 12.1% decline from the previous year, and the export value has kept declining since then. The export value of HS 8704 products from Indonesia to Japan in year 2014 shows a 9.4% decline from the previous year, and a 13.3% decline in year 2015 from the previous year. The export value of HS 8711 products from Indonesia to Japan in

year 2014 shows a 752.1% rise from the previous year, and a 328.8% rise in year 2015 from the previous year. However, in year 2016, it shows a 9% decline from the previous year.

Table 10: Growth Rates of the Export Values from Indonesia to Japan

HS	Change (2006-2005)	Change (2007-2006)	Change (2008-2007)	Change (2009-2008)	Change (2010-2009)	Change (2011-2010)	Change (2012-2011)	Change (2013-2012)	Change (2014-2013)	Change (2015-2014)	Change (2016-2015)	Change (2016-2005)
8703	26.3%	114.3%	2448.6%	-25.4%	30.3%	42.1%	14.8%	-12.1%	-7.0%	-8.9%	-0.9%	7971.4%
8704	54.9%	278.7%	848.0%	-24.8%	45.9%	36.1%	7.0%	4.7%	-9.4%	-13.3%	0.8%	7260.9%
8708	24.9%	13.4%	0.0%	-28.0%	45.3%	3.9%	14.4%	-9.8%	-3.6%	0.6%	2.1%	57.1%
8711	40.7%	61.8%	-48.5%	-4.0%	-47.8%	10.8%	97.3%	-13.7%	752.1%	328.8%	-9.0%	3592.6%
8714	17.9%	-15.3%	-20.0%	-84.7%	304.1%	55.0%	29.8%	0.4%	54.7%	-33.7%	24.5%	27.6%

Table 11 shows the growth rates of the export values of automotive parts and products from Indonesia to Malaysia. The export values of HS 8704, and HS 8714 products from Indonesia to Malaysia in year 2016 show a significant increase compared to the export values in year 2005, however, the export values are increasing and decreasing in the recent 10 years. The export value of HS 8703 products in year 2016 shows a 72.2% rise from the previous year, but for the previous 3 consecutive years, the export values decreased by 43.1%, 27.4%, and 10.1% respectively. The export value of HS 8708 products in year 2016 does not show a significant increase compared to the export value in year 2005. The export value of HS 8711 in year 2016 shows a 96.7% decline from the previous year.

Table 11: Growth Rates of the Export Values from Indonesia to Malaysia

HS	Change (2006-2005)	Change (2007-2006)	Change (2008-2007)	Change (2009-2008)	Change (2010-2009)	Change (2011-2010)	Change (2012-2011)	Change (2013-2012)	Change (2014-2013)	Change (2015-2014)	Change (2016-2015)	Change (2016-2005)
8703	79.8%	16.6%	90.8%	-56.3%	18.7%	-33.2%	161.1%	-43.1%	-27.4%	-10.1%	72.2%	131.8%
8704	-39.2%	24.5%	-96.0%	9341.4%	57.6%	375.0%	31.1%	-50.8%	2.2%	-62.0%	17.2%	522.7%
8708	-44.2%	-33.5%	106.0%	-12.1%	30.2%	-11.0%	11.4%	22.8%	12.5%	41.4%	-4.8%	61.1%
8711	-21.5%	1717.2%	-40.3%	17.9%	112.6%	-7.0%	833.0%	-63.1%	-26.8%	73.8%	-96.7%	189.0%
8714	114.6%	-85.0%	20.7%	38.8%	598.9%	40.1%	-33.8%	1.9%	-17.6%	-5.2%	54.9%	330.5%

Table 12 shows the growth rates of the export values of automotive parts and products

from Indonesia to Philippines. The export values of HS 8703, HS 8704, HS 8711, and HS 8714 products from Indonesia to Philippines in year 2016 show a significant increase compared to the export values in the previous year and the export value in year 2005. The export value of HS 8708 products in year 2016 shows a 148.7% rise from the export value in year 2005, and a 15.3% rise from the previous year.

Table 12: Growth Rates of the Export Values from Indonesia to Philippines

HS	Change (2006- 2005)	Change (2007- 2006)	Change (2008- 2007)	Change (2009- 2008)	Change (2010- 2009)	Change (2011- 2010)	Change (2012- 2011)	Change (2013- 2012)	Change (2014- 2013)	Change (2015- 2014)	Change (2016- 2015)	Change (2016- 2005)
8703	28.9%	54.2%	21.8%	-5.1%	35.2%	43.8%	75.6%	4.3%	59.7%	-9.8%	112.6%	2406.9%
8704	-	-	12.5%	-100%	-	-	-100%	-	-6.1%	101.3%	87.1%	-
8708	- 27.6%	25.4%	67.3%	1.0%	22.2%	7.4%	24.8%	2.1%	-6.1%	- 10.5%	15.3%	148.7%
8711	59.1%	38.8%	212.3%	- 54.5%	26.0%	138.9%	38.5%	- 55.6%	9.9%	73.2%	113.9%	2268.9%
8714	100.6%	- 50.8%	-9.1%	- 24.1%	1391.5%	- 42.8%	- 49.7%	137.9%	19.7%	12.1%	65.9%	1444.3%

Table 13 shows the growth rates of the export values of automotive parts and products from Indonesia to Singapore. The export value of HS 8711 products in year 2016 show a significant increase compared to the export value in the previous year and the export value in year 2005. The export values of HS 8703 products are increasing steadily in the past 3 consecutive years. The export value of HS 8704 products in year 2010 shows a 659.9% rise from the previous year, however the export value in year 2016 shows a 80.7% decline from the previous year. The export value of HS 8708 products in year 2016 shows a 35.2% decline from the export value in year 2005. For the past 2 consecutive years, the export values of HS 8714 products decreased by 15.4% and 15.9%, respectively.

Table 13: Growth Rates of the Export Values from Indonesia to Singapore

HS	Change (2006-2005)	Change (2007-2006)	Change (2008-2007)	Change (2009-2008)	Change (2010-2009)	Change (2011-2010)	Change (2012-2011)	Change (2013-2012)	Change (2014-2013)	Change (2015-2014)	Change (2016-2015)	Change (2016-2005)
8703	46.4%	-51.2%	288.1%	-44.2%	-73.4%	-5.1%	256.0%	-36.8%	80.2%	32.8%	32.9%	179.6%
8704	89.8%	72.4%	-27.7%	-85.1%	656.9%	168.2%	87.6%	-49.4%	17.0%	22.1%	-80.7%	87.6%
8708	41.8%	39.0%	-18.5%	-51.3%	6.4%	51.1%	-1.8%	-26.6%	20.4%	-20.7%	-25.2%	-35.2%
8711	-84.2%	655.6%	91.2%	812.3%	-99.2%	10477.8%	137.3%	1.8%	-57.7%	31.5%	184.6%	6280.7%
8714	20.2%	29.3%	35.2%	-42.1%	65.5%	32.2%	25.9%	-22.1%	20.2%	-15.4%	-15.9%	123.3%

Table 14 shows the growth rates of the export values of automotive parts and products from Indonesia to Thailand. The export values of HS 8708, and HS 8711 products from Indonesia to Thailand in year 2016 show a significant increase compared to the export values in year 2005. The export value of HS 8703 products in year 2016 shows a 42% rise from the previous year, but for the previous 3 consecutive years, the export values decreased by 17.7%, 12.1%, and 64.3% respectively. Indonesia does not export HS 8704 products to Thailand in year 2016. The export value of HS 8714 products in year 2016 shows a 10.3% decline from the export value in year 2005.

Table 14: Growth Rates of the Export Values from Indonesia to Thailand

HS	Change (2006-2005)	Change (2007-2006)	Change (2008-2007)	Change (2009-2008)	Change (2010-2009)	Change (2011-2010)	Change (2012-2011)	Change (2013-2012)	Change (2014-2013)	Change (2015-2014)	Change (2016-2015)	Change (2016-2005)
8703	-64.3%	44.3%	163.1%	-44.8%	204.9%	19.4%	119.9%	-17.7%	-12.1%	-64.3%	42.0%	119.7%
8704	-	-	-	-	-	25500%	559.0%	-91.1%	32.0%	414.6%	-100%	-

8708	58.6%	24.1%	41.5%	-8.9%	39.1%	- 26.3%	87.3%	- 21.2%	11.9%	23.6%	15.7%	514.7 %
8711	433.8 %	- 82.7%	68.8%	- 24.5%	138.7 %	- 14.1%	5946.7 %	- 21.4%	- 28.0%	661.0 %	- 18.8%	50734. 5%
8714	-4.1%	- 60.9%	5.7%	- 30.5%	170.1 %	6.8%	54.5%	-2.4%	- 51.3%	22.0%	26.4%	- 10.3%

Table 14 shows the growth rates of the export values of automotive parts and products from Indonesia to Viet Nam. The export values of HS 8703, HS 8704, HS 8708, and HS 8711 products from Indonesia to Viet Nam in year 2016 show a significant increase compared to the export values in the previous year and year 2005. The export value of HS 8714 products in year 2016 shows a 17.8% rise from the previous year, but for the previous 4 consecutive years, the export values decreased by 12.9%, 19.9%, 21.4%, and 18.5% respectively.

Table 15: Growth Rates of the Export Values from Indonesia to Viet Nam

HS	Change (2006- 2005)	Change (2007- 2006)	Change (2008- 2007)	Change (2009- 2008)	Change (2010- 2009)	Change (2011- 2010)	Change (2012- 2011)	Change (2013- 2012)	Change (2014- 2013)	Change (2015- 2014)	Change (2016- 2015)	Change (2016- 2005)
8703	123.7 %	571.7 %	- 12.1%	- 83.7%	166.8 %	45.7%	- 73.2%	70.2%	-2.6%	109.7 %	157.4 %	1909.3 %
8704	885.3 %	- 99.8%	-100%	-	-	164.2 %	- 25.1%	400.5 %	58.1%	144.5 %	71.2%	3587.7 %
8708	209.6 %	- 51.9%	71.0%	- 32.4%	7.5%	-4.1%	- 20.0%	65.4%	16.5%	18.8%	25.4%	308.7 %
8711	- 70.4%	5.9%	- 92.4%	- 94.6%	5050 %	10.7%	265.8 %	2054.7 %	104.3 %	- 34.0%	149.0 %	1840.1 %
8714	- 18.9%	- 16.8%	0.8%	- 26.9%	434.3 %	56.2%	- 12.9%	- 19.9%	- 21.4%	- 18.5%	17.8%	118.5 %

3.3. Findings

The results of the analysis of the impact of JIEPA on the Japanese outward FDI position in Indonesia and Indonesia's export values in automotive and automotive parts industries can be summarized as follows.

- (1) The Japanese outward FDI position in all industries and the automotive and automotive parts industries in Indonesia at the end of year 2016 shows a significant rise compared to the FDI position at the end of year 2005, so it is obvious that JIEPA has a significant impact on the Japanese outward FDI position in all industries and the automotive and automotive parts industries in Indonesia. However, since year 2015, the impact has become weaker.
- (2) In general, it can be said that JIEPA has a significant impact on Indonesia's export to the world in automotive and automotive parts industries. As shown in Figure 5 and Figure 6, the impact of JIEPA on Indonesia's export of HS 8703 and HS 8714 products to the world is still strong. As shown in Figure 3 and Figure 7, the impact of JIEPA still can be seen on Indonesia's export of HS 8703 and HS 8714 products to the world. However, as shown in Figure 4, it can be said that the impact of JIEPA on Indonesia's export of HS 8704 products to the world has become weak.
- (3) In general, it can be said that JIEPA has a significant impact on Indonesia's export to Japan in automotive and automotive parts industries. As shown in Table 10, the impact of JIEPA on Indonesia's export of HS 8703, HS 8704, and HS 8711 products to Japan is significant, but has been weaker in the last few years. However, it can be said that the impact of JIEPA on Indonesia's export of HS 8708 and HS 8714 products to Japan is not so strong.
- (4) In general, it can be said that JIEPA has a significant impact on Indonesia's export to the 5 major ASEAN countries, which are Malaysia, Philippines, Singapore, Thailand, and Vietnam, in the automotive and automotive parts industries. Exceptions are described below.
 - The impact of JIEPA on Indonesia's export of HS 8708 products to Malaysia is not significant.
 - The impact of JIEPA on Indonesia's export of HS 8704 and HS 8714 products to Singapore is temporal. Furthermore, JIEPA shows no impact on Indonesia's export of HS 8708 products to Singapore.
 - The impact of JIEPA on Indonesia's export of HS 8703 and HS 8704 products to Thailand is temporal. Furthermore, JIEPA shows no impact on Indonesia's export of HS 8714 products to Thailand.
 - The impact of JIEPA on Indonesia's export of HS 8714 products to Viet Nam is

temporal.

3.4 Limitations and Further Studies

The scope of this paper is very limited. It is not intended to examine the impact of Japan's direct investment on Indonesia's export in automotive and automotive parts industries. This paper only examines the impact of JIEPA on Japan's direct investment in Indonesia and Indonesia's export to Japan and other major ASEAN countries in automotive and automotive parts industries based on the available statistical data. Furthermore, this study does not consider any other factors that may influence the increase and the decrease of Japan's direct investment in Indonesia and Indonesia's export values in automotive and automotive parts industries

Several research efforts should take place in the future, as described below:

- (5) The study on the utilization Japan's EPA with ASEAN countries by the Japanese manufacturers in automotive and automotive parts industries.
- (6) The impact of JIEPA on Japan's direct investment in various industries in Indonesia.
- (7) The impact of Japan's direct investment in various industries in Indonesia on human resource development and employment in Indonesia.

4. Conclusion

Conclusions are summarized by the followings.

- (1) This paper describes a study that examines the impact of JIEPA on Japanese outward FDI position in Indonesia and Indonesia's export value in automotive and automotive parts industries.
- (2) By analyzing the Japanese outward FDI position in Indonesia from the end of year 2005 to the end of year 2016, it can be concluded that JIEPA has a significant impact on the Japanese outward FDI position in all industries and in the automotive and automotive parts industries. However, the impact has become weaker since year 2015.
- (3) By analyzing Indonesia's export values of HS 8703, HS 8704, HS 8708, HS 8711, and HS 8714 products to the world, Japan, and the 5 major ASEAN countries from year 2005 to year 2016, it can be concluded that in general, JIEPA has a significant impact on Indonesia's export in automotive and automotive parts industries. However, the results also show the followings.

- The impact of JIEPA on Indonesia's export of HS 8704 products to the world has become weak.
- The impact of JIEPA on Indonesia's export of HS 8703, HS 8704, and HS 8711 products to Japan has become weaker in the last few years.
- The impact of JIEPA on Indonesia's export of HS 8708 products to Japan and Malaysia, and HS 8714 products to Japan is not significant.
- The impact of JIEPA on Indonesia's export of HS 8703 products to Thailand, HS 8704 products to Singapore and Thailand, and HS 8714 products to Singapore and Viet Nam is temporal.
- JIEPA shows no impact on Indonesia's export of HS 8708 to Singapore, and HS 8714 products to Thailand.

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