Abstract

The supply chain of the remanufacturing industry transcends borders. Some companies have international centers for remanufacturing that import cores from abroad and export remanufactured goods across the globe. For example, Caterpillar and Komatsu have established centers that remanufacture parts of heavy equipment out of domestically sourced as well as imported cores. This paper reviews the existing remanufacturing business with an emphasis on the international trade of cores and remanufactured goods. It also examines how trade regulations have become an obstacle to remanufacturing and looks at efforts made by free trade agreements to reduce these barriers. The reasons behind such trade regulations and possible scenarios for promoting internationally efficient remanufacturing activities are also discussed.

1. Introduction

The key to running a successful remanufacturing business is to ensure you have a reliable supply of cores and a market. Section 2 shows some examples of international trade related to cores and remanufactured goods. Section 3 explains the trade restrictions on cores and remanufactured goods. The trade statistics on retreaded and used tires as well as the reasons behind the regulations are also shown and explained. Section 4 outlines a scenario of future trade regulations on cores and remanufactured goods, based on the relation between economic development and trade regulations in the APEC region.

Nomenclature/ Abbreviations

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<tr>
<td>APEC</td>
<td>Asia-Pacific Economic Cooperation</td>
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<td>PNG</td>
<td>Papua New Guinea</td>
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<td>USAID</td>
<td>United States Agency for International Development</td>
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<td>WTO</td>
<td>World Trade Organization</td>
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2. Remanufacturing and International Trade

The key to running a successful remanufacturing business is to ensure you have a reliable supply of cores and a market.
in which you can sell your remanufactured goods, in addition to apply technologies to produce good quality remanufactured goods. Just like cores can be obtained from both domestic and foreign markets, remanufactured goods can be sold both domestically and internationally. There are many examples of international trade of cores and remanufactured goods.

In the Harmonized Commodity Description and Coding System for trade statistics, the only remanufactured good with a universally accepted harmonized scheduled code is retreaded tire. In 2014, 151 countries reported international trade statistics to the UN Comtrade database, all of which traded tires. Of these 151 countries, 138 imported retreaded tires and 131 imported used tires.

In 2014, the country with the highest net export of retreaded tires was Germany, with 585 thousand units. The second highest was Australia, with a net export of 394 thousand units. In total, 192 thousand tons of retreaded tires were traded worldwide. However, some of these may have been counted twice because some counties first import and then re-export. For example, Hong Kong exported 456 thousand units of retreaded tires in 2014, but 413 thousand of those units were re-exports.

In addition to all these retreaded tires, 19 million units of used tires were internationally traded in that same year. Some of these might have been cores, but trade statistics do not distinguish between cores for retreading and used tires destined for reuse.

Remanufactured automobile parts are called “rebuilt” parts. Both cores and rebuilt parts are traded internationally. PT. Shine-Indonesia Abadi, located in Bekasi, is a subsidiary of the Japanese company Shin-Etsu Denso Co., Ltd. Shine-Indonesia imports raw materials from the US, Japan, South Korea, and Germany and produces rebuilt alternators and starters. More than 90% of all rebuilt parts are exported. Guangzhou Huadu Worldwide Automatic Transmission Co., Ltd. in China rebuilds automatic transmissions. While 70% of their cores are imported, 30% are sourced domestically. The rebuilt product is mainly sold in the domestic market.

Parts used in heavy equipment are also remanufactured internationally. Caterpillar operates several remanufacturing centers in the US, Europe, and Asia that import cores and export remanufactured parts. Komatsu has 11 remanufacturing plants, two of which, in Indonesia and Chile, are internationally oriented centers for remanufacturing.

Some types of electrical and electronic equipment are also remanufactured. PT Intech Agnugrah Indonesia import used useable liquid crystal display (LCD) from Japan and other countries. The company dismantles LCDs, cleans up display and remanufactures LCDs with new printed circuit board and casing. The new LCDs are exported to India and other countries. Fuji Xerox has an international recycling and remanufacturing facility in Thailand. The factory imports used toner cartridges, dismantle them, and remanufacture toner cartridges.

Some other internationally traded products that often contain cores and/or remanufactured parts are airplanes, computers, and medical devices.

3. Trade Restrictions on Cores and Remanufactured Goods

Trade restrictions on new and remanufactured goods have been discussed by the international community since Brazil introduced an import ban on retreaded tires. In 2005, the European Union (EU) brought the case to the WTO’s dispute panel. The EU exported retreaded tires to Brazil, but Brazil insisted that they were a health hazard as they increased waste and contributed to the spread of malaria. The WTO’s dispute panels, however, did not support Brazil’s import ban on retreaded tires. The ban was regarded as an arbitrary measure because Brazil did allow the import of secondhand tires. Therefore, Brazil now also prohibits the import of secondhand tires in order to continue its import ban on retreaded tires.

This Brazilian case is an example of intentional restriction on the import of remanufactured goods. However, most import restrictions on raw materials and remanufactured goods are unintentional. In many developing countries, remanufactured goods are not well recognized. For instance, trade restrictions on scrap or secondhand goods may also apply to cores. In addition, trade restrictions on secondhand goods may also apply to remanufactured products. Most countries do not distinguish between remanufactured and secondhand goods. Therefore, unintentional trade restrictions on cores and remanufactured goods exist. Such trade restrictions affect the location of remanufacturing businesses and the demand for remanufactured goods.

Regarding electrical and electronic equipment, Conference of Parties of the Basel Convention adopted “the technical guidelines on transboundary movements of electrical and electronic waste and used electrical and electronic equipment, in particular regarding the distinction between waste and non waste under the Basel Convention”. Table 1 shows the list of countries that only imported either used or retreaded tires, or neither, in 2014. 13 countries did not import retreaded tires, 19 countries, including Indonesia, did not import used tires and 7 countries did not import either of them.
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