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The Regional Nature of the World's Automotive Sector

by

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Abstract

There are 29 automotive firms in the world’s largest 500 firms. Yet none of these are “global” firms, defined as having at least 20 per cent of their sales in each of the three regions of the broad “triad” of the E.U., North America and Asia. Indeed 23 of the 29 auto and auto parts firms are home-region based, with an average of 60.6 per cent of their sales as intra-regional. These are representative firms across the 500, as the average intra-regional sales for all manufacturing firms is 61.8 per cent. These are a few special cases, especially Toyota and Nissan of firms being active in two regions of the triad. DaimlerChrysler and Honda are “host-region oriented”. Seven cases are discussed in some detail to explore the reasons for the lack of globalization in the world automotive business.

Key words: regional; intra-regional; automotive; globalization

Introduction

In a previous article in this journal, it has been demonstrated that globalization is a myth, Rugman and Hodgetts (2001). Business leaders cannot simply assume that world markets are fully integrated and that consumer demand is becoming homogenized. Nor is there a trend towards global economic integration. Instead, the data indicate that world markets are divided into three large “triad” blocks. The great majority of world trade, foreign direct investment (FDI), and sales by large firms takes place within these triad blocks, rather than between them. Further, there is evidence that such intra-regional trade, FDI and corporate sales are all increasing. The growth of these regional blocks should not be mistaken for globalization as entry to other regions of the triad is a difficult journey for most firms. Indeed, in another article in this journal, it was shown that only one of the 49 retail firms in the world’s 500 largest firms was global (LVMH) whereas most were heavily dependent for sales on their home region, Rugman and Girod (2003). The world’s largest firm, Wal-Mart, has 94 per cent of its sales in North America, while Carrefour has 81.3 per cent in Europe and Itochu has 100 per cent in Asia.

Recently the latter work has been extended to investigate the global or regional activities of the entire set of the world’s 500 largest firms. These firms account for 90 per cent of the world’s stock of FDI and nearly half the world’s trade, Rugman (2000). From this work it has been demonstrated that the vast majority of international business activity by the 500 firms is conducted on a regional basis, rather than globally, Rugman and Brain (2003), Rugman and Verbeke (2004), Rugman (2004). The large regional “triad” markets of the European Union (EU), the United States (or, more broadly, NAFTA) and Japan (or, more broadly, all of Asia) also account for most of the sales of the world’s largest automobile companies. For 380 of the world’s 500 largest companies, data on their geographic sales in the "broad" triad regions of Europe, North America and Asia (including Oceania) is available. Of these 380, 180 are manufacturing MNEs, see Table 1. The motor vehicle and parts industry accounts for 29 of these manufacturing MNEs.

Table 1 here

In this paper, we focus on the regional sales and localized production of the 29 large auto firms. We develop a table with the regional sales of these 29 firms. We find that none are global, only four are bi-regional, and the vast majority are home-region oriented. We then examine the reasons for such home-region sales including some discussion of the localized production clustering of auto and auto parts makers within each of the regions of the triad. We discuss the possible barriers to global expansion in this sector. Finally, we report in detail on the regional strategies and organizational structures of five leading auto firms. We find that the auto industry is not global, but very regional in its activities.

A Regional Automotive Industry

In previous papers, a revenue-based classification for firms' regional scope was developed, Rugman and Brain (2003), Rugman and Verbeke (2004). Global firms were defined as deriving over 20 per cent of their sales from each region of the broad triad, but less than 50 per cent in any one region. Bi-regional firms were defined as deriving over 20 per cent of their sales from two regions of the triad, including their own, but less than 50 per cent in the region in which they are headquartered. Host-region firms are defined as deriving over 50 per cent of their sales from a region other than their own. Home-region oriented firms, derived over 50 per cent of their sales from the region in which they are headquartered.

If we begin by examining the 'Transnationality Index' (TNI) published in the World Investment Report (UNCTAD) (2003) we find that all but two auto firms (Honda and Volvo) are actually less transnational than the average (59.4 per cent) for the top 100 non-financial transnational corporations (Table 2). This widely-cited measure of transnationality is based on comparing the foreign to total (F/T) ratios of three measures: sales, employment and assets. So it focuses on the country-level (F/T) dependence of a firm.

Table 2 here

If we then examine the regional dependence of these firms we find, as shown in Table 3, that none of the 29 automotive MNEs in the largest 500 are global; in fact, 23 are classified as "home-region oriented", with a majority of their sales in their home region of the triad. This includes Volvo which, despite its high TNI indicating a lack of home *country* orientation, is heavily dependent on the European region. Two automakers and two parts makers are bi-regional, with over 20 per cent of their sales in two parts of the triad and less than 50 per cent in any region.

DaimlerChrysler and Honda derive more than 50 per cent of their revenue from a host region and are labeled "host-region oriented." The weighted average of intra-regional sales in the automotive sector is 60.6 per cent, just below the manufacturing sector's average of 61.8 per cent.

Table 3 here

The automotive sector is concentrated in the three triad regions of the United States (North America), Europe and Japan (Asia). In each of these regions, domestic producers are significantly more competitive than foreign producers. General Motors, Ford and the Chrysler Group of DaimlerChrysler (a U.S. company prior to the merger with Daimler Benz) each have 28.3 per cent, 21.1 per cent, and 12.9 per cent of the U.S. market for motor vehicles. Together, the largest three domestic automakers in the United States have 62.3 per cent of the U.S. market. Imports account for approximately 15 per cent of the United States market and do not include locally-made Japanese brands, Morris (2001).

In general, the European market is more fragmented than the North American market. In 2002, Renault had 11.3 per cent of the European market for passenger cars and light commercial vehicles. Volkswagen and Opel (a GM subsidiary) followed with 10 per cent and 9 per cent of this market respectively. The five largest European brands, Renault, Volkswagen, Peugeot, Fiat and Citroen, accounted for 43.6 per cent of the European market. Ford, the fourth largest competitor in Europe, had 8.9 per cent of the market. Japanese and South Korean firms accounted for approximately 12.2 per cent and 3.1 per cent respectively.

The Japanese market is the most consolidated of all triad markets. Toyota alone has 38.3 per cent of the automobile market, Henderson (2003). Honda, the second largest Japanese automaker, accounts for 15.6 per cent. Together, Honda, Toyota, Renault-Nissan and Suzuki-Maruti, the four largest Japanese automakers, have 78.4 per cent of the Japanese market. Ford, which acquired domestic Mazda, accounts for 5 per cent. General Motors, the U.S. leader and the world's largest car manufacturer, has a mere 0.4 per cent of this market. VW, the European leader, has 1.2 per cent. Imports are a mere 4.5 per cent of the Japanese market and include imports by Japanese companies manufacturing abroad.

Excluding Japan, Toyota is the market leader in two of the six largest countries in Asia-Pacific: Malaysia and Thailand. South Korea is dominated by Hyundai, which controls 72.9 per cent of that market. Suzuki-Maruti is the leader in India, with 36.8 per cent market share. Indeed, only Australia and China have Western-based market leaders. In Australia, GM controls 22 per cent of the market, followed closely by Japan, which holds 20.6 per cent of the market. Including Japan, the top six Asian automakers control 69.5 per cent of the Asian market. This includes Renault-Nissan (8.1 per cent) and Ford-Mazda (4.4 per cent), Japanese companies in which Western firms have a dominant share, Henderson (2003).

Although the majority of the market in each of the three triad regions is controlled by home-region oriented companies, foreign companies continue to play a major role in each region. For example, Ford holds 10.9 per cent of the European market and is the fourth largest competitor. A number of foreign companies attained a competitive position by acquiring the operations of a local producer, such as GM's Opel subsidiary and others, through organic growth in foreign markets, such as Toyota and Honda in North America.

These findings counter a number of popular myths about the 'archetypal global industry', many dating from the 1980s and early 1990s which saw the global expansion of Japanese firms in the industry. Common views included: that a global car and a global car firm would soon evolve; that all production would shift to cheap labour regions leaving 'hollow corporations' in the United States and Europe, Jonas (1986), and; that sales by incumbents in the largest markets would be overtaken by more competitive foreign rivals. Both solid research, such as Womack, Jones and Roos (1991) and more sensationalist books, Maynard (2003) supported these views each of which had significant strategic implications for management in the automotive business. We find that such global car industry predictions have not come to pass for the key reason that the industry operates regionally, not globally.

Barriers to Global Expansion in the Automotive Industry

The auto industry operates largely in "clusters" of localized activity within each major triad region, as discussed in Rugman and D'Cruz (2000). There are networks of key supplies, other suppliers, key distributors, other partners, and the OEMs assemble cars from imports of literally thousands of suppliers, all location bound. This is why of the 55 million vehicles produced each year over 90 per cent are sold where they are made, McKinsey Quarterly (2003).

Auto firms are also strongly embedded in a range of other downstream activities and after-sales markets including financing (such as Ford Credit), insurance, maintenance and repairs (like Ford's Kwik-Fit operations), parts and accessories and emergency rescue services (such Ford's Rescu). These represent a substantial proportion of total revenues for the larger firms and are highly regionally-specific, Ealey and Troyano-Bermudez (2003).

Another persistent barrier to a global strategy or a global car is cultural barriers across regions. European consumers prefer performance cars with good engines while in the United States large comfortable cars are the norm. Even within NAFTA, while the United States and Canada prefer automatic transmissions, most cars in Mexico have manual transmissions. In terms of customer tastes, it is impossible to market the same car across regions, and usually all of the economies of scale for a model are achieved within each major region, Hong, Roos and Wensley (2004), Grein (2001).

Another factor is fuel. Diesel continues to be popular in Europe but is being phased out in the United States because of its environmental implications. Rather than phase out the less expensive fuel, European automakers are seeking ways of making it a cleaner alternative.

Each regional market in which automakers operate has its own set of environmental regulations. In the United States, automakers must design its vehicles to conform to the Environmental Protection Agency's (EPA) regulations and the environmental regulations of individual states. Other regulations that relate to automotive design include: noise control and fuel economy. The companies' industrial processes are also heavily regulated with laws relating to water discharges, air emissions, waste management and environmental cleanup. European and Asia-Pacific markets have different environmental laws to which automaker's operations must comply. For instance, the European Union is making all carmakers financially responsible for dismantling and recycling its own vehicles.

Finally, tariffs, ranging from 2.5 per cent in the United States, 10 per cent in some European countries and 100 per cent in some developing countries, represent another significant barrier to globalization.

Each region has a particular regulatory and competitive environment in which the major world players compete for market share. Local competitors are more adept at meeting the demands of their regional markets because they possess know-how on consumer preferences, government regulations, and market trends. While foreign companies might hire local personnel, purchase local car manufacturers, and do extensive market research, companies headquartered in that region are more capable of responding to changing circumstances of their primary market.

Cases

We now discuss seven cases with their top 500 ranking in parenthesis:- General Motors (3), Volkswagen (21), Toyota (10), DaimlerChrysler (7), Honda (4), Ford (5) and Renault (125)

General Motors

The world's largest manufacturer of automobiles is General Motors (GM). In 2002, the company's revenues totaled $187 billion; GM accounted for nearly 15 per cent of the world's market for trucks and automobiles. General Motors produces and manufactures vehicles in all three triad markets. Nonetheless, 74.3 per cent of its sales originate in the United States, its home national market. Including Canada, Mexico, Puerto Rico and Caribbean markets in North America, this number rises to 82.3 per cent of total sales. On the production side, its network of North American factories—which exist partly as a result of NAFTA—accounts for 65.8 per cent of production capacity. An international company yes, but by no means a global company, see Table 4.

Table 4 here

General Motors is primarily an automotive company, but it also operates communications services businesses and has a financing and insurance arm. Its automotive business is segmented geographically: GM North America, GM Europe, GM Latin America/Africa/Mid-East, and GM Asia Pacific. Each of these regions has a set of brands it promotes. In North America, for example, these are Chevrolet, Pontiac, Saturn, etc. In Europe, GM's brands include Opel, Vauxhall and Holden, among others. The GM Daewoo and Suzuki brands are marketed throughout Asia-Pacific.

The company is most successful in the North American market, where it holds 28 per cent of the market compared to 8.7 per cent of the European market and 3.4 per cent of the Asia-Pacific market. In North America, GM has a competitive advantage in that it is already well situated in the market and has a loyal consumer base. In other regions, however, it faces competition from local automakers that know their home regions very well. In Europe, Volkswagen, BMW, and DaimlerChrysler build high performance cars. In Asia, competitors build smaller, more fuel efficient cars that cater to local preferences.

General Motors' primary market is North America, in particular the United States. It derives most of its revenue and most of its profits from its home-region operations. GM's strategy must balance the benefit of investing in foreign regions to the benefits of investing in its home-region market. Foreign markets, though potentially profitable, do not offer the consolidated GM company sufficient incentive to switch the focus of its strategy. GM has plans to expand in China, but this is a country where rival MNEs are already active and where local Chinese producers are adapt at appropriating the intellectual property of western firms. In other words, China offers potentially high returns, but has great risks.

Volkswagen

In March 1998, Germany's Volkswagen revamped its strategy in the U.S. market by introducing the New Beetle. The car's appeal stems from the 60s and 70s nostalgia for the original VW Beetle. In 2002, Volkswagen delivered over 420,000 vehicles to the United States market and accounted for approximately 10.1 per cent of the passenger car import market.

Although the Volkswagen comeback into the U.S. market has been a success, the North American market is still a minor part of the company's operations. In 2002, only 19.9 per cent of total revenues originated in North America. It is the European market that Volkswagen depends on for the vast majority of its revenue. Like GM, which concentrates in the U.S. market, VW's primary market is Europe. Its cars reflect the European taste for performance, safety and durability. Germany accounted for 27.5 per cent of total sales. Including other European countries, the intra-regional sales of VW rise to 69.3 per cent. In addition, Europe accounts for over three-fourths of all assets. This is a highly regional company, and while success in other regions is significant, the company's main strategic market continues to be its home region, see Table 5.

Table 5 here

Over the last few years, Volkswagen has increasingly relied on foreign markets for its revenue and production. Between 1993 and 2002, production outside of Germany rose from 53.3 per cent of all units to 64.5 per cent, and its foreign workforce rose from 40.7 per cent to 48.1 per cent of the total. However, many of these factories and workers are located in Eastern Europe. Similarly, unit sales in foreign markets increased from 69.1 per cent to 81.8 per cent, but a large portion of these units are actually sold in the European regional market. Units delivered to Europe accounted for 63.2 per cent of total deliveries in 2002.

Volkswagen also has a larger share of the passenger car market in its home region. The company holds 30 per cent of its domestic market and 17.9 per cent of the European market (including Germany). This is well above its market share in the other two triad regions. Although the company has had some success in developing countries, with 25.1 per cent of the Mexican market and 20.2 per cent of the South American market, its revenues from these regions account for a very small fraction of total revenues because of the small size of these economies and their automobile markets.

Toyota

In 2002, two regional markets accounted for well over 80 per cent of Toyota's revenues: Asia (with Japan at 45 per cent of revenues) and North America, at 38.8 per cent of revenues. Europe was only at 8.8 per cent of revenues. In terms of units sold, the geographic distribution is similar: Asia and Oceania account for 46.2 per cent of unit sales (Japan at 38 per cent); North America for 30.8 per cent; and Europe for 15 per cent. Thus, in terms of revenue and units sold, Toyota is a bi-regional company. Market share shows a slightly different picture. Toyota holds approximately 40 per cent of the Japanese market but only 10 per cent of the North American market. Moreover, production is not as dispersed around the world; 75.9 per cent of all Toyota cars are still produced in Japan. Only 14.9 per cent are produced in North America. Other regions account for less than 10 per cent of production.

Table 6 here

Over the last 10 years, Toyota's intra-regional percentage of sales has decreased from 57.1 per cent to 46.2 per cent. One major reason for this is the Japanese market itself, where sales decreased from 48.4 per cent of total revenues in 1993 to 38.3 per cent in 2002. In contrast, North America, European, and non-triad sales have steadily increased in importance. In 1993, Toyota derived 25.4 per cent of its sales from North America. This rose to 30.8 per cent in 2002; EU restrictions on imports of Japanese cars were one reason why Toyota historically has been unable to be successful in the European market. European sales accounted for a mere 9.9 per cent of total sales in 1993, but by 2002 Toyota almost doubled the number of units sold so that, in this year, the region accounted for 15 per cent of total sales. This is partly a result of more local production but also of Toyota learning to cater to the European market.

Table 7

The Asian economies have been in a slump since the 1990s, and Europe has been growing slowly. This is why the North American market is very important for all Japanese manufacturers. Japanese carmakers began to manufacture in the United States, the largest North American national market, in the 1980s to protect themselves from import restrictions. North America is Toyota's second largest regional market in terms of revenues. It is also highly profitable. In 2002, one-fourth of Toyota's profits originated in this region.

Toyota manufactures locally over two-thirds of the cars it sells in the United States. The company's Canadian plant also serves this regional market, and a Mexican plant in Tijuana is expected to increase local production when it opens in 2005. Local responsiveness is important. Toyota introduced its luxury models to accommodate the aging and wealthier North American baby boomers in the 1990s. Today, the company is introducing cars to target the young American customer, the demographic echo of the baby boomers. Sixty per cent of U.S. car buyers remain loyal to the brand of their first car. It is thus imperative to service this young market.

American consumers, for their part, have been responsive to the company's reputation for quality and in particular for the lower price at which Toyota's cars are sold. In fact, during economic downturns in which consumers seek more value for their money Toyota does better in the United States. The company's cars are not only less expensive, but they also consume less gasoline than American cars. The resale value is also higher for Toyota cars. One major advantage for Toyota is that it has some of the best manufacturing facilities in the world, and it combines this with excellent relationships with its suppliers. The company is so efficient that, despite the lower price of its cars, it makes an average profit of $1,000 on each car sold compared to $330 for GM.

Toyota's European operations are money losers, but the company continues to try to access this market and increase its market share from its 3.8 per cent level in 2002. To boost its image for performance in the region, the company recently began to compete in Formula One races. To protect itself from currency risk, Toyota will now produce a higher percentage of its cars within the region. That also means more local procurement. To this end, Porsche was asked to produce engines for its European models. Porsche already produces transmissions for the company. The company expects to increase its market share to 5 per cent by 2005.

Toyota is one of the most efficient companies at outsourcing production to suppliers with whom it enjoys amicable long-term, sometimes kieretsu-style relationships. If the auto industry is to become more like the electronics industry (as many believe may occur), vehicle brand owners (VBOs), such as Toyota, GM, VW, will be the equivalent of original equipment manufacturers (OEMs) in the electronics industry, such as Nokia, IBM, and Microsoft, and will concentrate on designing, engineering and marketing vehicles to be sold under their brand while others take care of manufacturing. Toyota is probably furthest along this outsourcing route than other triad automakers.

DaimlerChrysler

When German Daimler-Benz merged with U.S. Chrysler, the aim of the German company was to secure a share in the large U.S. economy-class car market. Synergies (for instance in the area of purchasing), it argued, would reduce costs across all operations. At first glance, one can argue that the merger achieved its goal. In 2002, 58.7 per cent of the company's revenues originated in North America, a trend that has remained relatively stable since 2000, see Table 8. These data define the firm as host-region oriented. The numbers can be deceiving though; soon after the merger the Chrysler group was plagued by management defections and decreasing profits.

Table 8 here

Two things help explain the troubles of this merger. The first is that these companies were producing very different products. Mercedes Benz, Daimler-Benz' brand, had a competitive edge in the luxury market. Chrysler produced popular cars for the U.S. market. Although the expensive parts of Daimler's vehicles could be used for more affordable Chrysler cars and the cheaper Chrysler parts be used on Daimler vehicles; both these moves were likely to reduce the competitive advantage on each of the markets in which the original companies operated. Chrysler cars could have become less affordable while Daimler's brand might have lost its reputation for quality. In effect, while some parts can be shared and suppliers can manufacture different products for both vehicle brands at lower prices, the benefits from the merger were limited by the different product lines of each company.

The second, and perhaps most important barrier to overcome, was the cross-cultural differences between the German and U.S. companies. From the beginning, Daimler's management dominated the merged company, which resulted in an outflow of key U.S. personnel from management positions and the designer ranks. The Germans tended to be bureaucratic while U.S. managers made decisions on the spot. Many U.S. managers left unable to deal with the imposed management style. Capable designers went to rivals General Motors and Ford. Over time, the company has improved its cultural management of the U.S. operations, and this is improving the company's overall position in the motor vehicle market.

DaimlerChrysler is undoubtedly a host-region based company, but a closer look at the organization shows, not a cohesive organization with a bi-regional market span, but two internal groups with individual global standings.. The Mercedes Car Group, the non-commercial vehicle successor to the German part of the merger, derives 63 per cent of its revenues from the European market. The Chrysler Group, on the other hand, continues to derive over 90 per cent of its revenues from the North American market.

In terms of production, the Mercedes Group has eight production locations in Europe while the Chrysler Group has none. In the NAFTA region, the Chrysler Group has 38 production locations while the Mercedes Group only has one. This reflects two separate entities each trying to capitalize on their own knowledge of its home region, not a truly bi-regional or host-region oriented company.

Honda

Toyota may be the largest Japanese automaker in the world, but in the United States, Honda competes successfully for market share. In 2002, the Honda Accord was the best-selling passenger car in the United States. Not surprisingly, given the size of the US market, the company generates over half its revenues (55.6 per cent) in North America. Its home market of Japan accounts for only 23.3 per cent of sales. European sales account for 11.2 per cent of sales while sales to non-triad regions account for the remaining 9.9 per cent. Most of the company's assets are also in its host region of North America, 53 per cent. See Table 9.

Table 9 here

This unusual dependence on the North American market is partly the result of Honda's very early market-entry into the United States in the 1950s, as well as Toyota's evolving dominance of the Japanese market. The relative spread of revenues across the triad is not only influenced by the ability of a company to penetrate a foreign market, but also by how much of the domestic market it can attain. A small car manufacturer might have better opportunities for growth, despite the liability of foreignness, in another region of the triad than in its own home region. Indeed, Toyota's share of the U.S. market is higher than Honda's, but the region is significantly more important to Honda's overall revenues than to Toyota's.

Honda's future success is expected to rely on the company's three strategic directions: to create value, "glocalization" a term the company coined to mean localized global operations and a commitment to the future. To increase value, the company relies on continued innovation. Honda's modular production methods are giving it an edge against the competition. Around the world the company is known for its smaller, less expensive, more efficient and environmentally friendly cars.

Glocalization is the company's commitment to a global supply chain that is responsive to local customers. "Made by Global Honda" has already been chosen as the expression that will represent this global supply network that will link facilities in different regions. Honda divides its business into five regional operations: its domestic market of Japan; North America, Latin America, Europe, the Middle East and Africa; and Asia and Oceania. The Japanese market is expected to be served through imports from China, Thailand, Malaysia and Indonesia. To maintain its local responsiveness, the company has R&D facilities in each of the triad markets.

Ford and the Premier Auto Group (PAG)

Before it bought into Mazda and took over the four European auto manufacturers that make up its Premier Brands Group (PAG) Ford had already developed a relatively strong presence in Europe. In contrast to General Motor's mode of internationalization through

M&A it had expanded organically through the development of local sales, distribution and manufacturing activities around the world. In Europe it began with a plant in Manchester, England in 1911 before moving to the Dagenham site near London in 1932. Three-quarters of Ford's overseas production is now located in Europe, with plants in Germany, Spain, the UK and Belgium, Dicken (2003). Yet, including Brazil around 50 per cent of total production still takes place in the Americas, primarily in the U.S., Mexico and Canada.

This distribution reflects the regional sales mix of Ford's core brand, listed in Table 10, with 62 per cent sales in North America, 29 per cent in Europe and a weak 5 per cent showing in the Asia-Pacific region. Ford's historically weak position in Asia spurred it to establish an alliance with Mazda. This began with a series of joint ventures leading to Ford's initial 25 per cent stake in Mazda in 1979 increased to 33.4 per cent in 1996. The alliance has probably succeeded in boosting Mazda's sales in the U.S market, more than Ford's showing in Japan and Asia.

Table 10 here

The series of alliances and takeovers that led to the creation of the PAG were driven partly by the considerable drop in Ford's market share in Europe from 1994 to 1999, from almost 12 per cent to just over 9 per cent. A broad range of restructurings at the end of the 1990s and earlier this decade were initiated by then CEO Jacques Nasser who stepped in to refocus on the central Ford brand operations and marketing. In 1999, Ford bought Volvo for $6.45 billion, the largest of the PAG companies, adding to Jaguar (bought in 1989), Aston Martin and Land Rover.

On the face of it the overall Ford Group, combining the core brands group and the European-centered PAG, appears to be one of the more global of the largest auto firms. It is, however, still heavily regional and primarily U.S.-oriented. The relative lack of integration between the group companies, particularly when compared to the more recent Renault-Nissan alliance described below, further underlines its regional structure. Although Volvo, the largest of the four PAG firms, is listed as a 'Center of Excellence for Safety' within the Ford Group and a 'Center of Excellence for Telematics' within the PAG, this simply means its research and product development in these areas are monitored by other group companies. Volvo is headquartered in Gothenburg. Its major plants are in Sweden, Belgium and the Netherlands (operated by Nedcar), where it made 398,631 vehicles in 2002 (plus assembly units in South Africa, Thailand and Malaysia). It has a Swedish President and CEO and a very Swedish/North European organizational structure and culture.

The need to clearly differentiate and segment the individual brands is one major factor underlying the structural separation and cultural distinctiveness of the group companies in Ford. As discussed above, customizing auto designs and marketing campaigns to regional and even national markets is still a central part of the business.

Renault and Nissan

The Renault-Nissan alliance, currently heralded as one of the most successful in the business, represents the combination of two very different organizations, structurally and culturally. Renault is a strongly home-region oriented firm and is heavily dependent on its home economy, France. Alone it is relatively small holding just 4.2 per cent of the global market, but it vies with Volkswagen for European market leadership and held 10.7 of this market in 2002. Nissan is one of the unusual bi-regional auto firms, with strong sales in the United States and a relatively good market position in countries outside the triad regions.

Together Renault and Nissan account for 9.1 per cent of global auto sales, placing them jointly amongst the top 5 companies. Table 11 shows the individual and combined sales of both firms. These are similar-sized firms with very different geographic footprints that complement each other well.

Table 11 here

A similar pattern of differentiation is true for production. Nissan manufactures just over half of its vehicles in Japan with most of the rest spread fairly evenly between the United States, Mexico and the UK. It has industrial operations in 19 countries, including manufacturing sites in Taiwan, South Africa, Thailand, Philippines and Indonesia. Renault manufactures in 17 countries but makes over 55 per cent of its vehicles in France and most of the rest in Europe.

The alliance began in March 1999 with Renault taking a 36.8 per cent stake in Nissan; this is now increased to 44.4 per cent with Nissan having a reciprocal 15 per cent stake in Renault. The alliance has deepened following the far-reaching changes put in place by Carlos Ghosn, installed as President and CEO of Nissan and now revered for having engineered a radical turnaround in the firm's fortunes. It is now much broader and deeper than the auto sector alliances described above. Driven by an alliance board, chaired by the CEO of Renault, the two firms have developed: shared production facilities in Mexico, Brazil and Spain; common engineering platforms for entry-level B segment and mid-level C segment vehicles; common power train parts and increased sharing of engines and transmissions, and; increasingly integrated IT, information and communications systems.

Renault’s competencies in marketing, design and financing complement Nissan’s capabilities in engineering and manufacturing processes. Synergies are enhanced through the exchange of personnel. About 50 employees from Renault have joined departments such as supplier relations, product strategy, sales and marketing, and finance in Nissan. Similarly, around 50 Nissan employees work in the areas of quality control, vehicle engineering, manufacturing and power train in Renault. Beyond this, 250 executives from both firms are assigned to the permanent alliance structures, including cross-company teams and functional task teams and a further 250 Nissan employees are part of the restructured European sales and marketing divisions of Renault.

Nissan is one of the 8 passenger-car companies that have manufacturing operations in the centre-north *maquiladoras* region of Mexico, alongside GM, Ford, Chrysler and VW. Because Nissan had established these plants prior to the finalization of NAFTA they are considered to be within the agreement, with the right to privileged access to the export markets of the United States and Canada. Renault is therefore now in a position to use its Nissan alliance to make Mexico an export platform into these large markets.

Conclusions

The world's automobile sector has no companies producing globally. Instead, most production occurs in sub-regional clusters within the broad triad economies of the EU, North America, and Asia. GM is a very home-region oriented firm, as is VW. DaimlerChrysler is a host-oriented regional firm. Only Toyota and Honda are "biregionals", able to create significant sales presence in the host region United States, as well as in their home-region market of Japan and Asia. There is no evidence of a global car; just regional production as well as intra-regional sales. It's a regional world, not a global one.

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Table 1: The Top 500 MNEs,

	Industry Category	No of Firms in the Fortune 500	No. of Firms in the RNGMA	% of total
	Manufacturing	206	180	87.4
1	Aerospace and Defense	11	11	100.0
2	Chemicals and Pharmaceuticals	19	18	94.7
3	Computer, Office & Electronics	39	36	92.3
4	Construction, Building Materials and Glass	12	11	91.7
5	Energy, Petroleum & Refining	43	31	72.1
6	Food, Drug & Tobacco	18	14	77.8
7	Motor Vehicle and Parts	31	29	93.5
8	Other Manufacturing	13	13	100.0
9	Natural Resource Manufacturing	20	17	85.0
	Services	294	200	68.0
1	Banks	62	40	64.5
2	Entertainment, Printing & Publishing	9	9	100.0
3	Merchandisers	77	63	81.8
4	Other Financial Services	58	27	46.6
5	Other Services	25	21	84.0
6	Telecommunications & Utilities	43	27	62.8
7	Transportation Services	20	13	65.0
	Total	500	380	76.0

Data are for 2001 and are re-calculated from the annual reports of the world's top 500 firms.
Source: The Regional Nature of Global Multinational Activity, 2003. Indiana University CIBER,
http://www.kelley.indiana.edu/CIBER

Table 2: The Transnationality of The Major Global Auto Firms

Firm	Rank*	TNI**
Volvo	65	74.6
Honda	19	62.8
Toyota	12	59.3
Volkswagen	15	57.4
BMW	27	54.4
Fiat	13	51.5
Nissan	37	45.6
Renault	70	43.5
Ford	7	38.4
General Motors	8	29.8
Mitsubishi	64	28.5
DaimlerChrysler	35	22.1

* Rank in the WIR list of the 100 largest non-financial transnational corporations in terms of size of foreign assets

** The WIR's Transnationality Index (TNI) is calculated as the average of the following three ratios: foreign assets to total assets, foreign sales to total sales and foreign employment to total employment.

Source: UNCTAD's World Investment Report (WIR) 2003 (giving data for 2001).

Table 3: The Regional Nature of the Motor Vehicles & Parts Industries

	500 Rank	Company	Region	Revenues in bn US$	F/T Sales	per cent intra regional	North America per cent of total sales		Europe per cent of total sales	Asia-Pacific per cent of tota sales
Bi-regional										
1	10	Toyota Motor	Asia-Pacific	120.8	50.8	49.2	36.6		7.7	49.
2	58	Nissan Motor	Asia-Pacific	49.6	50.3	49.7	34.6		11.0	49.
3	285	Bridgestone	Asia-Pacific	17.6	61.2	38.8	43.0	l	10.1	38.
4	342	Michelin	Europe	14.6	na	47.0	40.0		47.0	n
Host-region oriented										
1	7	DaimlerChrysler	Europe	136.9	na	29.9	60.1		29.9	n
2	41	Honda Motor	Asia-Pacific	58.9	73.1	26.9	53.9		8.1	26.
Home-region oriented										
1	3	General Motors	North America	177.3	25.5	81.1	81.1		14.6	n
2	5	Ford Motor	North America	162.4	33.3	66.7	66.7	z	21.9	n
3	21	Volkswagen	Europe	79.3	72.3	68.2	20.1		68.2	5.
4	49	Fiat	Europe	51.9	65.6	73.3	13.0		73.3	n
5	112	BMW	Europe	34.4	73.4	57.3	31.7	l	57.3	n
6	125	Renault	Europe	32.6	60.8	89.1	na		89.1	n
7	133	Hyundai Motor	Asia-Pacific	30.9	20.9	81.6	18.1		0.3	81.
8	166	Delphi	North America	26.1	na	77.7	77.7		18.4	n
9	171	Mitsubishi Motors	Asia-Pacific	25.6	40.9	62.8	22.1		12.1	62.
10	252	Denso	Asia-Pacific	19.2	32.4	73.1	20.0	l	6.8	73.
11	264	Johnson Controls	North America	18.4	na	62.9	62.9		25.6	n
12	267	Volvo	Europe	18.3	na	51.6	30.2		51.6	6.
13	278	Visteon	North America	17.8	29.0	71.0	71.0	z	15.6	n
14	296	Mazda Motor	Asia-Pacific	16.8	34.3	65.7	24.4		7.0	65.
15	306	TRW	North America	16.4	40.7	59.3	59.3	z	na	n
16	343	Man Group	Europe	14.6	72.6	68.7	15.6		68.7	12.
17	352	Goodyear Tire & Rubber (q)	North America	14.1	45.9	54.1	54.1	z	na	n
18	369	Lear	North America	13.6	51.4	58.2	58.2		31.6	n
19	381	Suzuki Motor	Asia-Pacific	13.3	31.6	68.4	13.3		14.9	68.
20	404	Isuzu Motors	Asia	12.8	30.8	69.2	39.6		na	69.
21	456	Magna International	North America	11.0	67.2	67.7	67.7		31.4	n
22	462	Fuji Heavy Industries	Asia	10.9	34.0	66.0	33.7		na	66.
23	484	Dana	North America	10.5	na	74.8	74.8		17.4	3.
Weighted Average*				42.3		60.6				
Total				1,226.5						

Notes: Data are for 2001; q. Goodyear Tire & Rubber: Based on the location of the selling subsidiary (i.e. exports are not included). z. U.S. only; l. Americas; j. refers to Japan only. * Weighted intra-regional sales average is weighted according to revenues.

Table 4: Regional Sales of General Motors

Country	Sales units (000)	Sales units (%)	Sales $ (%)	Assets (%)	Production Capacity (000)	Capacity (%)
United States	4,859	57.0	74.3	70.9	4,839	51.3
North America	5,623	66.0	82.3	80.5	6,213	65.8
Other Americas	635	7.4	2.5	1.5	794	8.4
Total Americas	6,258	73.4	84.8	82.0	7,007	74.2
Europe	1,662	19.5	14.2	14.7	2,123	22.5
Asia-Pacific	605	7.1	na	na	311	3.3
Other	na	na	1.0	3.3	na	na
Total	8,525	100.0	100.0	100.0	9,441	100.0

Source: Adapted from General Motors, Annual Report, 2002
Note: Data are for 2002

Table 5: Regional Sales of Volkswagen

Country	Delivered Units (000)	Delivered Units* (%)	Sales $ (%)	Assets (%)
Germany	940	18.9	27.5	50.0
Rest of Europe	2,210	44.3	41.8	28.7
Total Europe	3,150	63.2	69.3	78.6
North America	663	13.3	19.9	16.4
South America	421	8.5	3.8	2.9
Africa	na	na	1.1	0.3
Asia/Oceania	621	12.5	5.9	1.8
Other	128.9	2.6	1.1	0.3
Total	4,984	100.0	100.0	100.0

Source: Adapted from Volkswagen, Annual Report, 2002
* Delivered Units include unsold inventory
Note: Data are for 2002

Table 6: Toyota's Regional Sales, Assets, and Production

Country	Sales units	Sales units (%)	Sales $ (%)	Assets (%)	Production (000) units	Production (%)
Japan	2,217	38.3	45.0	52.8	4,029	75.9
Asia-Pacific	2,675	46.2	NA	NA	NA	NA
North America	1,780	30.8	38.8	35.8	793	14.9
Europe	866	15.0	8.8	6.7	258	4.9
Other	463	8.0	7.4	4.7	225	4.2
Total	5,785	100.0	100.0	100.0	5,306	100.0

Note: Data are for 2002
Source: Toyota, *Annual Report*, 2002
Notes: Production per cent is calculated using units
Unit Sales shows percentage of units sold in each region
Sales $ shows percentage of revenues generated in each region
Asia-Pacific includes Japan

Table 7: Toyota is Regional, Sales 1993-2002

Year	Total	Japan	Asia-Pacific	North America	Europe	Other
			units sold			
1993	4,466,218	2,159,474	2,548,736	1,134,006	442,291	341,185
1994	4,130,846	2,010,130	2,372,598	1,105,447	384,249	268,552
1995	3,260,670	1,560,970	1,857,920	911,578	288,065	203,107
1996	4,148,641	2,058,457	2,422,167	1,117,248	360,003	249,223
1997	4,559,515	2,216,072	2,659,759	1,201,309	415,580	282,867
1998	4,456,344	1,907,059	2,300,369	1,293,121	500,668	362,186
1999	4,695,147	1,929,279	2,244,982	1,485,095	557,506	407,564
2000	5,182,774	2,177,524	2,517,465	1,689,483	633,879	341,947
2001	5,526,863	2,322,838	2,726,131	1,733,569	691,135	376,028
2002	5,784,917	2,217,002	2,675,493	1,780,133	866,351	462,940
			% of units sold			
1993	100.0	48.4	57.1	25.4	9.9	7.6
1994	100.0	48.7	57.4	26.8	9.3	6.5
1995	100.0	47.9	57.0	28.0	8.8	6.2
1996	100.0	49.6	58.4	26.9	8.7	6.0
1997	100.0	48.6	58.3	26.3	9.1	6.2
1998	100.0	42.8	51.6	29.0	11.2	8.1
1999	100.0	41.1	47.8	31.6	11.9	8.7
2000	100.0	42.0	48.6	32.6	12.2	6.6
2001	100.0	42.0	49.3	31.4	12.5	6.8
2002	100.0	38.3	46.2	30.8	15.0	8.0

Source: Adapted from Toyota, *Annual Report, 2002*

Note: 1995 is calculated using 9 months instead of 12.

Table 8: Daimler Chrysler Revenues

Country/Region	2002	2001	2000
(in percentages of total)			
European Union	31.1	29.9	31.0
of which Germany	15.5	15.9	16.0
North America	58.7	60.1	59.1
of which United States	51.9	53.1	52.0
Other markets	10.2	10.0	9.9
Total Revenues	100.0	100.0	100.0

Source: DaimlerChrysler, Key Figures, 2002

Table 9: Regional Sales and Assets of Honda

Country	Sales $ (per cent)	Assets (per cent)
Japan	23.3	31.4
North America	55.6	53.0
Europe	11.2	7.4
Other	9.9	8.2
Total	100.0	100.0

Source: Adapted from Honda, *Annual Report*, 2003
Note: Data are for 2002

Table 10: Ford and its Brands (2002)

	AUTOMOTIVE CORE BRANDS			
Primary Brands	Ford	LINCOLN	MERCURY	mazda
Dealers	13,000	1,561	2,141	6,131
Markets	137	38	15	145
Competitors	DaimlerChrysler, Fiat, GM, Honda, Nissan, Toyota, VW, Hyundai/Kia	DaimlerChrysler, GM, Honda, Nissan, Toyota, BMW	DaimlerChrysler, GM, Honda, Nissan, Toyota, VW	Toyota, Nissan, Honda, Mitsubishi, GM, DaimlerChrysler, VW
Vehicle retail sales	5,457,445	159,651	274,875	964,800
...% of total	74%	2%	4%	13%
Sales mix	62% N.America 29% Europe 5% Asia-Pacific 3% S.America 1% Rest-of-World	98% N.America 2% Rest-of-World	98% N.America 2% Rest-of-World	39% Asia-Pacific 36% N.America 20% Europe 5% Rest-of-World

	PREMIER AUTOMOTIVE GROUP (PAG)			
Primary Brands	ASTON MARTIN	JAGUAR	VOLVO	LAND-ROVER
Dealers	100	787	2,500	1,808
Markets	25	66	100	142
Competitors	Lamborghini, Ferrari, Porsche	DaimlerChrysler (Mercedes), BMW, Toyota (Lexus), Porsche	BMW, Mercedes-Benz, Audi, Lexus	Toyota, Nissan, GM, DaimlerChrysler, BMW
Vehicle retail sales	1,551	130,330	406,695	174,593
...% of total	0%	2%	5%	2%
Sales mix	30% N.America 30% Europe 30% UK 10% Rest-of-World	50% N.America 41% Europe 7% Asia-Pacific 2% Rest-of-World	60% Europe 30% N.America 10% Rest-of-World	61% Europe 25% N.America 14% Rest-of-World

Source: Corporate Annual Reports

Table 11: The Global Distribution of Renault and Nissan Sales (2002)

Region	Renault		Nissan		Combined Sales	
France	763,612	32%	35,800	1%	799,412	16%
Germany	227,182	9%	64,269	2%	291,451	6%
UK	215,343	9%	106,583	4%	321,926	6%
Spain	202,186	8%	56,523	2%	258,709	5%
Italy	182,352	8%	59,616	2%	241,968	5%
Western Europe	1,869,251	78%	432,017	16%	2,301,268	45%
North America	NA	NA	804,186	29%	804,186	16%
Japan	2,414	0%	773,726	28%	776,140	15%
Other	532,310	22%	725,601	27%	1,257,911	24%
World Total	2,403,975	100%	2,735,530	100%	5,139,505	100%

Source: Corporate Annual Reports

Short Bios

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