

# **Voluntary Export Restraints between Britain and Japan: The Case of the UK Car Market (1971-2001)**

James T. Walker

Henley Business School at the University of Reading, Department of Management and Centre for International Business History, University of Reading Business School, PO Box 218, Whiteknights, Reading, Berks, RG6 6AA;  
email: [j.t.walker@henley.reading.ac.uk](mailto:j.t.walker@henley.reading.ac.uk)

The rise in international markets of new productive Japanese producers provoked an intense world competition which created serious doubts on the economic sustainability of an industry mostly dominated until that decade by European and North-American multinational companies. Ultimately, indeed this crisis provoked a deep transformation of the industry whose consequences had permanent impact on European companies in this sector. American and later European manufactures were successful in lobby governments to provide protection. Using a rich source of data form the UK I show that the ‘new trade policy’, voluntary export restraint (VER), placed on Japanese exports of new cars from 1977 to December 1999 was binding. This case study illustrated the strategies used Japanese manufacturers to gain access European market through the UK market via strategic alliances and later through transplant production which Continental European nation states were unable fully insulate themselves against. It is also shown that the policy had a profound effect on the nature of Japanese products as Japanese firms responded to the quantity restraints by radically altering the product characteristics of their autos and the shifting towards larger auto and new goods to maximise their profits subject to a binding constraint.

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## 1. Introduction

The rise of “new trade protectionism” is commonly seen as arising from the constrained ability of governments to use traditional tariff barriers under the General Agreement on Tariffs and Trade.<sup>1</sup> In Britain’s case, the effects of multilateral trade liberalisation were accelerated by its accession into the European Economic Community in 1973. Integration with the EEC led to a sharp rise in import penetration in the UK car market by European producers from 21.6% in 1971 to 34.1% by 1980. In addition to the expanding share of European car manufacturers in the market, there was a sharp rise in Japanese imports, mirroring a global expansionary export trend by Japanese manufacturers.<sup>2</sup> As will be detailed below, the Japanese expansion was considered a threat to Britain’s domestic car industry, which was already struggling under the increased competition within its core domestic market. The government’s interest in the fate of the ailing motor industry received a new impetus in 1975 when Britain’s last mass car manufacturer, British Leyland, was nationalised. The government thus took on the role of rescuing arm that came to symbolise Britain’s industrial decline [Broadberry (2004)]. While the UK government could do little to stem the inflow of fellow EEC members’ cars, it was capable of influencing Japanese car imports. Japanese industry representatives advocated a voluntary reduction in exports to the UK under Voluntary Export Restraints (VERs) with negotiations commencing in 1975. Those agreements were implemented in 1977 and, although they were initially negotiated for a five year period, they were to remain in place until December 1999.

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<sup>1</sup> Britain had used non-voluntary forms of import quota extensively during the post-war reconstruction period [Milward and Brennan (1996)], however Voluntary Export Restraints (VERs) were first introduced to protect the UK and US textile industries that later formed the basis of the multi-Fibre Agreement [see Silberston (1989) and Meier (1973) for accounts of the UK and US agreements respectively].

<sup>2</sup> For example, Japanese exports to the largest world market for cars outside Europe, the US, rose from 5.7% in 1971 to 19.1% in 1980 [Berry, Levinsohn, and Pakes (1999, Table 3, p414)].

The paper proceeds as follows. The first section details the implementation of the policy before examining the political economy of Japanese UK automobile production as part of the broader global foreign direct investment expansion. It is illustrated that Japanese firms were adept at utilising joint ventures and later UK transplants as a mean to circumvent bilateral barriers, but also as a means to access key European markets that were considerably more restricted. The paper then goes on to illustrate the impact of the policy on products and firm behaviour. The ability of Japanese firms to react swiftly to the policy shift by altering the nature of their products is vividly illustrated. In particular it is shown that Japanese manufactures were able to upgraded the products via the embodiment of new technologies rapidly shifting form having relatively spartan offerings to having more fully equipped products within a few years. Over the longer term Japanese firms were able to shift their product mix dominating the profitable “new” good, 4-by-4 and personal carrier, segments as well as moving into the luxury market via the development of the Lexus brand. While these developments changed the face of the Japanese automobile industry the trade policy most European car manufacturers were able to restructure European car makers under the framework of the European Commission’s Elements of Consensus. The restructuring process appears to have been largely successful with major European conglomerates on the whole being competitive with Japanese manufacturers. Such success is reflected in the ending of VERs not leading to a substantial expansion in the UK or elsewhere. The exception being the UK flagship manufacturer, British Leyland, whose precipitous decline is documented elsewhere.<sup>3</sup>

## **2. VERs between the UK and Japan - Background to the Trade Policy**

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<sup>3</sup> The decline of Rover group, formally British Leyland, between 1971 and 2002 is subject of considerable research. The decline of the firm in the context of the UK car market which the firm was reliant on, and some of the causes for that decline, are documented in Walker (2006).

In the mid-1970s the global car industry came under considerable pressure in the form of Japanese exports against a trend of reduced demand for cars in the wake of the 1973 oil crisis. In response to the Japanese expansion, allegations of dumping and subsequent representations were made in attempts to persuade Japanese manufacturers themselves to limit their export volumes to a number of European countries, including Britain [Dunnett (1980)]. While the allegations were never legally tested, and it is unclear whether the success of Japanese exporters was “a tribute to the quality of their cars and to the effectiveness of their international marketing” or overt dumping, contemporary observers pointed out that Japanese marketing strategies would have had to take account of the growing clamour for protection which Japanese exporters were facing around the world. From the Japanese manufacturers’ perspective, as the commentators emphasise, they were known to be extremely worried over the possibility of direct action at the government level” and of suffering the possible long term consequences of protection.” [EIU (1975, 5-8)].

On the face of it, the case for protecting against Japanese imports was weak, with the trade balance being in the UK’s favour. However the government had clear pressure to protect what were termed ‘sensitive sectors’ of the UK industry. The main industry to fall under the ‘sensitive sector’ umbrella was the car industry with motor vehicles representing about 25% of UK imports from Japan at that time [Central Statistical Office (1975)]. Industry pressure was clearly apparent when in 1974 the then President of the Society of Motor Manufacturers and Traders (SMMT), Sir Ray Brookes, approached the government for assistance to protect the domestic industry from intensifying import penetration from all car manufacturing countries, but particularly Japan.

As a result, Prime Minister Harold Wilson undertook and obtained a limitation on imports to Britain [Dunnett 1980)]. Later in the year, the Secretary of State for Trade, Peter

Shore, when questioned on the results of inter-governmental discussions in Japan, stated that he had

“indicated both to the Japanese government and to their industry, that in the British government’s view, the rapid build up in Japanese car exports to the United Kingdom was unacceptable. For their part, the Japanese government predicted that during the remainder of the year their exports of cars to the United Kingdom would decline, and indicated that Japanese cars should be exported in an orderly way during 1976.” [Parliamentary question: Mr Alf Bates (Bebington and Ellesmere Port) asked the Secretary of State for Trade what discussions he had had on the problems facing the British motor car industry on his recent visit to Japan [*Opt cite*, Department of Trade and Industry (31/10/1975)].

Shore and Wilson’s efforts and the Japanese government’s ‘prediction’ were not actualised with new registrations of Japanese cars in the UK increasing 31%, year-on-year, in 1976.<sup>4</sup> A fuller appreciation of the threat to Britain’s nationalised producer, British Leyland, from Japan exports resulted from bilateral visits of engineers between Japan and the UK. On the impetus of a Japanese consortium made up of Nissan, Mitsubishi, Honda and Kansai Paint, BL engineers visited Japanese facilities in the summer of 1975. The tour was the first since the British Motor Corporation, the largest firm in the formation of British Leyland in the 1967 merger, had provided model designs, equipment, and advisors to Nissan in 1950 [Cusumano (1991, 88-108)]. The detailed engineer’s report, which was derived from the exchange, reflected the shifting fortunes of the two national industries over that twenty-five

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<sup>4</sup> This figure and derivations of new registrations use data collated by the Society of Motor Manufacturers and Trader. See Section 4 for a complete set of data sources used in this study.

year period. The report catalogued the institutional virtues of Japanese manufacturers and the advanced productivity of the Japanese plants relative to their British counterparts, and was disseminated along with specific recommendations to various BL departments, the firm's board, and to the Government through its links to the company [British Leyland Motor Company (06-07/1975)].

Formal discussions between the industries had begun that year with the UK manufacturers being represented by the SMMT, while the Japanese Car Manufacturers' Association (JAMA) acted on behalf of Japanese firms' interests. Discussions took place on a bi-annual basis thereafter covering, *inter alia*, a review of motor vehicle markets, the current and future economic and industrial outlook in Japan and the UK [Parliamentary Papers (1980-81, 661-3)]. The industry agreement limited Japanese new car registrations to a range between 9-11% of total registrations for five years.<sup>5</sup> Although it is difficult to uncover the extent of direct government involvement in industry-to-industry discussions, there are a number of reasons to consider it to be quite active. First, there was a pre-emptive announcement by the Department of Trade and Industry of their active role in the bilateral agreements, which was the cause of some embarrassment for JAMA.<sup>6</sup> Second, the government had the role of enforcing breaches in restriction levels, and acknowledged in 1978 that they had intervened in inter-industry discussions due to import levels breaches [Department of Trade and Industry (1980-81)]. Third, as the government had ownership of one of the members of SMMT it was also indirectly involved in the bilateral negotiation process. At the end of 1982 the form of the bilateral agreements were altered, with the European Community taking a coordinating role in the use of quantitative barriers with

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<sup>5</sup> The Commission's involvement in coordinating quantitative restrictions extended to industries outside the motor industry with the European Commission exacting agreements through negotiations with the Japanese Ministry of Industry and Trade (MITI) on video recorders restrictions in February 1983 [Greenaway and Hindley (1985, Ch.2.)].

<sup>6</sup> Brian Hindley is thanked for highlighting this incident.

Japan.<sup>7</sup> As Hindley (1982) pointed out, the Commission of the European Community had been preoccupied with the question of retaining its grip on trade policy prior to undertaking a coordinating role. However, the change in the negotiating body did not mean that negotiations for agreements would reflect the European Community as a whole rather than member countries' industry priorities. Unlike the common European tariffs, individual country's maintained their ability to determine their preferred restriction rates. For their part the Japanese agreed to exercise moderation over the three years (1983-85 inclusive), in their export of certain products, the most significant of which being autos. The Japanese restraint levels remained at the previously, industry-to-industry, determined levels.<sup>8</sup>

This *status quo* remained until the signing of the EC-Japan understandings and subsequent agreements, the so-called 'Elements of Consensus' (EOC), in July 1991.<sup>9</sup> The EOC provided an on-going means of partially insulating the industry over a transitional period, and country specific levels of VERs were applied. The EOC gave block exemptions to autos, thus acting in clear violation of the Treaty of Rome and the Single Market Programme, but its adoption provided a carrot for countries with constrained car markets to sign up to Single Market Programme in 1992. The VER phase out represented a pragmatic means to meet the Commission's objective of insulating the European industry, so that it could restructure itself to be able to compete with Japanese manufacturers, whilst providing a clear date for VERs to cease. In keeping with the EOC the phase out of VERs was finally completed in December 1999.

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<sup>7</sup> National registration requirements enabled the monitoring of Japanese sales. The national registration system, in combination with article 115 of the Treaty of Rome, enabled member states to take protective measures against indirect (parallel) imports, which had been on average below 50,000 units, or 0.25% of total new registrations, over the 1980-93 period.

<sup>8</sup> Details of the products covered in 1983 are contained in the Commission of the European Communities (1983) where respective surveillance was formalised. From 1985 the distribution of cars fell under EC Regulation 123/85, in effect legislatively entrenching an exemption from Article 85(1) of the Treaty of Rome from what was prior to this a set of informal bilateral agreements.

<sup>9</sup> An official explication of the EOS can be found at Commission of the European Communities (1993).

Application of the EOC also meant a shift from the bilateral maintenance of quotas set as fixed proportions of market size to a more complex formulation based on demand forecasts provided to the Commission through industry analysts. Taking these demand forecasts the Commission set Japanese imports at a decreasing rate of total market growth each year for the EU as a whole, as was indicated by Point 11 of the EOC that European manufacturers should enjoy *adequate* benefit of market growth. The term *adequate* translated into a lower proportion of market share being taken by Japanese firms during periods of market expansion and a higher proportion of reductions in market share during downturns: thus, providing latitude for the European industry to adjust under Point 10 of the EOS. The published forecasts were adhered to by the Commission indicating that the ability of industry or member states to influence the managed removal of the restrictions in their own markets was no longer effectual. Discussions with Commission representatives pointed out that the inability of the European industry to lobby in large part reflected the fact that the forecasts used to determine monitoring levels were always below the actual growth in demand, which translated into the Japanese bearing their share of the burden of restructuring, leaving the industry with little room for objection. That is not to say that constrained countries did not lobby. France and Italy were the most vocal advocates against the free trade in the European market prior to the Completion of the Market initiatives, and signing of the EOC, on the grounds that transplanting of cars produced by Honda, Nissan and Toyota in the UK does not constitute a “European car” because the European content of vehicles was below the EC definition. An example of such public lobbying comes from the Managing Director of Fiat in 1990 who denounced Nissan on the grounds that a study of the Nissan Bluebird (which was subsequently replaced by the UK manufactured Primera) by Fiat revealed that only 20% of its parts were clearly of European production, 32% of the parts could not be identified by location of production but the remaining 48% were produced outside the EU [The Times

(10/12/89)]. Indeed, the issue of local content was not a basis of legal objection for the EU since this would contravene the GATT. It is noteworthy however that there is no clear agreement that cars meeting such requirement could be sold outside the VER limit. Furthermore, in 1989 the French, having refused to accept Nissan products manufactured in the UK, were forced by the Commission to accept these imports as 'European' [Easton (18/04/89)].

Details of how VERs were dismantled was the subject of debate with different authors embracing divergent interpretations of the details of the agreements. The three areas of debate surrounded: (1) what types of vehicles were included in the EOC; (2) which countries were involved; (3) and whether or not foreign direct investment (FDI) was excluded from the negotiated restrictions. In terms of vehicles included Turrini (1999) argued that 4-by-4 vehicles were excluded from 1986. Authors have tended to argue that France, Italy and the UK certainly had VERs, while the issue of whether Portugal and Spain had restrictions has typically been ignored. It remains unclear whether Germany also applied constraints since the industry-to-industry agreements were to an extent outside the public domain. From 1993 the EU published the list of countries along with the types of vehicles included (vehicles less than five tonnes) with the constrained markets being the (UK, France, Italy, Portugal and Spain (including the Canary Islands)).<sup>10</sup>

The issue of whether or not FDI was excluded has proved more contentious, no doubt reflecting that that official documentation in the EOC does not explicitly include the production of Japanese transplants (that predominantly occurred in the UK), both prior to the EEC's involvement in 1983 or thereafter. A direct means to determine whether FDI featured in the UK VERs is to compare the market share of Japanese manufacturers in the UK within and without FDI. Figure 1 shows that when Japanese cars produced in the UK are accounted

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<sup>10</sup> Nomura Research Institute (1988) were the only source to point to Spain and Portugal effectively prohibiting Japanese imports in 1987.

for, Japanese (import) market penetration drops below the threshold 9% in the two years following the commencement of UK production by Nissan in 1986, and similarly drops further in the two years following Toyota's entry into UK-based production. Figure 1 provides indicative evidence that Japanese transplants were included as part of the effective UK VER. Some previous researchers have argued that transplants were included, and in effect that Voluntary Export Restraints negotiated with the Commission were strictly "export" restraints by name and not by nature (Mason(1995); Turrini (1999)].

Mason (1995) points out that the Commission's negotiators of the 1991 agreement explicitly stated that they did take into account expected sales from transplants when defining import limits. In contrast, Flam (1994) takes the alternative interpretation that imports were to be constrained but that transplants were not. In order to solve this puzzle discussions with the Commission were conducted that confirmed that transplants were not included as part of the EC-MITI negotiated agreements, but that there was considerable pressure to expand Japanese market share in the UK due to demand outstripping the restraint limit throughout the EOC period.<sup>11</sup>

### **INSERT FIGURE 1 ABOUT HERE**

How is it that VERs were binding, as the Commission observed, despite the large proportion of UK transplants sold by Japanese firms? If Japanese firms were free to market their UK manufactured products should they not have simply switched to local production to alleviate any constraint level? The fact that Japanese firms were still constrained by the official, Commission-MITI negotiated agreements, can only mean that they were also constrained in the sales of their UK manufactured transplants. For its part, the UK government had two

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<sup>11</sup>Again representatives of the Commission are sincerely thanked for frankly providing this information, and corroborating the interpretation of the EOC taken in this paper.

stated objectives. First, and the initial impetus to apply VERs, was that the government wanted to insulate the domestic market to protect the then nationalised UK car industry and safeguard employment. Second, the UK government encouraged FDI in order to create sustainable employment and efficiency, which constituted the lynch pins of the Thatcher government economic reform agenda [Thatcher (1993)]. *Real politick* meant that both objectives needed to be maintained. The best option for the UK was to disallow Japanese transplants from competing with domestic products (by including them as part of the restraint), while obtaining the employment benefits of FDI associated to UK production.<sup>12</sup>

While this was the best possible outcome for the UK the same cannot be said for Japanese investors who would wish to profit by being able to sell their UK produced wares in the UK. The UK was however able to provide further sweeteners for the deal in the form of financial and other inducements to reduce the sunk cost of FDI, and crucially, by endorsing access to other constrained European markets. Such action was possible since the Commission took the view that whatever was agreed by the UK Government/industry was their affair [Rhys (1990, 33) the explanation that Japanese firms were enticed to invest in the UK despite being denied access to the UK market appears to fit their observed sales patterns. However, without providing a concrete rationale for such Japanese investment, despite being faced with disincentive of being constrained in its UK sales, it remains an assertion without a sound explanatory foundation. To put some flesh on the argument a deeper look into the FDI behaviour of Japanese motor manufacturers in the UK and elsewhere needs to be taken.

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<sup>12</sup> The discussion of incentives to jointly utilise FDI and VERs has been analysed theoretically by Flam (1994). Flam's model is quite specific in that he examines a three-stage game where: (1) firms choose between constraints or not; (2) Japanese firms choose between investing or only exporting; and (3) Non-producing countries choose between allowing or prohibiting FDI in the third stage. He shows that under a policy regime where a restrictive VER is combined with FDI the welfare consequences differed considerably when FDI and VERs occur jointly than where each policy is considered individually. In his model Japanese firms opt to locate production in the UK following the EOC signed in 1991. However, the location decision in his result is based on there being no initial domestic production in the UK. This however was not the case with the UK was a producer of cars being home to Ford UK (whose production commence in the UK in 1929), GM Vauxhall (1926), and British Leyland (since the early 1900s).

### **3. The Advent and Political Economy of the Japanese UK Auto Production as Part of a Global FDI Expansion**

An influential MIT study argued that by the 1980s the productivity levels of Japanese car manufacturers had eclipsed those of both US and European car makers. In addition to arguing that Japanese manufacturers were relatively more efficient, the study also emphasised three factors that had contributed to their relative productive efficiency: (1) the deliberate restraint on the value of the Yen; (2) the lack of barriers to Japanese imports, and (3) the strong state support from MITI for Japanese cars seeking overseas markets [Altshuler, Anderson, Jones, Roos, and Womack (1984, pp.155-162)]. Two of these advantages were eroded during the late 1970s and 1980s. First, following the series of European bilateral agreements previously described, VERs were placed on Japanese exports to the US in May 1981. Coupled with this, the Yen saw a considerable appreciation following a currency realignment via the Plaza Agreement instigated in September 1985 by the Group of Five: Britain, France, Germany, Japan and the United States, and the Louvre Accord by the Group of Seven [Sakiya (1989, p9)]. Japanese firms reacted assertively to the changing trading environment by transplanting production outside Japan. The expansion of FDI by Japanese producers saw an enormous rise over the 1980s, with an investment of \$4bn in 1982, growing to \$4bn per month by 1990 [Japan External Trade Organisation (1992)].

The 'First Wave' of FDI from Japanese manufacturers was directed at the US market [Womack, Jones, and Roos (1990, 240-242)]. The central reasons for the concentration of resources on the US market were based on relatively more open access to that market and an ability to develop the fastest growing and least exploited segments of the US market -the mini and small family segments [*Ibid.*, pp.253-55]. However, the ability of Japanese firms to

effectively dominate these segments in the neighbouring, unprotected European markets indicates that Japanese manufacturers were also capable of expanding their market shares in constrained European markets. By 1980 Japanese manufacturers had already achieved considerable success in the US market having already secured a 22% market share compared with an average market share of 11% in the European market [Berry, Levinsohn, and Pakes (1999, Table 3, p414)].<sup>13</sup> Finally and most importantly, the US explicitly did not include transplant production in its restraint [Womack, Jones, and Roos (1990, pp.253-55)], while, as has been established above, there are clear indications that bilateral agreements with European countries did. Japanese companies reallocated resources to the US through a series of joint ventures and transplants encouraged by regional grants, subsidies and tax concessions with the seven major Japanese firms commencing production during the 1980s.<sup>14</sup>

Honda was the first Japanese firm to have its cars built in the UK, as had been the case in the US. Honda's entry into UK production was indirect, however, through the formation of a relationship with Austin-Rover (as British Leyland had been renamed in 1979).<sup>15</sup> BL required a partner to provide it with product designs and assistance to fill the gaps in its product range that had resulted from a lack of product development.

After failing to come to agreements with European manufacturers the erstwhile Chairman, Michael Edwardes, negotiated an agreement with Honda [Edwardes (1983)]. Honda had advantages as a business partner from BL's perspective in that it was a medium size Japanese firm, and was the only firm other than BL to use transverse-mounted engines with front wheel drive [Mair (1994, p.229)]. From Honda's perspective, the agreement provided an access to the UK market in the same year that VERs became effectively enforced, giving it

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<sup>13</sup> The market shares in the unconstrained European markets in 1988 were as follows: Irish Republic (43.6%); Finland (41.4%); Norway (39.3%); Greece (38.9%); Denmark (32.8%); Austria (33.1%); Switzerland (31.1%); Belgium and Luxembourg (21%) [Source: EIU (1989)].

<sup>14</sup> The firms being: Honda (1982), Nissan (1983), Mazda (1987), Mitsubishi (1988), Toyota (1988), a Subaru and Isuzu joint venture in 1989. See Mair and Kenney (1988), for a review of Japanese investment expenditure and location determinants in the US.

an ally within the walls of Europe. The relationship was to prove an enduring one and involved five projects between the firms. The first of these projects was a simple 'screw-driver' assembly deal where BL assembled and sold CKD kits of the Honda Ballade, re-badged the Acclaim, under licence [Edwardes (1983)].

The Acclaim was a success by Austin-Rover standards with about 100,000 being registered between 1981 and 1984, an amount greater than Honda's observed quota allocation of 70,000 vehicles over the same period. Following the lack of success in a second project to jointly develop an executive model, the Sterling, the firms returned to the less ambitious venture of redeveloping the Honda Ballade. The new version of the Ballade was renamed as the Rover 200 and was produced under an agreement between Honda and BL. Rover, as British Leyland was renamed as, agreed not to sell its 200 Series in Japan, while Honda was prohibited from selling its similar 4-door Civic in the European market. Of greater benefit to Honda, the firm was able to manufacture the Honda Ballade at Rover's Longbridge plant under the Rover badge, allowing it to circumvent VERs without needing to invest directly, and while also allowing Honda to directly assess the quality levels of the vehicles [Mair (1994, 234-236)].

In terms of sales the project was not significant with production being low, but the substantial gain to Honda was that it was able to acquire a plant facility in Swindon, which was later to become its manufacturing complex for the UK and led to the establishment of Honda UK Manufacturing Ltd.<sup>15</sup> The plant was developed in three stages, used initially as a testing station for cars imported from Japan and for Honda Ballades built at Longbridge. The next stage was to build engines for the Rover equivalent of the Honda Concerto, the new Rover 200 and 400 series. The models were to become Rover's most successful products

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<sup>15</sup> 8,898 Austin-Rover 'badged' Honda Ballades were registered in the UK between 1986 and 1990.

with Honda benefiting from engine sales of the models, which was sold both in the UK and in other European markets.<sup>16</sup>

The final project, the development of the Synchro, gave Honda its first car specifically designed for Europe, utilising the Swindon plant that been fully developed into a production plant from 1989, with Rover producing its analogous 600 Series at Cowley. While observers speculated that Honda UK would divest its relationship with Rover having successfully achieved its aim of establishing European plant facilities, the project augured in the first formalisation of the relationship between the firms sealed through a 20% exchange in equity and one board seat in 1990 [Cornelius (18/04/1989)]. The newly formalised relationship however collapsed two years later following the breakdown of negotiations between Honda with British Aerospace to purchase Rover. Rover was then purchased by BMW in 1994 [The Economist (03/03/1994)].

Honda's longstanding relationship with Rover bestowed upon the firm a number of benefits including the establishment of its Swindon plant facilities, a detailed knowledge of business and labour practices, sales experience in Europe in advance of Japanese competitors, and access to the part suppliers in the used by Rover. On the other hand, Honda's cautious approach to the European market through kit-set sales and parts supply was inconsistent with their highly successful transplant expansion into US production, and their close association with what was widely considered to be world's weakest car manufacturers [Mair (1994, 240)]. Indeed, had it been a viable option to produce cars directly in Europe, Honda's strategy of effectively entering the market in a piece-meal fashion is difficult to fathom. It was Nissan, not Honda, who became the first Japanese firm to set up a plant in Europe in 1986, building what was reputed to be the most efficient production plant in Europe and amongst the most efficient in the world [The Economist (3/10/1992)].

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<sup>16</sup> The Rover 200 and 400 Series models became the most successful models in Rover's range with sales of 560,000 models in the UK car market between 1987-1992, which included the production of 30,000 Honda Concertos per annum by Rover from 1989.

Where Honda's opportunity to forge links with the British industry had reflected the government's desire to aid the nationalised car industry in the late 1970s, Nissan's opportunity for direct investment reflected an antithetical government strategy to reduce assistance to nationalised industries, in favour of overseas investment. The New Right policy of rolling back the frontiers of the state, at least as far as direct subsidies for manufacturing capital were concerned, had its counterpart in the opening up of the domestic economy to more direct international investment [Thatcher (1993)].

Furthermore, as Cutler (1988) argued, regional policy in the 1980s and the 1990s was becoming increasingly influenced by the Completion of the European Market Program. The official stance of the Thatcher government was to virtually eliminate the Regional Development Grant, favoured by previous administrations, in favour of Selective Financial Assistance with a shift in emphasis towards small enterprises. However, while the rhetoric was the promotion of an enterprise culture based on market forces, commentators noted that overseas investors were given special treatment at the expense of nationalised industries which were privatised where possible [Balchin (1990), Garrahan and Stewart (1992)].<sup>17</sup>

In January 1981 Norman Tebbit, Secretary of State for Trade and Industry, announced that Nissan had selected the UK for its European expansion programme. On 24 July 1982 Nissan's own announcement seemed to put the project on hold, indicating that because of uncertainty in the world car industry, the company was postponing making a final decision. It would be two years before Tebbit would be able to confirm that Nissan would be investing in Sunderland, with Nissan investment being greater than the total stock of Japanese FDI in the UK in 1983 [Dicken (1983)].

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<sup>17</sup> Significant Japanese FDI of any significant scale and accompanying 'investment assistance' first occurred in the electronics industry rather than the car industry [Oliver and Wilkinson (1988)]. In 1980 the value of Japanese direct investment was \$186mn, but by 1989 this had risen to \$3,956mn. The cumulative total of Japanese direct investment in Europe between 1951-1988 stood at \$30,164mn, and fully one-third of this entered the UK [Data obtained from *Ministry of Finance*, Tokyo].

In keeping with the Conservative government's preference for FDI over domestic subsidies, the shipyards in Sunderland, which were part of the nationalised industry were refused financial support and were closed resulting in 2,000 job losses. Nissan received a direct subsidy of \$112mn for the first part of the project, which was costed at \$350mn, with the overall cost coming to \$670mn.<sup>18</sup> In return the government were guaranteed that the plant would employ 3,500 employees [Garrahan and Stewart (1992)]. Over a decade after bail out of Chrysler UK and nationalisation of BL in 1975 the government was once again underwriting overseas producers. Only the origin of the investment had changed. In addition to the direct subsidy, Nissan was able to benefit from access to a substantial tract of development land (930 acres in all) sufficiently large to serve both its own factory requirements and to enable the firm to lease considerable tracts of the land to sub-contracting firms thereby allowing Nissan to operate Just-in-Time (JIT) production methods.<sup>19</sup> Finally, a plentiful labour supply was available in the de-industrialised North of England, which had lost 230,000 jobs between 1975 and 1985 [*Office of National Statistics*, opt cite Stone (1988)]. Nissan also benefited from the declining role of the union movement and was able to utilise a single union agreement that was secured before employees were hired with membership being overseen by the Personnel Department of Nissan Motor Manufacturing UK (NMUK).<sup>20</sup>

To examine whether these firms were able to obtain increased quota in the other constrained European markets - Italy, France Spain and Portugal - data on firm sales in those

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<sup>18</sup> Information concerning the North Eastern Shipbuilders is taken from Stone (1988), while details concerning Nissan subsidies come from Trade and Industry Committee of the House of Commons, Minutes of Evidence, 15 January 1986.

<sup>19</sup> The initial parcel of land sold to Nissan was classified as derelict with the cost of that land being meet by local government. Nissan then took its option to purchasing an additional block of 436 acres of land at agricultural land prices which were substantially below market rates (\$1,800 per acre rather the valued price of \$20,000). Garrahan and Stewart (1992), pp.40-44 for details.

<sup>20</sup> The ability of NMUK to circumvent industrial disturbances was in keeping with the Nissan Way which was developed in the 1950s [see Wickens (1987)].

markets was obtained.<sup>21</sup> These data, which are summarised in Figure 3 illustrate that each of the three UK based producers raised their market share via transplant production in the constrained markets.<sup>22</sup> Prior to the French VER being announced in 1977 there was some growth in the French market, driving a rise in combined import penetration. Growth in Japanese market share in the constrained European markets effectively ended until the commencement of UK transplant production in 1988. The spectacular growth in the market share of the constrained Continental European markets is highly evident from 1989 onwards. The expansion in Nissan continental sales in constrained European market occurs at precisely the time as its share of the UK market fell. Toyota also witnessed an expansion following its entry into production, with Honda's expansion being less pronounced as is to be expected since the firm had been selling its wares under the Rover badge since 1987.

### **INSERT FIGURE 3 ABOUT HERE**

In effect the same cars that were not considered to be 'European' in the UK, and hence were not included in the quota, were considered 'European' in continental markets. It appears that Britain was playing outside the 'rules of the game' in order to simultaneously protect its nationalised local producer, British Leyland, whilst reaping the benefits of direct foreign investment. The regime was aiming to protect its own "Fortress Britain" at the expense of relaxing Japan's barriers to enter "Fortress (Continental) Europe". These findings are consistent with Honda's uncharacteristically cautious entry into UK production, Nissan's, and to a lesser extent Toyota's, sales strategies, and the un-changing market shares of nations applying VERs, add considerable weight to the view that Japanese production investments in UK were determined by a host of benefits that did not include evading UK export restrictions.

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<sup>21</sup> These data are available at Comité des Constructeurs Français d'Automobile in Paris.

<sup>22</sup> Since imports were known to be reduced through the EC-MITI negotiations all growth is transplant related.

#### **4. Impact of the Policy on Products and Firm Behaviour**

Japanese car manufactures have been lauded as paragons of efficiency noted for their well-equipped quality product, with these advantages being conceived as the being the rationale for the imposition of the restrictive policies detailed in this study.<sup>23</sup> The praise for Japanese firms reflecting their success in the European and global market places. It is also inextricably linked to the nature of the products that they provide and their success in entering new product segments most visibly reflected with the advent of the Lexus, the successful development of the 4-by-4 segment. In contrast, the inability of British Leyland to provide products that could sustain the firm profitability is unquestionable. The explanation of the post-war decline of British industry has been a central question and stimulant of historical research.<sup>24</sup> The reasons for the firm's decline however are contentious. A broad set of actors from industrial relations, to production methods relating to the employment of flexible technologies such as Just-in-Time approaches and a lack of scale production, to government policies relating to 'stop-go', accession into the European Union (the European Economic Community), to demand side influences of what has been termed 'product led decline', and the failure of the firm to make viable strategic decisions on product development are implicated.<sup>25</sup>

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<sup>23</sup> Following Altshuler, Anderson, Jones, Roos, and Womack (1984) there has been a substantial literature looking at the Japanese car industry.

<sup>24</sup> In the mid-1970s scholars began to refer to the precipitous fall in British industrial competitiveness during the twentieth century as the 'British disease' [Allen (1979)]. The concept that British industry as a whole suffered represented a broadening of a pessimistic literature that traced the declining fortunes of the troubled 'staple' industries, such as textiles and coal, to encompass new sectors that had grown out of the technological advances of the Second Industrial Revolution. These new sectors included chemicals, and complex manufactured goods associated with industries as diverse as aerospace, cars, computing, and engineering. However, of these industries, the dramatic decline of the car industry has made it the mainstay industry of analysis in the historical literature.

<sup>25</sup> Each of these elements, to a greater or lesser degree, have attracted considerable attention in the literature. See Walker (2006) Chapter 1 and associated references for a summary of these literature.

A considerable theoretical literature concerning the effects of quantitative restraints in particular, and strategic trade policy in general, developed from the late 1970s. Falvey (1979) and Rodriguez (1979) provide early examples of the literature analysing VERs with more recent contributions being referenced in Turrini (1999). Irwin (2002) surveys the backlash against strategic trade policy by academic economists. There is also a body of empirical analysis on VERs that falls under three methodological headings. The first is a series of hedonic studies and includes work on two European markets [de Melo and Messerlin (1988) (France and Germany)], and on the US market [Dinopoulos and Kreinin (1988), Feenstra (1985) and Feenstra (1988)]. In all cases VERs were shown to have been binding: in France in 1984 and 1985 but not in Germany [de Melo and Messerlin (1988)]; in the US by influencing European import prices to US consumers [Dinopoulos and Kreinin (1988)] and by raising the price of Japanese autos 1980-1984 [Feenstra (1985); Feenstra (1988)].

A key disadvantage of all previous work has been that the extent to which quality upgrading occurred not captured at the level that is purchased by consumers. Ideally studies should include the population of goods and their valued characteristics over the period of interest. However, examinations of voluntary export restraints failed to do. Specifically, products have been typically defined in terms of few “baseline” models, even though, particularly those that market consumer goods, products are marketed in differing forms or model versions. Furthermore, the characteristics space has been limited to few observable product attributes and, in the majority of cases, unobservable characteristics are omitted. As has been documented elsewhere there is considerable heterogeneity in the attributes of differing model versions [Requenas-Silvente and Walker (2004)].

By contrast, the data-set employed in this study incorporates a complete sample of new registrations, list car prices, and over 120 matching attributes for the complete set of car model and model versions marketed in the UK between 1971 and 1998. The SMMT originally

compiled the quantity data.<sup>26</sup> List prices were taken from Glass Guide Service Limited (1971-), with a vast array of product attributes at the variant level being obtained from Augurtech Ltd and two price guides: Parker's Guide (1993-1998) and Motorist's Guide (1971-1993).<sup>27</sup> The two key novelties of the data-set are that it uses the model version as the unit of analysis, and includes an exceptionally rich array of explanatory variables. The incorporation of a complete set of about one hundred and twenty product attributes is of particular importance in evaluating VERs. A critical aspect of VERs, which was appreciated by contemporary analysts across a wide variety of industries affected by restraints which influenced a theoretical research in the area, is that VERs are synonymous with quality upgrading. That Voluntary Agreements led to quality upgrading was appreciated in the earlier applications of VERs to the textile and steel industries. For example, Meier (1973, 149) argued that "Whereas the United States prefers export restrictions by value the Japanese have insisted on restrictions on a quantity basis saying that this is the only way they can encourage producers to shift costs from low-profit items to sophisticated high-profit items especially in the made-of-man-made fibre field". Concerning the US steel industry, [MacPhee (1974, 81)] observed that "the voluntary limitations on steel exports to the United States (that) began in 1969 were not as restrictive as would appear, one reason being that exporters compensated for tonnage limits by shipping higher price steel products." In addition, the findings of prior studies, which used data-sets that include only a spartan set of, typically, performance-based product attributes, indicate that upgrading effects are empirically important phenomena [e.g.

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<sup>26</sup> SMMT data was provided by Renault UK (1971-80), and Global Incite Ltd. (1980-2002). Nigel Griffith at Global Incite Ltd. and Fraser Davidson at Renault UK are thanked for making the data available for strictly academic use. The period examined reflects the availability of version-specific sales data which was collected from 1971.

<sup>27</sup> Augurtech Ltd. is an internet design consultancy for the motor industry whose data is provided directly from all automobile manufacturers operating in the UK. Attributes recorded by Augurtech are also recorded in the major trade publications. However, there are significant gaps in the Augurtech data-set before 1980, so information from two trade publications, Parker's Guide (1993-2002) and Motorist's Guide (1971-93), which also source attribute information directly from manufacturers, was used to complete the data-set. Samples of the data can be found at <http://www.ukcar.com>. Augurtech are thanked for allowing access to their data for purely academic use.

Feenstra (1988)]. Reasonably capturing the multiple dimensions of quality upgrading for a product as complex as a car is a challenging undertaking. The data-set includes a similar list of performance-based product characteristics that have been commonly employed in earlier work comprising of: fuel consumption (miles per £)<sup>28</sup>; power (brake horsepower divided by weight); and size (length times width). In contrast to previous research that has typically attempted to capture embodied attribute upgrading (if at all) through crude counts of luxury features, the data-set contains a far richer set of observable characteristics. A time line of the introduction of these features is contained in Table 1.<sup>29</sup>

### **INSERT TABLE 1 ABOUT HERE**

To examine the extent that quality upgrading occurred in Japanese cars' two dimensions of the upgrading process are examined in turn, namely: (1) adjustments to the product-mix;<sup>30</sup> (2) technology upgrading of car models via the embodiment of new technologies. An important aspect in quality upgrading was the adjustment of the product-mix of Japanese cars. The allocations of new registrations between market segments over the period, for both non-Japanese manufacturers (in Panel A) and Japanese firms (in Panel B), are summarised in Figure 4. Trade publications identify eight market segments. In order to simplify the graphic the segments are combined into four groups: small (mini and small family), medium, niche (executive, luxury, and sports), and 'new' (Multi-purpose vehicles, or Personal Carriers as they are termed in the UK, and 4-by-4s). Strictly speaking, the 4-by-4 segment had been in

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<sup>28</sup> Information on the type of fuel (diesel or petrol) and the fuel grade (4-Star, Unleaded and Ultra Unleaded) is used to account for differences in the prices of fuels when calculating miles per pence for each car. Fuel price data was obtained from the Department of Trade and Industry, while fuel type and grade comes from aforementioned trade publications.

<sup>29</sup> A detailed appendix concerning the specific technical definition and adoption of each of the product attributes contained in the data-set is omitted to preserve the length of this paper but is available on request.

<sup>30</sup> Indeed, Goldberg (1995) defines upgrading as a movement toward market segments that include more expensive cars.

existence through sales of the Land Rover from the late 1940s. However, it is not until the arrival of Japanese models in the segment in 1983 that 4-by-4s were marketed for primarily road use and were able to obtain a significant share of the market. The concept of the PC, was also not new, with the Volkswagen Microbus, introduced in 1949, being an early example. However, in common with other early PCs the Microbus was a rear wheel drive vehicle, so the weight of the engine was contained at the back of the vehicle, with the power of the engine going directly to the back wheels which is not a virtue in a vehicle with a long plate. In addition, the Microbus did not have independent suspension to absorb bumps. Both the weight distribution and poor suspension combined in making the early Microbus a far from comfortable drive. The PCs re-emergence required the overcoming of technical difficulties associated with poor suspension and weight distribution.<sup>31</sup>

#### **INSERT FIGURE 4 ABOUT HERE**

A number of noteworthy shifts are captured in Figure 4(a). First, between the late 1970s and the mid-1980s there was a shift towards small cars, reflecting the effects of the Oil Crises of the 1970s. Subsequently, the proportion of small cars fell. The falling share of small cars coincided with a second, and more dramatic, shift from the mid-1980s following the development of the 'new' segments that went from accounting for 1% of new registrations in 1983 to obtaining about 18% of non-Japanese manufacturer's sales in 2002. Panel B depicts the shifting product-mix of Japanese manufactured vehicles. Following the implementation of VERs in 1977 there is a discernable shift away from small toward medium cars with the ratio of Japanese to non-Japanese medium segment sales rising from .66 to a peak of 1.14 in 1981. After 1981 the ratio fell back as Japanese manufacturers concentrated their sales in the 'new'

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<sup>31</sup> Requena-Sivente and Walker, 2008, 166-168 for a summary of the development of the personal carrier segment.

segments with the initial expansion occurring in the 4-by-4 segment that was monopolised by the Land Rover until arrival of the Toyota Land Cruiser in 1981 and Suzuki's SJ410 in 1982. Japanese products effectively dominated the MPV segment that was established by the launch of Toyota's Space Cruiser in 1983. A previous analysis on new goods and PC by Petrin (2002) showed that such products provide manufacturers with higher mark-ups. It was therefore quite natural that constrained Japanese manufacturers concentrated their energies on developing their products for these market segments.<sup>32</sup> Indeed, Japanese manufacturers have dominated early sales of PCs and by 2002 their product-mix included over twice as many 'new' segment sales than the mean product-mix of other producers (including British Leyland).

Panel 2 shows British Leyland did not follow the Japanese decline in the mini-small segment until the mid-1990s with market shares spiking toward 50% as late as 1991. The oscillation in large part reflected the introduction of new products. Panel 2 also illustrates that British Leyland, despite being the key technological innovator in 4-by-4 technology lagged the Japanese firms in term of the proportion of market share in new products until the early 1990s when Land Rover became a more substantial player in the market under BMW's ownership from 1993. The firm never had a presence in the highly profitable personal carrier market. When BMW divested its ownership of Rover to a UK investment consortium, Phoenix Group, in 2000 it also significantly maintained it right to the Land Rover subsidy.<sup>33</sup>

To provide an initial indication of whether or not quality within-model attribute upgrading was systematically greater in Japanese cars, trends in the embodiment of binary product characteristics (see Table 1) and engine size (measured in cubic centimetres) of Japanese and 'other' manufacturers are examined in Figure 5.

#### **INSERT FIGURE 4 ABOUT HERE**

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<sup>32</sup>

<sup>33</sup> With the launch of its own 4-by-4 luxury competitor to Land Rover, the X5, BMW swiftly divested its ownership of Land Rover in October 2000 to Ford.

The top panel in Figure 5 (Panel A) depicts the difference between the mean proportions of binary features of Japanese cars relative to non-Japanese manufacturers [calculated as the sum of the (sales weighted) mean embodiment of binary features of Japanese manufacturers as a ratio of the mean incorporation of those same attributes by non-Japanese producers].<sup>34</sup> The Figure dramatically emphasises the rapid embodiment of features by Japanese manufacturers relative to non-Japanese manufacturers in the wake of the VER agreement enforcement in 1977 relative to the 1973 and 1976 period when they had been less well equipped. While it is popularly conceived that Japanese manufacturers market some of the most well equipped cars in the market, as the data illustrates, this was not the case prior to the implementation of VERs when Japanese cars were marketed on the basis of their price and reliability. The policy had a profound effect on the nature and perception of Japanese cars. It was not until the 1990s that the market converges on level of feature embodiment of Japanese manufacturers. Nevertheless, on average, Japanese products were still better equipped by the end of the period examined. In contrast, the expansion towards larger engine cars was slower no doubt reflecting the time required to develop larger model varieties and engines, which were not a Japanese manufacturers' speciality. Japanese car engine size eclipsed that of non-Japanese manufacturers in 1991 before falling below the average size of other manufacturers in 1997.

## **5. Concluding Discussion of the Findings**

The implementation and response of Japanese manufactures to Japan-UK VERs and FDI in the UK car market is analysed from their implementation in 1977 until they were removed in December 1999 is analysed.

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<sup>34</sup> For a full array of comparative graphs of the sales weighted means of all the 120 features and attributes in the sample is located in Appendix that is available on request.

It is illustrated that Japanese firms were adept at utilising joint ventures and later UK transplants as a mean to circumvent both bilateral barriers, but also as a means to access key European markets that were considerably more restricted. In effect the same cars that were not considered to be 'European' in the UK, and hence were not included in the quota, were considered 'European' in continental markets. It appears that Britain was playing outside the 'rules of the game' in order to simultaneously protect its nationalised local producer, British Leyland, whilst reaping the benefits of direct foreign investment. The regime was aiming to protect its own "Fortress Britain" at the expense of relaxing Japan's barriers to enter "Fortress (Continental) Europe".

The paper then goes on to illustrate the impact of the policy on products and firm behaviour. The ability of Japanese firms to react swiftly to the policy shift is vividly illustrated. In particular it is shown that Japanese manufactures were able to upgraded the products via the embodiment of new technologies rapidly shifting from having relatively spartan offerings to having more fully equipped products within a few years. Over the longer term Japanese firms were able to shift their product mix dominating the profitable "new" good, 4-by-4 and personal carrier, segments as well as moving into the luxury market via the development of the Lexus brand.

It is worth putting the results in context of the wider objective of the VER as a means to restructure European car makers under the gamut of the European Commission's Elements of Consensus. The restructuring process appears to have been largely successful with major European conglomerates on the whole being competitive with Japanese manufacturers. Such success is reflected in the ending of VERs not leading to a substantial expansion in the UK or elsewhere with Japanese manufacturers capturing 11.5% of the Western European market in

1999 and 14.3% in 2009.<sup>35</sup> Whether Japanese firms will be able to make further inroads into the European market remains to be seen. However examining the welfare effects of the policy in other constrained European markets provides a stimulating question for future research.

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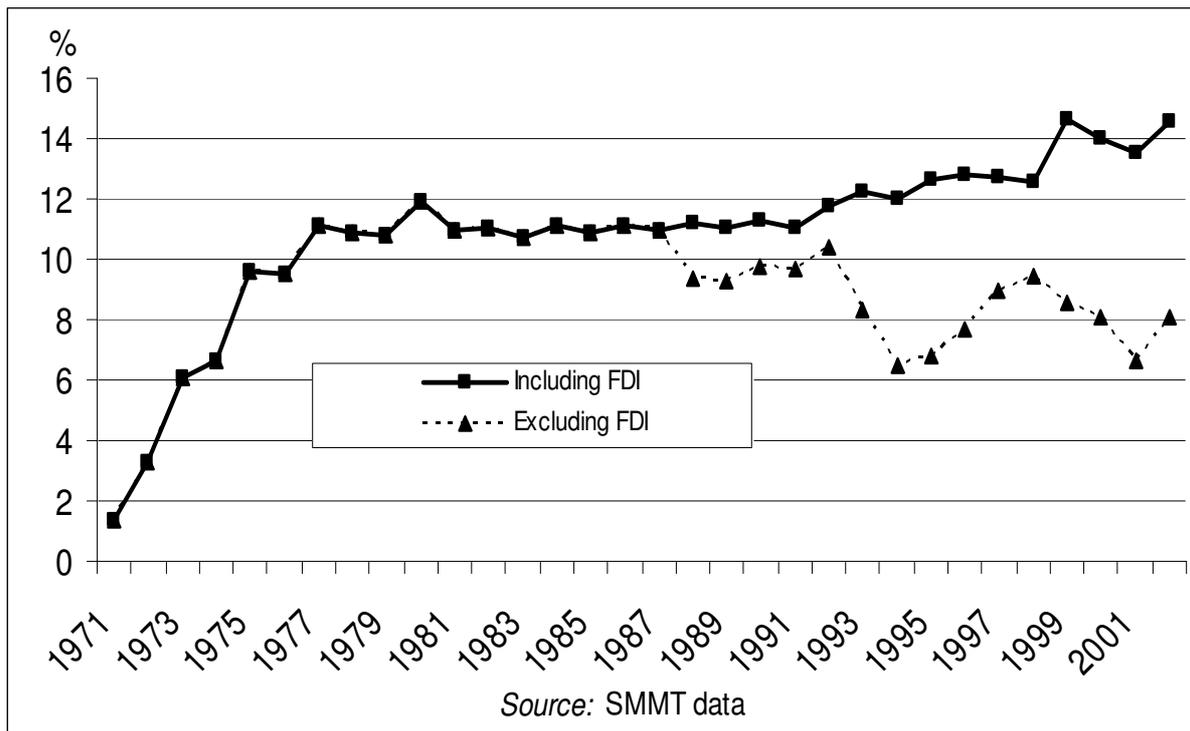
<sup>35</sup> 2009 is used as the reference date as there was a substantial fall in Japanese manufactures in general, and Toyota sales in particular, following the series of recalls between from November 2009 and calumniating with the recall of 1.8 million cars in Europe following an accelerator problem in January 2010 (<http://news.bbc.co.uk/1/hi/business/8487984.stm>).

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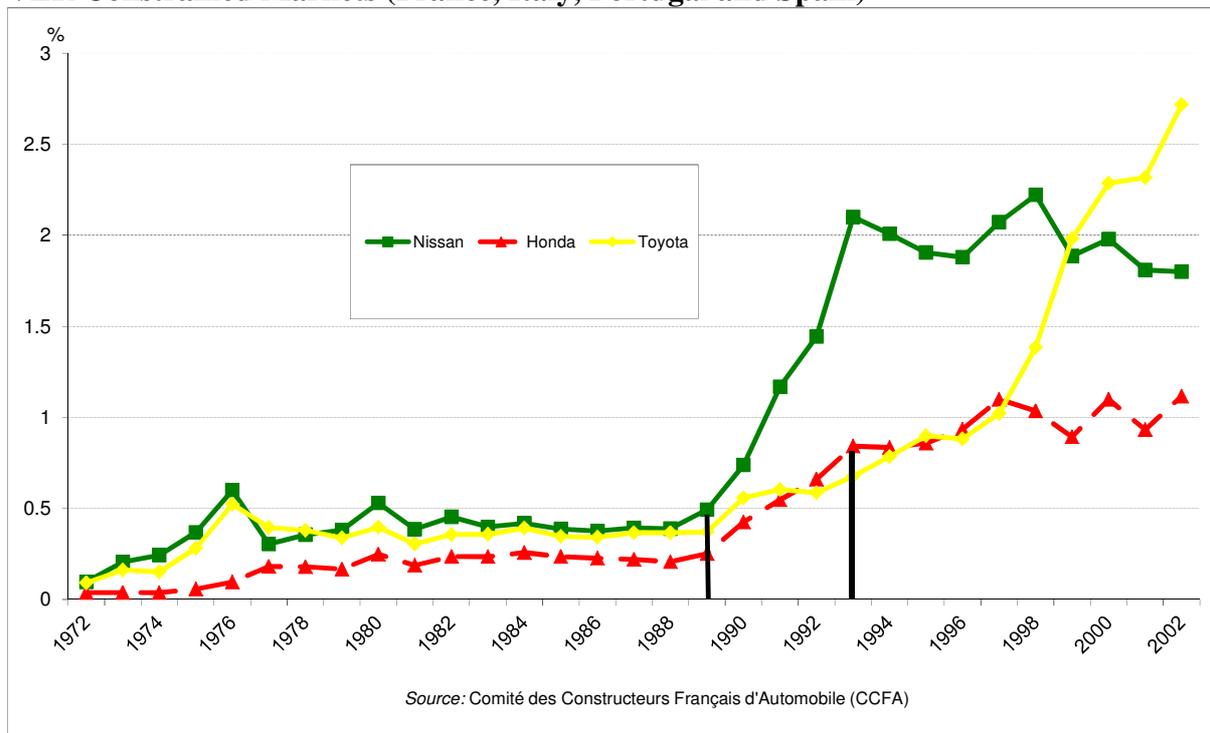
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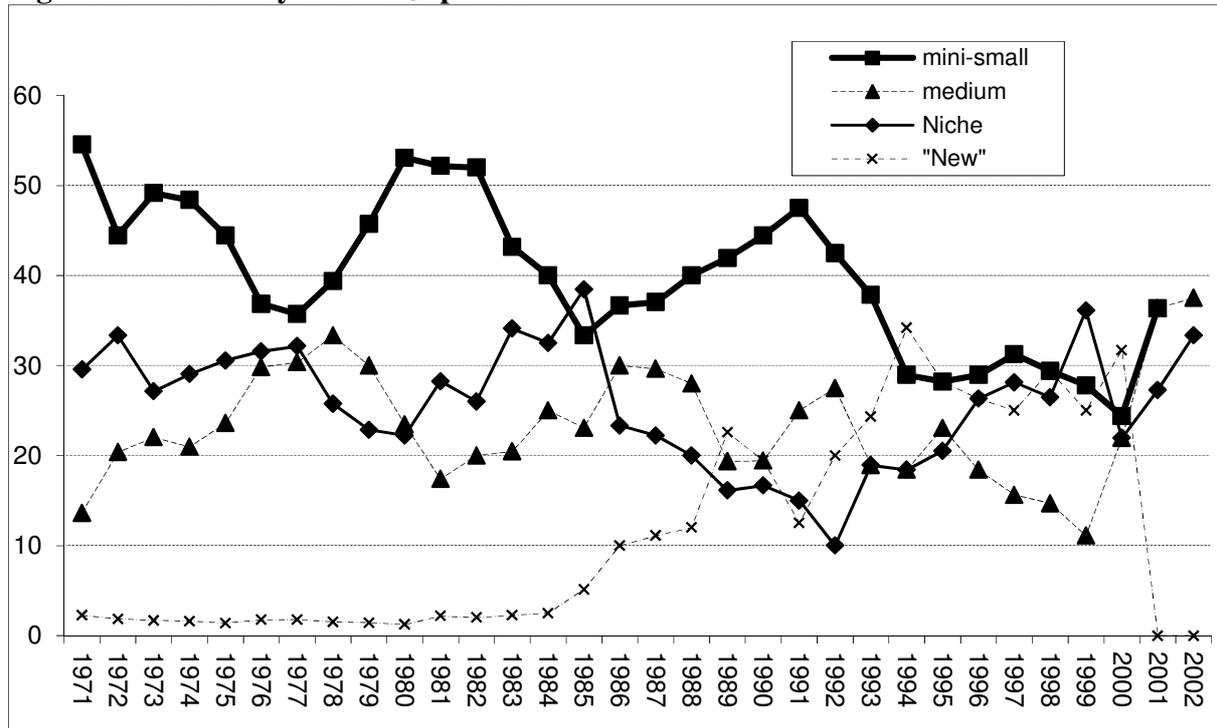
**Figure 1: Market Share of Japanese Manufacturers in the UK (1971-1998)**



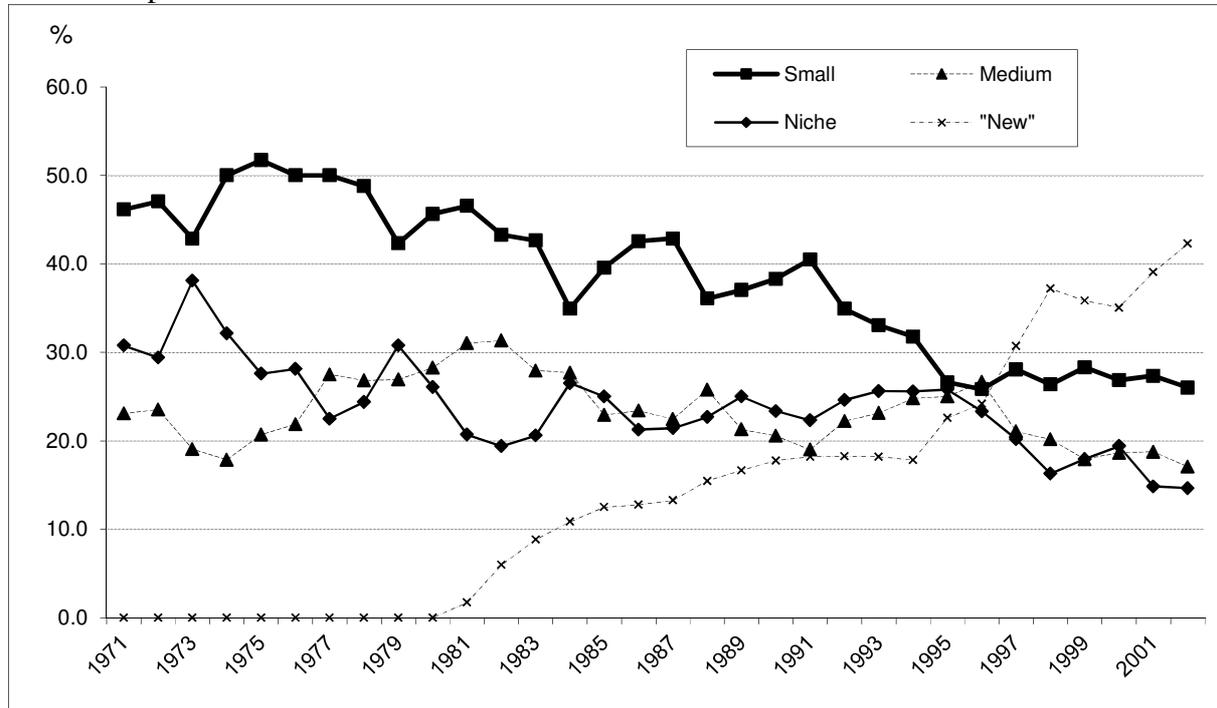
**Figure 2: Combined Shares of Japanese Firms Producing Cars in the UK and Other VER Constrained Markets (France, Italy, Portugal and Spain)**



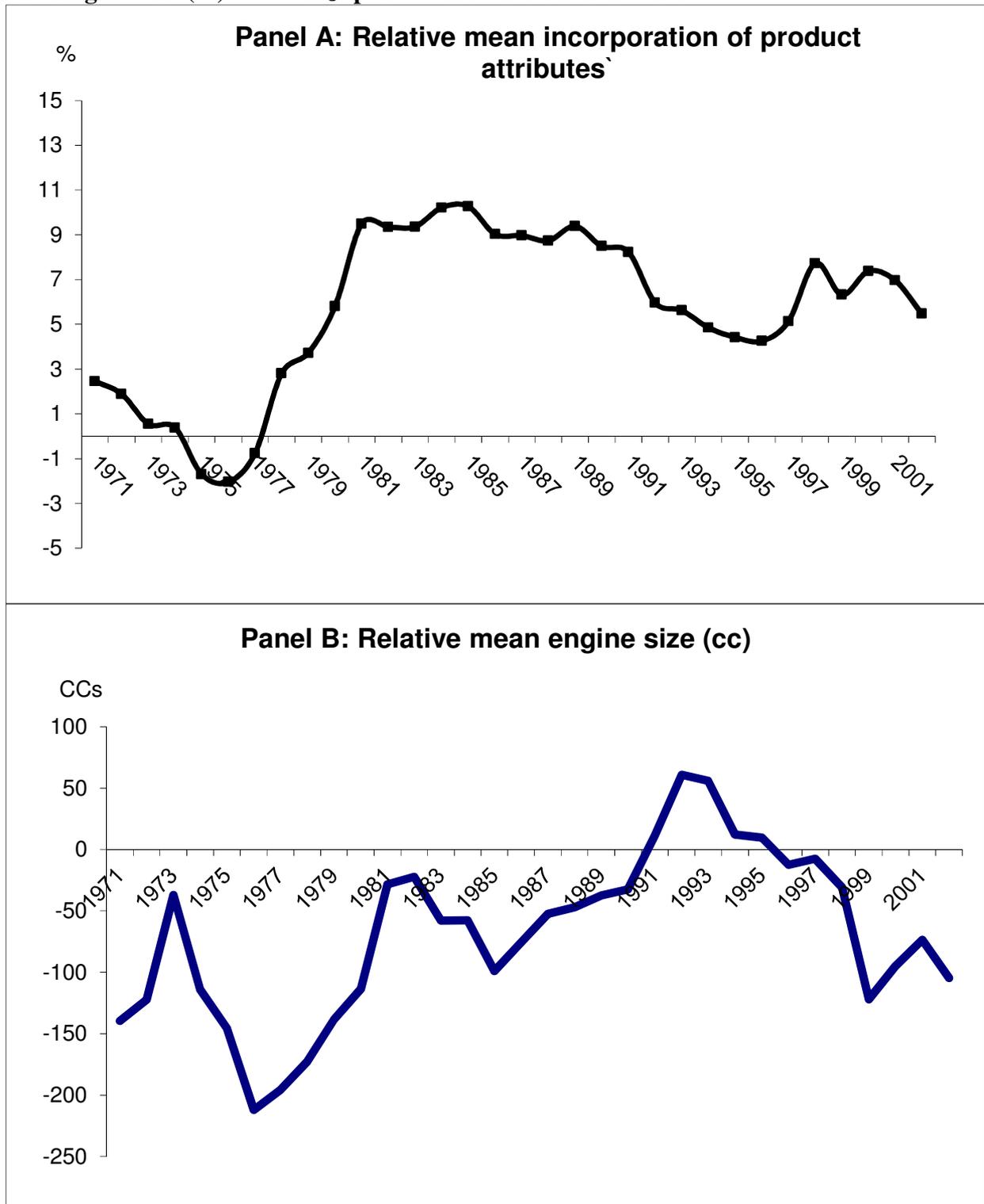
**Figure 3. British Leyland vs. Japanese**



**Panel 2: Japanese.**



**Figure 4: Relative Difference between Mean Average Embodiment of New Attributes and Engine Size (cc) between Japanese and other Manufacturers**



**Table 1: Time Line of Product Features Introduced**

<b>Post 1945</b>	Centre Arm Rest Front Centre Arm Rest Rear Chrome Trim Chrome Grille Cigarette Lighter Cloth Trim Drivers seat Lumbar Support Exterior Side Mouldings Front Fog lamps fitted Front Head Rest Front Spoiler Height Adjustable Drivers Seat Height Adjustable Seat Belts Independent Suspension Leather Upholstery Leather Coated Steering Wheel Limited Slip Differential Rear Seat Belts Rear Spoiler Rev Counter Sports Front Seats Sunroof Trip Counter Time Clock Vinyl Trim Walnut Trim	<b>1976</b>	Cruise Control Electric Mirrors
		<b>1977</b>	Removable Hard Top Remote Boot Release Remote Petrol Cap Release
		<b>1978</b>	Electric Height Adj. Seat Heated Front Seats Part Time 4 Wheel Drive Sunroof (Factory Fitted) Rear Load Cover
		<b>1979</b>	Deadlocks Removable Soft Top T-Bar Roof Roof Rails Pre-tensioned Belts (front)
		<b>1980</b>	Antilock Braking System <sup>1</sup> Trip Computer On Board Computer
		<b>1982</b>	Electric Memory Seats Rear Sun Blind (electric) Radio Cass (remote) Half Leather Trim
		<b>1983</b>	Free Wheel Front Hubs Cup holders Twin Sun Roofs Side Impact Protection Automatic Stability Control
<b>-1945</b>	Diff Lock Full Time 4 Wheel Drive 2 Speed Transfer Box	<b>1984</b>	Three Rear 3 Point Seat Belts
<b>1950s</b>	Air Conditioning Power Assisted Steering Electric Windows (front) Electric Windows (front & rear)	<b>1985</b>	Alarm High level brake Light Heated Front Windscreen External Temperature gauge Electric Power Hood
<b>1960s</b>	Pop-up Headlights Radio fitted Adjustable Steering Column Disc Brake (front) Disc Brakes (front & rear) Front Door Bins Intermittent Wash Wipe Radio Cassette Heated Rear Window Halogen Head Lights	<b>1986</b>	Pollen Filter
		<b>1987</b>	Rear Reading Lights Drivers Airbag
		<b>1988</b>	Active Suspension Catalytic Converter Remote Central Locking Side Steps Fitted Voice Synthesizer
<b>1970</b>	Adjustable Mirrors Central Locking Velour trim Tinted Windows	<b>1989</b>	Radio CD Player Multiplay CD Child Seat Front Twin Airbags Engine Immobiliser Compact Disc Player
<b>1971</b>	Locking Wheel Nuts Headlamp Wash Child locks	<b>1990</b>	Electro Chromatic Rear Mirror Traction Control Visible Identification Number
<b>1972</b>	Electric Aerial Rear Sun Blind Fitted Head Rests (front & rear) Alloy Wheels	<b>1991</b>	Electric Front Seat Belts
		<b>1992</b>	Front Side Air Bags GSM Mobile Xenon Headlights
<b>1973</b>	Split rear seats Heated Mirrors Height Adj. Headlight Aim Colour Coded Bumpers Colour Coded Mirrors	<b>1994</b>	Electric Operated Soft Top Courtesy Light Delay
		<b>1995</b>	Electric Folding Mirrors Revolving Front Seats Traffic Navigation System
<b>1974</b>	Rear Wash Wipe	<b>1996</b>	Climate Control
<b>1975</b>	Digital Odometer Sunroof (electric) Headlamp Wash Wipe 4 Wheel Steering	<b>1997</b>	12 V Accessory Power Point

*Source:* 1. Enumerated by the authors from trade publications since 1950 (see data sources for the titles). 2. ABS was originally used in the Jensen FF in 1966, however computer activated ABS was introduced in 7-Series BMW in 1980.