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**THE CHANGING JAPANESE HOUSING MARKET:
AN ASSESSMENT OF US EXPORT STRATEGIES FOR
PREFABRICATED WOODEN HOUSING AND
BUILDING MATERIALS**

**Ivan L. Eastin
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January, 1997

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CINTRAFOR Working PAPER 60

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EXECUTIVE SUMMARY

Introduction

The Japanese market for prefabricated homes and wooden building materials has tremendous potential for US firms, particularly those located in the Pacific Northwest. For example, exports of prefabricated housing to Japan increased by 51% from 1994 to 1995, with 81% of these exports originating from the Pacific Northwest. Despite this success, Japan is a relatively new market to most US firms and more information is required before US firms can fully take advantage of the opportunities that exist. This research project was developed to provide a broader understanding of the Japanese market for prefabricated homes and wooden building materials, and to identify the problems that exporters must overcome in order to compete effectively in Japan.

The objectives of this project were: (a) to perform a competitive assessment of the Japanese market for imported prefabricated housing and wooden building materials, (b) to identify those marketing strategies that are being employed by US manufacturers to compete successfully in Japan, and (c) to identify the tariff and non-tariff barriers that are perceived to adversely impact the competitiveness of US firms in Japan.

The results of this research study were derived from a census of prefabricated housing manufacturers, export consolidators, and Japanese trading companies currently exporting their products to the Japanese market. The final sample frame included sixty-six firms: fifty-one in Washington and fifteen in Oregon. Sixteen of the companies manufactured prefabricated housing, while thirty-four were export consolidators, and sixteen were subsidiaries of Japanese trading companies. The final response rate for the survey was 70%, with responses being received from 75% of the prefabricated housing manufacturers, and 79% of the export consolidators, but just 47% of the Japanese trading companies.

Results

Prefabricated housing exporters in Washington and Oregon can be characterized as being small to medium-sized firms with annual sales of less than \$10 million and employing less than 25 employees. Most of the firms have been exporting to Japan for a relatively short time, usually less than five years. However, prefabricated housing manufacturers appear to be highly involved in the Japanese market, as indicated by the fact that approximately half of the respondents generated more than 50% of their annual sales revenue from exporting to Japan.

The promotional strategies used by the survey respondents were fairly limited, a fact which might be attributed to the small size of the respondents and their limited financial resources. A majority of the respondents indicated that they relied on product brochures, word-of-mouth referrals, and trade shows to promote their products. Promotional strategies that required a higher commitment of financial resources, such as establishing a model home or product showroom in Japan, were employed less frequently than the other strategies.

In general, the distribution channels for wood products exports in Japan are complex, consisting of several layers of intermediaries. However, the results of this research indicate that many of the prefabricated housing manufacturers and export consolidators have been successful in bypassing the traditional Japanese distribution channels. Approximately half of the respondents indicated that their primary channel of distribution involves selling their products directly to Japanese home builders. This strategy provides these firms with substantial cost savings, helping to increase the competitiveness of US prefabricated homes and building materials in the Japanese market.

Most respondents considered the establishment of a strong personal relationship with their Japanese customers as one of the most important factors for succeeding in the Japanese market. This factor was rated as being more important than any other single marketing factor by each of the three groups of respondents included in the study. Other marketing factors that were perceived to be important included providing after-sales service, short delivery times, and technical assistance to the customer.

Product adaptation was also considered to be an important factor for succeeding in Japan. In fact, all of the prefabricated housing manufacturers and 88% of the export consolidators reported that they modify their product to

some extent for their Japanese customers. The most common types of product adaptation included changing the design of the home to include a tatami room and/or a genkan (Japanese-style entryway), utilizing higher quality materials in those products exported to Japan, and translating product brochures, installation instructions, and technical information into Japanese.

JAS and JIS product certification of building materials and the Japanese building code were perceived to be non-tariff trade barriers that had a substantial negative impact on the competitiveness of US prefabricated houses and building materials in Japan. Two other factors, the difference between US/Japan construction technology and inefficient transfer of US construction technology, were also perceived to be non-tariff barriers that restricted the competitiveness of US firms in Japan. It is interesting to note that in many cases the US subsidiaries of Japanese trading companies perceived the various trade barriers as having a greater impact on competitiveness than did the US firms. This was particularly true with respect to the complexity of the distribution channels in Japan and the import tariffs for prefabricated houses and building materials.

The vast majority of the prefabricated housing units exported from the US to Japan are manufactured using 2x4 construction technology. This poses a problem given the fact that most of the survey respondents reported that Japanese architects, contractors, and carpenters do not possess a strong understanding of 2x4 technology. In addition, many respondents stressed the fact that Japanese residential contractors seldom utilize the construction management techniques that are widely used in the US residential construction industry. As a result, construction costs are more than twice as high in Japan as in the US. But perhaps more important from a long-term strategic market development perspective is the fact that this basic lack of understanding regarding 2x4 construction technology can adversely impact the quality of 2x4 homes built in Japan and reduce their long-term performance. Either of these factors could potentially erode the competitive position of US prefabricated housing and wooden building materials in the event that substandard products and/or product performance adversely affect Japanese consumer perception of US products.

Not surprisingly, survey respondents indicated that the efficient transfer of 2x4 construction technology was an important component of their marketing mix, with approximately 85% of the respondents utilizing some type of strategy to address the issue of technology transfer. The three most widely employed types of technical assistance were: providing customers with installation instructions and/or product brochures, providing customers with seminars and/or on-site technical training, and sending over carpenters and/or construction site supervisors to ensure the quality of the construction work. Unfortunately, current Japanese immigration law makes it very difficult for US contractors and carpenters to obtain the work visas that are required to work in Japan. When asked to indicate what strategy would be most effective in transferring 2x4 construction technology to Japan, almost half of the respondents indicated that they favored providing training for Japanese construction professionals.

The results of this study indicate that prefabricated housing manufacturers and export consolidators in the Pacific Northwest are strategically poised to take advantage of current housing policies in Japan that promote imported housing and building materials. Despite the fact that many of the participants in these industries are relatively new to the Japanese market, a large number are already experiencing success. In particular, these firms have demonstrated the ability to take advantage of the new competitive environment in Japan by developing strong business relationships with their customers and partners and developing distribution channels that bypass the traditional extended and costly distribution system. Given the strengthening Japanese economy, the opportunities for imported housing and building materials in Japan appear to be bright.

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INTRODUCTION

Japan, with a population of 125 million, is approximately the size of California. However, over the past several years the number of residential housing starts in Japan has exceeded those in the US, totaling 1.47 million units in 1995 as compared to 1.35 million units in the US. Wooden housing comprised 45.3% of all housing starts in Japan in 1995, but has been losing market share to substitute building materials such as concrete and steel. While traditional Japanese post and beam construction still dominates the Japanese wooden construction market, comprising about 80% of all wooden construction in Japan, the number of western-style 2x4 platform frame and wooden prefabricated housing units built in Japan has increased despite the general decline in wooden construction.

Housing costs in Japan are notoriously high. According to a recent study on housing costs, an average 164 m² house in suburban Seattle cost about \$139,000 compared with \$255,000 for a similar house built in Sendai, a comparable medium-sized city in Japan (Magnier 1994). Among the reasons for this cost difference are the high cost of construction labor, the lack of skilled carpenters, non-standardized construction methods, lack of competition in the construction market, cumbersome building regulations, high building material costs, and an inefficient material distribution system. The above-mentioned comparison does not include the cost of land because of the wide disparity between the price of land in the US and Japan. It is estimated that the cost of land for the typical detached house represents over 60% of the total housing cost in urban regions and as much as 90% in some areas of Tokyo and Osaka (Yamakoshi 1994).

In 1992 the Japanese Ministry of Construction (MOC), responding to increasing complaints about the high cost of housing, announced an action program to reduce the cost of housing by one-third by the year 2000. It is planned that this cost reduction will be achieved by streamlining distribution channels, increasing the productivity of the domestic residential housing industry, and by reducing residential building regulations. At about the same time, the Japan External Trade Organization (JETRO) and the Ministry of International Trade and Industry (MITI) adopted a strategy for reducing the cost of residential housing in Japan by increasing housing imports. To achieve their objective, they initiated a program in 1994 to promote imports of foreign-made housing systems, including prefabricated houses. The JETRO/MITI plan calls for the import of 55,000 units of prefabricated houses from North America and Europe over the next five years, requiring an increase in annual imports from the current level of approximately 1,500 to 11,000 units. This focus on increasing imported housing not only provides a less expensive alternative to domestically produced housing, but also contributes to reducing Japan's massive trade surplus with Europe and North America.

The joint MITI/JETRO program, in conjunction with the strong yen, provides a unique opportunity to expand US exports of prefabricated homes into Japan. However, some Japanese housing industry analysts have expressed doubts about whether these ambitious goals can be met. A number of factors have been cited as reasons for pessimism, including current Japanese building regulations, high land prices, high costs of labor, the unfamiliarity of Japanese carpenters with western-style construction technologies, high transportation costs, and the complex distribution channels in Japan. Despite this, recent import statistics indicate that the number of prefabricated houses imported into Japan in 1996 will exceed 11,000 (Boardman 1996).

The Japanese market for prefabricated homes has tremendous potential for US firms, particularly those located in the Pacific Northwest. However, this is a relatively new market and much information is required before US firms can fully take advantage of the opportunities that exist. This research project is focused on providing a broader understanding of the Japanese market for prefabricated homes and the problems which exporters must confront in order to compete effectively in this market.

LITERATURE REVIEW

Overview of the Japanese Residential Construction Market

Size of the residential construction market

The Japanese residential construction industry is one of the largest in the world. The strong demand for new homes in Japan can be attributed to rapid urbanization, high per capita incomes, the practice of rebuilding older homes rather than repairing and/or remodeling them, and the need to replace substantial numbers of sub-standard housing units constructed immediately following the second World War.

The number of new housing starts in Japan has exceeded those in the United States since 1987, with housing starts peaking at 1.71 million in 1990 (Figure 1). While housing starts declined to 1.3 million in 1991 in response to the global recession, most analysts predicted a recovery in housing starts followed by a period of steady growth to the end of the century. This positive outlook seems to be supported by the data, which indicates that new housing starts have been increasing since 1991. Housing starts totaled 1.49 million units in 1993, a 5.2% increase over 1992, and increased to 1.57 million units in 1994 before declining to 1.47 million starts in 1995. Mid-year estimates suggest that housing starts will rebound in 1996, reaching a level of 1.65 million units (Japan Lumber Journal 1996a). Two factors that have contributed to this growth are the reduction of government mortgage interest rates to 3.1% and the decision by the Japanese government to make low-interest mortgages available to a wider range of Japanese home buyers (*Japan Lumber Journal* 1996b, JETRO 1993, Friedland 1992).

In order to stimulate the housing industry, mortgage rates through the government-run Government Housing Loan Corporation (GHLC) were lowered to 3.1%, the lowest rate ever. In addition, the maximum area of floor space for which GHLC financing can be obtained was expanded from 220 m² to 240 m², while the income ceiling for persons applying for low-interest GHLC financing was increased from ¥10 million to ¥13.225 million. Following the adoption of these changes, it is estimated that mortgage financing through GHLC will be available to over 90% of the salaried workers in Japan (*Japan Lumber Journal* 1996b).

The Japanese government has also enacted legislation to increase the amount of land available for residential construction in Japan's urban areas (JETRO 1993). This change in legislation has contributed to an increase in the number of new housing starts over the past two years. The so-called "Land Productivity Law" requires Japan's urban farmers (people who own land within the city and have declared it as farm land to avoid paying higher taxes while waiting for land values to increase) to declare their property according to end-use. Land owners who choose to register their land as conserved agricultural land will continue to pay minimal taxes, but will not be able to develop their land for a period of thirty years. At the same time, the government has provided these landowners with an incentive to develop their land by offering them a tax break if they choose to build low cost rental units on the property. It appears that the legislation has been effective, as the construction of rental units has increased since the law was passed in April of 1992.

Special characteristics of the Japanese residential construction market

Traditionally, wood has been the dominant building material used in the construction of residential housing units in Japan. However, the market share for wooden homes has declined substantially over the past twenty years, while steel and concrete units have increased their market share. As recently as 1975, over two-thirds of residential housing units were constructed using wood, a percentage that had declined to just 45.3% in 1995.

The decline in wood use in residential construction has been attributed to a variety of factors. One of these, particularly relevant to urban construction, is the strict nature of Japanese building codes with respect to fire prevention and containment (Jensen International 1992). Japan has historically experienced the highest rate of death per incidence of fire of all the industrialized nations, a fact that has been attributed by Japanese authorities to the use of combustible building materials, the close proximity of houses in Japanese cities, and the high incidence of geologic activity. As a result, Japanese building codes restrict the use of combustible materials in exterior applications and require the use of non-combustible materials in providing horizontal separation between

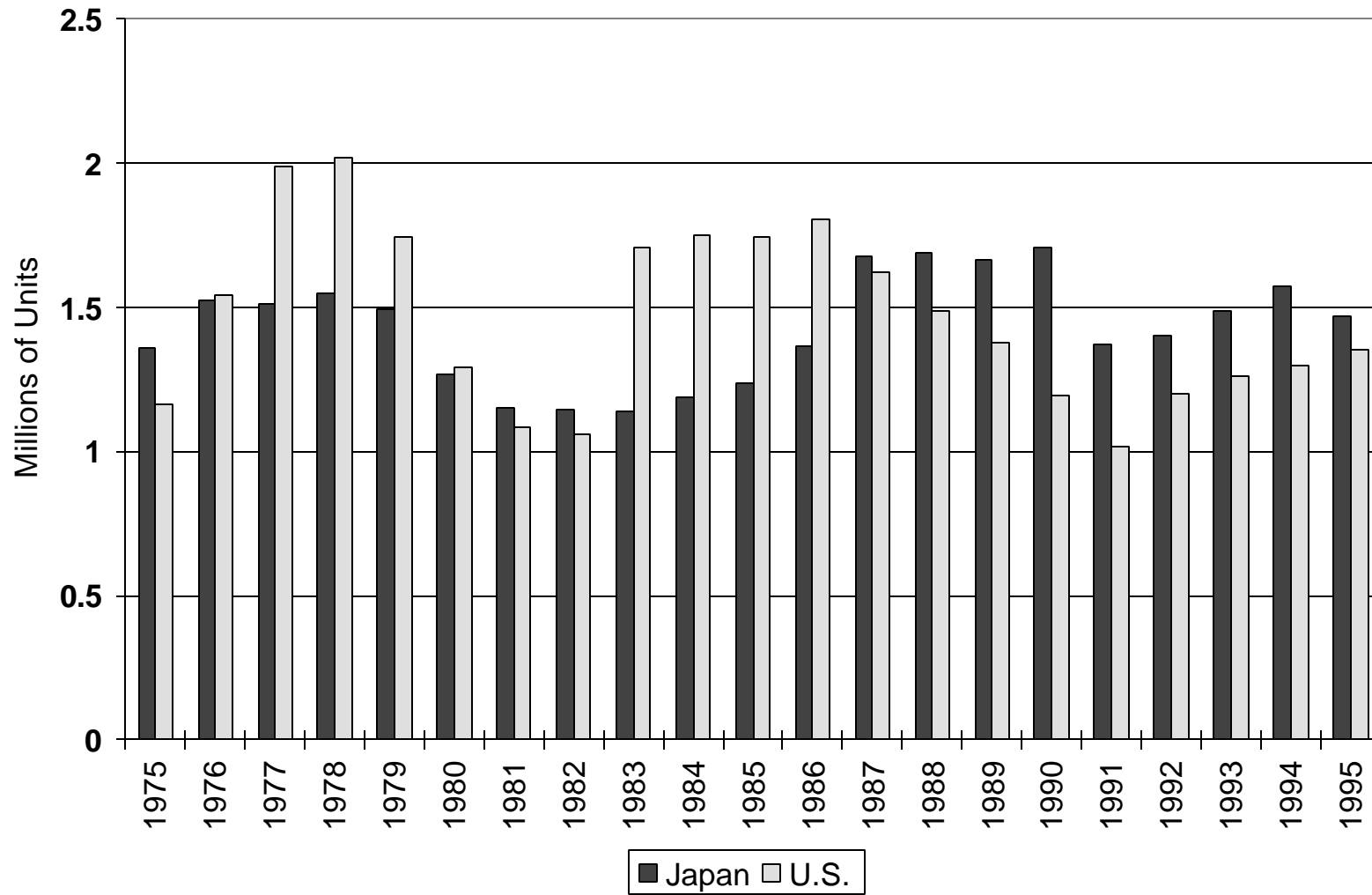


Figure 1. The number of new housing starts in Japan and the US, 1975-1995.

multifamily units with stairways. To illustrate this point, the use of wood frame construction for multifamily housing was prohibited until as recently as 1987.

Other factors that have contributed to the decline of wood as a building material include the development of acceptable and inexpensive non-wood alternatives (*e.g.*, steel and concrete), and the high cost of construction labor. To illustrate the importance of this last factor, the cost of labor represents approximately 30 to 35% of the cost of a new residential home in the US, while in Japan it represents between 50 and 65% of the cost of a traditional post and beam home. High labor costs and extended construction times help to drive the price of wooden housing beyond the reach of the average Japanese home buyer (Jensen International 1992). Further exacerbating the problem of high labor costs is the short supply of skilled carpenters. During the period 1987 to 1990 the membership of the Japanese Carpenters Association declined from 500,000 members to just 50,000 as fewer young people opt to pursue a career in carpentry. The reluctance of young people to pursue a career in carpentry is only half-jokingly described as an aversion to any type of work described by the three d's: dirty, dangerous and demanding. In Japanese this type of work is referred to as the three k's: *kitanai*, *kiken* and *kitsui*.

As a result of the high cost of purchasing a home in Japan, many potential home buyers have opted to live in less expensive suburban apartment complexes. Currently, only about 40% of Japanese families can afford to live in a single family home whereas just ten years ago almost 66% of Japanese families could afford to own their home. To illustrate this phenomenon, today the price of a house located one hour outside of Tokyo costs approximately ¥100,000,000 while an apartment in the same area costs about half as much (Jensen International 1992). High real estate prices have also contributed to smaller average floor areas for new homes in Japan (JETRO 1993). In 1995, the average floor area of a new home in Japan was 91.6m² compared to the 153m² average floor area for a new home in the US. Finally, the lot size for a single family residence in Japan is approximately 1/3 to 1/6 of that in the US (Jensen International 1992).

A relatively recent trend in the Japanese residential market is the increasing market share of 2x4 homes and prefabricated homes. Whereas the ratio of 2x4 and prefabricated houses to total housing starts was 2.5% and 13% respectively, in 1988, by 1995 this had increased to 5.0% and 18.9%. The following sections will discuss the Japanese 2x4 and prefabricated housing markets in terms of market demand and industry structure.

Home mortgage financing

As in the US, Japanese home buyers can obtain either private or public financing to purchase a new home. Private funds are provided from personal savings, financing from family members, pension funds, commercial banks, savings and loans, or even employers (Jensen International 1992, Smith 1988). Private funds support the majority of residential construction loans in Japan and, of the 1.47 million housing units started in fiscal 1995 almost 57% were privately financed (Figure 2). The remaining mortgages were provided through public mortgage lenders, primarily the Government Home Loan Corporation (GHLC). The public sector has increased its proportion of total mortgage financing from 30% in 1990 to 43% in 1995, a direct result of government policies targeted towards boosting the Japanese economy by increasing the demand for new homes.

The single most important public source of home financing is the Government Home Loan Corporation. Established in 1950 in response to the severe shortage of houses and charged with improving the overall quality of residential housing in Japan, the GHLC assists home buyers by providing them with long-term, low-interest home loans (Smith 1988). The interest rate on GHLC loans is lower than that provided by commercial financial institutions and the pay-back period is longer. As a result, GHLC mortgages are the preferred source of financing by Japanese home buyers. For example, whereas the commercial interest rate for home mortgages in Japan was about 4.4% in 1995, the GHLC mortgage rate was just 3.1% (*Japan Lumber Journal* 1996b).

Despite being the biggest single provider of home mortgages in Japan, GHLC sets several restrictions on the type of housing it will finance. For example, there is an upper limit on the floor area and purchase price of houses that qualify for GHLC mortgages. GHLC also employs a different interest rate on their home mortgages depending on the income of the applicant and the size or type of the house to be purchased. In 1994 GHLC mortgage financing

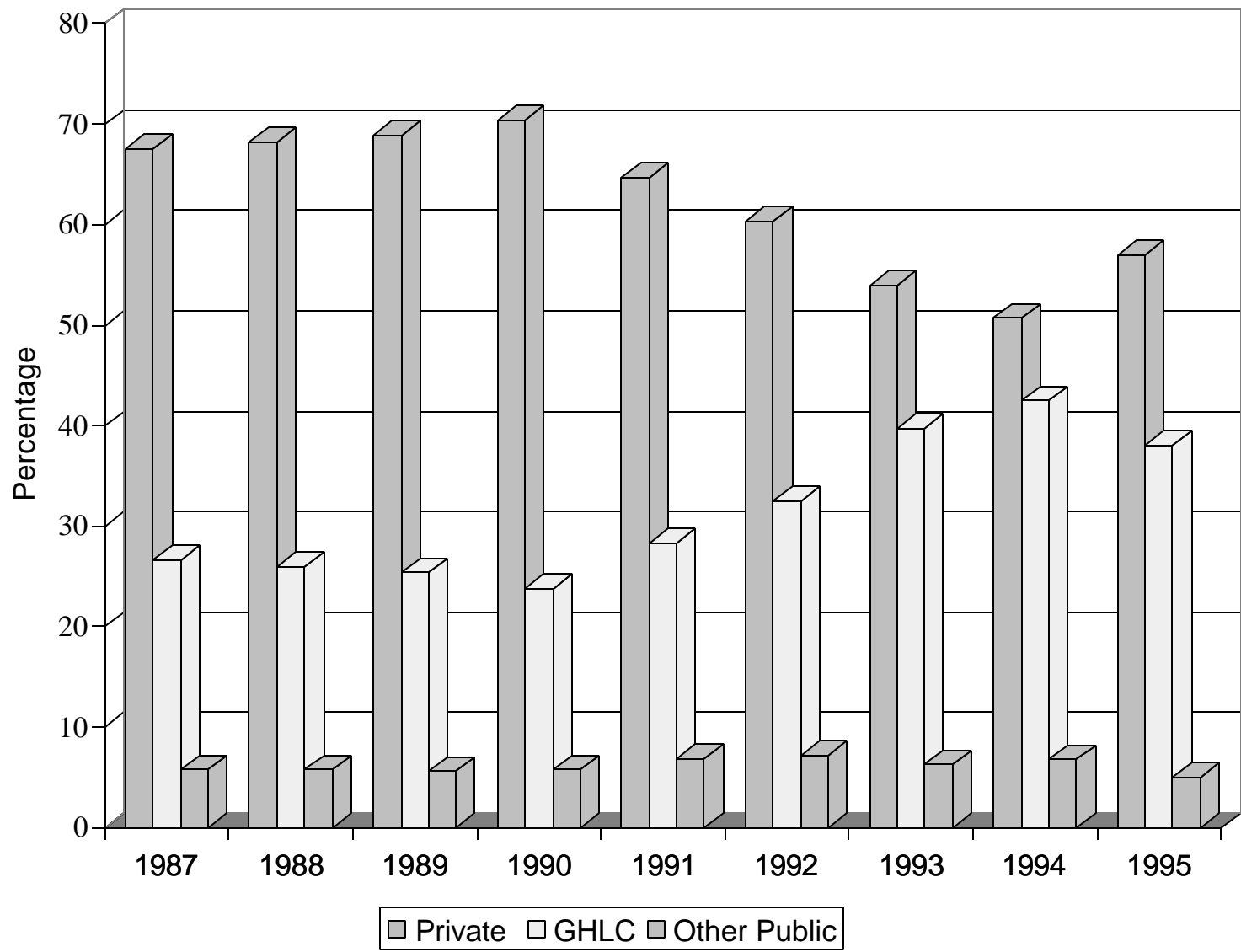


Figure 2. The source of mortgage funding for new housing starts in Japan, 1987-1995 (1995 estimated).

was increased to 630,000 units and the maximum mortgage level was raised. As a result, a record 667,118 mortgages were granted through GHLC in 1994.

GHLC has indicated that their loan regulations will be revised substantially at the end of 1996. These revisions will change the basis for establishing the mortgage rate from a floor area basis to a housing quality basis. The objectives of the revisions are to increase the quality of the housing stock and meet the need for more durable and energy-efficient housing in Japan (*Japan Lumber Journal* 1996c).

Other public mortgage providers include the Housing and Urban Development Corporation (HUDC) and public sector pension funds. However, the mortgage terms from these providers are more specific and usually more expensive than the preferred GHLC programs. For example, the HUDC concentrates its mortgage lending on the development of suburban communities called New Towns. Although HUDC will provide funding for between 80 to 90% of the cost of a new home, they limit their mortgage funding to home buyers purchasing a home in a community being developed by HUDC (Jensen International 1992). Providers of these other public mortgage programs finance between 6 and 7% of all residential home mortgages in Japan.

It is obvious that public funding has been gaining importance since 1987, particularly the GHLC program. However, public sector residential loans are an even more significant source of financing in specific industry segments, such as 2x4 construction and prefabricated construction. The latest available data segmented by type of construction is for 1991, and indicates that half of the 46,000 2x4 housing starts were publicly financed, 90% through GHLC. Of the detached prefabricated housing starts in 1991, 61.5% were publicly financed. Public financing was much less important for other types of prefabricated housing, representing just 8.8% of low-rise prefabricated houses and 44.3% of medium and high-rise apartment houses (JETRO 1993).

Due to its importance as a mortgage provider, GHLC is a major force in the residential construction industry in Japan. For example, it requires that all residential construction projects receiving a mortgage through GHLC be approved and conform to specific construction specifications set by GHLC. Thus, its policies have a direct impact on US firms interested in exporting 2x4 and prefabricated housing packages and housing components to Japan. Both types of construction are approved by GHLC for financing although all structural building materials are required to be JAS/JIS approved (or equivalent).

The 2x4 housing market in Japan

Demand for 2x4 housing

The North American 2x4 platform frame construction method was first introduced in Japan in 1974 (JETRO 1988). Following its introduction, the US forest products industry anticipated the rapid acceptance of 2x4 construction in Japan based on its cost advantages and superior structural strength characteristics with respect to the traditional Japanese post and beam construction method. However, it was not until the mid-1980s that 2x4 housing starts in Japan began increasing appreciably. By 1995 2x4 construction still represented only 11.1% of wooden housing starts and just 5.0% of total residential housing starts. Several factors have contributed to the relatively long introduction period for 2x4 construction technology. First, Japanese architects, contractors, and carpenters have little experience with 2x4 construction technology, resulting in relatively high production costs. Second, the Japanese construction industry has been slow to abandon the traditional post and beam construction method. Third, most US forest products companies have been reluctant to manufacture building materials in the sizes that are preferred by Japanese carpenters. Finally, difficulties in getting JAS approval for the imported building materials used in 2x4 platform frame construction has restricted access to the Japanese market (Jensen International 1992).

Despite its relatively small market share, 2x4 construction is a fast-growing segment of the residential housing market and is gaining popularity in Japan. The number of 2x4 housing starts in 1995 totaled 73,989, a 15.5% increase from the previous year. Additionally, the market share of 2x4 housing starts has been increasing steadily, from 1% in 1980 to over 5% in 1995. The Japan 2x4 Building Association expects the market to grow at an annual rate of 10% through the end of the century, with 2x4 housing starts reaching 100,000 by 1998 and 120,000 by 2000 (JETRO 1993).

According to Japanese industry experts and consumers, 2x4 construction technology is superior to the Japanese post and beam method in terms of both its structural and thermal efficiency characteristics (JETRO 1992). A summary of the factors cited as contributing to the increased popularity of 2x4 homes in Japan included:

- ? 2x4 houses utilize building materials and labor more efficiently,
- ? the total construction time for 2x4 houses is shorter,
- ? 2x4 construction does not require highly skilled carpenters and woodworkers,
- ? 2x4 houses possess better structural strength and durability characteristics and are perceived to have higher earthquake and wind resistance,
- ? 2x4 houses possess outstanding acoustical insulation characteristics,
- ? 2x4 houses offer better thermal insulation characteristics, generating only one-third to one-half of the energy consumption of traditional Japanese wooden housing,
- ? 2x4 housing designs are more flexible,
- ? 2x4 houses incorporate wood in their construction, a factor that is important to Japanese home buyers, and
- ? 2x4 houses are comparatively less expensive than post and beam houses.

Recently, some regulations of the Japan's Building Standards Law governing the construction of wooden houses have been eased, which should contribute to an increased demand for 2x4 housing. For example, the maximum floor space for apartment complexes constructed using wooden building materials and located in the suburban quasi-fire zones, previously limited to 2,000 m², has been increased to 3,000 m². This change in the Building Standards Law will allow the construction of three-story, multi-family wooden apartment houses, a fast growing sector of the market (JETRO 1993).

The 2x4 housing industry

The industrial body governing 2x4 housing in Japan is the Japan 2x4 Building Association, whose member companies also include firms involved in the import of prefabricated housing units. The combined membership (both regular and associate members) in the Japan 2x4 Home Builders Association totaled 744 companies in 1993 (JETRO 1993). Of the total membership, 360 companies have built at least one house using the 2x4 construction technology while the top five companies accounted for 46% of total 2x4 house sales in 1992 (Table 1). The total number of 2x4 units constructed in 1992 was 52,933; thus these 21 firms represented 63% of all 2x4 houses built in Japan. Most of these firms have their headquarters in the Tokyo or Osaka areas. Some of the largest 2x4 builders are also involved in the prefabricated housing industry.

The prefabricated housing market in Japan

Demand for prefabricated housing

Prefabricated houses are partially or completely manufactured using a factory assembly line process and are transported to the construction site as components that can easily be assembled on-site. Prefabricated housing offers some benefits over the traditional site-built home, including more consistent quality, standardization of the on-site construction process, and reduced costs. The lower cost of prefabricated housing can be attributed to the efficiencies accrued from the production process as well as a shorter period of on-site construction (JETRO 1993).

Table 1. The twenty largest 2x4 contractors in Japan, 1992.

Company	Units sold	Company	Units sold
Mitsui Home	11,600	E. D. Home Plaza	820
Sekisui Kagaku	4,800	Daiken Home	800
Taihei Jutaku	2,900	Mitsubishi Asset	800
Sanwa Home	2,000	Towa	700
Sekisui House	1,700	Iwakura Home	565
Sumitomo R. E. Home	1,450	Taisei Jutaku	320
Iwatani Jutaku	1,440	Kanebo House	280
Kinoshita Komuten	960	Hokushu Housing	260
Tokyu Home	900	Hokudai Homes	150
J. R. Home	850	Nihon Homes	100

Source: Japan Housing Industry Journal; Washington State Department of Community, Trade and Economic Development.

Prefabricated housing was introduced in Japan in the late 1950's; by 1995 the number of prefabricated homes constructed in Japan totaled 224,758 units annually. Prefabricated home construction has doubled over the past fifteen years and the market share for prefabricated homes in the total housing market has increased from 9% in 1978 to 18.9% in 1995 (Figure 3).

The success of prefabricated housing in Japan can be attributed to the fact that it is perceived to be a high quality product by Japanese consumers. This perception is actively supported by the manufacturers of prefabricated homes who often provide lifetime warranties for their homes. Other factors that have contributed to the success of the prefabricated housing industry include: the shortage of skilled carpenters, its suitability for industrial production, the development of CAD/CAM technology that allows substantial design flexibility and customer interaction during the design process, reduced on-site construction times that minimize labor costs, and reduced on-site material waste.

The primary demand for prefabricated housing is concentrated in and around the urban areas and includes apartment houses, condominiums, and single-family detached houses (JETRO 1993). In fact, 78% of the total prefabricated housing unit sales in Japan during 1991 were generated in the three largest metropolitan areas (*i.e.*, Tokyo, Nagoya and Osaka) (JETRO 1993). In 1991, 58% of the total number of prefabricated homes built in Japan were apartments, 39% were detached single family residences and 3% were tenements (JETRO 1993).

The prefabricated housing market can be segmented into three categories based on the primary type of structural material (steel, wood or concrete) employed in the construction process. Non-wood units represent the majority of prefabricated housing units manufactured in Japan (Figure 4). Of the prefabricated housing units constructed in 1991, 79% were steel, 14% utilized wood and 9% were made with concrete (JETRO 1993). The market share of wooden units has been increasing steadily and is expected to increase substantially during the next decade. Some industry observers estimate that wooden prefabricated houses have the potential to increase their share of the prefabricated housing market to 30% (Jensen International 1992).

The prefabricated housing industry

The Japan Prefabricated Construction Suppliers and Manufacturers Association reported a total membership of 120 companies in 1993 (JETRO 1993). The majority of these members are construction companies that specialize in medium and high-rise office buildings and apartment houses, with only ten companies specializing in prefabricated wooden homes. An analysis of the major prefabricated home builders indicates that many focus primarily on the prefabricated housing market, although a few of these companies are large Japanese general contractors (*e.g.*, Taisei Corporation and Shimizu Corporation).

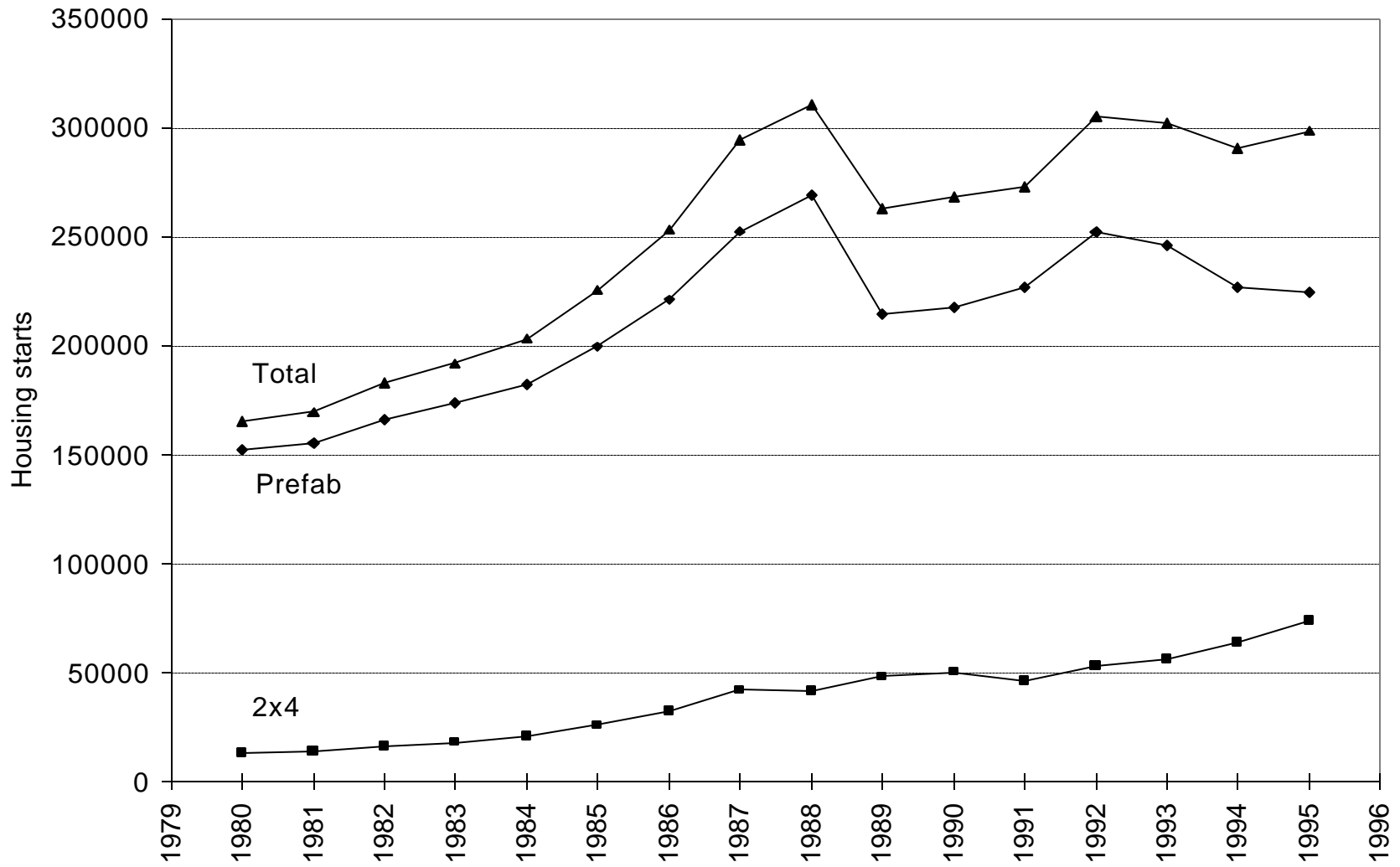


Figure 3. Number of prefabricated and 2x4 housing starts in Japan, 1980-1995.

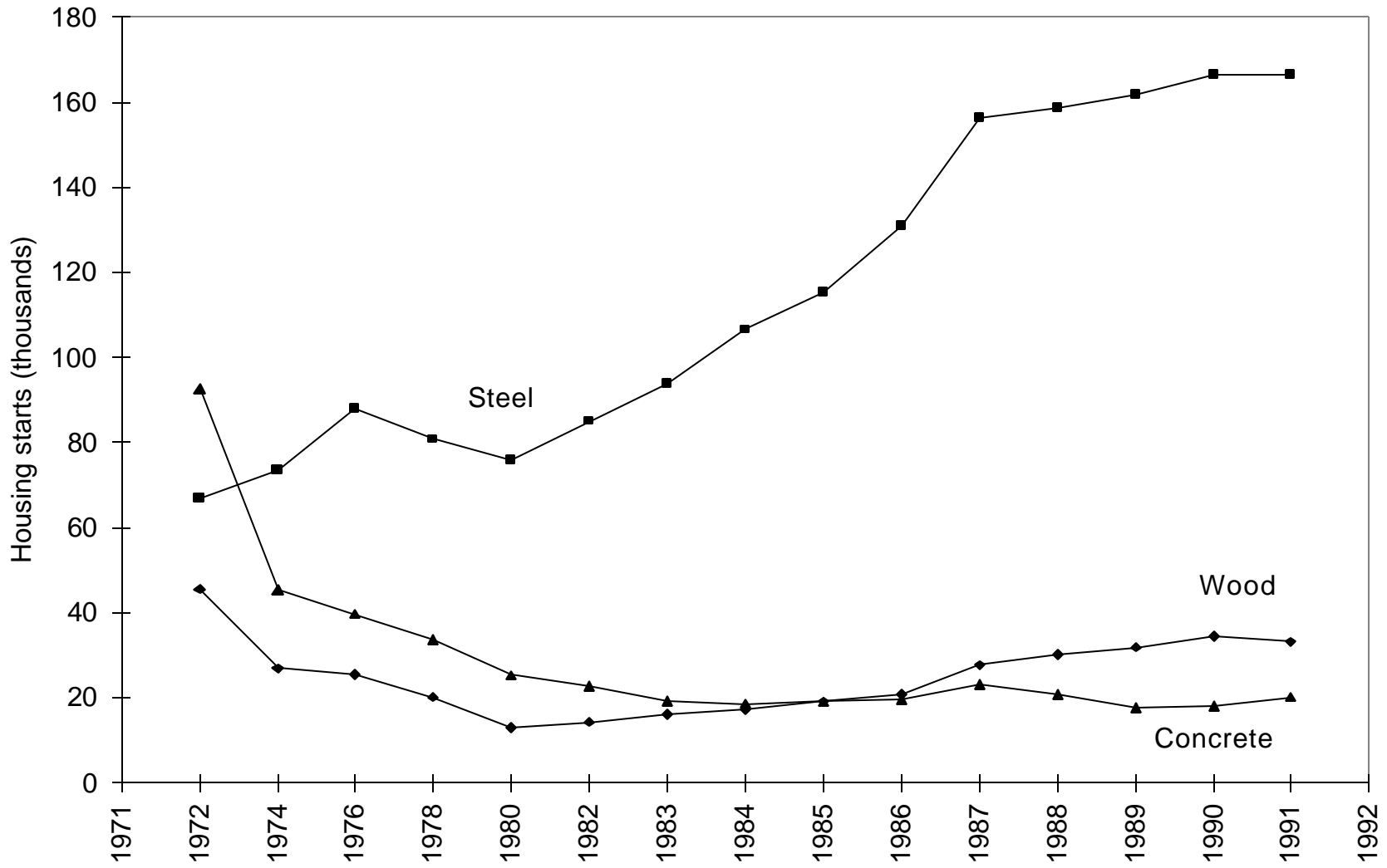


Figure 4. Structure of the prefabricated housing market in Japan, by construction material.

Despite the size of the prefabricated housing industry, the top five companies held a 73% share of the market in 1991, a strong indication of an oligopolistic market structure (Table 2). The top ten firms control almost 90% of the prefabricated housing market (JETRO 1993). The oligopolistic structure of the prefabricated housing market is particularly apparent in the wooden prefabricated home market segment where the three largest companies held a 97.4% market share in 1992 (Table 3) (JETRO 1993).

Table 2. Market shares of the ten largest prefabricated home builders in Japan, 1991.

Prefabricated Home Builders	Housing Units	Market Share
Sekisui House	63,983	22.2
Misawa Homes	45,937	15.9
Daiwa House	39,648	13.7
National House Industrial	32,580	11.3
Sekisui Chemical	28,500	9.9
Nisseki House Industry	13,002	4.5
Asahi Chemical Industry	12,660	4.4
Taisei Prefab	6,604	2.2
S x L Company	5,795	2.0
Kubota House	3,729	1.3
Total	252,193	87.4

Source: *2X4 Housing and Prefabricated Housing*, JETRO, March 1993.

Table 3. Japan's largest prefabricated housing manufacturers, 1992.

Company	Units Sold	Primary Building Materials	Sales Staff
Sekisui House	76,325	steel frame/wood panel	3,500
Misawa Home	47,261	wood frame/wood panel	3,310
Daiwa House	41,367	steel frame/wood panel	3,888
National House Industrial	32,612	steel frame/wood panel	1,990
Sekisui Chemical	30,300	steel frame/wood panel	2,313
Nisseki House	13,273	steel frame/wood panel	343
S x L Company	5,837	wood frame/wood panel	549

Source: Japan Housing Industry Journal; Washington State Department of Community, Trade and Economic Development.

Product and marketing strategies

The Japanese prefabricated housing industry was established in the late 1950's to respond to the shortage of houses in Japan. What was needed at that time were inexpensive, standardized houses that could be constructed quickly to meet the needs of the war ravaged population. However, the nature of the housing market has been changing as the shortage of housing has eased and the Japanese population has become more affluent. As a result, Japanese consumers can now afford more expensive, custom houses. The manufacturers of prefabricated homes have responded by developing high quality homes that provide high-end amenities. They also offer a diverse selection of house designs that can be customized to meet individual customer preferences by using a CAD/CAM design technology that allows the buyer to interact with the designer and view the results of design modifications instantaneously. In addition, the impact of design modifications on the price of the home can be immediately estimated for the buyer.

A large proportion of the houses constructed in Japan's metropolitan areas are built to replace older houses. This has necessitated that firms offer customized design plans that accommodate the great diversity of building conditions and lot sizes found in metropolitan Japan. For some of the largest Japanese prefabricated housing

manufacturers, custom homes represent as much as 100% of their business. The most recent trend in the housing market is an increasing demand for extended family and three-story houses. This housing trend is due largely to the typically small lot sizes and the extremely high cost of land in urban areas (JETRO 1988).

Prefabricated houses are usually sold directly by the manufacturer's own sales force or by independent authorized agents. If the sales and marketing are handled by the manufacturer, they typically also take care of the on-site construction. However, when sales are made by an independent agent, the on-site construction might be handled by either the manufacturer or the independent agent. The primary sales strategy for prefabricated housing manufacturers in Japan is to visit potential customers at their homes. Other important sales strategies include housing exhibitions, model homes, and word-of-mouth referrals (JETRO 1988).

Japanese imported housing policies

The Ministry of Construction "Action Program" to lower housing costs

The cost of building a residential home in Japan is estimated to range from 1.8 to 2.5 times the cost of building a similar home in the US. This has significant impacts on the final price of a home in Japan. For example, a detached home costs approximately eight times the annual salary of the average worker in Tokyo versus three times the average salary of a worker in the US. As a result, Japanese workers are forced to move further and further from the city in order to locate affordable housing. A recent publication indicated that a salaried worker working in Tokyo would have to live approximately forty kilometers from Tokyo in order to find an affordable home (JETRO 1993).

In an effort to address the high cost of residential housing, the Japanese Ministry of Construction announced an Action Program in 1994 with the objective of lowering the cost of residential housing by one-third by the year 2000 (Japan's Ministry of Construction 1994; Japan Lumber Reports 1994c). Currently, residential construction costs average ¥600,000 per tsubo (1 tsubo equals 36 square feet or 3.3 square meters) and the Action Plan would lower them to ¥400,000 per tsubo. The overall goal of the program is to increase the standard of living of Japan's population to better reflect the economic well-being of the country. The successful implementation of the Action Program is also expected to boost other segments of the national economy by stimulating consumer demand for furniture, appliances, and the other fixtures needed to furnish new homes.

The MOC has indicated that they can achieve the objectives of the Action Program and reduce construction costs by: 1) improving productivity in the Japanese construction industry, 2) rationalizing distribution channels for building materials, 3) relaxing construction related regulations, including those embodied in the Building Standards Law, 4) simplifying the certification procedure for domestic and imported building materials and equipment, and 5) increasing market competition by promoting increased imports of construction materials and housing.

The MITI/JETRO Plan to lower housing costs

In addition to the MOC initiative to reduce housing costs, the Japanese Ministry of International Trade and Industry (MITI) and the Japan External Trade Organization (JETRO) are working cooperatively toward lowering the cost of housing in Japan. Whereas the MOC Action Program emphasizes improvements in the efficiency and productivity of the domestic construction industry, the MITI/JETRO initiative focuses on promoting imported housing, primarily from Europe and North America. The MITI/JETRO program, established in March 1994, announced that imports of prefabricated houses and housing systems would be increased from the previous level of 1,500 units per year to 11,000 units per year by 1999.

To support this program, JETRO and MITI are undertaking a number of promotional activities. JETRO has opened four model home exhibition sites for the display of imported prefabricated houses in Yokohama, Sapporo, Osaka, and Fukuoka. In addition, they will subsidize the exhibition space for foreign exporters and/or Japanese importers (US Department of Commerce 1994d). To date eighteen firms have been selected to display their products, fourteen from North America and four from Europe. This type of promotional strategy is considered important by both MITI and JETRO because it provides potential home buyers an opportunity to evaluate and inspect the different types of homes. This type of promotional strategy is already employed by most of the major Japanese home builders to

advertise their homes (US Department of Commerce 1993e). In addition, the Export-Import Bank of Japan will provide low interest loans to importers of prefabricated homes. The normal interest rate of 4.6% will be reduced to 4.24% in order to encourage the import of prefabricated homes (US Department of Commerce 1993e).

Finally, MITI and JETRO will organize a committee to evaluate the numerous tariff and non-tariff barriers which adversely impact the competitiveness of imported building materials. One such barrier is the current 3.9% tariff levied against imported prefabricated homes. In addition, MOC has indicated a willingness to reassess certain provisions of the Japanese building code in an effort to facilitate the import of North American building materials and houses (US Department of Commerce 1993e).

The successful implementation of this program should provide US prefabricated home manufacturers with a unique opportunity to access the Japanese market. It has been estimated that the import of 55,000 prefabricated homes into Japan over the next five years would generate approximately US\$3-4.5 billion in revenue for foreign companies (Sakamaki 1994). In addition to providing more affordable housing to the Japanese consumer, the JETRO/MITI program would also help to reduce Japan's huge trade surplus with the US and Europe. While many Japanese experts voiced the opinion that the JETRO/MITI program was overly ambitious (Sakamaki 1994, Magnier 1994, Nakamae 1995, Osaki 1995), it has been reported that the number of imported prefabricated housing packages will exceed 11,000 in 1996 (Boardman 1996).

Problems and opportunities for imports

One reason why Japanese consumers purchase an imported house is its western appearance, the extensive use of wood in construction, its spacious design, and the inclusion of high quality appliances and fixtures. However, an equally important factor is the lower price of imported homes. The importance of price as an incentive to purchase an imported house is emphasized by the following comments from Japanese home buyers (Nakamae 1995):

Imported housing would be meaningless to us unless its price is at an affordable level. If it remains expensive, it will be just for a limited group of people with Western tastes.

We would probably choose a Japanese house, which we are more accustomed to, unless imported ones get much cheaper.

Given the relative cost structures in the US and Japan, imported US houses are price-competitive in the Japanese market. For example, in 1992 the cost of building a traditional Japanese post and beam house ranged from ¥150,000 to ¥180,000 per square meter as compared to ¥70,000 to ¥100,000 per square meter for a similar sized house in the US. However, industry statistics indicate that the final cost of building an imported house in Japan ranges from ¥240,000 to ¥300,000 per square meter. This huge increase in price can be partly attributed to the process of international trade, including shipping costs and import tariffs. However, a more important factor in the high cost of imported housing is the wide variety of inefficiencies inherent to the Japanese construction market. These inefficiencies include numerous government regulations that limit a builders' options in Japan (Sakamaki 1994, Nakamae 1994, Osaki 1995). For instance, foreign materials that do not meet the strict Japanese Agricultural Standards (JAS) cannot be used in homes where the mortgage is provided by GHLC. MOC's strict standards on fireproof construction material also make it difficult to utilize wood in exterior walls, windows, and doors in fire zones and quasi-fire zones. Imported faucets, nails and other building products are seldom used since the cost of obtaining building code approval for each of these individual products offsets their cost advantage. Further, only those utility firms (gas, plumbing, and electricity) authorized by local governments are allowed to operate within a given administrative area. These regulations create a monopoly that reduces competition and keeps construction costs high.

Another factor that impacts the relative price structure between imported and domestic housing is the low productivity and high wages of Japanese construction workers. It is estimated that the productivity of Japanese carpenters is only about one-third to one-half that of US carpenters (Nakamae 1994; Osaki 1995). As a result, labor costs account for 37% of the total construction costs in Japan, whereas they represent just 27% of total costs in the US (Table 4).

There are several factors that have been proposed to explain the lower productivity of Japanese carpenters. First, in Japan the various stages of the construction process are not well coordinated. For example, construction crews often do not have supervisors. Also, the critical path method of construction management, widely used in the US to manage and coordinate different aspects of a construction project, is generally not utilized by small- and medium-sized Japanese construction firms (Eastin, *et al.*, 1995). Second, construction workers in the US tend to specialize in specific tasks (*e.g.*, framing, roofing, hanging wallboard), while in Japan much of the work on a construction project is done by the carpenters (Eastin, *et al.*, 1995). Third, residential houses in Japan are much smaller than their US counterparts, a factor which often increases their construction costs. According to a representative of a Japanese construction firm, most Japanese homes have a floor area of just over 100 square meters, the minimum required to qualify for a GHLC mortgage. Fourth, Japanese workers are not familiar with the western 2x4 construction technology (Eastin, *et al.*, 1995). As a result, when confronted with a framing detail with which they are unfamiliar, they either revert to the post and beam technology to solve the problem or use excessive material to frame the detail. However, given adequate time and training, this factor will become less important as Japanese carpenters become more familiar with the 2x4 construction technology.

Another factor contributing to the lower productivity of Japanese contractors is that Japanese homes tend to be custom-made and located in dispersed locations, whereas in the US much residential housing construction activity focuses on residential housing developments (Eastin, *et al.*, 1995). Another important consideration relates to the fact that in the US the widespread use of 2x4 construction technology has led to the standardization of building techniques. In contrast, in Japan diverse construction methods are used depending on the region where the construction occurs and even with the contractor doing the work (JETRO 1993, Osaki 1995). These differences in construction practices eliminate the production and transportation efficiencies inherent to the 2x4 construction method and which contribute to reducing the cost of new housing (Eastin, *et al.*, 1995).

Table 4. Comparison of housing construction costs in Japan and the US.

	JAPAN		US	
Building Materials	\$43,188	20.7%	\$33,623	42.6%
Import Fees	14,493	6.9%	0	0%
Concrete Foundation	13,986	6.7%	3,986	5.1%
Carpenters	23,043	11.0%	8,261	10.5%
Plumbing and Electrical	31,594	15.1%	9,565	12.1%
Walls, Interior, <i>etc.</i>	25,362	12.1%	13,261	16.8%
Roofing and Siding	14,493	6.9%	797	1.0%
Genkan/Tatami Room	13,333	6.4%	0	0%
Scaffolds	10,652	5.1%	1,957	2.5%
Other Expenses	18,986	9.1%	7,391	9.4%
Total	\$209,130	100%	\$78,841	100%

Source: US Department of Commerce, 1995.

Note: For equivalent houses (164 m²) constructed in Sendai and a suburb in Seattle. Exchange rate used was for 1995 (\$1=¥138).

Finally, the widespread practice of using several layers of subcontractors in the Japanese construction industry increases the price of the finished house (Osaki 1995). For example, the contractor who accepts the new house order from the home buyer or architect frequently turns the entire job over to a subcontractor, while taking a sizable commission. In turn, the subcontractor might then give the project to yet another sub-contractor or sub-contractors. This system of middlemen can increase the cost of a residential construction project by as much as 50%.

While the use of lower-priced imported building materials can help to reduce the cost of a new home in Japan, there is a limit to how much construction costs can be cut by increasing the share of imported building materials (Nakamae 1994, Osaki 1995). In general, all types of building materials account for approximately 40% of total construction costs in Japan. Since the share of imported building materials in a residential project cannot exceed 70% (due to

Japanese government regulations), it has been estimated that the maximum cost reduction that might be obtained from using imported building materials is just 5.4% of the total project cost (Nakamae 1995).

All of the above mentioned factors interact to erode the price advantage of imported housing and building materials in Japan. For example, the average price of an imported house measuring 100-150 square meters ranges from ¥20-30 million when construction costs are included, while the cost of a similar sized Japanese home ranges from ¥16-27 million (Sakamaki 1994, Nakamae 1995). In summary, there are a variety of factors in the Japanese housing market that create barriers for selling imported prefabricated homes in Japan. These factors are described below and include both tariff and non-tariff barriers.

- ? The Government Housing Loan Corporation (GHLC), an MOC-affiliated financial institution that provides over 40% of low-interest, fixed-rate mortgages to homeowners, requires that new homes be built using JAS/JIS-approved building materials.
- ? Prefabricated housing imports are currently subject to a 3.9% import tariff, although there is some indication that this tariff may be abolished soon.
- ? On-time delivery and warranty support for products and components is an essential requirement for manufacturers exporting their products to Japan.
- ? The narrow roads in Japan, especially around urban areas, can constitute a physical barrier in transporting large containers and construction equipment to building sites.
- ? Transportation costs, estimated to be almost twice as high as in the US, contribute to the increased cost of imported housing.
- ? Inefficient technology transfer is an important factor because the availability of Japanese carpenters familiar with the western 2x4 construction technology is limited. Contributing to this problem is the fact that Japanese immigration laws restrict the availability of work visas for US construction crews.

Factors favoring imported housing

Despite the problems summarized above, the current market environment in Japan provides promising export opportunities for American manufacturers and exporters of prefabricated housing and related building materials. In addition to the JETRO/MITI program promoting the import of prefabricated housing, a number of other factors favor US exporters.

- ? The relatively strong yen makes US products more price-competitive in the Japanese market and imports of US value-added wood products have increased by 167% since 1989.
- ? As a result of the MITI/JETRO import program, an increasing number of Japanese contractors and potential homeowners have expressed interest in western-style homes.
- ? Many Japanese are dissatisfied with their current living conditions and would prefer to live in a larger home. A recent poll by the Ministry of Construction found that 51.5% of the Japanese were dissatisfied with their current place of residence. While the results of this poll may appear self-evident, the tremendous affluence of the Japanese population provides them with the financial resources to change their living conditions, a fact that should not be overlooked by US firms.
- ? As the Japanese begin to travel extensively and become more familiar with western standards of living, they will become more receptive to adopting elements of foreign architecture into their housing designs.
- ? As a result of foreign travel, some Japanese home buyers have begun to question whether the price of a Japanese house is a true reflection of its inherent value.

- ? Japanese consumers have a strong preference for wooden housing.
- ? It is anticipated that a number of Japanese building codes will be relaxed or modified over the next five years, thereby facilitating the entry of imported prefabricated homes and building materials.

RESEARCH OBJECTIVES

The objectives of this project were to: a) perform a competitive assessment of the Japanese market for imported prefabricated housing and wooden building materials; b) identify those export strategies that are being employed by US manufacturers to gain entry into Japan; and c) identify the tariff and non-tariff barriers that are perceived to impact the competitiveness of US firms in Japan adversely.

The specific research questions addressed in this study included:

- ? What specific tariff and non-tariff barriers are perceived to restrict access to the Japanese market?
- ? What are the primary channels of distribution for imported prefabricated homes and what factors affect the distribution of prefabricated houses in Japan?
- ? To what extent do US exporters of prefabricated homes utilize strategic alliances? Are strategic alliances with Japanese firms perceived to be an effective strategy for competing in Japan?
- ? How important are product attributes (*e.g.*, after-sales warranty and product quality) perceived to be?
- ? What types of technology transfer are currently being used by US manufacturers to ensure the quality and cost effectiveness of US construction methods?
- ? What strategies are perceived to be most effective in ensuring a more effective transfer of US construction technology?

SURVEY DESIGN AND METHODOLOGY

This research study was based on a census of manufacturers of prefabricated housing, export consolidators specializing in building materials and prefabricated housing, and the subsidiaries of Japanese trading companies located in Washington and Oregon who were involved in exporting to the Japanese market. The geographic area encompassed in the survey was limited to Oregon and Washington because the exports of wooden prefabricated housing to Japan from these states account for approximately 90% of total US exports to Japan. Manufacturers of log cabins were specifically excluded from the sample frame because these types of houses are generally not purchased as a primary residence; rather they are used as vacation homes and resorts.

The sample frame was constructed with the assistance of the Washington State Department of Community, Trade and Economic Development and the Oregon State Department of Economic Development. These agencies provided a list of prefabricated housing manufacturers and export consolidators who were currently exporting to Japan. Additional firms that fulfilled the study criteria were identified from the *Washington State Value-Added Wood Products Directory* and the *Directory of Oregon Wood Products Manufacturers*.

The initial sample frame consisted of 86 firms, although preliminary phone calls resulted in the disqualification of 20 firms because they either did not export to Japan or because they were no longer in business. As a result of this pre-qualification exercise, the final sample frame consisted of 66 firms, with 51 of the firms being located in Washington and 15 in Oregon. Sixteen of the companies in the sample were classified as prefabricated housing manufacturers (PF), while 34 were export consolidators (EC), and 16 were Japanese trading companies (JTC). Seventy-six percent of the export consolidators and 94% of the Japanese trading companies were located in Washington, whereas fairly equal numbers of prefabricated housing manufacturers were located in each state. The relatively small number of

firms identified for the survey and their uneven geographic distribution between Washington and Oregon suggest that the industry is still in its infancy.

Preliminary interviews were conducted with industry experts to gain a broader understanding of the issues confronting exporters of prefabricated homes and building materials. In addition, visits were made to two prefabricated housing manufacturers in Washington State to gain an insight into the manufacturing and design processes employed within the industry. A preliminary questionnaire was developed based on the results of these interviews. The questionnaire was pre-tested by both academic and business practitioners to ensure its validity and the final questionnaire was revised to incorporate the reviewers' suggestions.

The research questionnaire was designed to solicit three types of information. Basic demographic data related to firm size, sales volume, markets, and distribution channels was obtained. Likert scales and open-ended questions were employed to determine how various factors were perceived to affect US firms' access to markets in Japan. Likert scales were also used to determine what types of marketing variables were used by respondents in competing in Japan. Finally, open-ended questions were used to explore how respondents facilitated the transfer of the US 2x4 construction technology to Japan and how this technology transfer might be improved.

The final questionnaire was administered to the study participants by mail (Appendix A). Participants were contacted twice to encourage their participation; firms that did not respond were contacted by telephone. A total of 50 firms returned the survey questionnaire, although four of the respondents (all Japanese trading company subsidiaries) were later excluded from the study because they answered less than half of the questions. As a result, the final number of respondents was 46, providing an effective response rate of 70%. Seventy-five percent of the prefabricated housing manufacturers and 79% of the export consolidators responded to the survey, whereas the response rate for the Japanese trading companies was just 47%.

Table 5. Response rate by type of business and geographic location of the firms.

Type of Business	Washington		Oregon		Total
	Sample Frame	Number of responses	Sample Frame	Number of responses	Number of responses
PF	10	8	6	4	12
EC	26	21	8	6	27
JTC	15	7 ^a	1	0	7
Total	51	36	15	10	46

^a Although 11 Japanese trading companies returned the questionnaire, four of the questionnaires were excluded from the data analysis due to the incompleteness of their responses.

RESULTS

Profile of Survey Respondents

Survey respondents were asked several questions concerning the operation of their firms in order to develop a demographic profile of the respondents. Demographic information collected included: the number of years in business, total sales revenue, number of years exporting to Japan, percentage of total sales derived from exports in general, and percentage of total sales derived from exports to Japan in particular. The information obtained from the analysis of the demographic information is summarized in Tables 6-10 below.

The demographic information indicates that, on average, the survey respondents have been in business between 17 and 33 years (Table 6). While there was not a significant difference in firm age between the three industry segments, considerable variation was observed. For example, 50% of the prefabricated housing firms and 41% of the export consolidators had been in business less than 10 years while 57% of the Japanese trading companies had been operating for over 25 years. In general, the data indicates that the trading companies have been operating

substantially longer than either of the other types of firms. One interesting trend is the establishment of new firms. The survey data indicates that almost 42% of the prefabricated housing firms were established within the past five years compared to 26% of the export consolidators.

A similar trend was observed regarding the survey respondents' participation in the Japanese market, with prefabricated housing firms averaging just four years of experience in exporting while export consolidators and trading companies averaged 10 years and 27 years, respectively (Table 7). The data clearly indicates that the pre-manufactured housing firms are new to the Japanese market, with almost 60% having less than three years of experience exporting to Japan. In contrast, fully 70% of the export consolidators have at least five years experience exporting to Japan and almost 40% have been exporting to Japan for over 10 years. This data indicates that, while a substantial number of the prefabricated housing manufacturers have been in business less than five years, many of these firms are already exporting to Japan.

The information collected regarding the annual sales revenue of the respondents indicates that almost 60% of the pre-manufactured housing firms could be classified as small-sized firms with sales revenues below \$5 million annually (Table 8). In contrast, 42% of export consolidators and 86% of the Japanese trading companies generated annual sales revenues in excess of \$10 million. Not surprisingly, the Japanese trading companies generated 95% of their annual sales revenue from exports to Japan, although both pre-manufacturers and export consolidators derived approximately half of their annual sales revenues from exports to Japan (Table 9). The fact that both pre-manufactured housing firms and export consolidators generate a substantial percentage of their annual sales revenue from Japanese customers indicates that they have become highly involved in the Japanese market. For example, 25% of both pre-manufacturers and export consolidators derived over 80% of their annual sales revenue from Japan.

Respondent firms were asked to estimate the breakdown of their exports to Japan by product line: prefabricated homes (*i.e.*, panelized homes), house packages (*i.e.*, pre-cut homes and home kits), building components (*e.g.*, doors, windows, trusses, *etc.*), or structural building materials (*e.g.*, lumber and structural panels). Based on this

Table 6. Number of years respondent firms have been in business (number of firms).

Type of business	0-10 yrs	11-30 yrs	over 30 yrs	Average
PF	6	3	3	17 years
EC	11	8	8	23 years
JTC	0	4	3	33 years
Total	17 (37%)	15 (33%)	14 (30%)	

Table 7. Number of years respondents have been exporting to Japan (number of firms).

Type of business	0 - 5 yrs	6 - 10 yrs	over 10 yrs	Average
PF	8	3	1	4 years
EC	13	6	8	10 years
JTC	1	1	5	27 years
Total	22 (48%)	10 (22%)	14 (30%)	

Table 8. Total annual sales revenue reported by respondents (number of firms).

Type of business	Less than \$5 million	\$5 - \$10 million	over \$10 million
PF	7	3	2
EC	9	6	11
JTC	1	0	6
Total	17 (38%)	9 (20%)	19 (42%)

Table 9. Sales revenue of respondents derived from exports to Japan (number of firms).

Type of business	1-50%	51-80%	over 80%	Average
PF	6	3	3	49%
EC	17	3	7	46%
JTC	0	1	6	95%
Total	23 (50%)	7 (15%)	16 (35%)	

information and the annual sales revenue data, it was possible to estimate the total value of prefabricated housing exports represented by the survey respondents. Since annual sales revenues were reported within a range rather than as the exact value, the lower value of each range was used to estimate prefabricated housing exports. For instance, if the respondent indicated that their total sales ranged from \$1 million to \$2.5 million, the value of \$1 million was used in the calculations. Based on this conservative methodology, the value of prefabricated housing exported by the survey respondents to Japan was estimated to be \$34.1 million in 1994. When the exports of house kits (precut housing and housing systems) were included, the value of housing exports to Japan increased to \$56.6 million in 1994.

The total value of US wooden prefabricated housing exports to Japan during the period 1989-1995 is presented in Table 10. The export statistics indicate that the value of US wooden prefabricated housing exports to Japan totaled \$32.1 million in 1994, with 85% of these exports originating from the Pacific Northwest. The estimate of the value of prefabricated housing exports by the firms in this study (\$34.1 million) exceeds the number reported by the US Department of Commerce (\$27.3 million). This difference can be at least partially explained by the roughness of the calculation used in this study and the fact that there is considerable ambiguity between the US Customs classification of products into the prefabricated homes category and the other builders joinery category. Despite this discrepancy, the results would seem to indicate that the respondents in this study represent the vast majority of firms in the U.S. who are involved in the manufacture and export of prefabricated housing to Japan.

The US Department of Commerce export data reveals some interesting trends regarding US wooden prefabricated housing exports (Table 10). Perhaps most importantly, although US exports of prefabricated buildings have declined since 1991, exports to Japan have increased by more than 200%. Japan now represents the single most

Table 10. Value of US wooden prefabricated housing exports, 1989-1995.

	Total US Exports	US Exports to Japan	PNW Exports to Japan
1989	\$29,631,330	\$17,409,054	\$13,893,987
1990	\$35,669,297	\$18,657,976	\$15,048,037
1991	\$86,094,602	\$15,856,009	\$12,718,213
1992	\$59,757,706	\$14,575,652	\$11,073,037
1993	\$45,808,983	\$18,143,809	\$14,368,781
1994	\$74,258,415	\$32,102,867	\$27,159,144
1995	\$73,109,842	\$50,745,297	\$41,062,771

Source: CINTRAFOR analysis of US Department of Commerce export data.

important market for US prefabricated homes, accounting for almost 70% of all US exports. It is interesting to note that approximately 85% of US exports of wooden prefabricated homes to Japan come from the Pacific Northwest. Clearly Japan is the most important export market for wooden prefabricated housing manufacturers and exporters located in the Pacific Northwest while firms in this region dominate US exports to Japan.

The number of housing units exported by survey respondents totaled 730, including both prefabricated homes and house packages, although this is an underestimate of the total number of units exported because nine respondents did not answer this question. The percentage of respondents' total exports to Japan that consist of prefabricated

homes and house packages is summarized in Table 11. The results help to highlight one of the major differences between the different types of firms included in the study. Whereas the majority of the prefabricated housing manufacturers tend to be highly focused on the export of a single product line, both the export consolidators and Japanese trading companies indicated that they export a much more diversified range of products. In fact, the majority of export consolidators and trading companies do not even export housing packages, preferring instead to provide their customers with a broad selection of building materials and housing components. Despite this, a substantial number of export consolidators (18.5%) reported prefabricated homes were their primary product line.

Table 11. Ratio of prefabricated homes exports to total Japanese exports (number of firms).

Type of business	0%	1 - 25%	26 - 50%	51 - 75%	76 -100%
PF	0	0	2	2	7
EC	14	7	1	1	4
JTC	4	2	1	0	0

Distribution Channels for Imported Housing in Japan

One of the objectives of this study was to identify the distribution channels that are used by the exporters of prefabricated homes to Japan and to identify those factors that influence their choice of distribution channel. Survey respondents were asked to identify their distribution channels in Japan and estimate the percentage of their Japanese exports that were sold through each type of distribution channel. This information was used to identify each firm's primary and secondary distribution channels.

The distribution channels for imported wood products in Japan are known to be complex, consisting of multiple layers of channel intermediaries (Pesonen 1993). For example, imported softwood lumber might pass through as many as five distribution channel intermediaries, beginning with a Japanese trading company and including a primary wholesaler, a secondary wholesaler, a retailer, and a local builder or a construction firm, before reaching the final consumer (Pesonen 1993). At each step of the way a distribution markup is added to the price of the product, substantially increasing the price that the final consumer must pay for the product. As a result, an innovative firm can develop a substantial competitive advantage in the Japanese market by working to reduce the length of its distribution channel. Shortening the distribution channel not only helps the firm lower its prices and maximize its profits and/or market share, but it also provides the firm with more influence over how its product is marketed in Japan and facilitates the flow of information from the market to the exporting firm.

US firms involved in the manufacture and export of prefabricated homes and building materials have been fairly successful in establishing more direct distribution channels for their products in Japan (Figure 5). Over half of the respondents indicated that they either sold their products direct to a Japanese home builder or the final home buyer, thereby eliminating the role of channel intermediaries entirely. Despite the success of many companies, 40% of the responding firms relied on Japanese trading companies or Japanese wholesalers to bring their products to the Japanese market. It is important to note that virtually all of the respondents that reported exporting through a Japanese trading company were themselves a subsidiary of a trading company, while almost none of the prefabricated home manufacturers or export consolidators reported using a trading company.

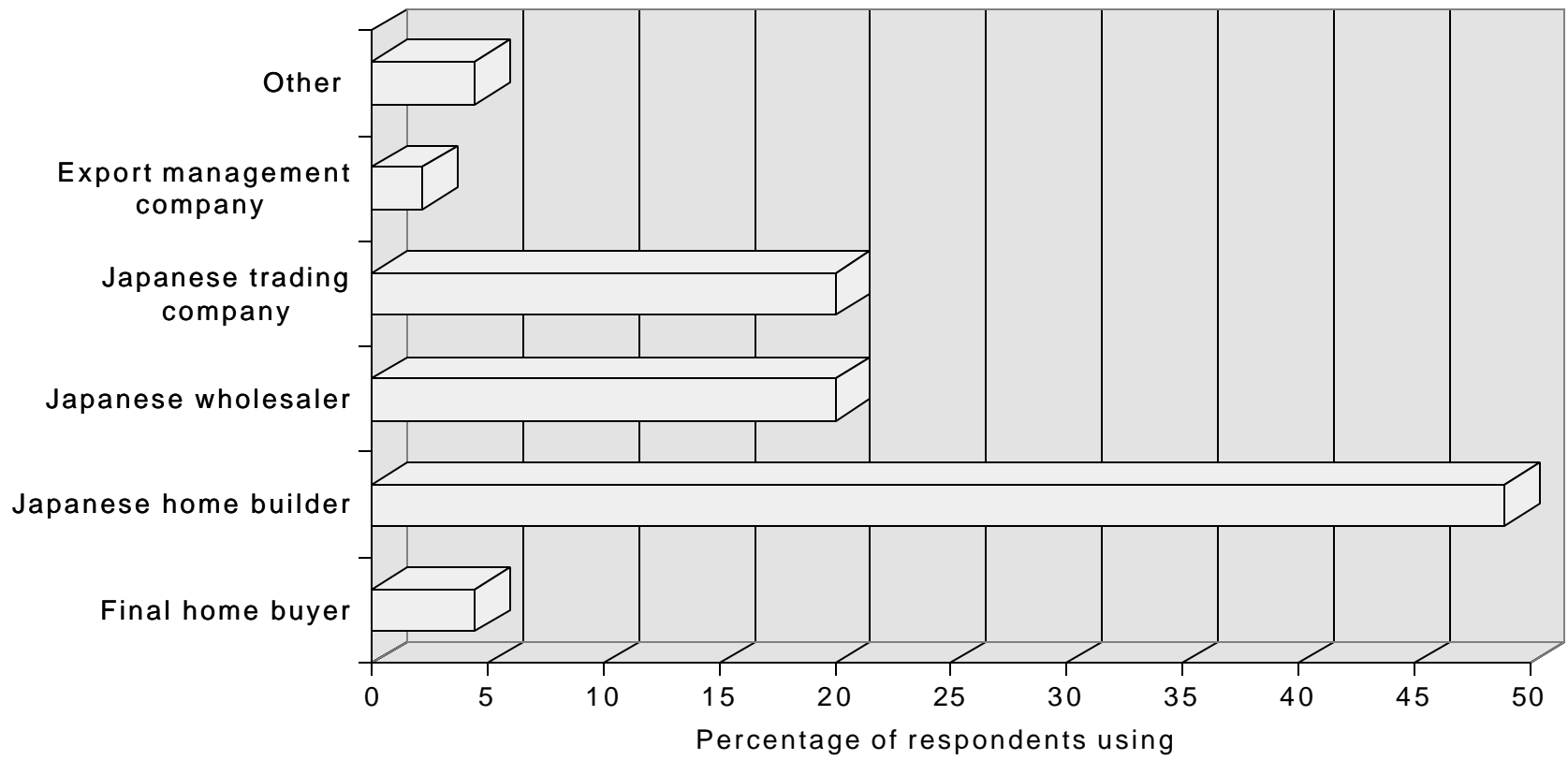


Figure 5. Primary distribution channel used by respondents in Japan.

A statistical analysis of the data was performed to determine if there was a significant difference in the choice of distribution channel between the different types of firms included in the survey (Table 12). The results of the statistical analysis indicate that there was a significant difference between respondents in their use of two types of channel intermediaries. US subsidiaries of Japanese trading companies generated a significantly higher percentage of their export sales through trading companies in Japan (61%) than did prefabricated home manufacturers (15%) or export consolidators (19%). In addition, prefabricated home manufacturers received a significantly higher percentage of their export sales by using a Japanese importer (18%) than did either of the other types of firms.

Table 12. Types of distribution channels utilized by US exporters in Japan (percentage).

Distribution channel	Average export sales (percentage)			
	Average	PF	EC	JTC
Japanese home builder	49	51	45	21
Japanese trading company	20	15 ^a	19 ^a	61 ^b
Japanese wholesaler	20	5	27	14
Japanese importer	4	18 ^a	0 ^b	0 ^b
Japanese home buyer	4	1	7	4
US export management company	2	7	1	0
US freight consolidator	1	3	0	0

a,b: A statistical difference exists between group means with different letters at the 0.05 alpha level using Scheffe's multiple comparison test.

Based on the results of the survey it would appear that each type of firm favors a primary distribution channel for the majority of exports but directs a substantial amount of exports through secondary distribution channels as well. It is no surprise that the US subsidiaries of Japanese trading companies generated 61% of the export sales through exports to their parent organizations. However, a substantial proportion of their export sales were derived from exports to Japanese home builders (21%) and Japanese wholesalers (14%). The primary distribution channel for both prefabricated housing manufacturers (51%) and export consolidators (45%) was to Japanese home builders. Exporters generated a significantly higher percentage of their export sales through trading companies in Japan (61%) than did prefabricated home manufacturers (15%) or export consolidators (19%). In addition, consolidators also derived a substantial percentage of their export revenue from Japanese wholesalers (27%) and Japanese trading companies (19%), while prefabricated housing manufacturers utilized Japanese importers (18%) and Japanese trading companies (15%).

Survey respondents were also asked to indicate whether they had established a sales office or employed a sales representative in Japan to sell their products (Table 13). A chi-square test of association indicated that there was a significant difference between export consolidators and prefabricated housing manufacturers and their use of sales offices and sales representatives in Japan. The results indicate that export consolidators were much more likely to establish a sales office or employ a sales representative in Japan to market their products than were prefabricated housing manufacturers. The Japanese trading companies that participated in the survey were excluded from this analysis because they all have local representation in Japan through their home offices.

Table 13. Number of firms having a sales office or a sales representative in Japan.

Type of business	Number of firms	
	Sales office	Sales representative
PF	0	0
EC	3	5

Despite the importance of the Japanese market for prefabricated housing manufacturers, none of the respondents reported having established a sales office or employing a sales representative in Japan. In contrast, three export

consolidators (11%) had established a sales office in Japan, while five (19%) employed a sales representative in Japan. There are several reasons for this difference between the two types of firms.

First, establishing a sales office in Japan requires a substantial investment and it is quite possible that such an investment is simply out of reach of most of the prefabricated housing manufacturers included in the study. The demographic information presented in Table 7 shows that approximately 60% of the prefabricated housing manufacturers generated annual sales revenues of less than \$5 million, an indication that these firms may not have the financial resources available to establish a sales presence in Japan. Secondly, the demographic information also shows that the prefabricated home manufacturers are relatively new to the Japanese market, having been exporting an average of just four years as compared to ten years for the average export consolidator. Finally, whereas the basic products line for prefabricated home manufacturers is essentially a single product (prefabricated homes), export consolidators represent a much more diverse set of building products. In fact, prefabricated homes and home packages are often just a small component of an export consolidator's product offering. While each of these factors no doubt has an influence on whether or not a firm establishes a sales office in Japan or engages a Japanese sales representative, most likely it is the interaction between these factors that determines the final decision.

It is thought that as a firm becomes more involved in a foreign market, it is more likely to increase its level of commitment to that market. This research used two factors as proxies for a firm's level of commitment to the Japanese market: (1) the establishment of a sales office or the engagement of a sales representative in Japan, and (2) a high percentage (over 50%) of a firm's total sales revenue being derived from exports to Japan. Firms that either established a sales office in Japan or engaged a sales representative in Japan were perceived as being highly committed to the Japanese market. Similarly, firms that derived more than 50% of their sales revenue from exports to Japan were also perceived to be highly committed to the Japanese market.

A chi-square statistical analysis was used to test for a relationship between these two factors. The results of this test indicated that there was no significant association between the two factors. However, it is interesting to note that, for those firms receiving more than 50% of their sales revenue from exports to Japan, two had established a sales office in Japan while four had retained a Japanese sales representative (Table 14). In contrast, firms deriving less than 50% of their sales revenues from exports to Japan had established only one sales office and retained just one sales representative. Despite the small number of firms considered in the analysis, it appears that firms deriving the majority of their sales revenue from Japan are more likely to establish a direct presence in Japan, either through a sales office or a sales representative.

Table 14. Number of respondents having a sales office or a sales representative in Japan.

Ratio of Japan export sales/total sales	Sales office	Sales representative
Less than 50%	1	1
More than 50%	2	4

Joint venture with a local company can be an effective entry strategy in markets like Japan where the barriers to entry (both financial and cultural) can be quite high. While half of the respondents indicated that they had considered establishing, or have established, a joint venture with a Japanese partner, none of the prefabricated housing manufacturers and only five of the export consolidators had actually established one (Table 15). There could be several reasons for the somewhat limited use of joint ventures with Japanese firms, including the required equity investment, small firm size, and uncertainty regarding their commitment to the Japanese market. However,

Table 15. Number of firms having established, or considered, a joint venture in Japan.

Type of business	Established a joint venture	Considered a joint venture
PF	0	7
EC	5	14

it is probably more likely that the respondent firms were reluctant to restrict their business relationship to a single Japanese firm, preferring instead to diversify their customer base in Japan.

Product Promotion Strategies

According to a recent report on the housing market in Japan, Japanese housing manufacturers employ a wide variety of promotion strategies to market their products (JETRO 1995). For example, the larger companies with national sales networks often employ full-scale advertising and promotion campaigns using TV, radio, newspapers, and magazines to reach the potential home buyer. Direct mailings and newspaper inserts aimed at specific customer segments are also widely used. Many firms also participate in housing exhibition centers where they can display model homes and provide potential customers with lavish full color product brochures and design consultations. These housing exhibition centers are independently managed and offer joint promotion services for a wide range of housing manufacturers. In addition, they provide manufacturers with a listing of prospective customers who have expressed an interest in their homes. The housing exhibition centers are considered to be one of the most effective strategies for promoting homes in Japan despite the high cost associated with leasing space and building and maintaining a model home. To reduce competition from other firms, housing manufacturers will occasionally establish their own exclusive housing exhibition center and employ their own sales staff. Smaller manufacturers, as well as local builders, wanting to avoid the high cost of exhibition centers, often invite prospective customers to tour one of their housing construction sites to provide them with the opportunity to inspect the home being constructed and get a feeling for the quality of the company's work.

To understand the extent to which US prefabricated housing exporters employ various promotion strategies to market their products in Japan, survey respondents were asked to identify their different promotion strategies (Figure 6). The most commonly used promotion tools were found to be product brochures (85%), word-of-mouth (72%), attendance at trade shows (65%), and participation in trade missions (43.5%). Unlike their Japanese competitors, few US housing exporters have established model homes or showrooms for their products in Japan. The more limited use of model homes and product showrooms, particularly by the smaller prefabricated housing manufacturers and export consolidators, is most likely due to the high costs associated with these strategies.

Several of the respondents indicated that their Japanese partners are responsible for promoting their product, including establishing and maintaining a model home. Approximately one third of the respondents reported using some other type of promotional strategy, including: visiting customers in Japan, product promotion through US and Japanese governmental organizations (*e.g.*, JETRO) and professional associations (*e.g.*, The Evergreen Partnership), product advertisements in the publication "*Commercial News of USA*" (published by the US Department of Commerce), and providing prospective customers with a product video.

The differences in the promotional strategies employed by prefabricated housing manufacturers versus export consolidators are summarized in Table 16. The Japanese trading companies are excluded because they were not directly involved in the development and implementation of promotional strategies; rather this process was managed by their parent company. A statistical analysis of the data indicated that export consolidators were significantly more likely to have established a model home in Japan than were the prefabricated housing manufacturers. The survey results indicate that none of the prefabricated housing manufacturers had established a model home or product showroom in Japan whereas nine export consolidators (33%) had established a model home and three export consolidators (11%) had established a product showroom.

Both prefabricated housing manufacturers and the export consolidators appear to use similar promotional strategies to market their products in Japan (Table 16). However, while prefabricated housing manufacturers tend to place more reliance on less expensive and informal promotional strategies than do export consolidators, both groups place a heavy reliance on product brochures, word-of-mouth advertising, trade show attendance, and participation in trade missions as strategies for promoting their products in Japan. While a substantial number of export consolidators supplement these strategies with advertising in trade journals and participation in model home parks, very few prefabricated housing manufacturers employed these strategies.

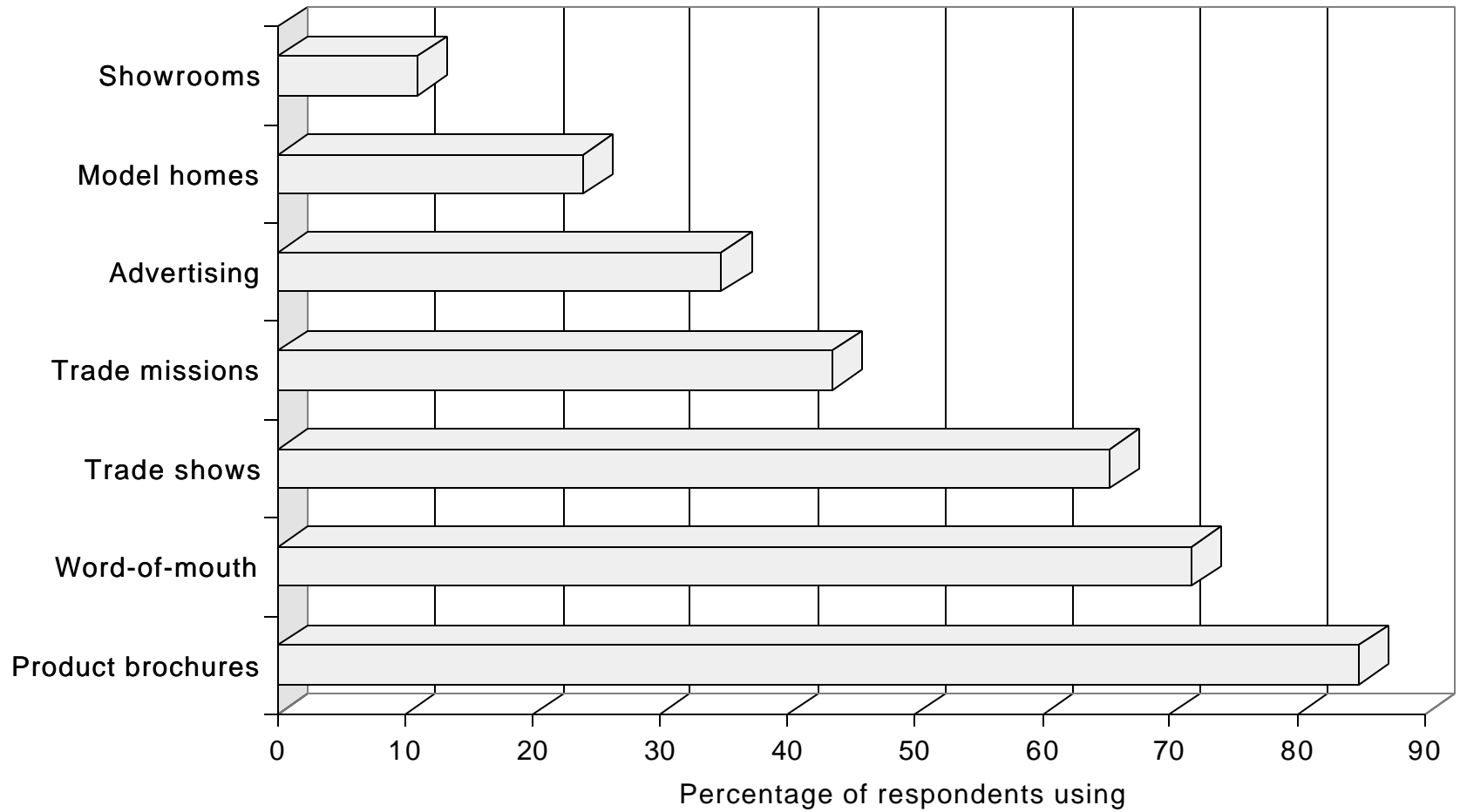


Figure 6. Types of promotion strategies used by the respondents to promote their products in the Japanese market.

Table 16. Respondents use of promotional strategies in developing customer contacts in Japan.

Promotional Strategy	Average	PF	EC
Product brochures	84.8%	83%	93%
Word-of-mouth	71.7%	75%	78%
Trade shows	65.2%	58%	74%
Trade missions	43.5%	50%	44%
Advertisements in trade journals	34.8%	17%	41%
Establish model homes	23.9%	0%	33%
Establish showrooms	10.9%	0%	11%

Product Adaptation Strategies

US housing exporters are often required to modify their products and designs to accommodate the unique characteristics of the Japanese culture, lifestyle and consumer preferences (JETRO 1993). The most common modifications to western-style homes include providing a tatami room with storage closets, a Japanese-style bath with separate toilet room or a step-up entrance at the front of the house for storing shoes and slippers (genkan). In addition, homes designed for Japan are often much smaller than in the US due to the high cost of land and the small size of building sites in urban areas. For example, the average floor space of a Japanese home in 1995 was 93 m² compared to 153 m² in the US.

To determine how survey respondents have adapted their products for the Japanese market, they were asked to identify the different types of product modifications they have incorporated into their products (Figure 7). Seventy-three percent of the respondents reported that they have changed the design specifications of their products, although they were not asked to specify the types of changes made. Approximately 60% of the respondents reported using higher quality materials in those products being exported to Japan. Interestingly, many of the firms that did not report using higher quality materials commented that the materials they use are already extremely high quality and therefore there is no need to increase the quality of the product being exported to Japan. Translation of the product brochure (59%) and the technical information sheet (50%) were also commonly performed by the respondents. In contrast, just 20% of the respondents indicated that they used a construction technology other than the 2x4 construction technology in the homes that they exported to Japan. Finally, very few of the respondents (7%) do not make any modifications to the products that they export to Japan.

While the types of product modifications employed by export consolidators and prefabricated housing manufacturers were not statistically different, some of the differences observed between the two types of firms are worth mentioning (Table 17). For example, the prefabricated housing manufacturers seemed to use higher quality materials in an effort to increase overall product quality to a larger extent than did the export consolidators. In contrast, the export consolidators were more likely to translate their product brochures into Japanese than were the prefabricated housing manufacturers, although half of the respondents in each group translate their technical information. Finally, all of the prefabricated housing manufacturers have modified their products being exported to Japan while 12% of the export consolidators have not.

Table 17. Respondents use of product modifications for the Japanese market.

Product modifications	Average	PF	EC
Modify design specifications	72.7%	83%	72%
Translate product brochure	59.1%	50%	68%
Increase product quality	56.8%	75%	48%
Translate technical information	50.0%	50%	52%
Modify construction technology	20.5%	33%	16%
Products not modified	6.8%	0%	12%

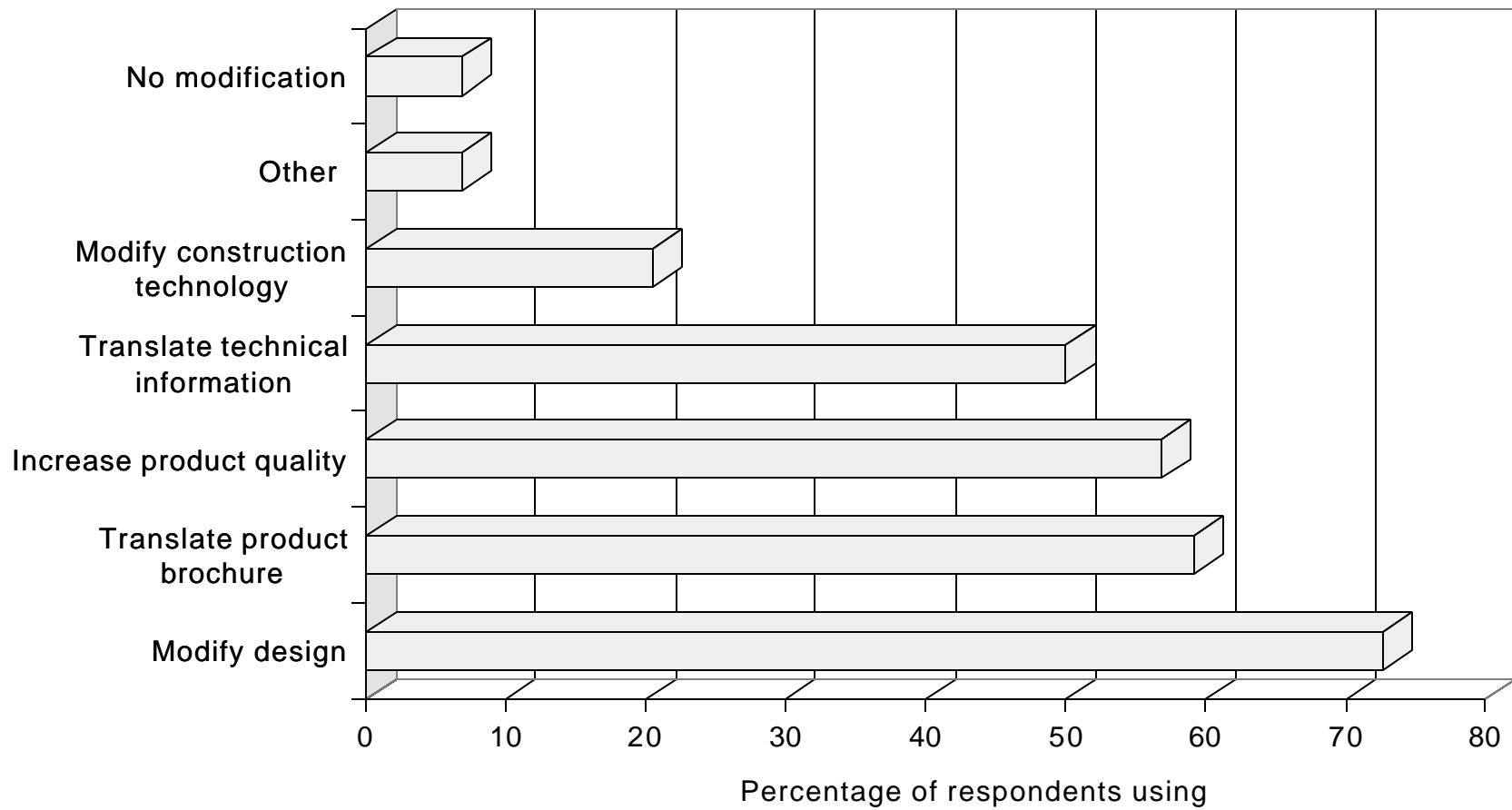


Figure 7. Respondent use of product modifications for the Japanese market.

The Perceived Importance of Marketing Variables for Succeeding in Japan

The Japanese housing market possesses several characteristics that differ from the domestic US housing market. Some of the differences that potential exporters need to be aware of include: 1) the specific legal requirements that apply to housing construction (including imported housing) such as the Japanese building code requiring JAS/JIS certification of building materials; 2) the higher quality requirements of Japanese consumers that can influence the grades of building materials used in homes exported to Japan; 3) the fact that because Japanese homeowners are not do-it-yourself oriented, Japanese builders have responded by providing customers with ten-year warranties, including free repair services; and 4) in addition to cultural and language differences, the tradition of doing business in Japan is different than in the US: Japanese managers seek to establish long-term business relationships with their partners.

To determine the specific marketing strategies that were perceived to have an important impact on business success in Japan, survey respondents were asked to list those factors that they considered to be important. The occurrence of each factor was then summed across all questionnaires and the results arranged in descending order of importance (Table 18). Among the most important success factors identified were: providing customer service (48%), being able to communicate in Japanese (43%), supplying high quality products (41%), and offering competitively priced products (30%). Providing customer service included having a sales/technical staff in Japan, providing after-sales service, offering a product warranty, and providing product information. The ability to speak Japanese was considered important for both assuring clear and accurate communication as well as for facilitating the development of close personal relationships with Japanese customers.

Table 18. Marketing variables that are perceived as being important for succeeding in Japan.

Marketing Factor	Average	PF	EC	JTC
Customer service/product warranty	48%	55%	54%	14%
Ability to communicate in Japanese	43%	36%	58%	0%
High product quality	41%	55%	35%	43%
Competitive price	30%	27%	15%	86%
Good Japanese partner	25%	18%	23%	43%
Product modification	21%	64%	4%	14%
Long-term commitment	21%	18%	19%	29%
Patience and persistence	14%	9%	19%	0%
Understand codes and regulations	11%	29%	12%	0%
Good reputation	11%	9%	12%	14%
Product knowledge	9%	0%	15%	0%
Educating clients	7%	0%	8%	14%
Brand name recognition	2%	0%	0%	14%

Other factors that were mentioned as being important included finding a good Japanese partner (25%), modifying the product for the Japanese market (21%), and making a long-term commitment to the Japanese market (21%). When talking about a good Japanese partner, the respondents emphasized how important finding the right distributor or sales representative can be to succeeding in the Japanese market. After the relationship has been established, it is necessary to maintain it with personal visits to Japan and by inviting Japanese partners and customers to the US.

There were some differences between the types of firms in how the importance of various marketing variables was perceived. When tested with the chi-square test, there was a significant association between the type of firm and three marketing variables, *i.e.*, the ability to communicate in Japanese, competitive price, and product adaptation. Product adaptation seemed to be much more important for the prefabricated housing manufacturers than for the export consolidators and the Japanese trading companies. In fact, 64% of the prefabricated housing manufacturers

mentioned product adaptation as being an important factor for succeeding in the Japanese market, whereas only 4% of the export consolidators and 14% of the Japanese trading companies mentioned this factor. Providing after-sales service or being able to speak Japanese was not an important issue for Japanese trading companies. In contrast, approximately half of the prefabricated housing manufacturers and export consolidators mentioned these marketing variables as being important factors in selling their products in Japan. The difference can be explained by the fact that many of the Japanese trading companies included in this survey export mainly building products and components that do not require such extensive after-sales service as homes. Naturally, being able to speak Japanese is not a barrier for the Japanese trading companies.

Product price was considered the most important marketing variable by the Japanese trading companies, whereas only 26% of the prefabricated housing manufacturers and 15% of the export consolidators mentioned competitive price. The marketing variable mentioned most frequently by the prefabricated housing manufacturers was product adaptation, whereas the ability to speak Japanese and after-sales service were considered most important by the export consolidators.

The respondents were also asked to rate the importance of a number of factors that had been determined to be important for selling prefabricated housing in Japan (Table 19). The scale used to measure the importance was a Likert scale ranging from one to seven, where a rating of one indicated that the factor was not important while a rating of seven suggested that the factor was extremely important. The differences between the ratings of the prefabricated housing manufacturers, the export consolidators, and the Japanese trading companies were tested with the Scheffe's multiple comparisons test. Unfortunately, the combination of the small size of the industry segments and the large variation in importance ratings within the groups reduced the power of the statistical test. Only one factor was found to be significantly different between the industry groups, with the Japanese trading companies rating the extension of credit to customers as being more important than did the export consolidators. While the prefabricated housing manufacturers did not consider providing credit to customers to be important, the difference in the importance ratings between prefabricated housing manufacturers and Japanese trading companies (4.50 vs. 3.00) was not large enough to be statistically significant.

Table 19. Mean importance ratings^a for different marketing factors with respect to their influence on succeeding in the Japanese market.

Marketing factors	Average	PF	EC	JTC
Personal relationships	6.47	6.42	6.56	6.17
After-sales service	5.40	5.00	5.48	5.83
Rapid delivery	5.40	5.50	5.37	5.33
Technical assistance	5.33	5.25	5.41	5.17
Translated product information	5.11	4.33	5.33	5.67
Increase product quality	5.05	5.00	4.88	5.83
Translated technical information	5.00	4.33	5.07	6.00
Customized product	4.91	5.42	5.00	5.00
Low price	4.29	4.33	4.04	5.33
Product warranty	4.13	4.33	3.96	4.67
Provide credit	2.91	3.00	2.48	4.50
Exclusive distributorships	2.62	2.83	2.44	3.00
Joint ventures	1.87	2.42	2.19	3.00

^a Survey respondents rated the importance of each factor using a Likert scale ranging from 1 (not important) to 7 (very important).

The differences between the prefabricated housing manufacturers' and the export consolidators' ratings were tested separately to determine whether there were any significant differences in how these firms perceived the importance of different marketing variables. However, none of the differences proved large enough to be statistically significant.

All three types of firms rated establishing a personal relationship with the customers as the most important factor for selling their products in Japan. They also agreed that providing after-sales service, rapid delivery and technical assistance to customers, as well as increasing product quality, were important factors for succeeding in the Japanese market. In general, there were few large differences in the importance ratings obtained from the three types of firms. However, the export consolidators and the Japanese trading companies seemed to place a higher emphasis on translating product information and technical information into Japanese than did the prefabricated housing manufacturers. In addition, low price and extending credit to customers were considered to be more important by the Japanese trading companies than by the two types of US firms. As discussed earlier, the Japanese trading companies seemed to rely more on the traditional Japanese distribution channels, where 60-120 day promissory notes are routinely extended to customers. This could explain why credit extension is more important for the Japanese trading companies than for the US firms, which mostly sold their products directly to Japanese home builders.

It seems that establishing joint ventures with Japanese firms and offering exclusive distributorships are not important for selling prefabricated housing in Japan. These factors received the lowest importance ratings from all three types of respondents. This result agrees well with the fact that none of the prefabricated housing manufacturers and only five of the export consolidators had established a joint venture with a Japanese partner. However, it seems that many of the respondents still emphasize the importance of finding good Japanese customers/partners and establishing close personal relationships with them. When asked to identify those marketing variables that were important for succeeding in Japan, 25% of the respondents mentioned the importance of establishing a strong business relationship with a reliable Japanese partner.

Perceptions of Trade Barriers

An important objective of this study was to identify those factors that were perceived to restrict exporters access to, and competitiveness in, the Japanese market. Given the exploratory nature of the research, each respondent was asked to list the three most important factors that restricted their ability to compete in the prefabricated housing market in Japan. The results of this question were analyzed and the factors are presented in decreasing order of incidence (Table 20).

Table 20. Factors perceived as being important in restricting the ability of US firms to compete in Japan (percentage of respondents mentioning each factor).

Type of trade barrier	Average	PF	EC	JTC
Building codes/regulations	53	64	46	57
Cultural differences	35	46	36	14
Japanese lack of knowledge of 2x4 technology	33	36	27	43
High transportation/distribution costs	25	9	32	29
Inability to make design modifications	23	18	32	0
Quality requirements	20	36	14	14
Language differences	20	46	14	0
Extended/complex distribution channels	18	46	5	14
Price	10	0	14	14
Long lead time	8	0	9	14
After-sales service	8	0	14	0
Credit requirements	5	5	14	0
Industry structure	5	0	5	14
Land availability	3	0	0	14
Import tariffs	3	0	5	0

Japanese building codes, fire restrictions and JAS/JIS certification requirements for building materials were considered to be the most significant trade barriers restricting prefabricated housing exports. For example, in order for an imported prefabricated house to be eligible for mortgage financing through the Government Housing Loan Corporation (GHLC), the house must be constructed using JAS/JIS certified building materials. Given the importance

of GHLC in providing home mortgages in Japan (they provided over 40% of residential home mortgages in 1995), the restrictive requirements for US manufacturers to use higher-cost materials in those products being exported to Japan effectively act as a barrier to competition for US firms. The additional costs incurred in meeting restrictive building codes and fire regulations were perceived by respondents as substantially reducing their competitiveness in the Japanese market.

Other factors that were frequently mentioned as adversely impacting the competitiveness of US prefabricated homes in Japan included the cultural differences between the US and Japan, the lack of knowledge of 2x4 construction technology by Japanese architects, contractors, and carpenters, and high transportation/distribution costs in Japan. One of the cultural differences most frequently mentioned by the respondents related to the Japanese business culture. In Japan, personal relationships are more important in doing business than in the US. As a result, US firms often make numerous visits to Japan before receiving their first order. This process is expensive and time consuming, particularly for the small- to medium-sized firm, and underscores the importance of the firm's establishing a strong, long-term commitment to the Japanese market prior to exporting. However, as some of the respondents indicated, US firms may perceive these requirements to be problems because of their unwillingness to learn the Japanese culture and adjust to the differences in business styles.

Additionally, the large size of housing packages was the main reason for the high transportation and distribution costs associated with exported prefabricated houses to Japan. A number of respondents indicated that the roads in Japan are quite narrow and represent a structural impediment to transporting prefabricated houses efficiently from the port facility to the job site. Many respondents also mentioned that the unit costs associated with transporting and warehousing building materials are substantially higher in Japan than in the US. Finally, another transportation/distribution related problem identified by the respondents was related to the small size of residential construction sites in Japan, which frequently necessitated the just-in-time delivery of building materials and restricted or prevented the use of construction cranes.

Other factors that were perceived to restrict the respondents' ability to export to Japan included the unwillingness of the Japanese to make design modifications, excessive product quality requirements, language differences, and the extended/complex nature of distribution channels in Japan, although there was less consensus between the different types of firms on these factors. For example, while 36% of the prefabricated housing manufacturers identified excessive quality requirements as a problem, only 14% of the export consolidators and Japanese trading companies perceived quality requirements to be restrictive. Similarly, communicating in Japanese and gaining access to Japanese distribution channels represented a bigger problem for prefabricated housing manufacturers than for the other two types of firms. Forty-six percent of the prefabricated housing manufacturers perceived distribution channels in Japan to be a trade barrier, while relatively few of the export consolidators (5%) and Japanese trading companies (14%) cited these factors.

To better understand the extent to which different factors were perceived to represent trade barriers, the respondents were asked to quantitatively rate the impact of each factor on their ability to compete in Japan. Respondents rated the impact of each factor using a Likert scale, where a score of one indicated that the factor had no impact on the respondent's competitiveness whereas a score of seven was reserved for those factors that had a substantial impact on the respondents ability to compete in Japan (Table 21).

The results obtained from this question match well with the results obtained from the open-ended question. In both questions, JAS certification of building materials, the restrictive nature of Japanese building codes, and efficient transfer of the US 2x4 construction technology were perceived to have the greatest impact on the competitiveness of the respondents. Restrictive import tariffs and the inability to extend credit to customers were perceived as having the least impact on the respondents ability to compete in Japan.

The summary ratings provide an indication of how respondents in the different industry segments perceive the various factors to be impacting their ability to compete in Japan. A statistical analysis of the data indicated that there was not a significant difference in the mean ratings obtained from the export consolidators, the prefabricated house manufacturers, and the Japanese trading companies. It is ironic to note that the only exception noted relates to the fact that the US subsidiaries of Japanese trading companies indicated that the Japanese import

Table 21. Summary of the mean importance ratings^a for different trade barriers that were perceived to restrict the competitiveness of US firms in Japan.

Trade barrier	Average	PF	EC	JTC
JAS certification of building materials	5.28	4.73	5.31	6.18
Japanese building codes	5.02	4.82	5.08	5.17
Differences in construction techniques	4.65	4.27	4.81	4.67
Transferring 2x4 construction technology	4.59	4.73	4.50	4.50
Complex distribution channels	3.88	3.55	3.73	5.18
Restrictive import tariffs	3.40	2.73	3.27	5.17
Inability to extend credit to customers	2.86	3.00	2.81	2.83

^a Survey respondents rated the impact of each factor on their competitiveness in Japan using a Likert scale ranging from 1 (no impact) to 7 (substantial impact).

tariffs had a significantly greater impact on their competitiveness than did either the export consolidators or the prefabricated housing manufacturers.

Although the mean ratings for the various factors were not significantly different, there were some interesting differences noted. Exports of prefabricated homes (including house kits) are currently subject to a 3.9% import tariff in Japan. However, the tariff rate is much higher for wood products that are exported separately. For example, while the import tariff for lumber ranges from 8-10% and the tariff for plywood ranges from 10-15% when these products are exported separately to Japan, a 3.9% tariff is levied on them when they are shipped as part of a housing package. This practice of levying different tariff rates helps to explain why the US export consolidators and prefabricated housing manufacturers indicated that Japanese import tariffs had little impact on their competitiveness while the subsidiaries of Japanese trading companies rated the impact as being significantly higher.

Equally interesting is the fact that the Japanese trading companies also rated the complex and extended distribution channels in Japan as having a larger impact on their ability to compete than did the US export consolidators and the prefabricated housing manufacturers. This result can most likely be explained by the different distribution channels used by the respondents. While most of the prefabricated housing manufacturers and export consolidators sell their products directly to Japanese housing manufacturers, the Japanese trading companies usually export their products to their parent companies in Japan, which in turn sell the product to other intermediaries, including wholesalers, retailers, builders, and contractors. It would appear that the US subsidiaries of the Japanese trading companies are well aware of the costs associated with the traditional distribution channels in Japan and would prefer to shorten their distribution channels by selling more directly.

Strategies for a More Efficient Transfer of 2x4 Construction Technology

The survey respondents indicated that Japanese contractors and carpenters lack an in-depth understanding of 2x4 construction technology. Not only does this lack of understanding cause problems during the construction process, but it has even more significant implications with respect to the quality and long-term performance of the finished home. This should be of particular concern to US firms because poor performance by US housing will create the perception that product quality is low, regardless of the factors affecting the performance of the product. One of the problems most frequently cited by respondents was the lack of Japanese construction worker familiarization with 2x4 construction technology. Additionally, Japanese customers were not always made aware of the benefits that 2x4 construction technology offers with respect to the traditional Japanese post and beam construction method. Finally, many respondents indicated that Japanese carpenters are often unfamiliar with the installation of US building products, in particular doors, windows, cabinets and stairways.

To understand what types of technical assistance might be more effective in efficiently transferring 2x4 construction technology to Japanese architects, contractors, and carpenters, respondents were asked to identify the type(s) of technical assistance they currently provide to their Japanese customers (Figure 8). Overall, 92% of the prefab housing manufacturers, 82% of the export consolidators, and 68% of the Japanese trading companies reported

providing some type of technical assistance to their customers. The most commonly reported type of technical assistance was to provide written and verbal instructions to the customer (47%). Some examples of the instructions provided include: construction manuals and instruction guides in Japanese and/or English, architectural drawings, product photos, over-the-phone technical assistance, and technical or sales staff expertise in Japan to offer technical advice on the job-site.

In addition, 30% of the respondents indicated that they arrange training seminars for Japanese construction workers, while 20% of the respondents indicated that they sent over their own crews of carpenters to Japan. The training seminars provided for Japanese contractors and construction workers ranged from inviting them to the US to visit construction sites and familiarizing them with the use of US building products, providing trainers for technical seminars in Japan, or providing hands-on technical training on the job-site. Other types of technical assistance provided by respondents included translating product brochures and catalogs, providing on-site construction management and supervision, providing videos and slides that illustrate the 2x4 construction process, and assisting with design development.

The types of technical assistance provided by the prefabricated housing manufacturers, the export consolidators, and the Japanese trading companies are summarized in Table 22. While the types of technical assistance provided by the three types of firms were not significantly different, there were some interesting differences observed between the firms. In general, prefabricated housing manufacturers and export consolidators utilized a wide variety of strategies to achieve a more efficient transfer of technology with their Japanese customers, relying primarily on written and verbal instructions, field seminars and training, and using US carpenters to install products and build homes.

Table 22. Types of technical assistance provided by exporters to their Japanese customers.

Type of Technical Assistance	Average	PF	EC	JTC
Provide written/verbal instructions	46.5%	50%	46%	40%
Seminars and field training	30.2%	42%	31%	0%
Provide US carpenters	20.9%	17%	27%	0%
Provide product brochures	16.3%	0%	23%	20%
Provide supervisors on-site	14.0%	33%	8%	0%
Provide training videos/slides	9.3%	8%	8%	20%
Design development	7.0%	18%	4%	0%

While 33% of the prefabricated housing manufacturers sent construction supervisors to Japan to oversee a project, only 8% of the export consolidators used this strategy. In contrast, 23% of the export consolidators provide their customers with product brochures while none of the prefabricated housing manufacturers reported using this strategy. The technical assistance provided by the US subsidiary of Japanese trading companies was much more restricted than their US counterparts. In general the Japanese trading companies reported providing written/verbal instructions (40%) or, to a lesser extent, providing product brochures (20%) or training videos (20%).

Finally, respondents were asked to identify the different strategies they thought would be most effective in ensuring a more efficient transfer of 2x4 construction technology to Japanese construction professionals (Figure 9). While no new strategies were suggested, the order in which the strategies were presented differed somewhat from the order of the strategies that are currently being utilized. Approximately half of the respondents felt that the most effective strategy for transferring 2x4 construction technology to Japan involved training Japanese construction workers. Suggestions for training Japanese carpenters included sending US construction technicians or construction crews to advise Japanese construction workers at the construction site, organizing a series of seminars in 2x4 construction techniques in Japan, or establishing a 2x4 construction training center in Japan. Only 28% of the respondents

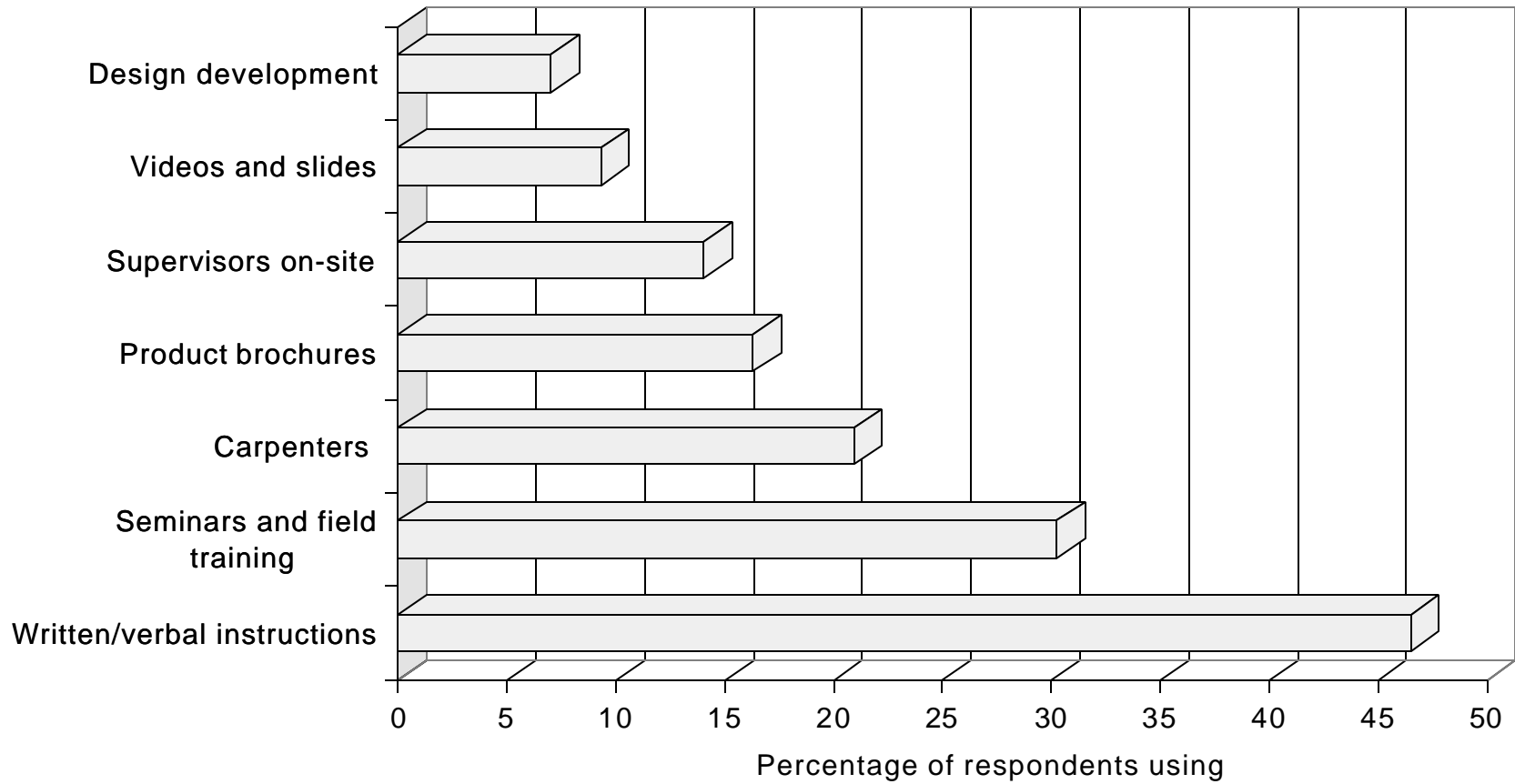


Figure 8. Type of technical assistance provided by the respondents to their Japanese customers.

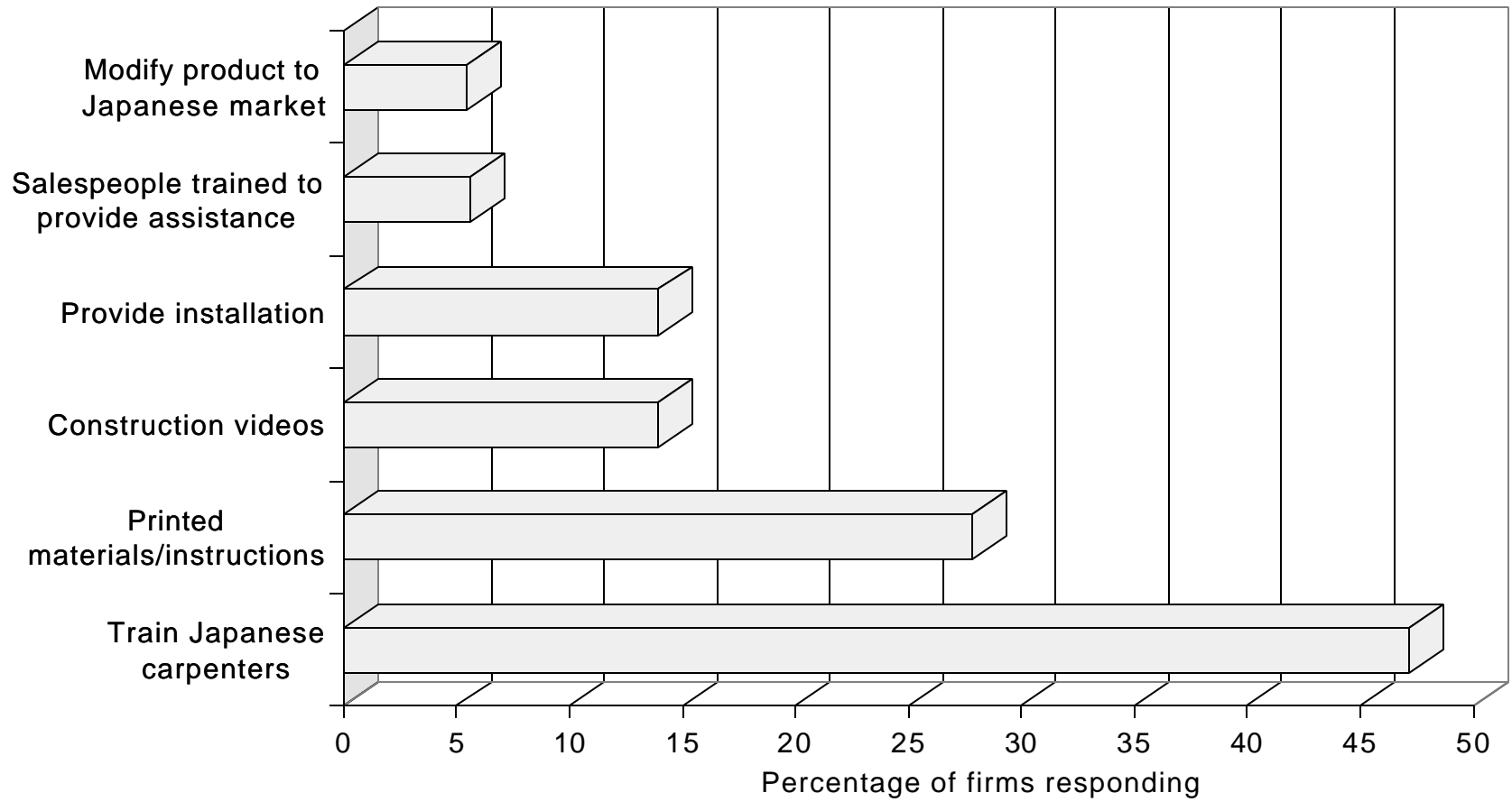


Figure 9. Type of technical assistance perceived by respondents to be most effective in transferring US construction technology to Japan.

suggested that printed materials and instructions are an effective strategy for facilitating technology transfer, despite the fact that this strategy is currently the most common type of technical assistance provided.

DISCUSSION AND CONCLUSIONS

Promising opportunities exist for prefabricated housing exports to Japan. The most important of these is the Japanese government's plan to increase housing imports from North America and Europe to lower domestic housing costs and help alleviate Japan's trade imbalance with these regions. The plan calls for increasing prefabricated housing imports from the previous level of 1,500 annually to 11,000 housing units per year.

The demand for new housing in Japan is high. In fact, in 1995 the number of residential housing starts in Japan totaled 1.47 million, exceeding those in the US. The housing demand is forecast to remain strong due to several government initiatives, including measures to lower interest rates for home mortgages, and the extension of publicly backed home mortgages to a larger segment of Japanese consumers.

Even though the share of wooden housing to total housing starts in Japan has been declining, both the wooden prefabricated housing market and 2x4 housing market remain fast growing market segments. The 2x4 housing market is expected to grow at a 10-15% rate this year and 2x4 housing starts are expected to top 125,000 by the end of the century. Currently, the number of 2x4 houses constructed in Japan is approximately 80,000.

The factors which have been responsible for the decline of the overall wooden housing market in Japan include the high component of labor intensiveness associated with the traditional post and beam construction method, high labor costs, and Japanese building codes which have restricted the use of imported wood products in residential construction, particularly in the quasi-fire zone areas.

The success of western-style 2x4 houses and wooden prefabricated houses in the Japanese market during a period when the use of wood in the overall residential construction market is declining can be attributed to several technical and cost-related factors that favor imported houses and construction methods over the traditional Japanese post and beam construction technology:

- ? The 2x4 construction technology uses materials and labor more efficiently than does the post and beam technology and does not require as high a degree of skilled labor. This means that the total time required for the construction process is shorter and the construction costs are lower.
- ? The cost of prefabricated housing is even lower than 2x4 because the housing components are manufactured in a factory setting and installed on site, resulting in reduced construction times, reduced labor costs and minimal material waste.
- ? Imported houses have superior heat and sound insulation characteristics over traditional post and beam houses, particularly older houses. In addition, the routine use of shear walls in US residential houses translates into superior performance in adverse conditions (*e.g., earthquakes*).

The small number of prefabricated housing exporters indicates that the prefabricated housing industry is not well developed at this point in time. In addition, the majority of prefabricated housing exporters were located in the state of Washington. This can be attributed to a number of factors. First, Washington companies have a long tradition of exporting products to Japan and other Pacific Rim countries. As a result, they appear to be much more comfortable with the concept of exporting. In addition, Washington companies have more direct access to a well developed port infrastructure than do firms in Oregon. Third, the state of Washington has been very proactive in encouraging and assisting wood products firms in developing the Japanese market for their products.

Prefabricated housing exporters in Washington and Oregon can be characterized as being small to medium-sized firms with annual sales of less than \$10 million and employing less than 25 employees. Most of the firms have been exporting to Japan for a relatively short time, usually less than five years. However, prefabricated housing

manufacturers appear to be highly involved in the Japanese market, as indicated by the fact that approximately half of the respondents generated more than 50% of their annual sales revenue from this market.

The promotional strategies used by the survey respondents were fairly limited, a fact which can likely be attributed to their small size and limited financial resources. A majority of the respondents indicated that they relied on product brochures, word-of-mouth referrals, and trade shows to promote their products. Promotional strategies that required a higher commitment of financial resources, such as establishing a model home or product showroom in Japan, were employed less frequently than the other strategies.

In general, the distribution channels for wood product exports in Japan are complex, consisting of several layers of intermediaries. However, the results of this research indicate that many of the prefabricated housing manufacturers and export consolidators have been successful in bypassing the traditional Japanese distribution channels. Approximately half of the respondents indicated that their primary channel of distribution involves selling their products directly to Japanese home builders. This strategy provides these firms with tremendous cost savings by minimizing the costs associated with distribution and helps to make US prefabricated homes and building materials more competitive in the Japanese market.

Most respondents considered the establishment of a strong personal relationship with their Japanese customers as representing one of the most important factors for succeeding in the Japanese prefab housing market. This factor was rated as being more important than any other single marketing factor by each of the three groups of respondents included in the study. Other marketing factors that were perceived to be important included providing after-sales service, short delivery times, and providing technical assistance for the customer.

Product adaptation was considered to be important for succeeding in the Japanese prefabricated housing market. In fact, all of the prefabricated housing manufacturers and 88% of the export consolidators reported that they modify their product to some extent for their Japanese customers. The most common types of product adaptation included changing the design of the home to include a tatami room and/or a genkan (Japanese-style entry way), utilizing higher quality materials, and translating product brochures, installation instructions, and technical information into Japanese. None of the prefabricated housing manufacturers and just 12% of the export consolidators indicated that they did not modify their products in any way for their Japanese customers.

JAS and JIS certification of building materials and the Japanese building code were both perceived to be non-tariff trade barriers that had a substantial negative impact on the competitiveness of US prefabricated houses and building materials in Japan. Two other factors, both related to the differences in US and Japanese residential construction technology, were perceived to be barriers that restricted the competitiveness of US firms in Japan. It is interesting to note that, in many cases, the US subsidiaries of the Japanese trading companies perceived the impact of the different trade barriers as having a greater impact on trade than did the US firms. This was particularly true with respect to both the complexity of the distribution channels in Japan and the import tariffs for building materials where the Japanese trading companies perceived these factors to have a much higher impact on their competitiveness than did their US competitors.

The vast majority of the prefabricated housing units exported from the US to Japan are manufactured using the 2x4 construction technology. This poses a problem given the fact that most of the survey respondents reported that Japanese architects, contractors, and carpenters often do not have a strong understanding of this technology. In addition, many respondents also stressed the fact that Japanese residential contractors seldom utilize the construction management techniques that are widely used in the US residential construction industry. As a result, construction costs are more than twice what they are in the US. But, perhaps more important from a strategic market development perspective is the fact that a basic lack of understanding regarding the US construction technology can adversely impact the quality of 2x4 homes and reduce their long-term performance. Both of these factors could potentially erode the competitive position of US housing products to the extent that Japanese consumers perceive these products to be of substandard quality.

Survey respondents indicated that technology transfer was an important factor in their marketing mix and approximately 85% of the US firms utilize some type of strategy to address the issue of technology transfer. The

three most widely used types of technical assistance used in Japan were providing customers with installation instructions and/or product brochures, providing customers with seminars and/or on-site technical training, and sending over carpenters and/or construction site supervisors to ensure the quality of the construction work. Unfortunately, current Japanese immigration law makes it very difficult for US contractors and carpenters to obtain the work visas required before they can work in Japan.

The results of this survey indicate that prefabricated housing manufacturers and export consolidators in the Pacific Northwest are strategically poised to take advantage of housing policy changes in Japan to promote the import of western-style housing and building materials. Despite the fact that many of the participants in this research are relatively new to the Japanese market, many are already experiencing success in Japan. In particular, these firms have demonstrated the ability to take advantage of the new competitive environment in Japan and develop business relationships and distribution channels that bypass the traditional extended and costly distribution system. Given the strengthening Japanese economy, the opportunities for imported housing and building materials in Japan appear to be bright.

FUTURE RESEARCH

Without a doubt, the most urgent problem identified during the course of this project was to identify strategies for promoting the more effective transfer of 2x4 construction technology to Japanese architects, contractors, and carpenters. The continued growth of the imported housing market in Japan depends to a large extent on the ability of Japanese contractors to provide high quality 2x4 housing to Japanese home buyers at a competitive price. However, while price is an important factor when buying a home, it must be remembered that the quality requirements of Japanese home buyers are the highest in the world and form the basis of their purchase decision. Construction practices that compromise the structural integrity and/or long-term performance of western-style houses in Japan have the potential to seriously undermine the reputation and long-term growth potential of this segment of the residential construction market and would have significant adverse economic implications for a broad range of firms in the Pacific Northwest who have devoted considerable time and effort to developing this market segment.

As a result, it is essential to identify those areas where current construction practices in Japan are inappropriate and/or inefficient, and make a proactive effort to ensure that Japanese contractors understand and correctly utilize 2x4 construction practices that result in a high quality product. One strategy for achieving this goal would be to perform a comparative cost assessment of similar construction projects performed by US and Japanese construction crews. This exercise would facilitate the identification of those areas of a construction project where the Japanese cost structure is excessive and help to isolate components of the construction process where more effective technology transfer needs to be implemented.

RESEARCH LIMITATIONS

The small number of firms included in the survey limited the types of statistical analyses that could be performed on the data. The fact that there were so few firms in the different industry groups (particularly the Japanese trading companies) made it difficult to statistically analyze the differences between the groups. In many cases there seemed to be substantial differences between the strategies employed by the different types of firms and their perceptions of the impact of different trade barriers and technology transfer strategies. However, because of the small sample size and large variations in the data, the statistical tests were generally unable to detect any significant differences between the different firm types. However, despite the fact that the Japanese trading companies were not well represented, the responses and strategies of the US firms are clearly of more importance in assessing the overall export performance of firms in this important segment of the Japanese market.

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APPENDIX A
SURVEY QUESTIONNAIRE

1.) Does your firm currently export to Japan?

Yes _____ (Please continue to question #2)

No _____ (Please return the questionnaire in the envelope provided.)

PART I. Marketing Variables

2.) Approximately what percentage of your export sales to Japan are through the following distribution channels?

Total should add to 100 %.

To final home buyer	_____ %
To Japanese home builder	_____ %
To Japanese wholesaler	_____ %
To Japanese trading company	_____ %
To freight consolidator	_____ %
To export management company	_____ %
Other (please specify):	_____ %
_____	_____ %
	100 %

3.) Does your company have a sales office in Japan? Yes _____ No _____

4.) Does your company employ a sales representative in Japan? Yes _____ No _____

5.) Has your company established a joint venture with a Japanese company? Yes _____ No _____

6.) Has your company considered establishing a joint venture with a Japanese company?
Yes _____ No _____

7.) Which of the following promotional tools does your firm use to market its products in Japan?
Please check all that apply.

_____ Attendance at trade shows	
_____ Participation in trade missions	
_____ Provide product brochures	
_____ Advertise in trade journals	
_____ Establish a model home in Japan	
_____ Establish a showroom in Japan	
_____ Word-of-mouth	
_____ Other (please specify): _____	

8.) How are your products modified for the Japanese market. Please check all choices that apply.

Use higher quality materials than in US market	_____
Alter design specifications	_____
Translate technical information	_____
Translate promotional information	_____
Use different construction technology	_____
Other (please specify): _____	
_____	_____

Our products are not modified _____

9.) In your opinion, what are the three most important marketing factors for succeeding in Japan?

1. _____
2. _____
3. _____

10.) In your opinion, how important are each of the following factors in selling your product in Japan?
Please circle the number that best describes your opinion.

	Not						Extremely	
	Important						Important	
Provide a customized product	1	2	3	4	5	6	7	
Increase the quality of your product	1	2	3	4	5	6	7	
Low price	1	2	3	4	5	6	7	
Provide rapid delivery	1	2	3	4	5	6	7	
Provide technical assistance	1	2	3	4	5	6	7	
Provide credit terms to customers	1	2	3	4	5	6	7	
Provide product warranty	1	2	3	4	5	6	7	
Provide after-sales service	1	2	3	4	5	6	7	
Exclusive distributorships	1	2	3	4	5	6	7	
Joint ventures	1	2	3	4	5	6	7	
Provide technical information in Japanese	1	2	3	4	5	6	7	
Provide product information in Japanese	1	2	3	4	5	6	7	
Personal relationships with customers	1	2	3	4	5	6	7	
<i>Other (please specify):</i>								
_____		1	2	3	4	5	6	7
_____		1	2	3	4	5	6	7

11.) In your opinion, what are the three most important factors that restrict the ability of US firms to compete in the prefabricated housing market in Japan?

1. _____
2. _____
3. _____

12.) To what extent does each of the following factors affect your ability to compete in Japan? Please circle the number that best describes your opinion.

	No			Some		Substantial	
	Impact			Impact		Impact	
Japanese building codes	1	2	3	4	5	6	7
JAS certification of building materials	1	2	3	4	5	6	7
Complex distribution channels in Japan	1	2	3	4	5	6	7
Restrictive import tariffs	1	2	3	4	5	6	7
Differences in construction techniques	1	2	3	4	5	6	7
Inability to extend credit to customers	1	2	3	4	5	6	7
Transferring 2x4 construction technology	1	2	3	4	5	6	7
<i>Other (please specify):</i>							
_____	1	2	3	4	5	6	7

13.) Does your firm provide your Japanese customers with technical assistance in assembling your product?

Yes _____ No _____

If yes, what type of technical assistance does your firm provide?

14.) In your opinion, what type of technical assistance would be most effective in transferring US construction technology to Japan?

Part II. Company Demographics

15.) What is your job title? _____

16.) What is your company's line of business? _____

17.) Approximately what percentage do the following products make up of your exports to Japan? *Total should add to 100 %.*

Open panel prefabricated housing	_____ %
Closed panel prefabricated housing	_____ %
Modular prefabricated housing	_____ %
Precut house packages (round log/solid timber structures)	_____ %
Building components	_____ %
Building systems	_____ %
Building materials	_____ %
<i>Other (please specify)</i>	_____ %
_____	_____ %
_____	_____ %
	100 %

18.) How many years has your firm been in business? _____ years

19.) How many years has your firm been exporting to Japan? _____ years

20.) If your company manufactures prefabricated housing, approximately how many units did you export to Japan in 1994?

_____ units

21.) What percentage of your sales revenue come from exports?

_____ % derived from exports to all countries

_____ % derived from exports to Japan

22.) How many people does your firm employ?

production	_____
marketing/sales	_____
engineering/design	_____
administration	_____
other; (please specify):	_____
Total	_____

23.) Please estimate your company's total sales for 1994? *Check only one.*

_____	0 - \$500,000
_____	\$500,001 - \$1,000,000
_____	\$1,000,001 - \$2,500,000
_____	\$2,500,001 - \$5,000,000
_____	\$5,000,001 - \$10,000,000
_____	more than \$10,000,000

Thank you very much for your cooperation and time in filling out this questionnaire. Please return it to us in the stamped/addressed envelope provided. If you would like to receive a FREE COPY OF THE RESULTS of this research project, please check the following space and we will see that you get the report!

_____ ***Yes, I would like to receive the results of this study.***
