

AN ABSTRACT OF THE THESIS OF

Jun-Yen Lee for the degree of Doctor of Philosophy in Forest Products
presented on October 7, 1994.

Title: An Assessment of Domestic Market Outlook and Export Market Potentials
for U.S. Wood Windows and Doors.

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Abstract approved: _____

Brian J. Greber and Terence D. Brown

The U.S. wood window and door industry has experienced much growth for the past decade. However, to date, little information on factors that could affect marketing strategies exists. This research represents an initial step for providing this information.

A mail survey of U.S. wood window and door manufacturers was used to collect primary information on market characteristics, entry barriers, distribution channels used, and export decision factors. Also, an economic model was built to assess the domestic market sensitivity to changes in the residential construction price, construction costs, and raw material prices.

The results of mail survey indicated that the key characteristics of the domestic window and door market were strong competition and a price sensitive market, while the future growth potential was identified as a key market characteristic in the Pacific Rim markets. The key entry barriers in

domestic window and door markets are viewed as non-tariff barriers (building codes, regulations, etc.), but in the Pacific Rim markets business peoples' attitudes and the complexity of distribution channels are viewed as the key entry barriers. In general, the Pacific Rim markets are perceived as more difficult to penetrate than the domestic wood window and door markets. The key factor affecting the export decision with wood windows and doors is quality. There exist gaps in the views of exporters and nonexporters in the importance of technical support, consistency of supply, and familiarity/tradition. Intermediaries such as wholesalers, retailers, and distributors were commonly used in domestic wood window and door markets.

The results of econometric analysis have shown that demand for wood windows and doors is sensitive to the change in residential construction price with an elasticity of 3.54%. The aggregate demand appears insensitive to own price; this finding ignores some of the substitution with door and window types that the survey results helped highlight.

An Assessment of Domestic Market Outlook and Export Market Potentials for
U.S. Wood Windows and Doors

by

Jun-Yen Lee

A THESIS

submitted to

Oregon State University

in partial fulfillment of
the requirements for the
degree of

Doctor of Philosophy

Completed October 7, 1994

Commencement June 1995

Doctor of Philosophy thesis of Jun-Yen Lee presented on October 7, 1994

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AN ASSESSMENT OF DOMESTIC MARKET OUTLOOK AND EXPORT MARKET POTENTIALS FOR U.S. WOOD WINDOWS AND DOORS

1. INTRODUCTION

The U.S. wood window and door industry has experienced much growth for the last decade. Since 1980, the shipments of wood window and door products rose more than 75 percent from \$2.9 billion dollars (1987 dollars) to more than \$5 billion dollars (1987 dollars) in 1990 (U.S. Department of Commerce (U.S.D.C.), 1992b). Wood windows and doors have become one of the most important sectors in the wood products industry.

1.1 The Problem

Wood window and door manufacturers have faced the challenges of contracting wood supplies, especially in Pacific Northwest, increasing competition from non-wood products, and slow growth in domestic housing starts in the 1990s. To relieve the increasing cost pressures associated with the shortage of wood, wood window and door manufacturers have developed new technologies and acquired lower cost raw materials, such as finger-jointed lumber laminated with veneers and imported Radiata pine lumber to replace the higher price of domestic solid wood. While supply remains tight, the demand pressures from competition and slow growth in U.S. housing markets suggest U.S. wood window and door manufacturers should explore new marketing opportunities including export markets. Unfortunately, information regarding market trends, market characteristics, distribution channels, entry barriers,

export market nuances, and demand sensitivities in domestic and foreign wood window and door markets are rare and have received a little attention.

1.2 The Objectives

The overall objective of this study is to identify market opportunities in the U.S. and Pacific Rim markets, and help the wood window and door industry, economic development experts, and public policy makers understand the market potentials. Specific objectives include:

1. Identify the key characteristics influencing marketing strategies of the domestic window and door markets.
2. Identify the key characteristics influencing marketing strategies of the Pacific Rim window and door markets.
3. Identify the key barriers to entry for new producers in the U.S. window and door market.
4. Identify the key barriers to entry for the Pacific Rim window and door markets.
5. Identify the key factors that influence the manufacturer's export decisions and contrast the views of exporters to nonexporters.
6. Identify the distribution channels used by wood window and door manufacturers.
7. Assess the sensitivity of U.S. market demand for wood windows and doors to market price and residential construction prices.

8. Assess the sensitivity of U.S. wood window and door market to change in raw material costs.
9. Suggest future studies on the exploration of the behavior of wood product importers and builders in the Pacific Rim markets.

To accomplish these objectives, primary information and secondary data must be collected and analyzed. To gather primary information, a mail survey was used to obtain the information on market characteristics, entry barriers, factors influencing the exportation of products, and distribution channels. An econometric analysis used secondary data to assess the sensitivity of the market to changes in wood window and door price, residential construction prices, and raw material costs.

1.3 The Scope

This study focused upon the U.S. wood window and door industry. The U.S. wood window and door industry was defined using U.S. Department of Commerce, Standard Industrial Classification (SIC) and included the manufacturers of wood window units (SIC 24311), wood window sash (SIC 24312), wood window and door frames (SIC 24313), wood doors-interior and exterior (SIC 24314), and other wood doors (SIC 24315). The secondary data was collected for all of these sectors. The primary information was obtained from manufacturers whose production line consisted of only wood windows or doors, or their main products are wood windows and doors. These manufacturers are believed to have more effects on the growth of whole

industry because the sectors of wood window units (SIC 24311) and wood door-interior and exterior (SIC 24314) have been ranked as the highest value of product shipments in this industry for the past decade.

Due to data availability, the export and import data used in summarizing market background was from 1989 to 1992; the data used in econometric analysis was from 1973 to 1990. The market survey was conducted in 1993.

1.4 Organization of the Study

Chapter two presents the basic market background for U.S. wood windows and doors. Chapter three includes the reviews of prior marketing research and econometric analysis conducted for the wood products industry. Chapter four discusses the methodology of mail survey and the development of the econometric model for domestic wood windows and doors. Results and discussions are provided in Chapter five. Finally, Chapter six presents the summary and conclusions.

2. MARKET BACKGROUND

Wood window and door market trends in product types and domestic versus export market information are presented in this chapter. The domestic and export data were collected from the 1982 and 1987 Census of Manufactures, U.S.D.C., and U.S. merchandise import and export trade, U.S.D.C. (annual), respectively. These data may be a representation at a particular time, and yet they are dynamic; they grow, peak, and decline over a period of time. The goal of the analysis of market trends in product types and domestic versus export market information is to identify, understand, and ultimately predict directional changes.

2.1 Market Trends-Product Types

Market trends in product types were assessed through the examination of historical data of the value of wood window and door shipments, number of establishments, number of all employees, market size, and export shares.

Growth has been evident in the wood windows (SIC 24311) and wood doors-interior and exterior (SIC 24314) sectors as reflected in the change in the number of establishments, in employment from 1982 to 1987, and in the average annual change of value of product shipments from 1982 to 1991. However, in wood window and door frames (SIC 24313), and other wood doors (including garage, screen, storm, and etc.)(SIC 24315) sectors, the number of establishments has declined, but employment and product shipments have

shown growth (Table 2.1). This implies that the increased production has concentrated in fewer firms in the wood window and door frames, and other wood doors sectors.

In the wood window and door industry, wood window units had the highest average annual change in the value of product shipments at 11.2%. The market includes double-hung, casement, and all other windows (including single-hung). The casement type represents the largest sector with shipments of \$349.1 million (1987 \$'s) in 1982 and \$938 million in 1987 (Table 2.2).

In the wood doors-interior and exterior sector, two main types of wood doors are used in the market: flush and panel doors. Panel doors experienced the highest growth at 124% between 1982 and 1987 census (Table 2.2). Panel doors traditionally were used primarily as exterior doors, but had gradually lost their market share to fiber glass and insulated steel-embossed doors due to the increasing production costs and strict energy codes in the 1990's (U.S. D.C., 1993a). While much of the growth was in the panel door market, high wood costs and tougher energy codes may further slow down the growth of wood panel doors in the 1990's.

Table 2.1 The change of establishments, all employees, and value of product shipments.

S.I.C.	Class of products	Number of all establishments ^a			Number of all employees ^a (1,000)			Value of product shipments ^b (million 1987 dollars)				
		1987	1982	% change (1982-1987)	1987	1982	% change (1982-1987)	1991	1987	1982	% change (1982-1987)	% Avg. annual change (1982-1991)
24311	Wood window units	95	88	7.9	19.9	10.9	82.6	1683.3	1995.1	790.1	152.5	11.2
24312	Wood window sash	12	12	0	0.7	0.4	75	137.4	184.6	69.2	166.7	10.5
24313	Wood window and door frames	33	50	-34	3.2	2.7	18.5	268.2	358.4	217.1	65.1	3.7
24314	Wood doors, interior and exterior	198	183	8.1	14.3	9.9	44.4	1,361.3	1,509.6	885.3	70.5	5.5
24315	Other wood doors, including garage, screen, storm, etc.	89	95	-6	6.9	5.4	27.7	929.3	966.4	548.4	76.2	6.4
2431	All millwork ^c	2,782	2,321	19.9	89	56.8	56.5	7590.9	8,800.9	4553	93.3	6.5

^aSource: Census of manufactures (U.S.D.C. 1987a).

^bSource: Annual survey of manufacturers (U.S.D.C. 1992b), value was deflated by the Implicit Price Deflator for Gross Domestic Product.

^cNote. does not equal sum to above.

Table 2.2 Value of wood window and door product shipments by product items.

Class of products	Items	Value of product shipments ^b (million 1987 dollars)				
		1987	% share	1982	% share	% change (1982-1987)
Wood window units (SIC 24311)	Double hung (Including cladde)	754	37.8	283.2	35.8	166.2
	Awning	27	1.4	37.1	4.7	-27.2
	Casement (Including cladde)	938	47.0	349.1	44.2	168.7
	Horizontal sliding	46.9	2.3	48.2	6.1	-2.7
	All others (including single hung)	229.2	11.5	72.5	9.2	216.1
	Subtotal	1995.1	100	790.1	100	
Wood window sash (SIC 24312)	Knock down (K.D.) and open	68.3	37.0	21.6	31.2	216.2
	Glazed	92.6	50.2	34	49.1	172.3
	All others	23.7	12.8	13.6	19.7	74.2
	Subtotal	184.6	100	69.2	100	
Wood window and door frames (SIC 24313)	Wood window frames	133.5	37.3	70.9	32.6	88.3
	Wood door frames	224.5	62.6	136.1	62.7	65
	All others	0.4	0.1	10.2	4.7	-96
	Subtotal	358.4	100	217.1	100	

Table 2.2 Value of wood window and door product shipments by product items (Continued).

Class of products	Items	Value of product shipments ^b (million 1987 dollars)				
		1987	% share	1982	% share	% change (1982-1987)
Wood doors-interior and exterior (SIC 24314)	Panel type (including french types)	563.5	37.3	251.9	28.5	123.7
	Flush type, hollow core	516.8	34.2	303.5	34.3	70.3
	Flush type, solid core	336.1	22.2	255	28.8	31.8
	All others	93.2	6.3	74.8	8.5	24.6
	Subtotal	1509.6	100	885.3	100	
Other wood doors, including garage, screen, storm etc. (SIC 24315)	Wood garage doors	285.9	29.6	169.0	30.8	69.2
	Screen doors and combination screen and storm doors	31.3	3.2	16.6	3.0	88.6
	Louver doors	53.7	5.6	51.1	9.3	5.1
	Bifold doors	127	13.1	69.6	12.7	82.5
	Sliding patio doors	253.6	26.2	101.8	18.6	149.1
	All others, including storm, cabinet, toilet, grain, etc.	214.9	22.2	140.4	25.6	53.1
	Subtotal	966.4	100	548.5	100	
All millwork ^b (SIC 2431)		8,800.9		4,553.0		93.3

^aSource: Census of Manufactures (U.S.D.C. 1987a), annual data is not available, value was deflated by the Implicit Price Deflator for Gross Domestic Product.

^bNote, does not equal sum to above.

2.2 Domestic Versus Export Markets

The market size information is only available for the period 1989-1992 and 1989-1991, due to the availability of export and import data. Market sizes need to be measured in terms of sales values instead of volume, which lacks uniform definition. The domestic market size (M.S.) of wood windows and doors is defined as the value of product shipments (V.P.) minus the export value of wood windows and doors (E.V.) plus the import value of wood windows and doors (I.V.), i.e. $M.S. = V.P. - E.V. + I.V.$ This market size is somewhat imperfect, since the definition of the value of product shipments¹, import value², and export value³ are slightly different. The difference in freight and handling costs do not, however, substantially alter the interpretation of the data.

There has been a downward change in market size from 1989 to 1991. This may be from the slow growth of domestic housing starts and the increased competition from vinyl window and metal door manufacturers. However, wood window and door exports have shown growth over this same period (Table 2.3). It appears that domestic wood window and door manufacturers have

¹ Value of product shipments: the received or receivable net selling values, excludes freight and taxes.

² Import Value: or Customs value, valued at transactions value, excluding the cost of international freight services and insurance cost.

³ Export value: or F.A.S. value, the value measured at free along side ship at the U.S. ports of export, including inland freight.

utilized the export markets to increase sales, while there has been a reduction in domestic market sales.

The export in wood windows and doors appears to be getting stronger (Fig. 2.1 and Fig. 2.2). Three relevant export items are defined by the Bureau of Census, U.S.D.C.: "Doors and their frames, thresholds, wood" (U.S.D.C. commodity number: 4418200060), "Flush doors, wood" (U.S.D.C. commodity number: 4418200030) and "Windows, french windows and their frames" (U.S.D.C. commodity number: 4418100000). Considering the exports of wood windows and doors, wood doors have the largest share in terms of export value and units, accounting for more than 75% of each in 1992 (Table 2.4 and Table 2.5). Threshold doors and their frames accounted for 84% of the wood door export values in 1992 (Table 2.4).

While growth has occurred in exports, the domestic manufacturers have increased their exports annually by only a small portion (Table 2.6). This small portion of exports may be caused by the manufacturers' being unfamiliar with the characteristics of potential markets.

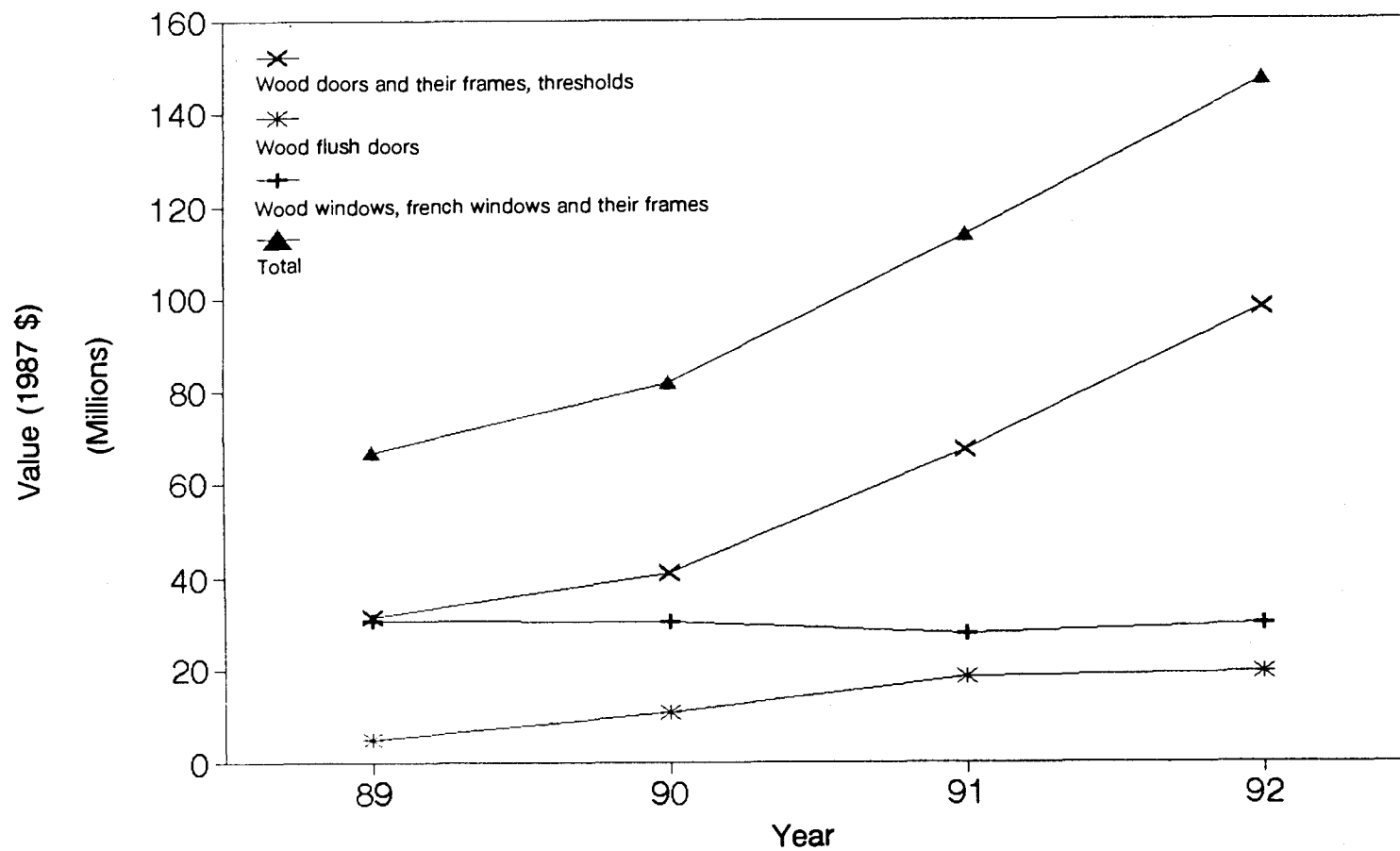
Table 2.3 U.S. wood window and door market size.

	U.S. wood windows and doors (million 1987 dollars)		
	1989	1990	1991
Value of wood windows and doors (SIC 24311, 24312, 24313, 24314, 24315) ^a	4,994.20	4,930.10	4,579.50
Exports of wood window, door and their frames(Commodity numbers:4418200000, 4418200030, 4418200060) ^b	66.53	81.56	113.61
Imports of wood window, door and their frames(Commodity numbers:4418200000, 4418200030, 4418200060) ^b	94.56	76.11	65.60
U.S. market size ^c	5,022.23	4,924.65	4,535.50

^a Source: Value of product shipments, Annual survey of manufacturers (U.S.D.C., 1992b).

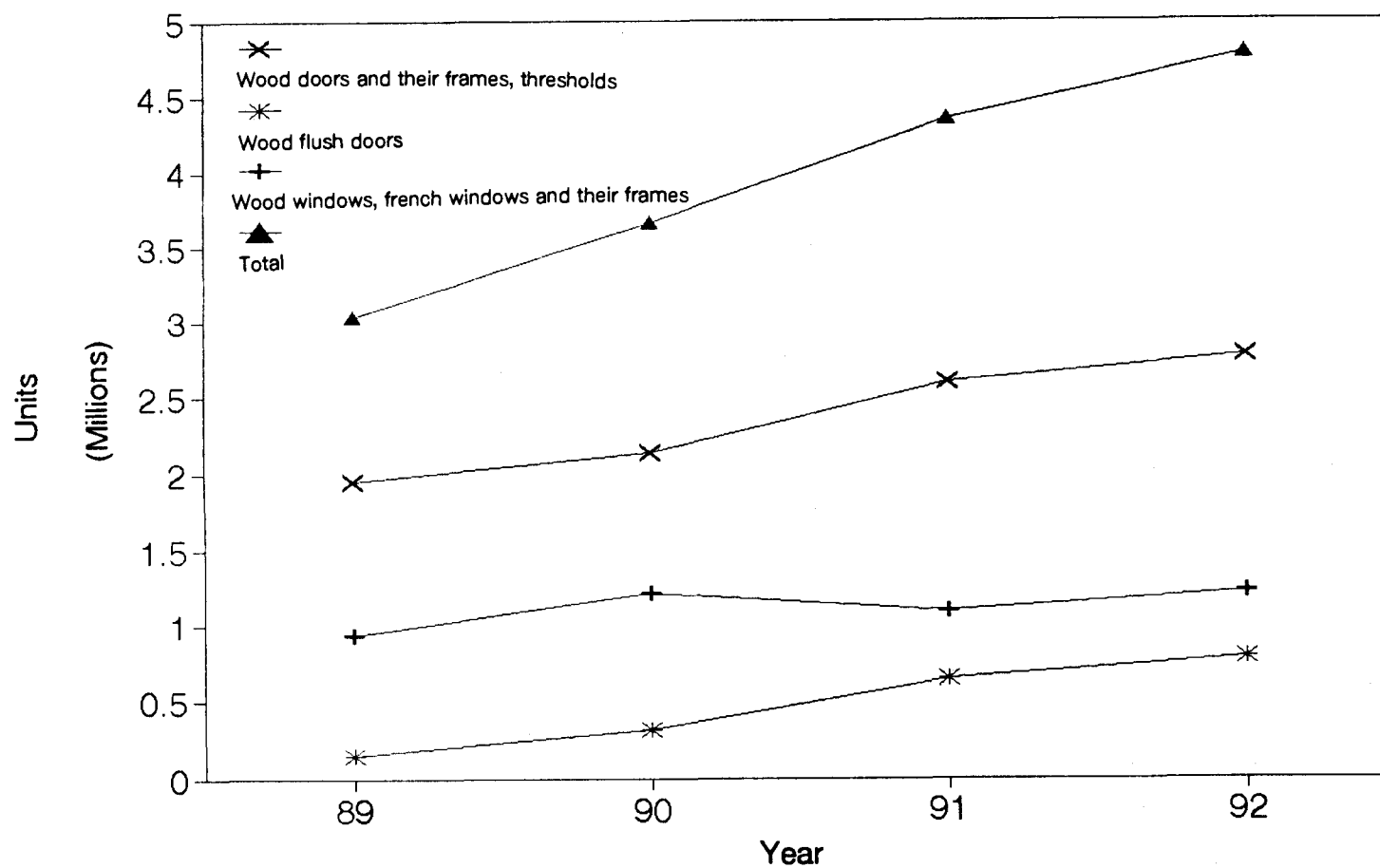
^b Source: U. S. merchandise import & export trade, commodity by country (U.S.D.C., 1993b).

^c Market size = Value of product shipments - Exports (Value) + Imports (Value).



Source: U.S. merchandise import & export trade, commodity by country, U.S.D.C. 1993 (U.S.D.C., 1993b).

Figure 2.1 The value of U.S. wood windows and doors export to the world.



Source: U.S. merchandise import & export trade, commodity by country, U.S.D.C. 1993 (U.S.D.C., 1993b).

Figure 2.2 The number of U.S. wood windows and doors export to the world.

Table 2.4 Value^a of U.S. wood windows and doors exported to the world and Pacific Rim^b.

Export to	Items & Commodity number ^c	1989	1990	1991	1992
-----1987 dollars-----					
World	Doors and their frames, thresholds, wood (4418200060)	31,021,300	40,774,250	67,227,190	97,911,270
	Flush doors, wood (4418200030)	4,939,815	10,699,000	18,590,340	19,310,560
	Windows, french windows and their frames, wood (4418100000)	30,571,300	30,088,850	27,794,280	29,745,340
	Total	66,532,410	81,562,100	113,611,800	146,967,200
Pacific Rim	Doors and their frames, thresholds, wood (4418200060)	3,283,333	10,286,490	11,073,350	7,738,243
	Flush doors, wood (4418200030)	873,148	1,733,454	3,361,360	3,920,142
	Windows, french windows and their frames, wood (4418100000)	5,325,926	6,989,121	5,453,488	6,283,940
	Total	9,482,407	19,009,070	19,888,190	17,942,320

^a Value was deflated by the Implicit Price Deflator for Gross Domestic Product.

^b Pacific Rim includes Japan, Taiwan, and South Korea only.

^c U.S. merchandise export trade, commodity by country (U.S.D.C., 1993b).

Table 2.5 U.S. wood window and door units exported to the world and Pacific Rim^a.

Export to	Items & Commodity number ^b	1989	1990	1991	1992
World	Doors and their frames, thresholds, wood (4418200060)	1,951,617	2,133,024	2,593,812	2,766,500
	Flush doors, wood (4418200030)	149,039	314,084	650,179	778,793
	Windows, french windows and their frames, wood (4418100000)	931,110	1,217,307	1,094,838	1,224,961
	Total	3,031,766	3,664,415	4,338,829	4,770,254
Pacific Rim	Doors and their frames, thresholds, wood (4418200060)	112,502	288,874	415,053	302,398
	Flush doors, wood (4418200030)	16,642	37,448	95,752	110,370
	Windows, french windows and their frames, wood (4418100000)	200,704	268,786	212,696	249,931
	Total	329,848	595,108	723,501	662,699

^a Pacific Rim includes Japan, Taiwan, and South Korea only.

^b U.S. merchandise export trade, commodity by country (U.S.D.C., 1993b).

Table 2.6 The export share of value of U.S. wood window and door shipments.

Year	Value of wood window and door shipments (Million 1987 dollars) (SIC 24311, 24312, 24313, 24314, 24315) ^a	Export share (World)	Export share (Pacific Rim ^b)
1989	4,994.2	1.33%	0.19%
1990	4,930.1	1.65%	0.39%
1991	4,579.5	2.48%	0.43%

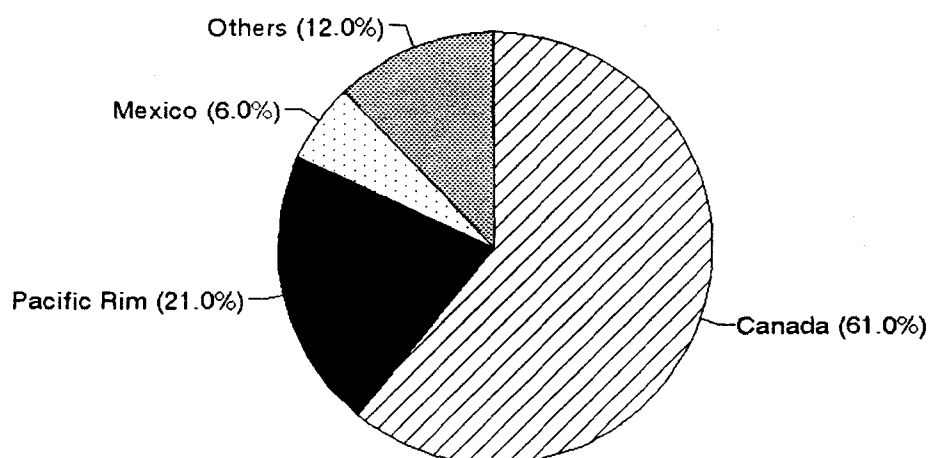
^a Source: Value of product shipments, Annual survey of manufacturers (U.S.D.C., 1992b).

^b Pacific Rim includes Japan, Taiwan, and South Korea only.

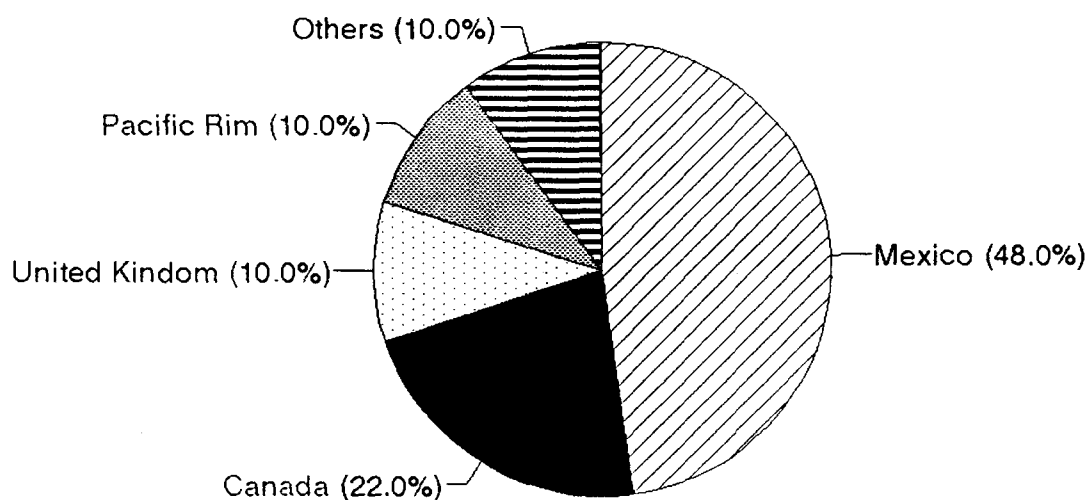
Exports of wood windows to the world market in 1992 were valued at \$ 29.7 million (1987 \$'s); with 61% shipped to Canada, 21% to the Pacific Rim (Japan 16% and South Korea 5%), and 6% to Mexico (Fig. 2.3). Forty-eight percent of the \$ 117.2 million (1987 \$'s) in export door value in 1992 were delivered to Mexico, 22% to Canada, 10% to United Kingdom and 10% to the Pacific Rim (including 7% to Japan) (Fig. 2.3).

The Pacific Rim market is a small but important potential export market for the U.S. domestic wood window and door manufacturers. In 1989, only 0.19% of the domestic value of product shipments were in exports to this area; however, the Pacific Rim export share increased to 0.43% in 1991 (Table 2.6, Fig. 2.4 and Fig. 2.5). Continued improvement in these markets may be realized due to exchange rate trends (Fig. 2.6), labor rate characteristics, demographics, and housing types in Japan.

Export value of wood windows in 1992

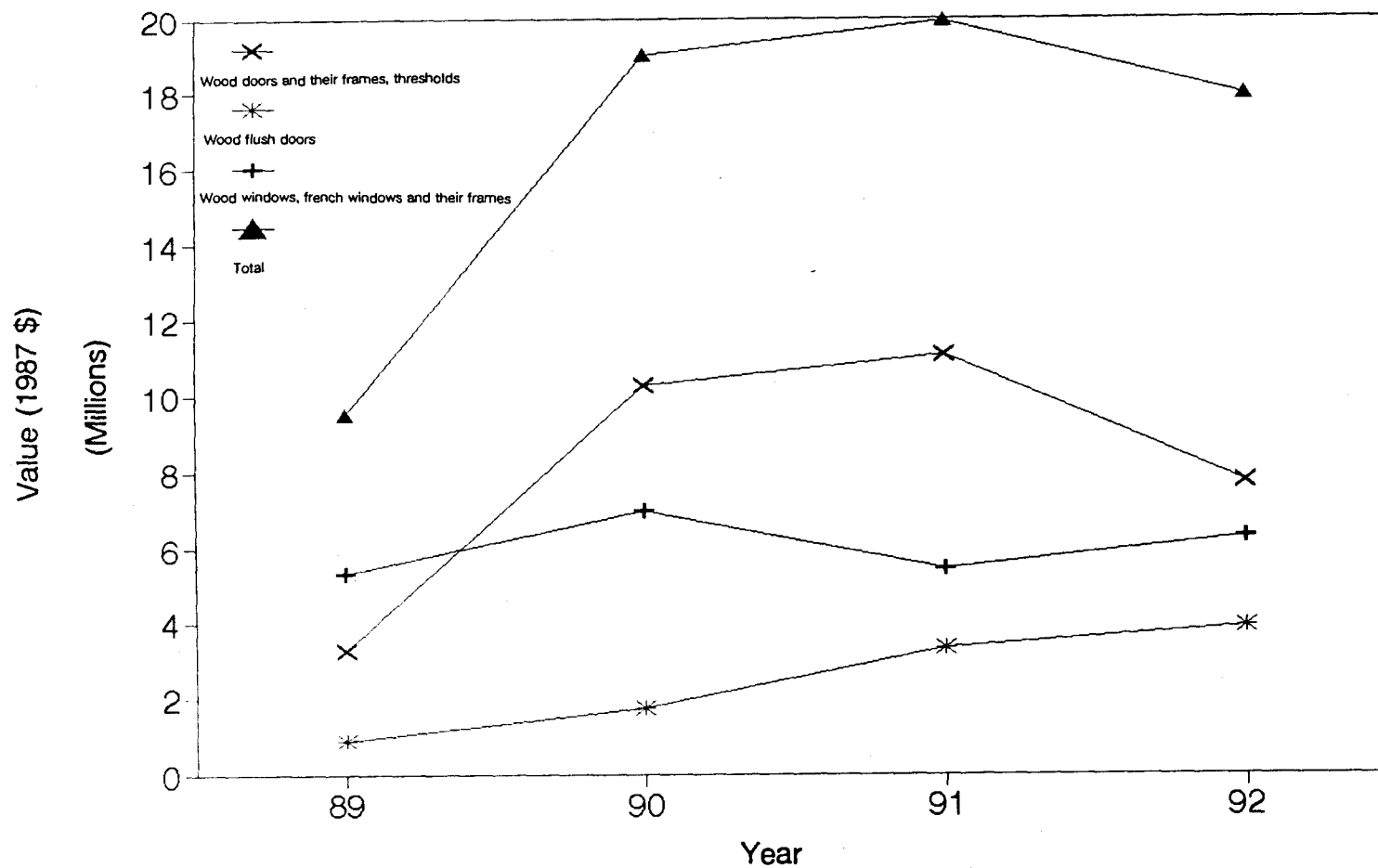


Export value of wood doors in 1992



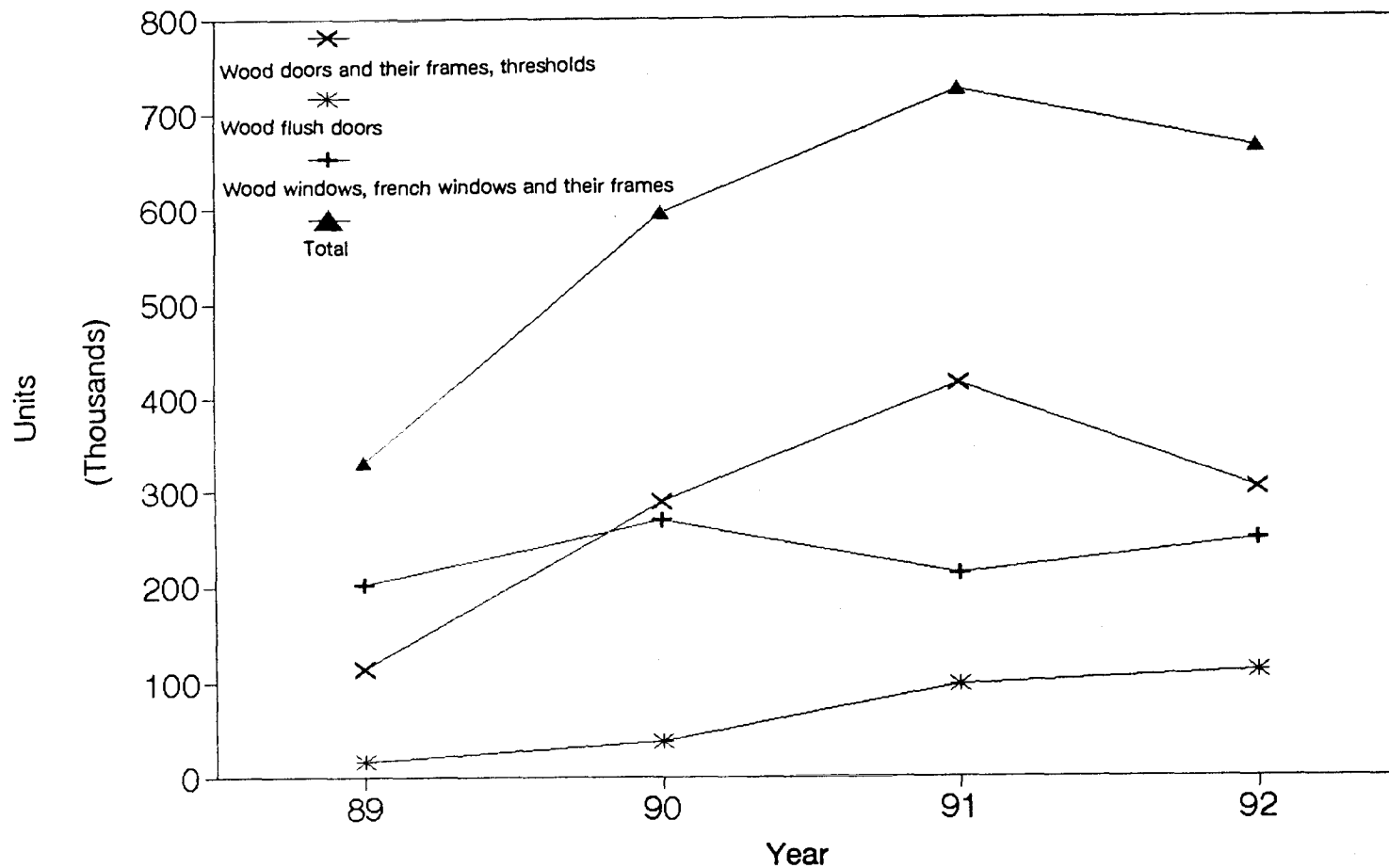
Source: U.S. merchandise import & export trade, commodity by country, U.S.D.C. 1993 (U.S.D.C., 1993b).

Figure 2.3 The U.S. export wood windows and doors in value by countries in 1992.



Source: U.S. merchandise import & export trade, commodity by country, U.S.D.C. 1993 (U.S.D.C., 1993b).

Figure 2.4 The value of wood windows and doors export to the Pacific Rim.



Source: U.S. merchandise import & export trade, commodity by country, U.S.D.C. 1993 (U.S.D.C., 1993b).

Figure 2.5 The number of wood windows and doors export to the Pacific Rim.

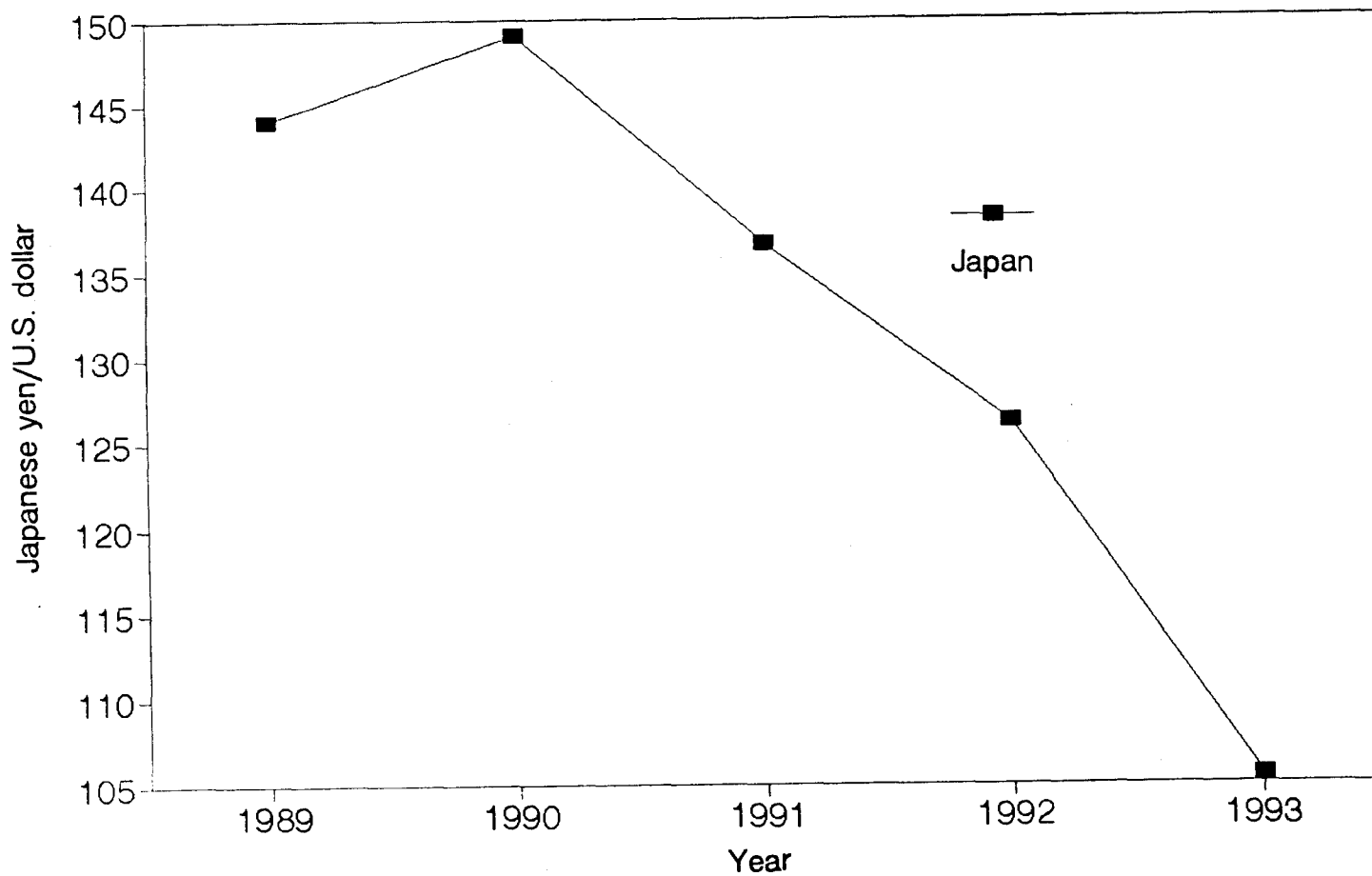


Figure 2.6 The trend of exchange rate of Japanese yen per U.S. dollar.

3. LITERATURE REVIEW

The literature review plays a major role in the development of the study's marketing research and the econometric model used for assessing the U.S. wood window and door market. The information collection techniques, sampling methods, questionnaire designs, and data analysis are of particular concern in the review of marketing research. In the review of econometric model, the model development, variables specification, estimation techniques, interpretation, and conclusions are examined.

The review consists of two sections. The first section reviews wood products marketing research studies in the U.S. The second section reviews econometric analyses for wood products.

3.1 Review of Marketing Research in Wood Products

There have been hundreds of marketing research studies dealing with consumer products, but studies of industrial products, especially wood products, are rare. In the past few years, marketing research has become more frequently applied to wood products.

Meyer (1992) et al. used a mail survey to collect information on furniture industries and channels of distribution. The sample covered U.S. wood household furniture manufacturers. Industry representatives and experts were consulted in designing the questionnaire. A pilot test had been used before the

formal questionnaire was mailed. A chi-square test between early and late respondents' characteristics was used and showed no significant difference. The results indicated that the solid hardwood furniture was the most frequently produced type of furniture. Over 60% of total furniture sales were through manufacturers' representatives.

Jones et al. (1992) also used a mail survey to examine the major characteristic of regional hardwood manufacturing industry. A ten-State area in the northern and central Appalachian states was chosen due to their predominant hardwood forests. Samples were selected from two industry segments, i.e., lumber and wood products, and furniture and fixtures. Based on employment number, the authors used census and stratified sampling methods. The results indicated that the important factors affecting the determination of firms' location are community, personal considerations, and market and raw material access.

Ifju and Bush (1993) used a mail survey to identify the factors that influence exports in the eastern hardwood lumber industry. Small hardwood lumber firms with 35 or fewer employees in the eastern United States were included in the sample. A comparison of early and late respondents was used to test the potential nonresponse bias; the test showed no significant difference. The results indicated that the increasing profit and communication with export distributors/brokers were the most important factors in stimulating export activity.

Cohen (1993) conducted an interview with the Japanese companies to assess the Japanese market potential for finger-jointed lumber. The sample includes importers, general and specialized wholesalers, and large and small construction companies. Companies, based on their size and function, were chosen. Results included market opportunities for using structural finger-jointed material in prefabricated homes, remanufactured housing companies, and American style houses. The opportunities for non-structural finger-jointed material included members in interior wall panels and core stock for traditional post & beams house.

Phelps and McCurdy (1993) conducted a mail survey of the U.S. sawmills to examine the production of rail ties and its markets. Chi-square analyses were used to test the nonresponse bias and showed no significant difference. Results showed that the production of rail road ties in 1991 was 25 million units. Most of the ties (58%) were sold to a treatment plant, while only 11% of the ties were sold to the railroad company.

Floyd et. al. (1993) conducted a mail survey to gather data for characterizing Ohio's wood pallet industry. Two additional mail surveys and a phone follow-up were used to increase the response rate. The population includes all known pallet producing firms and potential producers. A census method was used, then responses were screened and only active firms in the pallet industry were included. Nonresponse bias was tested and not evident.

Results indicated that the industry produced 32 million pallets and consumed 470 MMbf of lumber in the State of Ohio.

Forbes et al. (1993) mailed questionnaires to assess the volume of raw material used in U.S. wood furniture, and to predict the volume to be used in the future. Samples covered U.S. manufacturers of wood household, upholstered, and wood office furniture. A census method (for those firms with more than 100 employees) and a 25% random sample method (for firms with less than 99 employees) were used. Independent t-tests were performed to test the non-response bias; no bias was evident. The results included that total hardwood lumber used in wood furniture was over 2.4 billion board feet in 1990, and was expected to increase 13% from 1990 to 1991.

Armstrong et al. (1993) used a mail survey to determine the Canadian lumber buyers' needs. The sample included potential hardwood lumber buyers in Canada. The results indicated that the Canadian buyers were satisfied with the quality of U.S. products and services.

Idassi et al. (1994) used a mail survey to contrast customer-oriented to product-oriented marketing methods by measuring the customers' and producers' perceptions of hardwood lumber values. Personal interviews of producers and consumers were conducted prior to developing the mail questionnaires. Gaps analysis was used to test for key discrepancies between producers' perceptions and customers' expectations. Gaps analysis provides a statistical basis for assessing differences in responses between two groups

and is discussed in depth in Brown and Swartz (1989). Due to the small sample size, nonparametric tests were used to test the significant difference between the factors. The results indicated that product-oriented marketing methods are ineffective in influencing customer perceptions of hardwood lumber.

Christoforo et. al. (1994) collected the primary data by mail survey from U.S. pallet, container, shoo, and skid manufacturers to determine the volumes of hardwood and softwood lumber, cants, and panel products consumed by the U.S. pallet and container industries. A mixture of census and random sample techniques were applied. A census method was used for firms with ten or more employees. For firms with less than 10 employees, a 25% random sample technique was used. A concern was whether the sampling process incurred any bias due to general characteristics of nonresponding firms. Independent t-tests based on the mean values were used to test for the presence of nonrespondent bias; no bias was evident. The results showed that total industry use of hardwood lumber and cants in 1991 was 3,803 million board feet (MMbf); use of softwood lumber and cants was 1,853 MMbf; softwood plywood consumption was 271 million ft².

The preceding studies of wood product marketing research covered product attributes, industrial market characteristics, market potential, and distribution channels. Surveys used personal interviews and mail surveys. Most used mail surveys due to the target samples were widely dispersed.

Census, random sampling, or professional (judgement) sampling methods was used based on research objectives and industry characteristics in terms of size, employment, etc. Study scopes ranged from region to nation, to overseas countries. Products covered rail ties, household furniture, finger-jointed lumber, and pannels. These studies provided valuable insight for the development of a marketing survey for the wood window and door market.

3.2 Review of Econometric Models for the U.S. Wood Products

Many econometric models have been developed for primary wood products such as logs, lumber, plywood, etc. However, econometric models for the secondary wood products are still limited. By reviewing the econometric models for primary wood product markets, the model development, variable specification, and estimation techniques could be developed for the wood window and door market.

McKillop (1969) developed a recursive model for redwood lumber market to explain the economic structure and to prepare for forecasting. Monthly data was used to estimate coefficients of equations. The ordinary least square technique was used. The model consisted of 6 estimated equations, including unfilled orders, stocks, current production, current shipments, current new orders, and the current price index for redwood lumber. Two forecasting methods, i. e. reduced form and solved structural, are used and compared. The results indicated that the difference is small while comparing the two methods.

Adams and Blackwell (1973) developed an econometric model for the U.S. wood product industry. The model consisted of 15 equations (i.e. 12 stochastic and 3 identity equations) for the purpose of forecasting and policy analysis. The ordinary least square technique was used. The U.S. wood product markets included the lumber, plywood, sawlogs, veneer logs, and stumpage industries. Annual data was used over the period of 1949 to 1969. The model operated at the aggregate level and provides forecasts to 1975. The results indicated that the price of stumpage increases consistently throughout the forecast period.

Rockel and Buongiorno (1982) used a translog cost function approach and duality theory obtained to derive demand functions for softwood lumber, plywood, hardboard and particle board, other materials, and labor. Monthly data was used from the period of January 1968 to December 1977. The instrumental variables and ordinary least square methods were used to estimate the parameters. However, the results of the instrumental variables method was poor in terms of expected signs and accuracy of coefficients. Finally, the ordinary least square technique was applied to estimate the parameters of the cost functions. The results showed that labor costs contributed more to the rise in construction cost than did other inputs.

Luppold (1984) developed a recursive econometric model for the U.S. hardwood lumber market. Annual data from 1960 through 1979 were collected. The market model for hardwood lumber consisted of three equations

representing demand, supply and price of hardwood lumber, and equilibrium identity. Quantity of lumber demanded was a function of time, past hardwood lumber price, price of substitute material, wage and interest rate, and price of output. Quantity of lumber supplied was expressed as a function of lagged quantity supplied, hardwood lumber price, wage rate, stumpage cost, interest rate, and time. Price function of hardwood lumber was a function of average 2 years millstocks, average exports, and a price expectation variable. The ordinary least squares procedure was used to estimate these equations. The results indicated that much of the economic behavior of the hardwood lumber is caused by outside forces such as exchange rates and income level of other countries.

Newman (1987) presented an aggregate regional model of the southern softwood solid wood and pulpwood stumpage markets. Stumpage demand was derived using a profit maximization framework. Demand was a function of its output price (price indexes of forest products) and the prices of all inputs (stumpage price, wage, capital cost, etc.). The aggregate stumpage supply function was a function of the price received for both pulpwood and solid wood products, and the harvesting cost. The time period of the data runs from 1950 to 1980. Three stage least square regression techniques were used to estimate the parameters. The results indicated that solid wood stumpage was a complement in production with pulpwood. In demand, changes in the final good price affects the solid wood stumpage quantity more than pulpwood.

The objectives of the preceding wood product econometric models included forecasting, policy analysis, and market structure understanding. The most frequently applied estimation technique was ordinary least squares. The demand function for wood product markets developed by Rockel and Buongiorno (1982), Luppold (1984), and Newman (1987) was derived from linkages to the upper level market. Most of supply functions developed in the reviews, however, were very conventional. Supply was assumed to be a function of its own price and other input prices.

The literature has provided the basic direction for developing an econometric model for wood window and door market; but some concerns in terms of market structure and data collection must be carefully examined. To develop an econometric model for the secondary wood product market, one must recognize the different market structure between primary and secondary wood product markets.

4. METHODOLOGY

A mail survey of U.S. wood window and door manufacturers was used to obtain primary information on market characteristics, entry barriers, export decision factors, and distribution channels.

An econometric model was developed to assess the sensitivity of the U.S. market demand for wood windows and doors to prices and costs.

4.1 Survey of Wood Window and Door Manufacturers

4.1.1 The Sample Frame

The sample frame for this survey is compiled from the Random lengths 1991 big book (Random lengths, 1991), the Export Yellow Pages (U.S.D.C., 1993c), and 1992 Membership and Product Directory published by the National Wood Window and Door Association (1992). There are 124 firms on the list (Fig. 4.1), most firms not only produce wood windows and doors, but also produce intermediate products such as cutstock, and window and door frames, or garage and screen doors.

Since the scope and purpose focus on the exploration of information perceived by U.S. wood window and door manufacturers, the judgement sampling method (nonprobability sampling method) as opposed to probability sampling method has been used in this research (Hartly et al., 1983). Included in the sample are all wood window and door manufacturers perceived to have

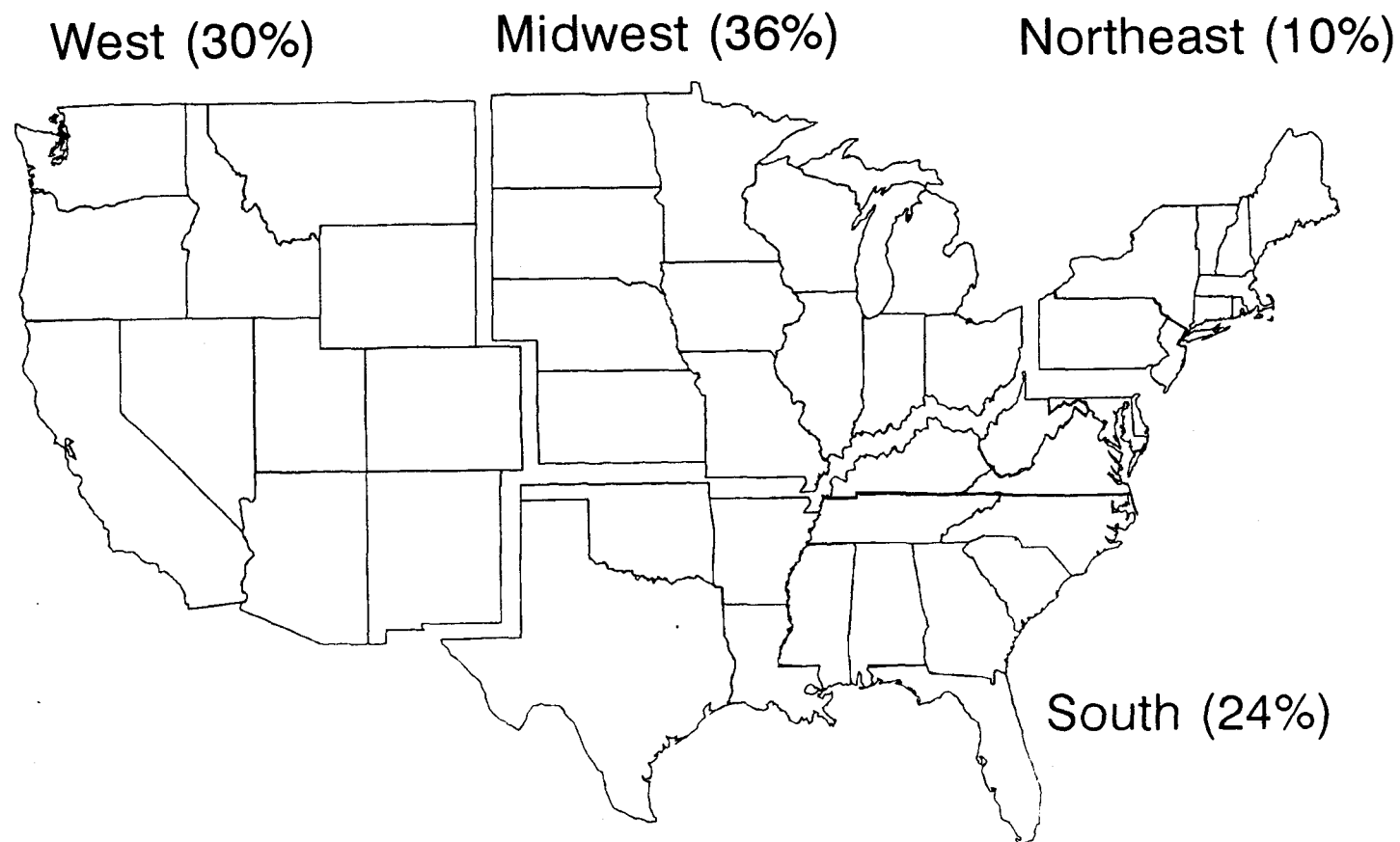


Figure 4.1 The geographic distribution of the U.S. wood window and door related manufacturers (n = 124).

export experience or potential, and whose main products are wood windows and doors. The final sample size is 36 firms.

4.1.2 Data Collection

A questionnaire (Appendix A) was designed based on the following specific objectives:

1. Identify the U.S. manufacturers' perceptions of the characteristics of window and door markets in the U.S. and the Pacific Rim.
2. Identify the U.S. manufacturers' perceptions of the entry barriers to window and door markets in the U.S. and the Pacific Rim markets.
3. Explore what factors will affect the U.S. manufacturers' export decisions.
4. Identify the U.S. manufacturers' methods for distributing their window and door products (distribution channels).

In order to assess the U.S. window and door market characteristics, manufacturers were asked to assess nine market characteristics ("Quality consciousness", "Future growth potential", "Government policy effects", "Familiarity/ Tradition", "Customer loyalty", "Risk of new product introduction", "Price sensitivity", "Speed of market change", and "Intensity of competition") on a scale ranging from 1 (very high) to 5 (very low).

In order to understand the importance of entry barriers for new manufacturers, respondents were asked to rate the importance of entry barriers given a scale ranging from 1 (very important) to 5 (Not at all important). Seven entry barriers: recruitment of marketing personnel, language obstacles,

complexity of distribution channels, attitude of end-users, attitude of business people, tariffs and quotas, and non-tariff barriers, were provided. Of the seven important entry barriers, two entry barriers, tariff and non-tariff (building code standards and regulations) barriers were specified as the institutional barriers. The remaining barriers are the non-institutional barriers which are either related to consumers' behavior or business management.

To assess factors that affect the domestic manufacturers' export decisions, seven factors ("Quality", "Consistency of supply", "Style", "Price", "After-sale service", "Technical supports", and "Familiarity/Tradition") were to be ranked on a scale range from 1 (Very important) to 4 (Not at all important). Also, a gap analysis (Brown and Swartz, 1989) is performed to identify the discrepancies between exporters' and non-exporters' perceptions of exporting factors.

Open-ended questions were used to assess the distribution channels used by domestic wood window and door manufacturers.

Due to the small sample size, an assumption of normal distribution of the data is unreasonable and, therefore, nonparametric sign tests and Wilcoxon rank sum tests were used to test for relative difference from the response medians of ordinal rankings (Gibbons, 1976).

Pre-survey telephone notification was used prior to mailing the questionnaire. The purpose of the telephone notification was to identify the name and title of the company's appropriate marketing people. In addition, out

of business companies and unwilling participants were recognized and eliminated. A pilot test of the questionnaires was sent to industry experts prior to the initial mailing.

The thirty-six revised questionnaires and cover letters (Appendix B) were mailed to the identified marketing people in the fall of 1993. Fifteen responses were received within two weeks and then follow-up questionnaires along with a reminding letter were sent to the 21 nonrespondents. In spite of the following up efforts, only four more responses were received. Of the 19 responses, one was returned blank, and two with the comments as "No longer producing wood windows" and "Cut stock producers". Only 16 returned questionnaires were deemed usable and the final adjusted response rate is 48 percent.

Geographically, the respondents were in four major survey regions (Fig. 4.2). The Midwest accounts for 44% of all respondents; the highest percentage of respondents. The results of survey have some certain power of representation from the most concentrated region of wood window and door manufacturers (Fig. 4.1). They lack, however, in their ability to represent the most logical exporters to the Pacific Rim, i.e., the West region.

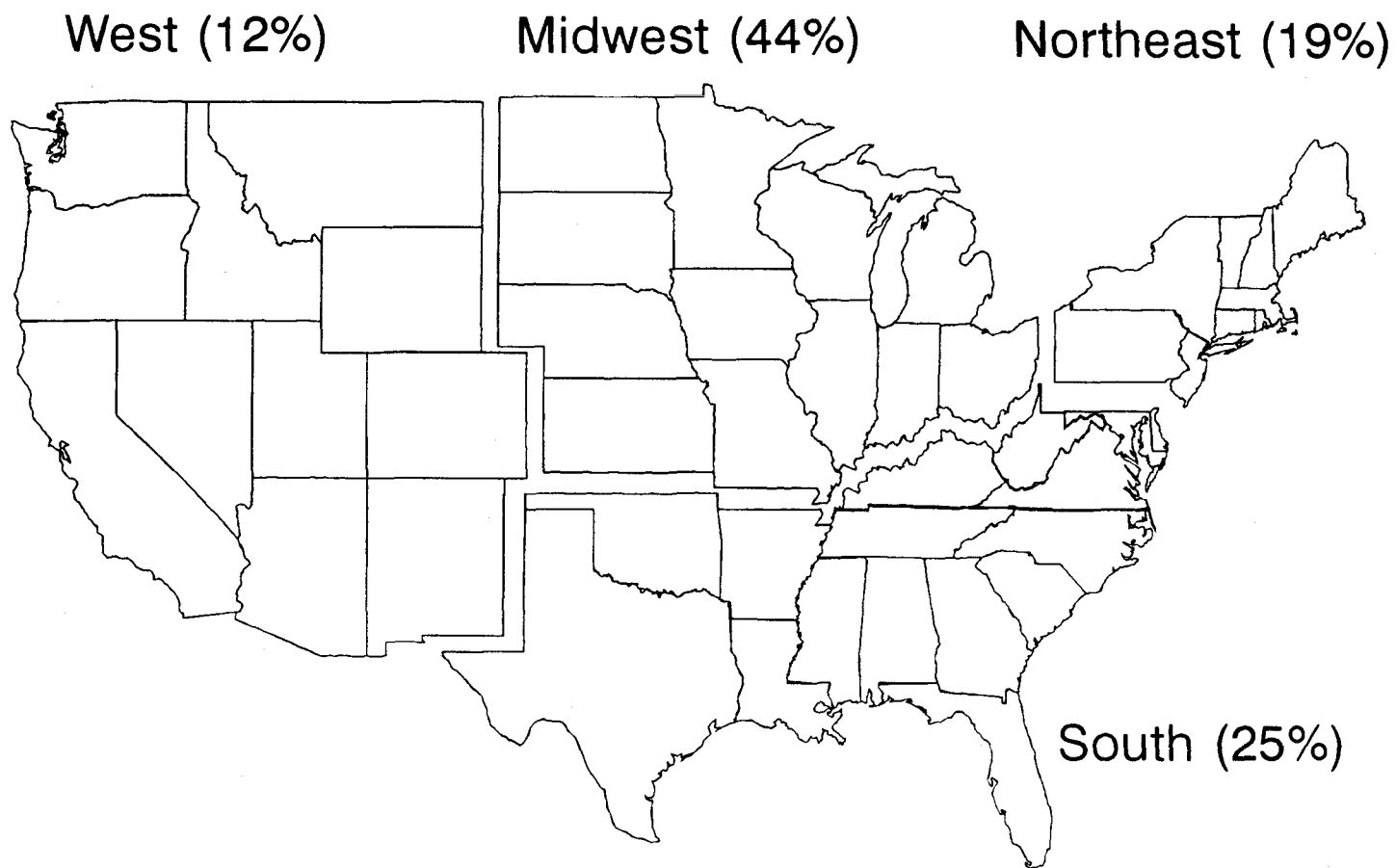


Figure 4.2 Survey response by geographic regions (n = 16).

4.2 An Econometric Model for the U.S. Wood Window and Door Market

4.2.1 Model Development and Specification

Using neoclassical theory, a derived demand function can be developed for the wood window and door market, in a manner similar to Luppold's (1982) hardwood lumber market model and Newman's (1987) southern softwood stumpage market model. A model of oligopolistic pricing is hypothesized for the wood window and door market. The market model for wood windows and doors can thus be expressed as follows:

$$D_t = f(P_t, w_t, r_t, P_{dt}, P_{ot}) \quad (1)$$

$$P_{dt} = f(IP_{dt}, P_{trg}) \quad (2)$$

where:

D_t = demand quantity for wood windows and doors

P_t = price of new building construction and upkeep

w_t = construction wage rate

r_t = interest rate

P_{dt} = price of wood windows and doors

P_{ot} = price of other materials

IP_{dt} = prior price of wood windows and doors

P_{trg} = the trigger factor

The demand for wood windows and doors is derived from new building construction and other construction applications. Builders or contractors purchase wood windows and doors, construction labor, capital, and other inputs to build new buildings. The production function for new building construction and upkeep may be expressed as follows:

$$Q_t = f(L_t, K_t, D_t, O_t) \quad (3)$$

where:

Q_t = amount of new building construction and upkeep

L_t = the quantity of labor

K_t = capital

D_t = quantity of wood windows and doors

O_t = other materials

t = 1973 to 1990

Builders or contractors are assumed to be attempting to maximize their profit (p_t), in time period t ,

$$\max_{L_t, K_t, D_t, O_t} \Pi_t = P_t f(L_t, K_t, D_t, O_t) - w_t L_t - r_t K_t - P_{dt} D_t - P_{ot} O_t \quad (4)$$

where:

w_t = construction wage rate

r_t = interest rate

P_{dt} = price of wood windows and doors

P_{ot} = price of other materials

P_t = price of new building construction and upkeep

Setting the first derivatives of π_t with respect to labor, capital, wood windows and doors, and other materials (L_t , K_t , D_t , O_t) equal to zero,

$$\frac{\partial \Pi}{\partial L_t} = P_t f_L - w_t = 0 \quad (5)$$

$$\frac{\partial \Pi}{\partial K_t} = P_t f_K - r_t = 0 \quad (6)$$

$$\frac{\partial \Pi}{\partial D_t} = P_t f_D - P_{dt} = 0 \quad (7)$$

$$\frac{\partial \Pi}{\partial O_t} = P_t f_O - P_{ot} = 0 \quad (8)$$

where:

f_L = the first derivative of production function with respect to labor

f_K = the first derivative of production function with respect to capital

f_D = the first derivative of production function with respect to wood windows and doors

f_O = the first derivative of production function with respect to other materials

By solving equation (5), (6), (7) and (8), simultaneously, the derived

demand for wood windows and doors can be expressed as a function of output price, P_t , and other input prices(w_t , r_t , P_{dt} , and P_{ot}).

$$D_t^* = f(P_t, w_t, r_t, P_{dt}, P_{ot}) \quad (9)$$

On the supply side, the oligopolistic model was adapted after a typical competitive supply model failed to be supported, due to incorrect signs on parameters and insignificance of key competitive parameters. In addition market evidence supports the oligopoly hypothesis. There are a very limited number of establishments producing the different products encompassed in this industry. In that firms often own more than one establishment (in some cases one firm will own several), the number of operating firms is far fewer than the number shown in Table 2.1. Therefore, the wood window and door industry is considered to be an oligopolistic market. Oligopolistic markets are often modeled in a price dependent fashion, reflecting the behavior of the firms in those limited competitive settings. The "barometric-firm model" has been developed to explain this oligopoly pricing behavior (Call and Halaham, 1983). The "barometric-firm model" reflects that when one firm increases its price, because of rising input costs, other companies will follow.

The millwork industry (SIC 2431), as a whole, has shown a tendency towards increased concentration, and the 8-firm concentration ratio (i.e. the percentage of shipments accounted for by the 8 largest firms) rose from 15% in 1972, to 20% in 1977-1982, to 27% in 1987 (U.S.D.C., 1987b). The U.S.

Industrial Outlook (U.S.D.C., 1993a) anticipates this to be a continuing trend as the industry "... will continue to automate and consolidate." and "... will become more vertically integrated to ensure a consistent level of raw material supplies, while allowing maximum control over processing, distribution, and deliveries."

Raw material costs in this industry dominate the production costs of wood windows and doors. In 1987, 60 percent of total production costs used in wood window and door was raw material (U.S.D.C., 1987a). Therefore, if the price of raw material is rising, it would strongly affect the industry's output price.

In the case of the wood window and door industry, the rising price of raw material provides a common cost pressure. Wood window and door producers faced with wood cost increases and still trying to maintain their profit margins will increase the price of wood windows and doors. Under these circumstances, there will typically be a window and door producer who reluctantly leads with increases his wood window and door prices, then other producers will soon follow.

The price of wood windows and doors could be expressed as a function of its past year's own-price and a "trigger factor." A trigger factor is a factor which is an incentive to push up (or down) the price of wood windows and doors. The price difference of the ponderosa pine, 5/4" #2 shop lumber, between this year and last year is considered to be a trigger factor and treated as an indicator of raw material cost.

$$P_{dt} = f (IP_{dt} , P_{trg}) \quad (10)$$

where:

P_{dt} = price of wood windows and doors

IP_{dt} = prior price of wood windows and doors

P_{tg} = the trigger factor

The econometric model specified for the wood window and door market is a recursive model. Since the error term in each equation is assumed to be independently distributed, the two equations could be estimated using ordinary least square (OLS).

The equations were fitted in linear form. These models represent an approximation of globally nonlinear production functions. In the derived demand function, builders or contractors who are investing new building construction are assumed to base the decision on the past year's price of labor, capital, and other inputs (which comprised a large portion of construction costs). It is assumed that they then make the decision for smaller input costs later, for example, using wood or non-wood windows and doors, wood or non-wood floor, etc. Hence, the quantity demanded for wood windows and doors is set to be a function of current price of wood windows and doors, past year price of new residential buildings, and past year prices of all other inputs. In the supply function, the price of wood windows and doors is set as a function of the prior year price of wood windows and doors and the difference between last year's and this year's of ponderosa pine lumber price. The specified structure for the wood window and door market is thus,

$$D : Dqwd = \alpha_0 + \alpha_1 P_{dt} + \alpha_2 Prcst + \alpha_3 R6mth + \alpha_4 Rwg + \alpha_5 Pothr + \epsilon_1 \quad (11)$$

$$S : P_{dt} = \beta_0 + \beta_1 IP_{dt} + \beta_2 P_{dif} + \epsilon_2 \quad (12)$$

where:

α_i and β_i = the estimated coefficients

ϵ_i = the error terms.

4.2.2 Data Collection

Secondary data (Appendix C) from the period 1973 to 1990 were used to estimate the parameters of the equation (11) and (12). Because quantity of wood windows and doors is difficult to obtain, a proxy for quantity was estimated using the value of wood window and door shipments divided by the price index of millwork. The price of millwork is used as a proxy for the price of wood windows and doors, since no consistent standard source exists for the price of wood windows and doors from 1973 to 1990. The residential Boeckh cost index (a standard index for the average construction cost of 20 cities) is used as a proxy for the price of new building construction and upkeep. Price of other materials was derived from the modified Laspeyres formula specified in the 1973-1990 Construction Review (Pitcher, 1975). The data base used in demand function is found in the Construction Review (U.S.D.C., 1991), and the Business Statistics, 1963-1991 (U.S.D.C., 1992a). The price of ponderosa pine

lumber was obtained from the Random Lengths Yearbook, 1973-1990 (Random lengths, 1990). The interest rate (as reported in the Business Statistics, 1963-1991) was adjusted to real terms using the average inflation rate of the prior 4 years). See Table 4.1 and Table 4.2 for detailed explanations of variables.

Table 4.1 Major factors, variables, expected relationships and units in the demand equation.

Factors	Variables	Expected relationships	Units
Dqwd: Demand quantity for wood windows and doors	Derived from value of window and door shipments ^a (current dollars) against current dollars of price index of millwork ^b		Quantity indicator
P _{dt} : Price of wood windows and doors	Price index of millwork, deflated by implicit price deflator ^c (IPD)	Negative	Index (1982=100)
Prcst: Price of new building construction and upkeep	Residential Boeckh price index, lagged one year and deflated by IPD	Positive	Index (1982=100)
R6mth: price of capital	Real six month commercial paper ^d , lagged one year and adjusted by the average of prior 4 year's inflation rate	Negative	Percentage
Rwg: price of labor	Wage rate at new residential construction employment level ^c , lagged one year and deflated by IPD, average hourly earnings index	Negative	Index (1982=100)
Pothr: price index of other materials	Price index was calculated by the modified Laspeyres formula -- including price indices of softwood lumber, hardwood lumber, structural panels, heating system, plumbing, structural clay, and portland cement except price index of millwork, lagged one year and deflated by IPD ^c	Negative	Index (1982=100)

^aData source: Annual Survey of manufactures (U.S.D.C., 1992b).

^bData source: Random lengths yearbook, 1990 (Random lengths, 1990).

^cData source: Construction Review (U.S.D.C., 1991).

^dData source: Business Statistics, 1963-1991, U.S.D.C., Bureau of Economic Analysis (U.S.D.C. 1992a).

Table 4.2 Major factors, variables, expected relationships and units in the price equation.

Factors	Variables	Expected relationships	Units
P_{dt} : Price of wood windows and doors	Price index of millwork ^a , deflated by implicit price deflator ^b (IPD)		Index (1982=100)
IP_{dt} : Prior price of wood windows and doors	Price index of millwork, lagged one year, deflated by IPD	Positive	Index (1982=100)
P_{dif} : Price difference of ponderosa pine lumber	Price difference of ponderosa pine 5/4" #2 shop lumber ^a between current year and prior year ($P_t - P_{t-1}$), deflated by IPD.	Positive	1987 dollars

^aData source: Random lengths yearbook, 1990 (Random lengths, 1990).

^bData source: Construction Review (U.S.D.C., 1991).

5. RESULTS AND DISCUSSIONS

This chapter summarizes the results and discussions of the mail survey of the U.S. wood window and door manufacturers and of the econometric analysis of the U.S. wood window and door market.

5.1 Survey of the U.S. Wood Window and Door Manufacturers

The survey was primarily used to identify the domestic and Pacific Rim window and door market characteristics, summarize the market entry barriers in the U.S. and Pacific Rim markets, explore the key factors affecting the domestic manufacturers' export decisions, and determine the distribution channel used by domestic wood window and door manufacturers.

5.1.1 Market Characteristics in the U.S. and Pacific Rim

The factors of "intensity of competition", "price sensitivity", and "quality consciousness" were ranked as important market characteristics in domestic window and door markets (Fig. 5.1). They are significantly different from the other groups of factors in window and exterior door markets (Table 5.1 and 5.2). However, in the interior door market, the factor of "quality consciousness" is replaced by "speed of market change" in the upper grouping (Table 5.3).

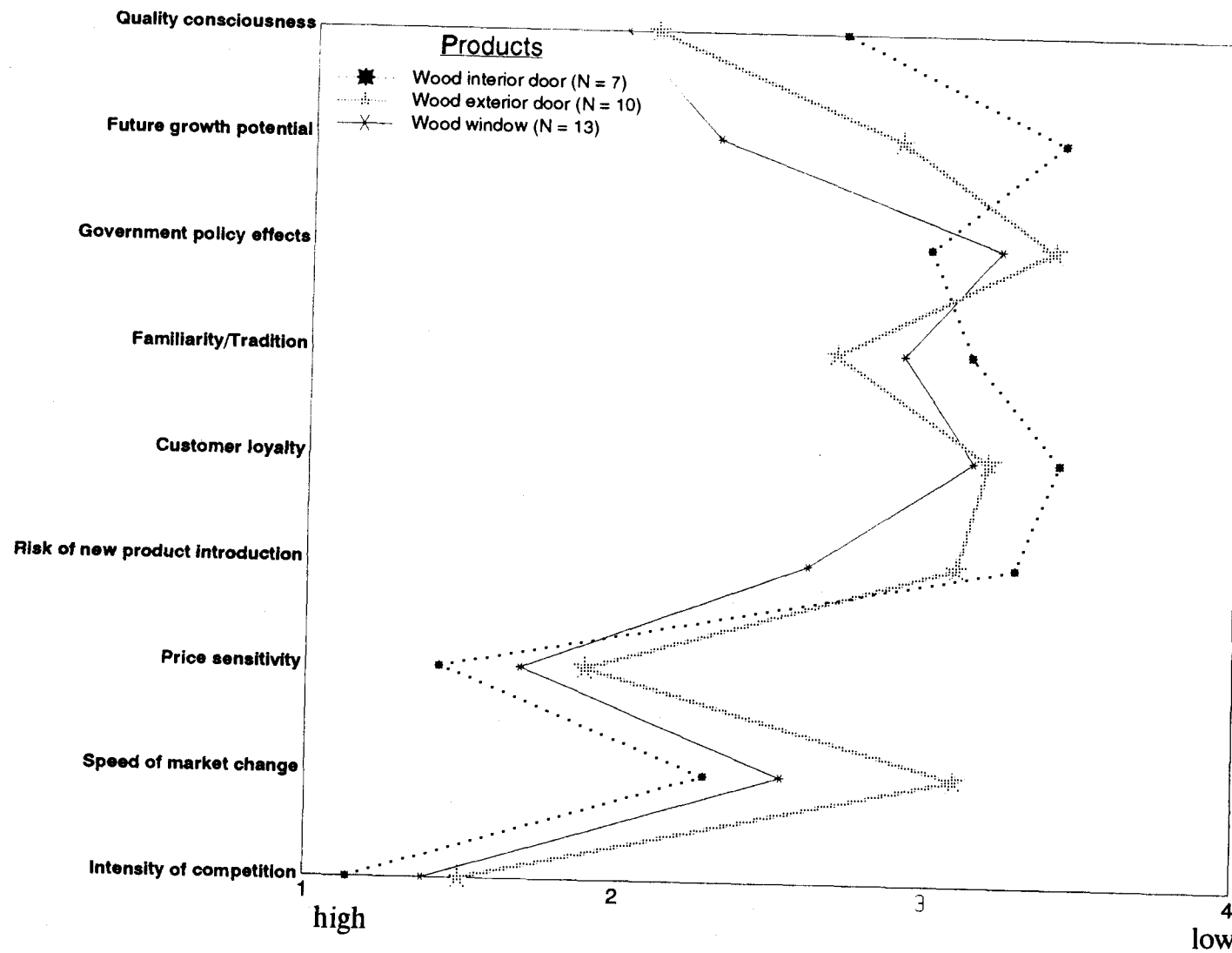


Figure 5.1 Domestic market characteristics as perceived by the U.S. wood window and door manufacturers.

Table 5.1 The window market characteristics in the U.S. as perceived by the U.S. manufacturers.

Factors	Window market (n = 13)		
	Mean	Rank	Homogeneous groups ^b
Intensity of competition	1.38 (0.18) ^a	1	A
Price sensitivity	1.69 (0.24)	2	A B
Quality consciousness	2.00 (0.20)	3	A B C
Future growth potential	2.31 (0.26)	4	B C D
Speed of market change	2.54 (0.27)	5	B C D
Risk of new product introduction	2.62 (0.29)	6	C D
Familiarity/ Tradition	2.92 (0.24)	7	D
Customer loyalty	3.15 (0.27)	8	D
Government policy effects	3.23 (0.39)	9	D

^a Mean (Standard error).

^b The same letter indicated that they are not significantly different at $\alpha = 0.05$, the nonparametric sign test was used.

Table 5.2 The exterior door market characteristics in the U.S. as perceived by the U.S. manufacturers.

Factors	Exterior door market (n = 10)		
	Mean	Rank	Homogeneous groups ^b
Intensity of competition	1.50 (0.27) ^a	1	A
Price sensitivity	1.90 (0.23)	2	A B
Quality consciousness	2.10 (0.18)	3	A B
Familiarity/ Tradition	2.70 (0.33)	4	B C
Future growth potential	2.90 (0.31)	5	B C
Risk of new product introduction	3.10 (0.18)	6	C
Speed of market change	3.10 (0.31)	7	C
Customer loyalty	3.20 (0.29)	8	C
Government policy effects	3.40 (0.43)	9	C

^a Mean (Standard error).

^b The same letter indicated that they are not significantly different at $\alpha = 0.05$, the nonparametric sign test was used.

Table 5.3 The interior door market characteristics in the U.S. as perceived by the U.S. manufacturers.

Factors	Interior door market (n = 7)		
	Mean	Rank	Homogeneous groups ^b
Intensity of competition	1.14 (0.14) ^a	1	A
Price sensitivity	1.43 (0.30)	2	A B
Speed of market change	2.29 (0.42)	3	A B C
Quality consciousness	2.71 (0.42)	4	B C
Government policy effects	3.00 (0.49)	5	B C
Familiarity/ Tradition	3.14 (0.34)	6	C
Risk of new product introduction	3.29 (0.36)	7	C
Future growth potential	3.43 (0.30)	8	C
Customer loyalty	3.43 (0.37)	9	C

^a Mean (Standard error)

^b The same letter indicated that they are not significantly different at $\alpha = 0.05$, the nonparametric sign test was used.

It suggests that the quality in the interior door market is perceived as an less important factor than that in window and exterior door markets.

Due to the threat of increasing production costs and higher energy efficiency codes, it is understandable that the domestic window and door markets have been characterized by intensity of competition and price sensitivity.

The Pacific Rim market characteristics failed to show any perceptible statistical difference (Table 5.4, 5.5 and 5.6), perhaps because only a small number of manufacturers were involved in the export activities. However, regardless of the lack of statistical significance, future growth potential was identified as an important factor in each market (Fig. 5.2). The upward trend in shipments of wood windows and doors in the Pacific Rim shown in Fig. 2.4 on page 19 tends to support the manufacturers' perception of future growth potential.

Further comparing the domestic and Pacific Rim window and door market characteristics, the factor of intensity of competition was ranked as the most important factor in the domestic market while the factor of future growth potential was identified as most important in the Pacific Rim markets (Table 5.7). It is not surprising that the recent increasing pressures in production costs and competition in domestic markets had made the wood window and door manufacturers seek the foreign market.

Table 5.4 The window market characteristics in the Pacific Rim as perceived by the U.S. manufacturers.

Factors	Window market (n = 4)		
	Mean	Rank	Homogeneous groups ^b
Future growth potential	1.50 (0.5) ^a	1	A
Quality consciousness	1.75 (0.48)	2	A
Price sensitivity	2.25 (0.25)	3	A
Intensity of competition	2.25 (0.63)	4	A
Customer loyalty	2.50 (0.50)	5	A
Familiarity/ Tradition	2.50 (0.65)	6	A
Government policy effects	2.75 (0.25)	7	A
Risk of new product introduction	2.75 (0.25)	8	A
Speed of market change	3.25 (0.48)	9	A

^a Mean (Standard error)

^b The same letter indicated that they are not significantly different at $\alpha = 0.05$, the nonparametric sign test was used.

Table 5.5 The exterior door market characteristics in the Pacific Rim as perceived by the U.S. manufacturers.

Factors	Exterior market (n = 4)		
	Mean	Rank	Homogeneous groups ^b
Quality consciousness	2.00 (0.41) ^a	1	A
Future growth potential	2.25 (0.25)	2	A
Price sensitivity	2.25 (0.25)	3	A
Intensity of competition	2.25 (0.48)	4	A
Risk of new product introduction	3.00 (0)	5	A
Speed of market change	3.00 (0.41)	6	A
Customer loyalty	3.00 (0.71)	7	A
Familiarity/Tradition	3.00 (0.71)	8	A
Government policy effects	3.50 (0.65)	9	A

^a Mean (Standard error)

^b The same letter indicated that they are not significantly different at $\alpha = 0.05$, the nonparametric sign test was used.

Table 5.6 The interior door market characteristics in the Pacific Rim as perceived by the U.S. manufacturers.

Factors	Interior market (n = 4)		
	Mean	Rank	Homogeneous groups ^b
Price sensitivity	1.75 (0.25) ^a	1	A
Future growth potential	2.00 (0.41)	2	A
Risk of new product introduction	2.00 (0.41)	3	A
Quality consciousness	2.00 (0.58)	4	A
Speed of market change	2.50 (0.29)	5	A
Intensity of competition	2.50 (0.41)	6	A
Government policy effects	2.50 (0.65)	7	A
Familiarity/Tradition	2.50 (0.87)	8	A
Customer loyalty	2.50 (0.87)	9	A

^a Mean (Standard error)

^b The same letter indicated that they are not significantly different at $\alpha = 0.05$, the nonparametric sign test was used.

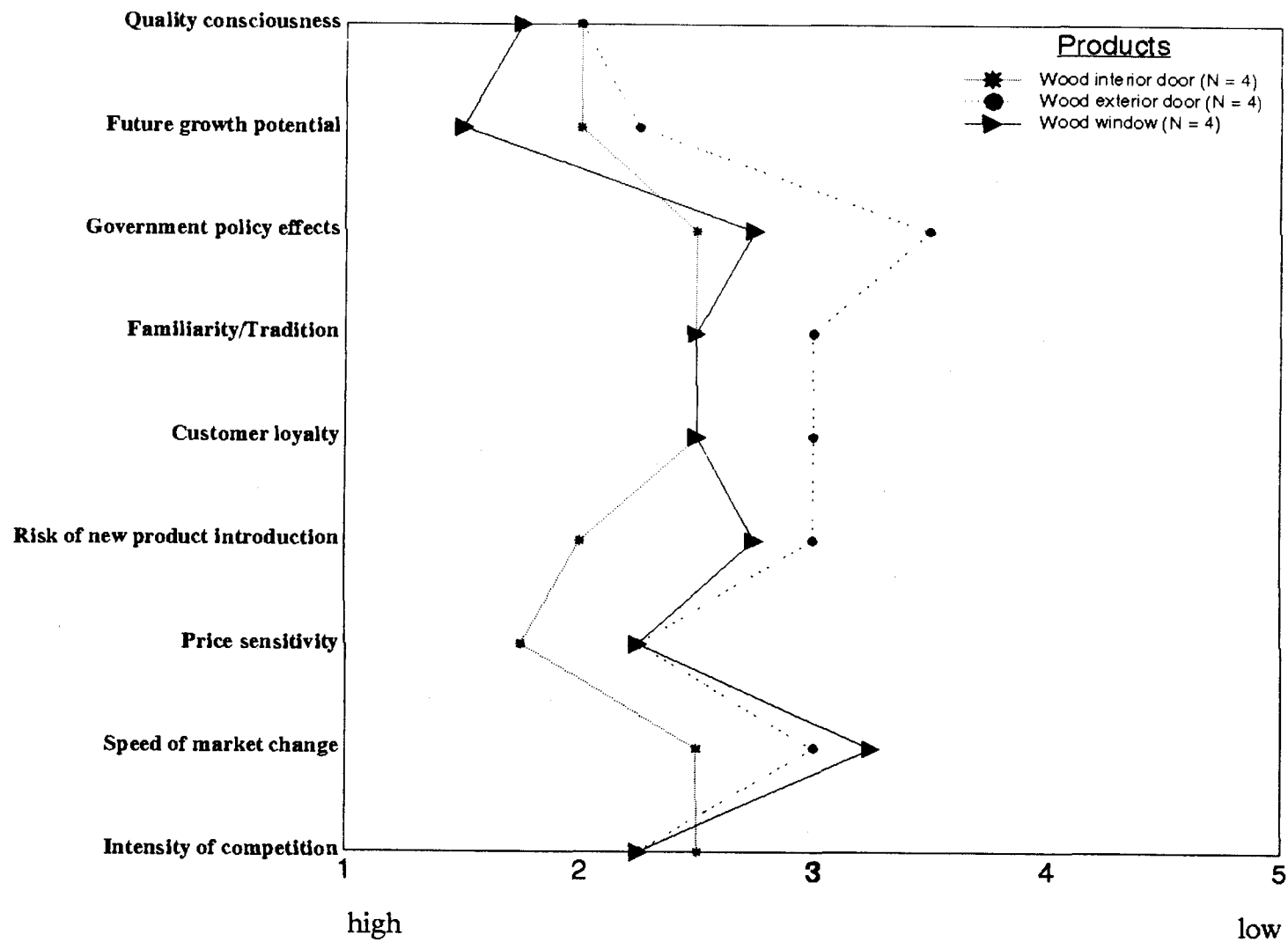


Figure 5.2 The Pacific Rim market characteristics as perceived by the U.S. wood window and door manufacturers.

Table 5.7 The comparison of domestic and Pacific Rim window and door market characteristics as perceived by the U.S. manufacturers, ranked by mean score.

Rank	Domestic market characteristics (N=30)	Pacific Rim market characteristics (N= 12)
1	Intensity of competition	Future growth potential
2	Price sensitivity	Quality consciousness
3	Quality consciousness	Price sensitivity
4	Speed of market change	Intensity of competition
5	Future growth potential	Risk of new product introduction
6	Familiarity/Tradition	Customer loyalty
7	Risk of new product introduction	Familiarity/Tradition8
8	Government policy effects	Speed of market change
9	Customer loyalty	Government policy effects

5.1.2 Entry Barriers to the Domestic and Pacific Rim Markets

Entry barriers consist of institutional and non-institutional barriers.

Institutional barriers are related to the behavior of public authorities and officials, and include tariffs, quotas, and non-tariff barriers (building code standards and regulations). Non-institutional barriers are related to the behavior of business people, and include the attitude of consumers and the complexity of distribution channel.

One of the institutional barriers, non-tariff barriers: building code standards and regulations, was ranked as the severest entry barrier to the domestic market (Fig. 5.3). Assuming this rank order is valid, regardless of the statistical significance, the conclusion might be drawn that the severest entry barrier for new manufacturers entering the U.S. window and door market is an institutional barrier, i.e., non-tariff barrier (building codes and regulations) (Table 5.8).

In contrast to the U.S. market, the most important barriers in the Pacific Rim market are non-institutional barriers, i.e., the attitude of foreign business people and the complexity of distribution channels (Table 5.9). In the Pacific Rim markets, the Japan market accounts for more than 70% of export value of U.S. wood windows and doors. It is commonly understood that the complexity of distribution channels and the attitude of Japanese business people are important when considering entering the Japanese market.

Comparing the perceived entry barriers between the U.S. and Pacific Rim

markets, barriers to the Pacific Rim markets are perceived as being more severe than to the U.S. market (Fig. 5.3). The entry barriers to the Pacific Rim are significantly different from those to the U.S. market (Table 5.10). The evidence may provide the reason for the small portion of export share of U.S. wood window and door value shipments occurring in the Pacific Rim markets (Table 2.4) on page 15.

Based on these respondents' viewpoints, it appears that to enter the U.S. window and door market successfully, new producers should put more emphasis on the building code related issues, and regulations. To enter the Pacific Rim markets, the attitudes of foreign business people and the complexity of distribution channel should receive more attention.

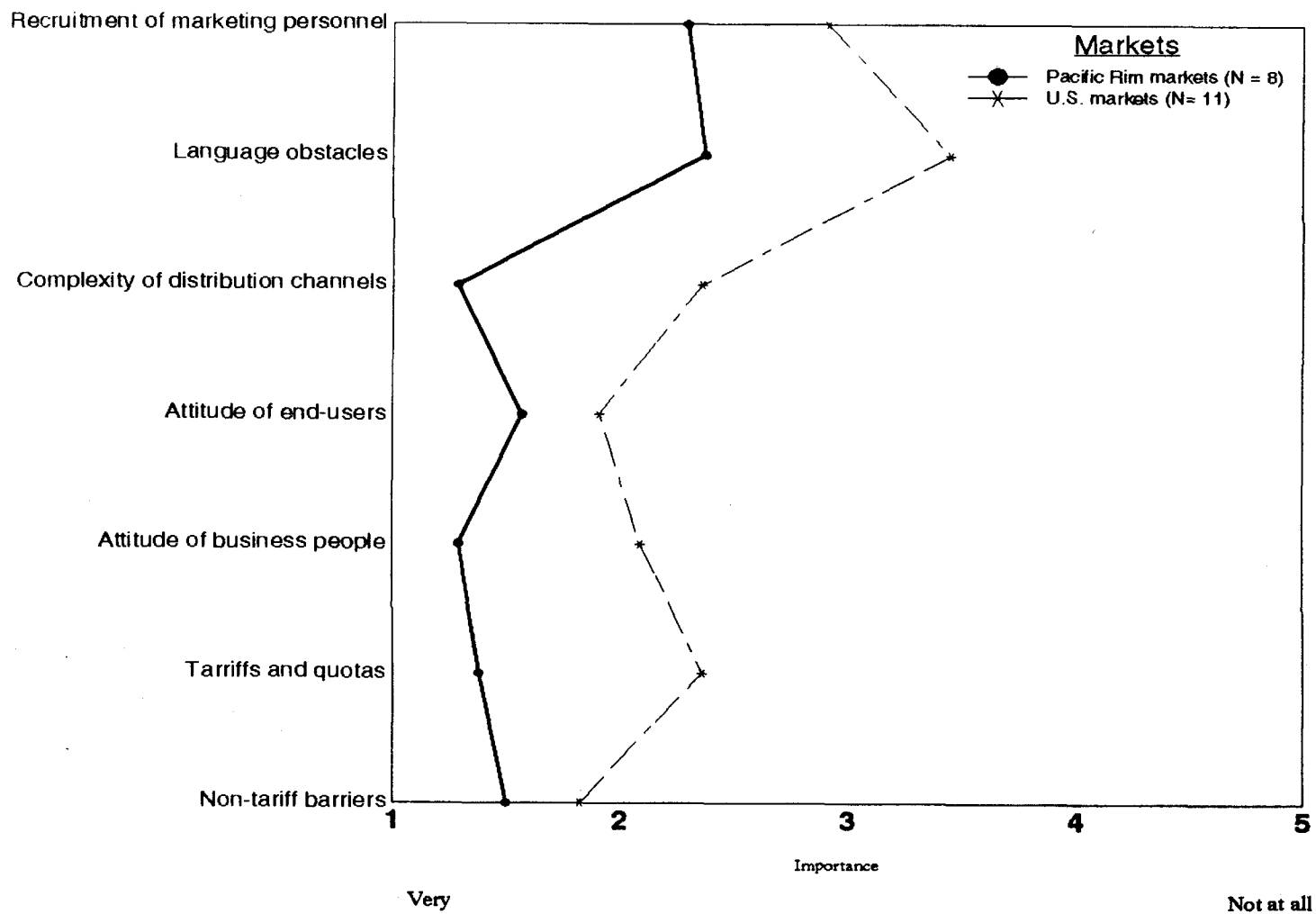


Figure 5.3 The importance of entry barriers as perceived by the U.S. wood window and door manufacturers.

Table 5.8 Entry barriers to domestic window and door markets as perceived by the U.S. manufacturers.

Factors	Entry barriers in the U.S. (n = 11)		
	Mean	Rank	Homogeneous groups ^b
Non-tariff barriers (e.g., building codes, regulations, etc.)	1.82 (0.18) ^a	1	A
Attitude of end-users	1.91 (0.34)	2	A B
Attitude of business people	2.09 (0.21)	3	A B
Tariffs, quotas, etc.	2.36 (0.28)	4	A B
Complexity of distribution channels	2.36 (0.20)	5	A B
Recruitment of marketing personnel	2.91 (0.25)	6	B C
Language obstacles	3.45 (0.21)	7	C

^a Mean (Standard error).

^b The same letter indicated that they are not significantly different at $\alpha = 0.05$, the nonparametric Wilcoxon rank-sum test was used.

Table 5.9 Entry barriers to the Pacific Rim window and door markets as perceived by the U.S. manufacturers.

Factors	Entry barriers in the Pacific Rim (n = 8)		
	Mean	Rank	Homogeneous groups ^b
Attitude of business people	1.25 (0.16) ^a	1	A
Complexity of distribution channels	1.25 (0.16)	2	A
Tariffs, quotas, etc.	1.38 (0.18)	3	A
Non-tariff barriers (e.g., building codes, regulations, etc.)	1.50 (0.19)	4	A
Attitude of end-users	1.63 (0.26)	5	A
Recruitment of marketing personnel	2.25 (0.31)	6	A
Language obstacles	2.38 (0.46)	7	A

^a Mean (Standard error).

^b The same letter indicated that they are not significantly different at $\alpha = 0.05$, the nonparametric Wilcoxon rank-sum test was used.

Table 5.10 The comparison of perceived entry barriers to the U.S. and Pacific Rim markets.

Factors	Entry barriers	
	Mean	Rank ^b
Pacific Rim markets (n = 56)	1.66 (0.11) ^a	1
U. S market (n = 77)	2.42 (0.10)	2

^a Mean (Standard error)

^b Student's t-test, significantly different at $\alpha = 0.05$.

5.1.3 The Viability of Exporting Wood Windows and Doors

In order to identify the key factors that affect manufacturers' decisions to export, seven factors were ranked. The information was segregated into two groups of respondents, exporters and non-exporters. Comparing the perceptions of exporters and non-exporters, the factor of "Quality" was unanimously ranked as the most important factor when considering exporting wood windows and doors (Table 5.11).

Gap analysis helps identify the discrepancies between exporters and non-exporters. Significantly positive gaps were found in the factors of technical support, consistency of supply, and familiarity/tradition (Table 5.12). The positive gaps show that non-exporters identified those factors as more important than exporters did. In other words, when establishing marketing strategies, the non-exporters appear to put too much emphasis on those factors. It may cause the non-exporters to misallocate their marketing

Table 5.11 - The comparison of wood window and door export factors perceived by exporters and non-exporters, ranked by mean score.

Rank	Exporters (N=11)	Non-exporter (N=13)
1	Quality	Quality
2	Price	Consistency of supply
3	Style	Familiarity/Tradition
4	Consistency of supply	Style
5	After-sale service	Technical support
6	Technical support	After-sale service
7	Familiarity/Tradition	Price

Table 5.12 Gaps between wood window and door exporters', and non-exporters' perception on exporting factors.

Factors	Exporters mean score (N=11)	Non-exporters mean score (N=13)	P value ^b	Gap ^c
Price	1.64 (0.15) ^a	1.92 (0.21)	0.37	Negative
Quality	1.09 (0.09)	1.08 (0.07)	0.95	Positive
After-sale service	2.09 (0.37)	1.77 (0.25)	0.62	Positive
Style	1.64 (0.15)	1.61 (0.14)	0.95	Positive
Technical support	2.45 (0.31)	1.77 (0.20)	0.09	Positive [*]
Consistency of supply	1.73 (0.19)	1.23 (0.12)	0.04	Positive [*]
Familiarity/ Tradition	2.82 (0.23)	1.62 (0.24)	0.00	Positive [*]

^a Mean (Standard error).

^b The nonparametric Wilcoxon rank sum test was used.

^c The exporter mean scores minus non-exporter mean score.

^{*} Significant at 90% confidence level.

resources and possibly lose sale opportunities. Identifying and correcting these gaps may help non-exporters establish efficient export marketing strategies and avoid unnecessary efforts.

5.1.4 Distribution Channels Used by the Domestic Wood Window and Door Manufacturers

The U.S. wood window and door market is a typical industrial market. Manufacturers seldom directly sell products to the home builders (end-users). Instead, manufacturers use intermediaries such as wholesalers, retailers, and distributors to sell and deliver their products to the consumers (Fig. 5.4 and 5.5). The findings are consistent with the report in the Construction Review (U.S.D.C., 1984). These indirect distribution channels are used frequently in wood window and door markets because the domestic builder markets are fragmented and widely dispersed, low volume transactions prevail, and buyers (builders or contractors) typically purchase a variety of windows and doors in one transaction.

The export distribution channels used by the U.S. manufacturers are direct to foreign markets (using direct or indirect channels) or through foreign companies (Fig. 5.6). The domestic intermediaries are not involved in the export distribution channels in this study's responses. The variety of products and unfamiliar foreign market demand may explain the lack of domestic intermediaries in export distribution channels.

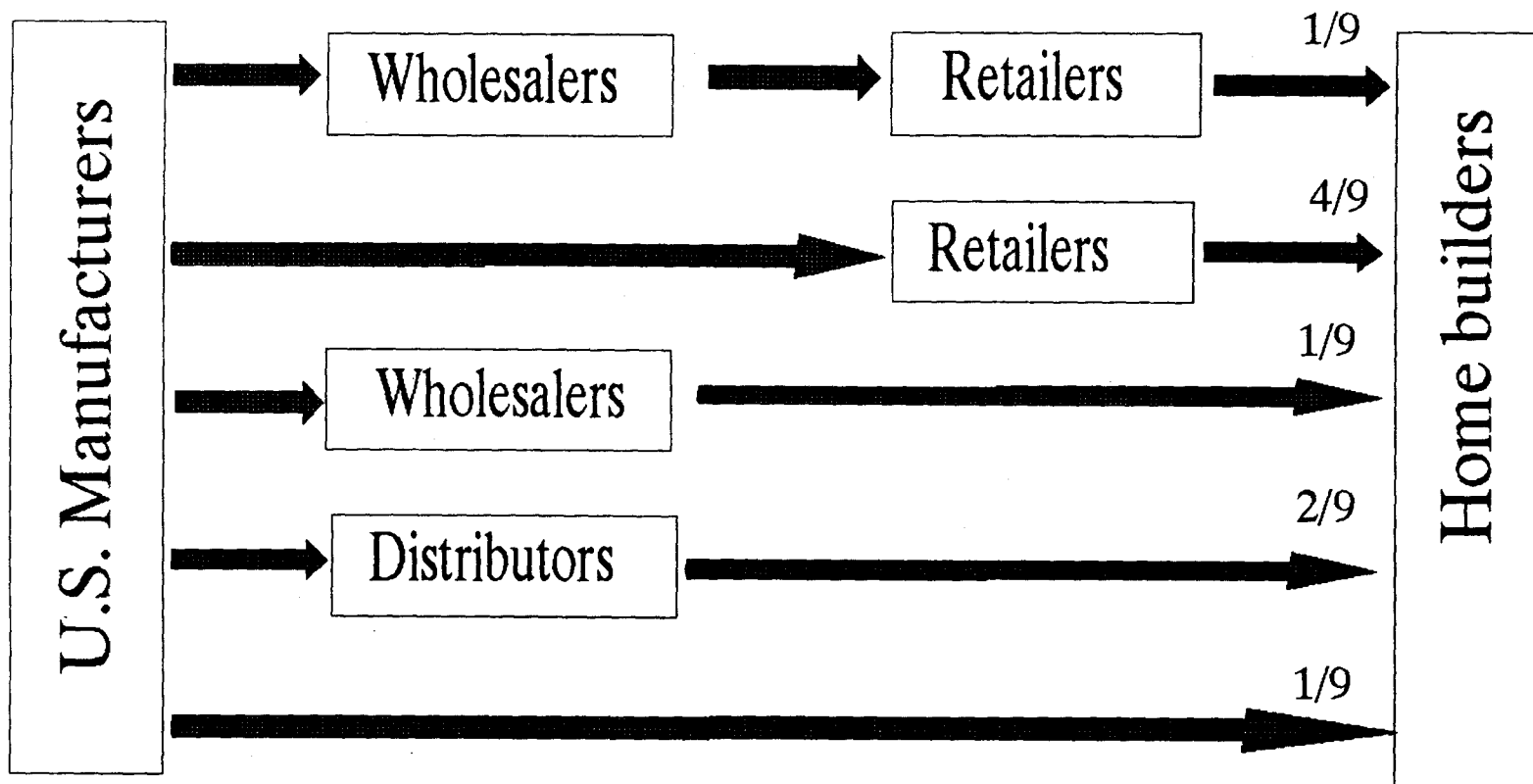


Figure 5.4 Distribution channels used by the U.S. wood window manufacturers (n = 9).

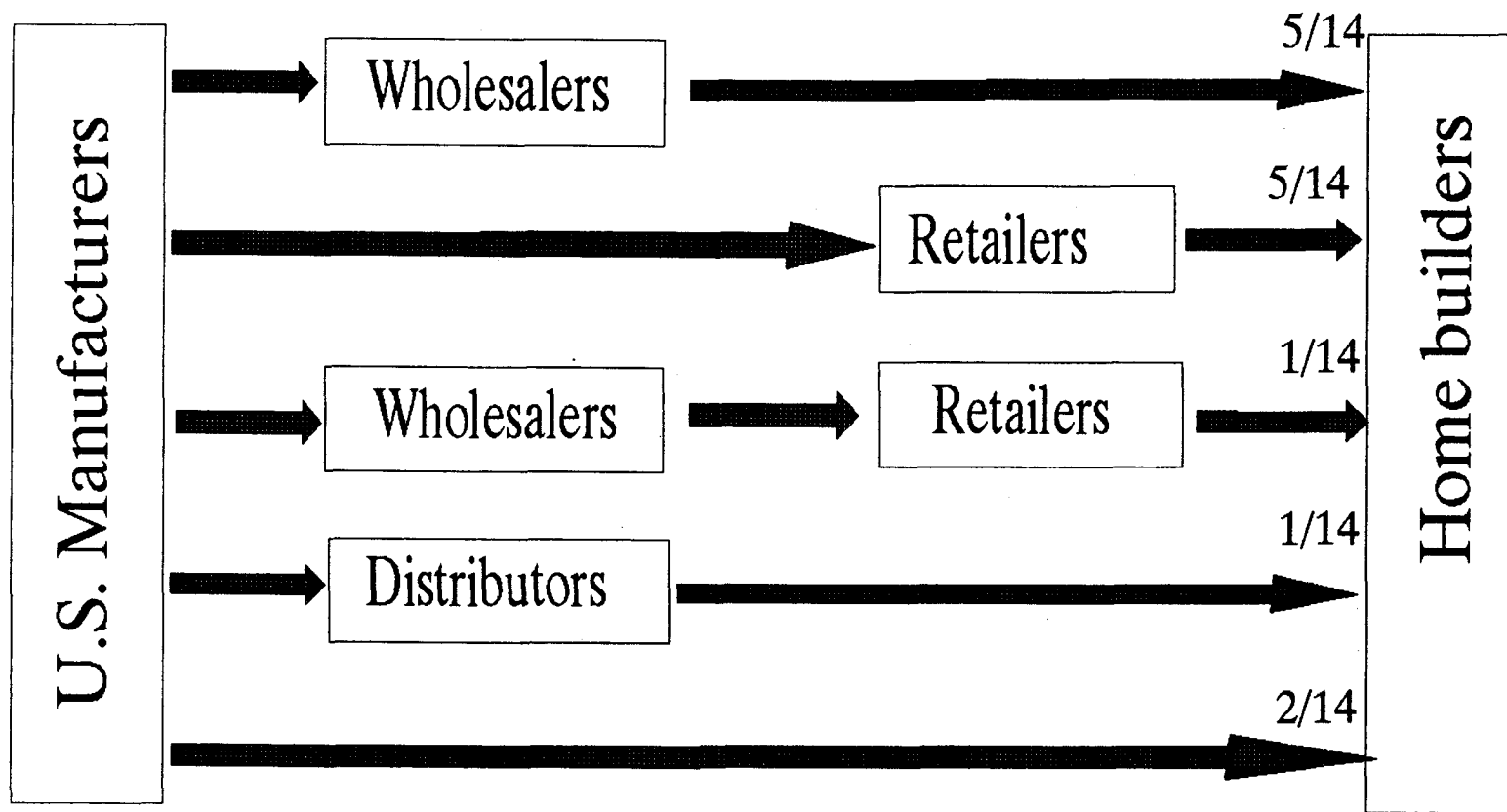


Figure 5.5 Distribution channels used by the U.S. wood door manufacturers ($n = 14$).

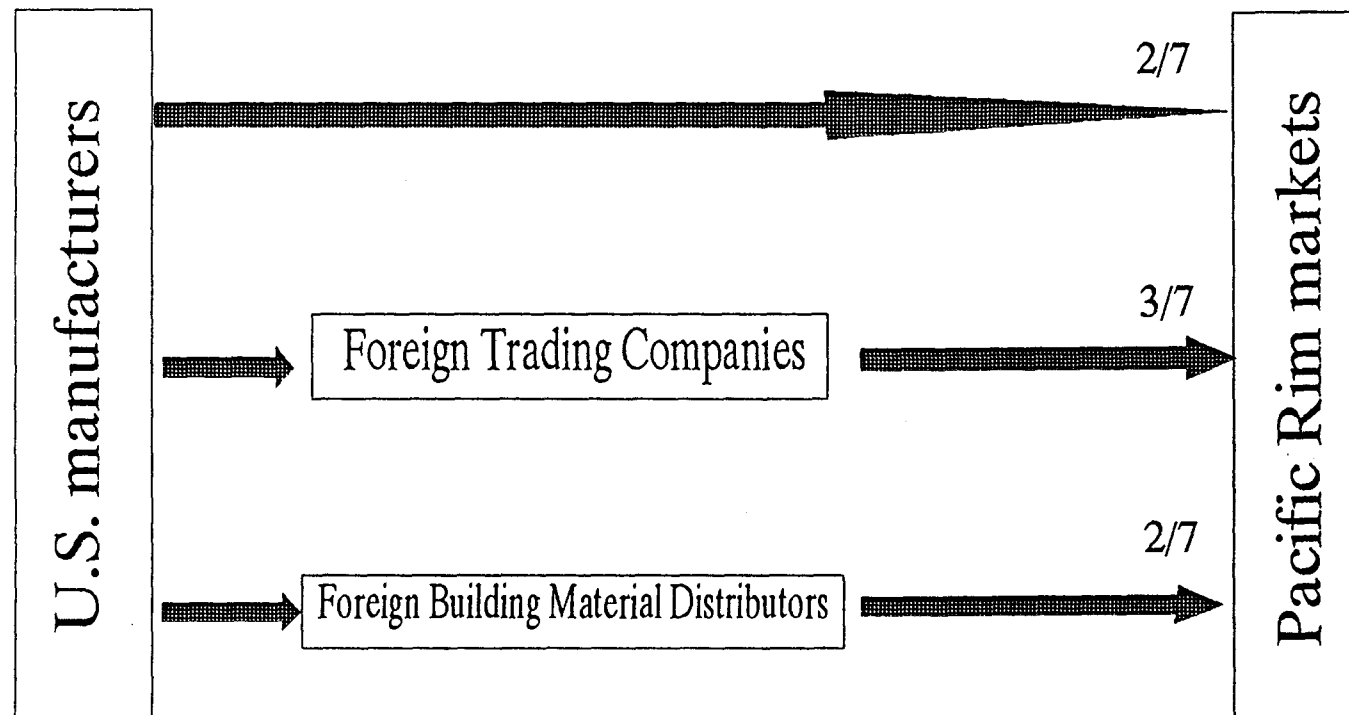


Figure 5.6 Export distribution channels used by the U.S. wood window and door manufacturers ($n = 7$).

5.2 An Econometric Analysis of the U.S. Wood Window and Door Market

This section provides the model results and the interpretation of the relationship of coefficients in dependent and independent variables.

5.2.1 Model Validation and Evaluation

Table 5.13 presents the regression results for both the demand and price equations. The Durbin-Watson (D.W.) value (Pindyck and Rubinfeld, 1991) for the demand equation is 1.94; indicating that first order autocorrelation is not evident. The Durbin-Watson statistic in the supply equation is invalid, since a stochastic variable, lagged price of millwork, appears on the right hand side of supply equation. Therefore, the Durbin-h test is used to test for first autocorrelation and fails to provide the evidence of significant first order autocorrelation.

In general, the value of R^2 and the "Student's-t" test on individual variables could be partially relied on for the evaluation of the quality of an econometric model. In practice, the explanatory abilities of demand and supply equations lie in their power to explain the fluctuations of data (Luppold, 1982).

Table 5.13 Estimated market model structural equations.

Equations	Independent Variables	Regression Coefficients	Student's t-value	Elasticities ^a
(1) Demand for wood window and door, D_{wd} :				
	Intercept	70.76 [*]	2.31	
	P_{dt}	-0.02	-0.13	-0.08
$F = 21.96^{**}$	P_{rcst}	0.96 ^{**}	4.81	3.54
$R^2 = 0.91$	$R6mth$	-218.41 ^{**}	-4.40	-0.17
D.W. = 1.94	R_{wg}	-4.7 ^{**}	-3.45	-1.74
MAPE = 5.08%	P_{othr}	-0.74 ^{**}	-4.86	-2.76
(2) Price of window and door, P_{dt} :				
	Intercept	59.89 [*]	2.25	
$F = 4.50^*$	lp_{dt}	0.50 [*]	2.24	
$R^2 = 0.39$	P_{dif}	0.10 [*]	2.70	
D.h. = 1.02				
MAPE = 2.07%				

* Significant at the 0.95 probability level (two tailed for t-test).

** Significant at the 0.99 probability level (two tailed for t-test).

^a Elasticity measures estimated at means.

In Fig. 5.7 and 5.8, it is evident that the demand and price equations capture most of the historical turning points in the data base. Overall, the demand and price equations performed very well. The explanatory abilities of these two equations were excellent as further verified by the mean absolute percentage errors (MAPE) equal to 5.08% and 2.07%.

5.2.2 Model Interpretation

In the estimated demand function for wood windows and doors, the coefficient of price of new building construction and upkeep, and all input prices except own-price are significant. Wood windows and doors, capital stock, labor and other materials appear to be complementary goods. In other words, an increase of capital cost or wage rate leads to a decrease in the window and door quantity demanded. The result is collaborated with other studies which show wood and labor are complements (e.g., Merrifield and Haynes, 1983).

The price elasticity of demand indicates the percentage change of demand quantity resulting from a percentage change in price. In the demand function, a one percent change in the past year's price of new residential buildings will increase the quantity demanded of wood windows and doors by 3.54% (when evaluated at the means). It appears that the higher price of new building construction and upkeep tends to be correlated with greater use of wood windows and doors.

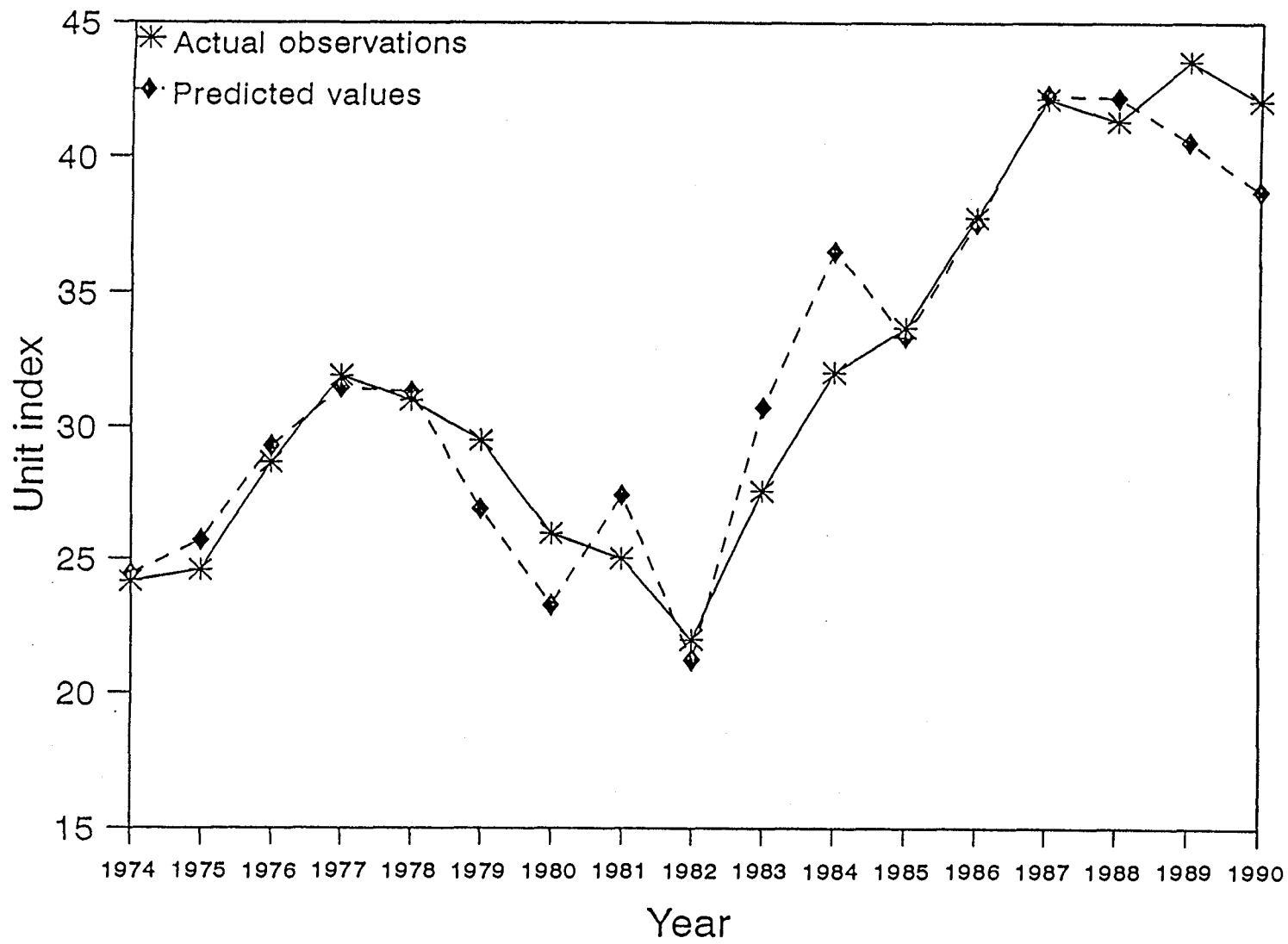


Figure 5.7 The predicted and actual values of the demand function.

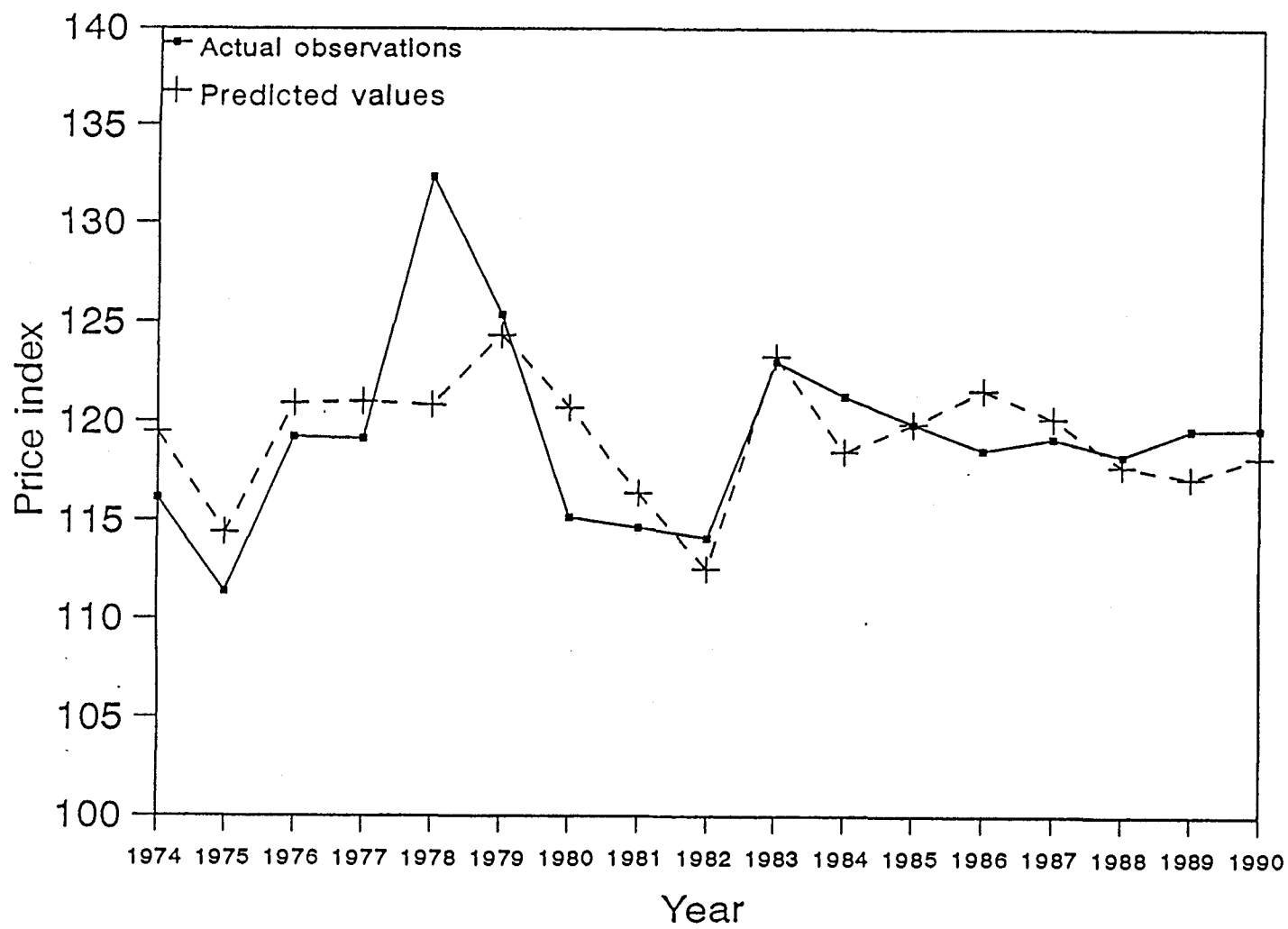


Figure 5.8 - The predicted and actual values of the price equation.

In the supply equation, the coefficient of past price of wood windows and doors and the price difference of ponderosa pine lumber are significant at the 95 percent confidence level. As expected the price of wood windows and doors is positively affected by its own past price. The new price of wood windows and doors set by producers may be triggered by the price change in ponderosa pine lumber. These results are consistent with the theory of barometric pricing behavior.

From a goodness of fit perspective, the demand and price models performed very well. As with all econometric models, however, results must be used with caution. Many proxy variables were used (e.g. price of millwork served as price of wood windows and doors and cost of residential building served as a proxy of price of new building construction and upkeep). These may cause some degree of measurement errors and result in an inflated variance in each estimator. These circumstances may have resulted in the insignificant coefficient on the price of wood windows and doors variable in the demand equation.

6. SUMMARY AND CONCLUSIONS

The domestic window and door market was perceived as being characterized by the intensity of competition and price sensitivity. This has been heightened by timber shortages and more stringent energy codes.

The factor of future growth potential was identified as an important window and door market characteristic in the Pacific Rim markets. While U.S. manufacturers are beginning to pursue this market, to date, it has been a small portion of their sales.

The institutional barriers, i.e. building codes and regulations, were ranked as the highest entry barriers in the U.S. window and door market. This would indicate technology and R &D capabilities are very important in this market.

The non-institutional barriers, such as the attitude of business people and complexity of distribution channels were identified as the highest entry barriers in the Pacific Rim market. The Pacific Rim markets are perceived as having more severe entry barriers than those in the U.S. market.

The U.S. manufacturers perceived that quality of product was an important factor when considering the export of U.S. wood windows and doors. Also, there exist gaps in the perceptions of exporters and non-exporters. Non-exporters tend to believe factors, such as technical support, consistency of supply, and familiarity/tradition are more important than exporters do.

Most wood window and door manufacturers indicated that intermediaries were hired to distribute their products to their final consumers. This is not surprising in light of the disaggregated markets into which their products are sold.

The past year's price of new buildings and upkeep positively affected the quantity of wood windows and doors demanded. Demand for wood windows and doors was insensitive to change in own price. This maybe due to the relatively small proportion of overall construction costs accounted for by windows and doors.

The specification of the supply function that used lumber price difference and past price of wood windows and doors, was consistent with an oligopolistic market structure for the wood window and door industry.

The research identified the market characteristics, entry barriers to the Pacific Rim countries, and factors affecting the export decisions. Yet, the behavior and intention of importers and builders in the Pacific Rim were not explored. To help the U.S. wood window and door manufacturers to explore the foreign potential markets, such as Pacific Rim, a marketing survey on Pacific Rim countries should be arranged.

The scope would be importers and builders in Japan, South Korea, and Taiwan. The questionnaires with questions on product type used, the factors that affected foreign builders' decisions on using wood windows and doors, the potential end-users, and distribution channels were designed and translated into

each target country's language (Appendix D, Appendix E, and Appendix F).

Perceptions of importers or users, and manufacturers could be contrasted after administering these questionnaires.

Econometric analyses such as that presented here may also lead further understanding to the export markets.

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APPENDICES

Appendix A

Marketing Survey of U.S. Wood Window and Door Manufacturers

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WOODEN WINDOW & DOOR
MARKETING SURVEY

Conducted by

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This survey contains questions about various wooden window and door products. Your cooperation and insights are greatly appreciated.

U.S. MANUFACTURERS SURVEY

1. About what percentage of the following types of windows or doors was assembled in your company
Please circle one number to show the percentage.

MATERIALS:	FOREIGN-USE (Percentage)						DOMESTIC-USE (Percentage)				
	0	25%	50%	75%	100%		0	25%	50%	75%	100%
a. Vinyl window	1	2	3	4	5	.....	1	2	3	4	5
b. Vinyl exterior entry door.....	1	2	3	4	5	.....	1	2	3	4	5
c. Vinyl interior door	1	2	3	4	5	.....	1	2	3	4	5
d. Wooden window	1	2	3	4	5	.....	1	2	3	4	5
e. Wooden exterior entry door	1	2	3	4	5	.....	1	2	3	4	5
f. Wooden interior door	1	2	3	4	5	.....	1	2	3	4	5
g. Aluminum window	1	2	3	4	5	.....	1	2	3	4	5
h. Aluminum exterior entry door	1	2	3	4	5	.....	1	2	3	4	5
i. Aluminum interior door	1	2	3	4	5	.....	1	2	3	4	5
j. Steel window	1	2	3	4	5	.....	1	2	3	4	5
k. Steel exterior entry door	1	2	3	4	5	.....	1	2	3	4	5
l. Steel interior door	1	2	3	4	5	.....	1	2	3	4	5
m. Others (please specify)	1	2	3	4	5	.....	1	2	3	4	5
.....	1	2	3	4	5	.....	1	2	3	4	5
.....	1	2	3	4	5	.....	1	2	3	4	5

2. When considering the viability of exporting wood and non-wood windows, how important are the following key factors?

FACTORS:	WOOD WINDOW (Importance)					NON-WOOD WINDOW (Importance)			
	VERY	SOME- WHAT	NOT TOO	NOT AT ALL		VERY	SOME- WHAT	NOT TOO	NOT AT ALL
a. Price	1	2	3	4	.....	1	2	3	4
b. Quality	1	2	3	4	.....	1	2	3	4
c. After-sale service	1	2	3	4	.....	1	2	3	4
d. Style	1	2	3	4	.....	1	2	3	4
e. Technical support	1	2	3	4	.....	1	2	3	4
f. Consistency of supply	1	2	3	4	.....	1	2	3	4
g. Familiarity/Tradition	1	2	3	4	.....	1	2	3	4
h. Other (please specify)	1	2	3	4	.....	1	2	3	4
.....	1	2	3	4	.....	1	2	3	4
.....	1	2	3	4	.....	1	2	3	4

(Please go on to the next page)

3. When considering the viability of exporting wood and non-wood exterior entry door types, how important are the following key factors?

FACTORS:	WOOD EXTERIOR DOOR (Importance)					NON-WOOD EXTERIOR DOOR (Importance)			
	VERY	SOME- WHAT	NOT TOO	NOT AT ALL		VERY	SOME- WHAT	NOT TOO	NOT AT ALL
a. Price	1	2	3	4	.....	1	2	3	4
b. Quality	1	2	3	4	.....	1	2	3	4
c. After-sale service	1	2	3	4	.....	1	2	3	4
d. Style	1	2	3	4	.....	1	2	3	4
e. Technical support	1	2	3	4	.....	1	2	3	4
f. Consistency of supply	1	2	3	4	.....	1	2	3	4
g. Familiarity/Tradition	1	2	3	4	.....	1	2	3	4
h. Other (please specify)									
.....	1	2	3	4	.....	1	2	3	4
.....	1	2	3	4	.....	1	2	3	4
.....	1	2	3	4	.....	1	2	3	4

4. When considering the viability of exporting wood and non-wood interior door types, how important are the following key factors?

FACTORS:	WOOD INTERIOR DOOR (Importance)					NON-WOOD INTERIOR DOOR (Importance)			
	VERY	SOME- WHAT	NOT TOO	NOT AT ALL		VERY	SOME- WHAT	NOT TOO	NOT AT ALL
a. Price	1	2	3	4	.....	1	2	3	4
b. Quality	1	2	3	4	.....	1	2	3	4
c. After-sale service	1	2	3	4	.....	1	2	3	4
d. Style	1	2	3	4	.....	1	2	3	4
e. Technical support	1	2	3	4	.....	1	2	3	4
f. Consistency of supply	1	2	3	4	.....	1	2	3	4
g. Familiarity/Tradition	1	2	3	4	.....	1	2	3	4
h. Other (please specify)									
.....	1	2	3	4	.....	1	2	3	4
.....	1	2	3	4	.....	1	2	3	4
.....	1	2	3	4	.....	1	2	3	4

(Please turn the page)

5. How would you rate the overall performance (appearance, durability, etc.) of wood and non-wood windows from various countries?

WINDOWS MADE IN:	WOOD WINDOWS					NON-WOOD WINDOWS				
	EXCELLENT	GOOD	FAIR	POOR	DONT KNOW	EXCELLENT	GOOD	FAIR	POOR	DONT KNOW
a. U.S.	1	2	3	4	5	1	2	3	4	5
b. Canadian	1	2	3	4	5	1	2	3	4	5
c. Nordic countries	1	2	3	4	5	1	2	3	4	5
e. Others (please specify)	1	2	3	4	5	1	2	3	4	5
.....	1	2	3	4	5	1	2	3	4	5
.....	1	2	3	4	5	1	2	3	4	5
.....	1	2	3	4	5	1	2	3	4	5

6. How would you rate the overall performance (appearance, durability, etc.) of wood and non-wood exterior entry doors from various countries?

DOORS MADE IN:	WOOD EXTERIOR ENTRY DOORS					NON-WOOD EXTERIOR ENTRY DOORS				
	EXCELLENT	GOOD	FAIR	POOR	DONT KNOW	EXCELLENT	GOOD	FAIR	POOR	DONT KNOW
a. U.S.	1	2	3	4	5	1	2	3	4	5
b. Canadian	1	2	3	4	5	1	2	3	4	5
c. Nordic countries	1	2	3	4	5	1	2	3	4	5
e. Others (please specify)	1	2	3	4	5	1	2	3	4	5
.....	1	2	3	4	5	1	2	3	4	5
.....	1	2	3	4	5	1	2	3	4	5
.....	1	2	3	4	5	1	2	3	4	5

(Please go on to the next page)

7. How would you rate the overall performance (appearance, durability, etc.) of wood and non-wood interior doors from various countries?

DOORS MADE IN:	WOOD INTERIOR DOORS						NON-WOOD INTERIOR DOORS				
	EXCELLENT	GOOD	FAIR	POOR	DONT KNOW		EXCELLENT	GOOD	FAIR	POOR	DONT KNOW
a. U.S.	1	2	3	4	5	_____	1	2	3	4	5
b. Canadian	1	2	3	4	5	_____	1	2	3	4	5
c. Nordic countries	1	2	3	4	5	_____	1	2	3	4	5
e. Others (please specify)	1	2	3	4	5	_____	1	2	3	4	5
_____	1	2	3	4	5	_____	1	2	3	4	5
_____	1	2	3	4	5	_____	1	2	3	4	5
_____	1	2	3	4	5	_____	1	2	3	4	5

8. How do you distribute your windows and doors to end-users in the U.S. (e.g., manufacturers → wholesalers → retailers → homebuilders, etc.)?

a. Windows: _____

b. Doors: _____

9. How do you distribute your windows and doors to end-users in the Pacific Rim (e.g., manufacturers → foreign trading company, etc.)?

a. Windows: _____

b. Doors: _____

(Please turn the page)

11. On a scale from one to five where one is very low and five is very high, how do you rate the window and door market characteristics in the Pacific Rim market?

FACTORS:	WINDOW					EXTERIOR DOOR					INTERIOR DOOR				
	VERY LOW				VERY HIGH	VERY LOW				VERY HIGH	VERY LOW				VERY HIGH
a. Intensity of..... competition	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
b. Speed of..... market change	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
c. Price..... sensitivity	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
d. Risk of new..... product introduction	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
e. Customer..... loyalty	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
f. Familiarity/..... Tradition	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
g. Government..... policy effects	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
h. Future growth..... potential	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
i. Quality..... consciousness	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
j. Others (please specify)															
_____	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
_____	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
_____	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5

(Please turn the page)

10. On a scale from one to five where one is very low and five is very high, how do you rate the window and door market characteristics in the U.S. market?

FACTORS:	WINDOW					EXTERIOR DOOR					INTERIOR DOOR				
	VERY LOW				VERY HIGH	VERY LOW				VERY HIGH	VERY LOW				VERY HIGH
a. Intensity of competition	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
b. Speed of market change	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
c. Price sensitivity	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
d. Risk of new product introduction	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
e. Customer loyalty	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
f. Familiarity/ Tradition	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
g. Government policy effects	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
h. Future growth potential	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
i. Quality consciousness	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
j. Others (please specify)															
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5

(Please go on to the next page)

12. *How important are these barriers when window and door manufacturers try to enter the U.S. and Pacific Rim window and door markets?*

FACTORS:	U.S. (Importance)					Pacific Rim (Importance)			
	VERY	SOME- WHAT	NOT TOO	NOT AT ALL		VERY	SOME- WHAT	NOT TOO	NOT AT ALL
a. Non-tariff barriers (e.g., building code standards, regulations, etc.)	1	2	3	4	.....	1	2	3	4
b. Tariffs, quotas, etc.	1	2	3	4	.....	1	2	3	4
c. Attitude of business people	1	2	3	4	.....	1	2	3	4
d. Attitude of end-users	1	2	3	4	.....	1	2	3	4
e. Complexity of distribution channels	1	2	3	4	.....	1	2	3	4
f. Language obstacle	1	2	3	4	.....	1	2	3	4
g. Recruitment of marketing personnel	1	2	3	4	.....	1	2	3	4
h. Other barriers (please specify)									
.....	1	2	3	4	.....	1	2	3	4
.....	1	2	3	4	.....	1	2	3	4
.....	1	2	3	4	.....	1	2	3	4

13. *Please indicate whether or not you assemble each of the following window styles.*

	WOOD WINDOW			NON-WOOD WINDOW	
	YES	NO		YES	NO
a. Double-hung	1	2	.....	1	2
b. Bay	1	2	.....	1	2
c. Bow	1	2	.....	1	2
d. Others (please specify)					
.....	1	2	.....	1	2
.....	1	2	.....	1	2
.....	1	2	.....	1	2

14. *Please indicate whether or not you assemble each of the following exterior entry and interior door.*

	WOOD					NON-WOOD			
	EXTERIOR		INTERIOR			EXTERIOR		INTERIOR	
	YES	NO	YES	NO		YES	NO	YES	NO
a. French.....	1	2	1	2	.....	1	2	1	2
b. Flush.....	1	2	1	2	.....	1	2	1	2
c. Raised panel.....	1	2	1	2	.....	1	2	1	2
d. Others (please specify)									
_____	1	2	1	2	.....	1	2	1	2
_____	1	2	1	2	.....	1	2	1	2
_____	1	2	1	2	.....	1	2	1	2

(Thank you for your cooperation)

Appendix B

Cover Letter for Marketing Survey

Dear :

This questionnaire is part of an Oregon State University research project dealing with the Pacific Rim market potentials for U.S. manufactured doors and windows.

You have been included in a selected group of manufacturers who are being asked to complete a brief questionnaire dealing with the market structure and opinions regarding foreign markets. Because you are part of a selected sample of manufacturers, your response represents a critical contribution and your opinion counts.

Pretesting has indicated that it will take approximately ten minutes to complete the questionnaire. Please fill out the form and return it as soon as convenient in the preaddressed, stamped envelope.

We are not asking for name or address. Your answer will remain completely anonymous.

Sincerely,

Dr. Brian Greber
Associate Professor

Jun-Yen Lee
Assistant Research

Appendix C

Data Base for Econometric Analysis on Wood Window and Door Market

Year	Dqwd	P _{dt}	Pothr	R6mth	Rwg	Prcst	Ppond
1973	29.63	106.96	110.04	1.17	128.73	108.69	162.44
1974	24.13	101.73	103.71	2.08	117.89	101.53	149.13
1975	24.58	97.57	107.31	-1.46	115.90	99.71	114.34
1976	28.65	104.43	110.67	-2.27	117.25	103.33	170.04
1977	31.92	104.36	112.62	-1.77	113.28	104.11	186.95
1978	30.99	115.94	111.88	0.36	108.40	101.30	202.52
1979	29.49	109.82	110.82	2.13	104.25	98.50	186.68
1980	25.96	100.89	103.97	2.83	99.28	96.05	169.07
1981	25.03	100.46	103.33	6.06	97.47	95.46	159.93
1982	21.99	100.00	100.00	4.57	100.00	100.00	114.16
1983	27.59	107.77	102.31	3.21	100.63	104.58	180.05
1984	32.04	106.23	102.86	5.82	100.90	107.48	152.30
1985	33.70	105.05	100.94	4.26	102.35	107.38	147.71
1986	37.80	103.90	98.38	2.79	101.26	106.25	167.12
1987	42.16	104.41	96.44	3.34	99.37	104.84	178.70
1988	41.32	103.65	94.24	3.94	100.00	103.14	163.15
1989	43.55	104.79	94.17	4.62	100.81	103.20	146.22
1990	42.07	104.83	94.67	4.60	100.18	104.50	133.00

Appendix D

Questionnaires on Wood Windows and Doors Importers and Builders in Japan

窓およびドアに関する市場調査

オレゴン州立 大学 (米国) 林産学部

Brian J. Greber (助教授)

Jun Yen Lee (助手)

このアンケート中には、種々の木製窓とドアについての質問がなされています。あなたがたのご協力に心より感謝致します。

Oregon State University
Department of Forest Products
Corvallis, OR 97331
U. S. A.

輸入業者（商社）に対する調査

1. どのようなタイプの窓やドアを輸入されてますか。おおよその割合（％）の所に丸を入れて下さい。

製品	外国製品				
	0	25%	50%	75%	100%
a. ビニール窓	1	2	3	4	5
b. ビニール外装ドア	1	2	3	4	5
c. ビニール内装ドア	1	2	3	4	5
d. 木製窓	1	2	3	4	5
e. 木製外装ドア	1	2	3	4	5
f. 木製内装ドア	1	2	3	4	5
g. アルミ窓	1	2	3	4	5
h. アルミ外装ドア	1	2	3	4	5
i. アルミ内装ドア	1	2	3	4	5
j. スチール窓	1	2	3	4	5
k. スチール外装ドア	1	2	3	4	5
l. スチール内装ドア	1	2	3	4	5
m. その他（例をあげて下さい）					
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5

2. 木製と非木製の窓の輸入成長をどのような時考えますか。下にいくつかの因子をあげていますが、その重要性につきお答え下さい。

因子	木製窓				非木製窓			
	非常に	やや	それほど	まったく	非常に	やや	それほど	まったく
a. 価格	1	2	3	4	1	2	3	4
b. 品質	1	2	3	4	1	2	3	4
c. アフターサービス	1	2	3	4	1	2	3	4
d. スタイル	1	2	3	4	1	2	3	4
e. 技術的支援	1	2	3	4	1	2	3	4
f. 供給の一貫性	1	2	3	4	1	2	3	4
g. 精進度/伝統	1	2	3	4	1	2	3	4
h. その他（例をあげて下さい）								
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4

（次ぎのページへ）

3. 木製と非木製の外装入口ドアにつき、どのような因子につきその輸入成長を考えますか。その重要性につきお答え下さい。

因子	木製外装ドア				非木製外装ドア			
	非常に	やや	それほど	まったく	非常に	やや	それほど	まったく
a. 価格	1	2	3	4	1	2	3	4
b. 品質	1	2	3	4	1	2	3	4
c. アフターサービス	1	2	3	4	1	2	3	4
d. スタイル	1	2	3	4	1	2	3	4
e. 技術的支援	1	2	3	4	1	2	3	4
f. 供給の一貫性	1	2	3	4	1	2	3	4
g. 精進度/伝統	1	2	3	4	1	2	3	4
h. その他(例をあげて下さい)								
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4

4. 木製と非木製の内装用ドアにつき、どのような因子につきその輸入成長を考えますか。その重要性につきお答え下さい。

因子	木製内装ドア				非木製内装ドア			
	非常に	やや	それほど	まったく	非常に	やや	それほど	まったく
a. 価格	1	2	3	4	1	2	3	4
b. 品質	1	2	3	4	1	2	3	4
c. アフターサービス	1	2	3	4	1	2	3	4
d. スタイル	1	2	3	4	1	2	3	4
e. 技術的支援	1	2	3	4	1	2	3	4
f. 供給の一貫性	1	2	3	4	1	2	3	4
g. 精進度/伝統	1	2	3	4	1	2	3	4
h. その他(例をあげて下さい)								
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4

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5. 世界各国からの木製と非木製の窓の総合的な品質（見かけ、耐久性等）をどのように評価しますか。

生産国	木製窓					非木製窓				
	優秀	良い	普通	悪い	わからない	優秀	良い	普通	悪い	わからない
a. アメリカ	1	2	3	4	5	1	2	3	4	5
b. カナダ	1	2	3	4	5	1	2	3	4	5
c. 北欧諸国	1	2	3	4	5	1	2	3	4	5
d. 国内	1	2	3	4	5	1	2	3	4	5
e. その他（例をあげて下さい）										
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5

6. 世界各国からの木製と非木製の外装入口ドアの総合的な品質（見かけ、耐久性等）をどのように評価しますか。

生産国	木製外装ドア					非木製外装ドア				
	優秀	良い	普通	悪い	わからない	優秀	良い	普通	悪い	わからない
a. アメリカ	1	2	3	4	5	1	2	3	4	5
b. カナダ	1	2	3	4	5	1	2	3	4	5
c. 北欧諸国	1	2	3	4	5	1	2	3	4	5
d. 国内	1	2	3	4	5	1	2	3	4	5
e. その他（例をあげて下さい）										
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5

7. 世界各国からの木製と非木製の内装ドアの総合的な品質（見かけ、耐久性等）をどのように評価しますか。

生産国	木製内装ドア					非木製内装ドア				
	優秀	良い	普通	悪い	わからない	優秀	良い	普通	悪い	わからない
a. アメリカ	1	2	3	4	5	1	2	3	4	5
b. カナダ	1	2	3	4	5	1	2	3	4	5
c. 北欧諸国	1	2	3	4	5	1	2	3	4	5
d. 国内	1	2	3	4	5	1	2	3	4	5
e. その他（例をあげて下さい）										
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5

（次ぎのページへ）

8. 建築に用いられる国産品の木製と非木製の窓につき、下にあげる家のスタイルに対し、どちらをどの程度評価されますか。

木製窓					非木製窓				
スタイル	非常に	やや	それほど	まったく	非常に	やや	それほど	まったく	
a. 伝統的な建築様式	1	2	3	4	1	2	3	4	
b. プレハブ型	1	2	3	4	1	2	3	4	
c. アメリカ型 (2x4)	1	2	3	4	1	2	3	4	
d. ヨーロッパ型	1	2	3	4	1	2	3	4	
e. 改造型	1	2	3	4	1	2	3	4	
f. アパート	1	2	3	4	1	2	3	4	
g. その他(例をあげて下さい)									
	1	2	3	4	1	2	3	4	
	1	2	3	4	1	2	3	4	
	1	2	3	4	1	2	3	4	

9. 建築に用いられる国産品の木製と非木製の外装用ドアにつき、下にあげる家のスタイルに対し、どちらをどの程度評価されますか。

木製外装ドア					非木製外装ドア				
スタイル	非常に	やや	それほど	まったく	非常に	やや	それほど	まったく	
a. 伝統的な建築様式	1	2	3	4	1	2	3	4	
b. プレハブ型	1	2	3	4	1	2	3	4	
c. アメリカ型 (2x4)	1	2	3	4	1	2	3	4	
d. ヨーロッパ型	1	2	3	4	1	2	3	4	
e. 改造型	1	2	3	4	1	2	3	4	
f. アパート	1	2	3	4	1	2	3	4	
g. その他(例をあげて下さい)									
	1	2	3	4	1	2	3	4	
	1	2	3	4	1	2	3	4	
	1	2	3	4	1	2	3	4	

(次ぎのページへ)

10. 建築に用いられる国産品の木製と非木製の内装用ドアにつき、下にあげる家のスタイルに対し、どちらをどの程度評価されますか。

		木製内装ドア						非木製内装ドア			
スタイル		非常に	やや	それほど	まったく			非常に	やや	それほど	まったく
a. 伝統的な建築様式	.....	1	2	3	4	.....		1	2	3	4
b. フレハブ型	.....	1	2	3	4	.....		1	2	3	4
c. アメリカ型 (2×4)	.....	1	2	3	4	.....		1	2	3	4
d. ヨーロッパ型	.....	1	2	3	4	.....		1	2	3	4
e. 改造型	.....	1	2	3	4	.....		1	2	3	4
f. アパート	.....	1	2	3	4	.....		1	2	3	4
g. その他(例をあげて下さい)	.....	1	2	3	4	.....		1	2	3	4
	.....	1	2	3	4	.....		1	2	3	4
	.....	1	2	3	4	.....		1	2	3	4

11. 建築に用いられる外国産品の木製と非木製の窓につき、下にあげる家のスタイルに対し、どちらをどの程度評価されますか。

		木製窓						非木製窓			
スタイル		非常に	やや	それほど	まったく			非常に	やや	それほど	まったく
a. 伝統的な建築様式	.....	1	2	3	4	.....		1	2	3	4
b. フレハブ型	.....	1	2	3	4	.....		1	2	3	4
c. アメリカ型 (2×4)	.....	1	2	3	4	.....		1	2	3	4
d. ヨーロッパ型	.....	1	2	3	4	.....		1	2	3	4
e. 改造型		1	2	3	4			1	2	3	4
f. アパート		1	2	3	4			1	2	3	4
g. その他(例をあげて下さい)		1	2	3	4			1	2	3	4
		1	2	3	4			1	2	3	4
		1	2	3	4			1	2	3	4

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1 2. 建築に用いられる外国産品の木製と非木製の外装用ドアにつき、下にあげる家のスタイルに対し、どちらをどの程度評価されますか。

		木製外装ドア				非木製外装ドア				
スタイル		非常に	やや	それほど	まったく	非常に	やや	それほど	まったく	
a. 伝統的な建築様式		1	2	3	4	.....	1	2	3	4
b. プレハブ型		1	2	3	4	.....	1	2	3	4
c. アメリカ型 (2x4)		1	2	3	4	.....	1	2	3	4
d. ヨーロッパ型		1	2	3	4	.....	1	2	3	4
e. 改造型		1	2	3	4	.....	1	2	3	4
f. アパート		1	2	3	4	.....	1	2	3	4
g. その他(例をあげて下さい)		1	2	3	4	.....	1	2	3	4
		1	2	3	4	.....	1	2	3	4
		1	2	3	4	.....	1	2	3	4
		1	2	3	4	.....	1	2	3	4

1 3. 建築に用いられる外国産品の木製と非木製の内装用ドアにつき、下にあげる家のスタイルに対し、どちらをどの程度評価されますか。

		木製内装ドア				非木製内装ドア				
スタイル		非常に	やや	それほど	まったく	非常に	やや	それほど	まったく	
a. 伝統的な建築様式		1	2	3	4	.....	1	2	3	4
b. アレハブ型		1	2	3	4	.....	1	2	3	4
c. アメリカ型 (2x4)		1	2	3	4	.....	1	2	3	4
d. ヨーロッパ型		1	2	3	4	.....	1	2	3	4
e. 改造型		1	2	3	4		1	2	3	4
f. アパート		1	2	3	4		1	2	3	4
g. その他(例をあげて下さい)		1	2	3	4		1	2	3	4
		1	2	3	4		1	2	3	4
		1	2	3	4		1	2	3	4
		1	2	3	4		1	2	3	4

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窓およびドアに関する市場調査

オレゴン州立 大学 (米国) 林産学部

Brian J. Greber (助教授)

Jun Yen Lee (助手)

このアンケート中には、種々の木製窓とドアについての質問がなされています。あなたがたのご協力に心より感謝致します。

Oregon State University
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Corvallis, OR 97331
U. S. A.

建設業者に対する調査

1. どのようなタイプの窓やドアを建築に用いられていますか。およその割合(%)の所に丸を入れて下さい。

製品	外国製品					国産品				
	0	25%	50%	75%	100%	0	25%	50%	75%	100%
a. ビニール窓	1	2	3	4	5	1	2	3	4	5
b. ビニール外装ドア	1	2	3	4	5	1	2	3	4	5
c. ビニール内装ドア	1	2	3	4	5	1	2	3	4	5
d. 木製窓	1	2	3	4	5	1	2	3	4	5
e. 木製外装ドア	1	2	3	4	5	1	2	3	4	5
f. 木製内装ドア	1	2	3	4	5	1	2	3	4	5
g. アルミ窓	1	2	3	4	5	1	2	3	4	5
h. アルミ外装ドア	1	2	3	4	5	1	2	3	4	5
i. アルミ内装ドア	1	2	3	4	5	1	2	3	4	5
j. スチール窓	1	2	3	4	5	1	2	3	4	5
k. スチール外装ドア	1	2	3	4	5	1	2	3	4	5
l. スチール内装ドア	1	2	3	4	5	1	2	3	4	5
m. その他(例をあげて下さい)	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5

2. 木製または非木製の窓を選ぶ様々な因子があると思いますが、その重要性につきお答え下さい。

因子	木製窓				非木製窓			
	非常に	やや	それほど	まったく	非常に	やや	それほど	まったく
a. 価格	1	2	3	4	1	2	3	4
b. 品質	1	2	3	4	1	2	3	4
c. アフターサービス	1	2	3	4	1	2	3	4
d. スタイル	1	2	3	4	1	2	3	4
e. 技術的支援	1	2	3	4	1	2	3	4
f. 供給の一貫性	1	2	3	4	1	2	3	4
g. 積運度/伝統	1	2	3	4	1	2	3	4
h. その他(例をあげて下さい)	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4

(次きのページへ)

3. 木製または非木製の外装用ドアを選ぶ様々な因子があると思いますが、その重要性につきお答え下さい。

因子	木製外装ドア				非木製外装ドア			
	非常に	やや	それほど	まったく	非常に	やや	それほど	まったく
a. 価格	1	2	3	4	1	2	3	4
b. 品質	1	2	3	4	1	2	3	4
c. アフターサービス	1	2	3	4	1	2	3	4
d. スタイル	1	2	3	4	1	2	3	4
e. 技術的支援	1	2	3	4	1	2	3	4
f. 供給の一貫性	1	2	3	4	1	2	3	4
g. 精進度/伝統	1	2	3	4	1	2	3	4
h. その他(例をあげて下さい)	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4

4. 木製または非木製の内装用ドアを用いる様々な因子があると思いますが、その重要性につきお答え下さい。

因子	木製内装ドア				非木製内装ドア			
	非常に	やや	それほど	まったく	非常に	やや	それほど	まったく
a. 価格	1	2	3	4	1	2	3	4
b. 品質	1	2	3	4	1	2	3	4
c. アフターサービス	1	2	3	4	1	2	3	4
d. スタイル	1	2	3	4	1	2	3	4
e. 技術的支援	1	2	3	4	1	2	3	4
f. 供給の一貫性	1	2	3	4	1	2	3	4
g. 精進度/伝統	1	2	3	4	1	2	3	4
h. その他(例をあげて下さい)	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4

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5. 世界各国からの木製と非木製の窓の総合的な品質（見かけ、耐久性）をどのように評価しますか。

生産国	木製窓					非木製窓				
	EXCL 優秀	良い	普通	悪い	わからない	EXC 優秀	良い	普通	悪い	わからない
a. アメリカ	1	2	3	4	5	1	2	3	4	5
b. カナダ	1	2	3	4	5	1	2	3	4	5
c. 北欧諸国	1	2	3	4	5	1	2	3	4	5
d. 国内	1	2	3	4	5	1	2	3	4	5
e. その他(例をあげて下さい)										
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5

6. 世界各国からの木製と非木製の外装用ドアの総合的な品質（見かけ、耐久性）をどのように評価しますか。

	木製外装ドア					非木製外装ドア					
生産国	優秀	良い	普通	悪い	わからない	EXCE	優秀	良い	普通	悪い	わからない
a. アメリカ	1	2	3	4	5	1	2	3	4	5	
b. カナダ	1	2	3	4	5	1	2	3	4	5	
c. 北欧諸国	1	2	3	4	5	1	2	3	4	5	
d. 国内	1	2	3	4	5	1	2	3	4	5	
e. その他（例をあげて下さい）											
.....	1	2	3	4	5	1	2	3	4	5	
.....	1	2	3	4	5	1	2	3	4	5	
.....	1	2	3	4	5	1	2	3	4	5	

7. 世界各国からの木製と非木製の内装用ドアの総合的な品質（見かけ、耐久性）をどのように評価しますか。

生産国	木製内装ドア					非木製内装ドア				
	優秀	良い	普通	悪い	わからない	優秀	良い	普通	悪い	わからない
a. アメリカ	1	2	3	4	5	1	2	3	4	5
b. カナダ	1	2	3	4	5	1	2	3	4	5
c. 北欧諸国	1	2	3	4	5	1	2	3	4	5
d. 国内	1	2	3	4	5	1	2	3	4	5
e. その他（例をあげて下さい）										
.....	1	2	3	4	5	1	2	3	4	5
.....	1	2	3	4	5	1	2	3	4	5
.....	1	2	3	4	5	1	2	3	4	5

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8. 建築に用いられる国産品の木製と非木製の窓につき、下にあげる家のスタイルに対し、どちらをどの程度評価されますか。

スタイル	木製窓				非木製窓			
	非常に	やや	それほど	まったく	非常に	やや	それほど	まったく
a. 伝統的な建築様式	1	2	3	4	1	2	3	4
b. プレハブ型	1	2	3	4	1	2	3	4
c. アメリカ型 (2x4)	1	2	3	4	1	2	3	4
d. ヨーロッパ型	1	2	3	4	1	2	3	4
e. 改造型	1	2	3	4	1	2	3	4
f. アパート	1	2	3	4	1	2	3	4
g. その他(例をあげて下さい)								
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4

9. 建築に用いられる国産品の木製と非木製の外装入口ドアにつき、下にあげる家のスタイルに対し、どちらをどの程度評価されますか。

スタイル	木製外装ドア				非木製外装ドア			
	非常に	やや	それほど	まったく	非常に	やや	それほど	まったく
a. 伝統的な建築様式	1	2	3	4	1	2	3	4
b. プレハブ型	1	2	3	4	1	2	3	4
c. アメリカ型 (2x4)	1	2	3	4	1	2	3	4
d. ヨーロッパ型	1	2	3	4	1	2	3	4
e. 改造型	1	2	3	4	1	2	3	4
f. アパート	1	2	3	4	1	2	3	4
g. その他(例をあげて下さい)								
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4

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10. 建築に用いられる国産品の木製と非木製の内装ドアにつき、下にあげる家のスタイルに対し、どちらをどの程度評価されますか。

木製内装ドア					非木製内装ドア				
スタイル	非常に	やや	それほど	まったく	非常に	やや	それほど	まったく	
a. 伝統的な建築様式	1	2	3	4	1	2	3	4	
b. アレハブ型	1	2	3	4	1	2	3	4	
c. アメリカ型 (2×4)	1	2	3	4	1	2	3	4	
d. ヨーロッパ型	1	2	3	4	1	2	3	4	
e. 改造型	1	2	3	4	1	2	3	4	
f. アパート	1	2	3	4	1	2	3	4	
g. その他(例をあげて下さい)									
	1	2	3	4	1	2	3	4	
	1	2	3	4	1	2	3	4	
	1	2	3	4	1	2	3	4	

11. 建築に用いられる外国産品の木製と非木製の窓につき、下にあげる家のスタイルに対し、どちらをどの程度評価されますか。

木製窓					非木製窓				
スタイル	非常に	やや	それほど	まったく	非常に	やや	それほど	まったく	
a. 伝統的な建築様式	1	2	3	4	1	2	3	4	
b. アレハブ型	1	2	3	4	1	2	3	4	
c. アメリカ型 (2×4)	1	2	3	4	1	2	3	4	
d. ヨーロッパ型	1	2	3	4	1	2	3	4	
e. 改造型	1	2	3	4	1	2	3	4	
f. アパート	1	2	3	4	1	2	3	4	
g. その他(例をあげて下さい)									
	1	2	3	4	1	2	3	4	
	1	2	3	4	1	2	3	4	
	1	2	3	4	1	2	3	4	

(次ぎのページへ)

12. 建築に用いられる外国産品の木製と非木製の外装入口ドアにつき、下にあげる家のスタイルに 対し、どちらをどの程度評価されますか。

木製外装ドア					非木製外装ドア				
スタイル	非常に	やや	それほど	まったく	非常に	やや	それほど	まったく	
a. 伝統的な建築様式	1	2	3	4	1	2	3	4	
b. フレハブ型	1	2	3	4	1	2	3	4	
c. アメリカ型 (2×4)	1	2	3	4	1	2	3	4	
d. ヨーロッパ型	1	2	3	4	1	2	3	4	
e. 改造型	1	2	3	4	1	2	3	4	
f. アパート	1	2	3	4	1	2	3	4	
g. その他(例をあげて下さい)									
	1	2	3	4	1	2	3	4	
	1	2	3	4	1	2	3	4	
	1	2	3	4	1	2	3	4	

13. 建築に用いられる外国産品の木製と非木製の内装ドアにつき、下にあげる家のスタイルに 対し、どちらをどの程度評価されますか。

木製内装ドア					非木製内装ドア				
スタイル	非常に	やや	それほど	まったく	非常に	やや	それほど	まったく	
a. 伝統的な建築様式	1	2	3	4	1	2	3	4	
b. フレハブ型	1	2	3	4	1	2	3	4	
c. アメリカ型 (2×4)	1	2	3	4	1	2	3	4	
d. ヨーロッパ型	1	2	3	4	1	2	3	4	
e. 改造型	1	2	3	4	1	2	3	4	
f. アパート	1	2	3	4	1	2	3	4	
g. その他(例をあげて下さい)									
	1	2	3	4	1	2	3	4	
	1	2	3	4	1	2	3	4	
	1	2	3	4	1	2	3	4	

(次ぎのページへ)

14. 次ぎにあげましたエージェンシーを通して、木製や非木製の窓をどの程度注文されていますか。

		木製窓							非木製窓				
エージェンシー		0	25%	50%	75%	100%			0	25%	50%	75%	100%
a. 外国貿易会社	.....	1	2	3	4	5	.....		1	2	3	4	5
b. 国内貿易会社 (輸入業者)	.....	1	2	3	4	5	.....		1	2	3	4	5
c. 知同屋	.....	1	2	3	4	5	.....		1	2	3	4	5
d. 国内製造業者	.....	1	2	3	4	5	.....		1	2	3	4	5
e. その他(例をあげて下さい)	.....	1	2	3	4	5	.....		1	2	3	4	5
	.....	1	2	3	4	5	.....		1	2	3	4	5
	.....	1	2	3	4	5	.....		1	2	3	4	5
	.....	1	2	3	4	5	.....		1	2	3	4	5

15. 次ぎにあげましたエージェンシーを通して、木製や非木製の外装用ドアをどの程度注文されていますか。

		木製外装ドア							非木製外装ドア				
エージェンシー		0	25%	50%	75%	100%			0	25%	50%	75%	100%
a. 外国貿易会社	.....	1	2	3	4	5	.....		1	2	3	4	5
b. 国内貿易会社 (輸入業者)	.....	1	2	3	4	5	.....		1	2	3	4	5
c. 知同屋	.....	1	2	3	4	5	.....		1	2	3	4	5
d. 国内製造業者		1	2	3	4	5			1	2	3	4	5
e. その他(例をあげて下さい)		1	2	3	4	5			1	2	3	4	5
		1	2	3	4	5			1	2	3	4	5
		1	2	3	4	5			1	2	3	4	5
		1	2	3	4	5			1	2	3	4	5

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16. 次ぎにあげましたエージェンシーを通して、木製や非木製の内装用ドアをどの程度注文されてますか。

エージェンツ	木製内装ドア					非木製内装ドア						
	0	25%	50%	75%	100%	0	25%	50%	75%	100%		
a. 外国貿易会社	-----	1	2	3	4	5	-----	1	2	3	4	5
b. 国内貿易会社 （輸入業者）	-----	1	2	3	4	5	-----	1	2	3	4	5
c. 卸問屋	-----	1	2	3	4	5	-----	1	2	3	4	5
d. 国内製造業者	-----	1	2	3	4	5	-----	1	2	3	4	5
e. その他（例をあげて下さい）												
	-----	1	2	3	4	5	-----	1	2	3	4	5
	-----	1	2	3	4	5	-----	1	2	3	4	5
	-----	1	2	3	4	5	-----	1	2	3	4	5

17. 取引されている窓の供給者の総合的な評価をして下さい。(1は悪い、5は非常に良い)

											木製窓					非木製窓															
											VERY LOW					VERY HIGH					VERY LOW					VERY HIGH					
a. 外国貿易会社											1	2	3	4	5	.....	1	2	3	4	5										
b. 国内貿易会社											1	2	3	4	5	.....	1	2	3	4	5										
c. 卸同屋											1	2	3	4	5	.....	1	2	3	4	5										
d. 国内製造業者											1	2	3	4	5	.....	1	2	3	4	5										
e. その他(例をあげて下さい)																															
_____											1	2	3	4	5	.....	1	2	3	4	5										
_____											1	2	3	4	5	.....	1	2	3	4	5										
_____											1	2	3	4	5	.....	1	2	3	4	5										

(次ぎのページへ)

18. 取引されているドアの供給者の総合的な評価をして下さい。(1は悪い、5は非常に良い)

<u>木製ドア</u>						<u>非木製ドア</u>						
低い						高い	低い				高い	
a. 外国貿易会社		1	2	3	4	5	.....	1	2	3	4	5
b. 国内貿易会社		1	2	3	4	5	.....	1	2	3	4	5
c. 卸売屋		1	2	3	4	5	.....	1	2	3	4	5
d. 国内製造業者		1	2	3	4	5	.....	1	2	3	4	5
e. その他(例をあげて下さい)		1	2	3	4	5	.....	1	2	3	4	5
.....		1	2	3	4	5	.....	1	2	3	4	5
.....		1	2	3	4	5	.....	1	2	3	4	5
.....		1	2	3	4	5	.....	1	2	3	4	5

19. 国産および外国産の窓のスタイルについて、どのタイプの窓を使用されていますか。使用の有無をお答え下さい。

木製						非木製					
国産品						外国製品		国産品		外国製品	
YES						NO		YES		NO	
a. ダブルハング型	.....	1	2	1	2	.....	1	2	1	2	
b. ペイ型	.....	1	2	1	2	.....	1	2	1	2	
c. バウ型	.....	1	2	1	2	.....	1	2	1	2	
d. その他（例をあげて下さい）											
		1	2	1	2	.....	1	2	1	2	
		1	2	1	2	.....	1	2	1	2	
		1	2	1	2	.....	1	2	1	2	

(次ぎのページへ)

20. 国産および外国産の外装用ドアのスタイルについて、どのタイプの窓を使用されますか。使用の有無をお答え下さい。

	木製					非木製			
	国産品		外国製品			国産品		外国製品	
	YES	NO	YES	NO		YES	NO	YES	NO
a. フランス型	1	2	1	2	-----	1	2	1	2
b. フラッシュ型	1	2	1	2	-----	1	2	1	2
c. レイズド・パネル型	1	2	1	2	-----	1	2	1	2
d. その他(例をあげて下さい)									
_____	1	2	1	2	-----	1	2	1	2
_____	1	2	1	2	-----	1	2	1	2
_____	1	2	1	2	-----	1	2	1	2

21. 国産および外国産の内装用ドアのスタイルについて、どのタイプの窓を使用されますか。使用の有無をお答え下さい。

	木製					非木製			
	国産品		外国製品			国産品		外国製品	
	YES	NO	YES	NO		YES	NO	YES	NO
a. フランス型	1	2	1	2	.....	1	2	1	2
b. フラッシュ型	1	2	1	2	.....	1	2	1	2
c. レイズド・パネル型	1	2	1	2	.....	1	2	1	2
d. その他(例をあげて下さい)									
.....	1	2	1	2	.....	1	2	1	2
.....	1	2	1	2	.....	1	2	1	2
.....	1	2	1	2	.....	1	2	1	2

(御協力ありがとうございました)

Appendix E

Questionnaires on Wood Windows and Doors Importers and Builders in South Korea

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나무창과 나무문의 시장성 조사

교 수 Brian J. Greber
실험조교 Jun Yen Lee

이 설문조사서는 여러 나무문과 나무창들에 관한 질문들을 포함하고 있습니다. 여러분의 협조에 대해 대단히 감사드립니다

수입업자들에 대한 조사

1. 당신은 아래와 같은 창틀 또는 문의 몇 퍼센트 정도를 수입하고 있습니까?
퍼센트를 표시하는 숫자 하나에 O표 하여 주십시오.

생 산 품:	외제품 (퍼센트)				
	0	25%	50%	75%	100%
a. 플라스틱 창틀 -----	1	2	3	4	5
b. 플라스틱 출입문 -----	1	2	3	4	5
c. 플라스틱 실내문 -----	1	2	3	4	5
d. 나무 창틀 -----	1	2	3	4	5
e. 나무 출입문 -----	1	2	3	4	5
f. 나무 실내문 -----	1	2	3	4	5
g. 알루미늄 창틀 -----	1	2	3	4	5
h. 알루미늄 출입문 -----	1	2	3	4	5
i. 알루미늄 실내문 -----	1	2	3	4	5
j. 쇠 창틀 -----	1	2	3	4	5
k. 쇠 출입문 -----	1	2	3	4	5
l. 쇠 실내문 -----	1	2	3	4	5
m. 기타(자세히 기술하여 주십시오)					
-----	1	2	3	4	5
-----	1	2	3	4	5
-----	1	2	3	4	5

2. 목재 또는 비목재 창틀의 수입가능성을 고려하여 볼 때, 다음과 같은 요소들은 얼마나 중요합니까?

요 소:	목재 창틀 (중요한 정도)				비목재 창틀 (중요한 정도)			
	매우	약간	별로	문제안됨	매우	약간	별로	문제안됨
a. 가격 -----	1	2	3	4	----- 1	2	3	4
b. 질 -----	1	2	3	4	----- 1	2	3	4
c. 에프터 서비스 -----	1	2	3	4	----- 1	2	3	4
d. 형태 -----	1	2	3	4	----- 1	2	3	4
e. 기술적인 도움 -----	1	2	3	4	----- 1	2	3	4
f. 공급의 지속성 -----	1	2	3	4	----- 1	2	3	4
g. 친숙성 / 전통 -----	1	2	3	4	----- 1	2	3	4
h. 기타(자세히 기술)								
-----	1	2	3	4	----- 1	2	3	4
-----	1	2	3	4	----- 1	2	3	4
-----	1	2	3	4	----- 1	2	3	4

(다음 페이지로)

3. 목재 또는 비목재 출입문의 수입가능성을 고려하여 볼 때, 다음과 같은 요소들은 얼마나 중요합니까 ?

요 소:	목재 출입문 (중요한 정도)				비목재 출입문 (중요한 정도)			
	매우	약간	별로	문제안됨	매우	약간	별로	문제안됨
a. 가격 -----	1	2	3	4	----- 1	2	3	4
b. 질 -----	1	2	3	4	----- 1	2	3	4
c. 에프터 서비스 -----	1	2	3	4	----- 1	2	3	4
d. 형태 -----	1	2	3	4	----- 1	2	3	4
e. 기술적인 도움 -----	1	2	3	4	----- 1	2	3	4
f. 공급의 지속성 -----	1	2	3	4	----- 1	2	3	4
g. 친숙성 / 전통 -----	1	2	3	4	----- 1	2	3	4
h. 기타(자세히 기술)								
_____	1	2	3	4	----- 1	2	3	4
_____	1	2	3	4	----- 1	2	3	4
_____	1	2	3	4	----- 1	2	3	4

4. 목재 또는 비목재 실내문의 수입가능성을 고려하여 볼 때, 다음과 같은 요소들은 얼마나 중요합니까 ?

요 소:	목재 실내문 (중요한 정도)				비목재 실내문 (중요한 정도)			
	매우	약간	별로	문제안됨	매우	약간	별로	문제안됨
a. 가격 -----	1	2	3	4	----- 1	2	3	4
b. 질 -----	1	2	3	4	----- 1	2	3	4
c. 에프터 서비스 -----	1	2	3	4	----- 1	2	3	4
d. 형태 -----	1	2	3	4	----- 1	2	3	4
e. 기술적인 도움 -----	1	2	3	4	----- 1	2	3	4
f. 공급의 지속성 -----	1	2	3	4	----- 1	2	3	4
g. 친숙성 / 전통 -----	1	2	3	4	----- 1	2	3	4
h. 기타(자세히 기술)								
_____	1	2	3	4	----- 1	2	3	4
_____	1	2	3	4	----- 1	2	3	4
_____	1	2	3	4	----- 1	2	3	4

(다음 페이지로)

5. 당신은 여러 나라들로 부터 수입된 목재와 비목재 창틀의 유용성(모양, 수명 등등)에 대해 어떻게 생각하십니까 ?

창틀 수입국:	목재 창틀					비목재 창틀				
	매우좋다	좋다	보통	나쁘다	모르겠다	매우좋다	좋다	보통	나쁘다	모르겠다
a. 미국 -----	1	2	3	4	5 ----	1	2	3	4	5
b. 캐나다-----	1	2	3	4	5 ----	1	2	3	4	5
c. 북유럽 국가들 -----	1	2	3	4	5 ----	1	2	3	4	5
d. 국내 -----	1	2	3	4	5 ----	1	2	3	4	5
e. 기타(자세히 기술)										
_____	1	2	3	4	5 ----	1	2	3	4	5
_____	1	2	3	4	5 ----	1	2	3	4	5
_____	1	2	3	4	5 ----	1	2	3	4	5

6. 당신은 여러 나라들로 부터 수입된 목재와 비목재 출입문의 유용성(모양, 수명 등등)에 대해 어떻게 생각하십니까 ?

출입문 수입국:	목재 출입문					비목재 출입문				
	매우좋다	좋다	보통	나쁘다	모르겠다	매우좋다	좋다	보통	나쁘다	모르겠다
a. 미국 -----	1	2	3	4	5 ----	1	2	3	4	5
b. 캐나다-----	1	2	3	4	5 ----	1	2	3	4	5
c. 북유럽 국가들 -----	1	2	3	4	5 ----	1	2	3	4	5
d. 국내 -----	1	2	3	4	5 ----	1	2	3	4	5
e. 기타(자세히 기술)										
_____	1	2	3	4	5 ----	1	2	3	4	5
_____	1	2	3	4	5 ----	1	2	3	4	5
_____	1	2	3	4	5 ----	1	2	3	4	5

7. 당신은 여러 나라들로 부터 수입된 목재와 비목재 실내문의 유용성(모양, 수명 등등)에 대해 어떻게 생각하십니까 ?

실내문 수입국:	목재 실내문					비목재 실내문				
	매우좋다	좋다	보통	나쁘다	모르겠다	매우좋다	좋다	보통	나쁘다	모르겠다
a. 미국 -----	1	2	3	4	5 ----	1	2	3	4	5
b. 캐나다-----	1	2	3	4	5 ----	1	2	3	4	5
c. 북유럽 국가들 -----	1	2	3	4	5 ----	1	2	3	4	5
d. 국내 -----	1	2	3	4	5 ----	1	2	3	4	5
e. 기타(자세히 기술)										
_____	1	2	3	4	5 ----	1	2	3	4	5
_____	1	2	3	4	5 ----	1	2	3	4	5
_____	1	2	3	4	5 ----	1	2	3	4	5

(다음 페이지로)

8. 건물에 이용되는 국내제작 목재와 비목재 창틀중, 다음과 같은 집형태에는 어떤 재료를 추천하겠습니까 ?

형 태:	목재 창틀 (적합한 정도)					비목재 창틀 (적합한 정도)				
	매우	약간	별로	적합치	않음	매우	약간	별로	적합치	않음
a. 전통적인 기둥과 보 스타일 -----	1	2	3	4	-----	1	2	3	4	-----
b. 아파트 -----	1	2	3	4	-----	1	2	3	4	-----
c. 조립식 가옥 -----	1	2	3	4	-----	1	2	3	4	-----
d. 미국의 가옥형태 ----- (2 by 4 system)	1	2	3	4	-----	1	2	3	4	-----
e. 유럽의 가옥형태 -----	1	2	3	4	-----	1	2	3	4	-----
f. 수리한 집 -----	1	2	3	4	-----	1	2	3	4	-----
g. 기타(자세히 기술)										
_____	1	2	3	4	-----	1	2	3	4	-----
_____	1	2	3	4	-----	1	2	3	4	-----
_____	1	2	3	4	-----	1	2	3	4	-----

9. 건물에 이용되는 국내제작 목재와 비목재 출입문중, 다음과 같은 집형태에는 어떤 재료를 추천하겠습니까 ?

형 태:	목재 출입문 (적합한 정도)					비목재 출입문 (적합한 정도)				
	매우	약간	별로	적합치	않음	매우	약간	별로	적합치	않음
a. 전통적인 기둥과 보 스타일 -----	1	2	3	4	-----	1	2	3	4	-----
b. 아파트 -----	1	2	3	4	-----	1	2	3	4	-----
c. 조립식 가옥 -----	1	2	3	4	-----	1	2	3	4	-----
d. 미국의 가옥형태 ----- (2 by 4 system)	1	2	3	4	-----	1	2	3	4	-----
e. 유럽의 가옥형태 -----	1	2	3	4	-----	1	2	3	4	-----
f. 수리한 집 -----	1	2	3	4	-----	1	2	3	4	-----
g. 기타(자세히 기술)										
_____	1	2	3	4	-----	1	2	3	4	-----
_____	1	2	3	4	-----	1	2	3	4	-----
_____	1	2	3	4	-----	1	2	3	4	-----

(다음 페이지로)

10. 건물에 이용되는 국내제작 목재와 비목재 실내문중, 다음과 같은 집형태에는 어떤 재료를 추천하겠습니까 ?

형 태:	목재 실내문 (적합한 정도)					비목재 실내문 (적합한 정도)				
	매우	약간	별로	적합치	않음	매우	약간	별로	적합치	않음
a. 전통적인 기둥과 보 스타일	1	2	3	4	-----	1	2	3	4	-----
b. 아파트	1	2	3	4	-----	1	2	3	4	-----
c. 조립식 가옥	1	2	3	4	-----	1	2	3	4	-----
d. 미국의 가옥형태 (2 by 4 system)	1	2	3	4	-----	1	2	3	4	-----
e. 유럽의 가옥형태	1	2	3	4	-----	1	2	3	4	-----
f. 수리한 집	1	2	3	4	-----	1	2	3	4	-----
g. 기타(자세히 기술)	1	2	3	4	-----	1	2	3	4	-----
	1	2	3	4	-----	1	2	3	4	-----
	1	2	3	4	-----	1	2	3	4	-----

11. 건물에 이용되는 수입된 목재와 비목재 창틀중, 다음과 같은 집형태에는 어떤 재료를 추천하겠습니까 ?

형 태:	목재 창틀 (적합한 정도)					비목재 창틀 (적합한 정도)				
	매우	약간	별로	적합치	않음	매우	약간	별로	적합치	않음
a. 전통적인 기둥과 보 스타일	1	2	3	4	-----	1	2	3	4	-----
b. 아파트	1	2	3	4	-----	1	2	3	4	-----
c. 조립식 가옥	1	2	3	4	-----	1	2	3	4	-----
d. 미국의 가옥형태 (2 by 4 system)	1	2	3	4	-----	1	2	3	4	-----
e. 유럽의 가옥형태	1	2	3	4	-----	1	2	3	4	-----
f. 수리한 집	1	2	3	4	-----	1	2	3	4	-----
g. 기타(자세히 기술)	1	2	3	4	-----	1	2	3	4	-----
	1	2	3	4	-----	1	2	3	4	-----
	1	2	3	4	-----	1	2	3	4	-----

(다음 페이지로)

12. 건물에 이용되는 수입된 목재와 비목재 출입문중, 다음과 같은 집형태에는 어떤 재료를 추천하겠습니까 ?

형 태:	목재 출입문 (적합한 정도)					비목재 출입문 (적합한 정도)				
	매우	약간	별로	적합치	않음	매우	약간	별로	적합치	않음
a. 전통적인 기둥과 보 스타일	1	2	3	4	-----	1	2	3	4	
b. 아파트	1	2	3	4	-----	1	2	3	4	
c. 조립식 가옥	1	2	3	4	-----	1	2	3	4	
d. 미국의 가옥형태 (2 by 4 system)	1	2	3	4	-----	1	2	3	4	
e. 유럽의 가옥형태	1	2	3	4	-----	1	2	3	4	
f. 수리한 집	1	2	3	4	-----	1	2	3	4	
g. 기타(자세히 기술)	1	2	3	4	-----	1	2	3	4	
	1	2	3	4	-----	1	2	3	4	
	1	2	3	4	-----	1	2	3	4	

13. 건물에 이용되는 수입된 목재와 비목재 실내문중, 다음과 같은 집형태에는 어떤 재료를 추천하겠습니까 ?

형 태:	목재 실내문 (적합한 정도)					비목재 실내문 (적합한 정도)				
	매우	약간	별로	적합치	않음	매우	약간	별로	적합치	않음
a. 전통적인 기둥과 보 스타일	1	2	3	4	-----	1	2	3	4	
b. 아파트	1	2	3	4	-----	1	2	3	4	
c. 조립식 가옥	1	2	3	4	-----	1	2	3	4	
d. 미국의 가옥형태 (2 by 4 system)	1	2	3	4	-----	1	2	3	4	
e. 유럽의 가옥형태	1	2	3	4	-----	1	2	3	4	
f. 수리한 집	1	2	3	4	-----	1	2	3	4	
g. 기타(자세히 기술)	1	2	3	4	-----	1	2	3	4	
	1	2	3	4	-----	1	2	3	4	
	1	2	3	4	-----	1	2	3	4	

(다음 페이지로)

14. 당신은 창틀과 문들을 사용자들에게 어떻게 공급하십니까 ?

(예> 수입자 --> 도매상 --> 건축자 등등)

a. 창틀 :

b. 문 :

15. 당신은 한국에서의 창틀과 문의 시장성에 대해 어떻게 생각하십니까 ?

요 소:	창틀					출입문					실내문				
	매우나쁘다				매우좋다	매우나쁘다				매우좋다	매우나쁘다				매우좋다
a. 경쟁성 -----	1	2	3	4	5 -----	1	2	3	4	5 -----	1	2	3	4	5
b. 시장의 변화속도 ----	1	2	3	4	5 -----	1	2	3	4	5 -----	1	2	3	4	5
c. 가격의 탄력성 -----	1	2	3	4	5 -----	1	2	3	4	5 -----	1	2	3	4	5
d. 새로운 생산품에 대한 위험도	1	2	3	4	5 -----	1	2	3	4	5 -----	1	2	3	4	5
e. 소비자의 만족도 ----	1	2	3	4	5 -----	1	2	3	4	5 -----	1	2	3	4	5
f. 친숙성 / 전통 -----	1	2	3	4	5 -----	1	2	3	4	5 -----	1	2	3	4	5
g. 정부의 정책에 의한 영향	1	2	3	4	5 -----	1	2	3	4	5 -----	1	2	3	4	5
h. 미래의 수용증가 가능성	1	2	3	4	5 -----	1	2	3	4	5 -----	1	2	3	4	5
i. 질감 -----	1	2	3	4	5 -----	1	2	3	4	5 -----	1	2	3	4	5
j. 기타(자세히 기술)															
	1	2	3	4	5 -----	1	2	3	4	5 -----	1	2	3	4	5
	1	2	3	4	5 -----	1	2	3	4	5 -----	1	2	3	4	5
	1	2	3	4	5 -----	1	2	3	4	5 -----	1	2	3	4	5

(다음 페이지로)

16. 외국의 창틀과 문 제조업자들이 한국의 창틀과 문 시장에 들어가려 할 때, 다음의 문제들은 얼마나 중요합니까 ?

요 소:	중요한 정도			
	매우	약간	별로	전혀 중요치 않다.
a. 비과세 장벽 ----- (예> 건축물 기준법, 규제조항 등등)	1	2	3	4
b. 과세, 수입량 등등 -----	1	2	3	4
c. 수입업자의 태도 -----	1	2	3	4
d. 사용자들의 태도 -----	1	2	3	4
e. 공급노선의 복잡성 -----	1	2	3	4
f. 언어장벽 -----	1	2	3	4
g. 판매사원의 모집 -----	1	2	3	4
h. 기타(자세히 기술하여 주십시오)				
_____	1	2	3	4
_____	1	2	3	4
_____	1	2	3	4

17. 당신은 다음과 같은, 외국에서 만들어진 창틀을 수입한 적이 있습니까 ?

	목재 창틀			비목재 창틀	
	있다	없다		있다	없다
a. 내리닫이 창 ----- (Double-hung)	1	2	-----	1	2
b. 반원형 창틀 ----- (Bay)	1	2	-----	1	2
c. Bow -----	1	2	-----	1	2
d. 기타(자세히 기술)					
_____	1	2	-----	1	2
_____	1	2	-----	1	2
_____	1	2	-----	1	2

18. 당신은 다음과 같은, 외국에서 만들어진 출입문과 실내문을 수입한 적이 있습니까 ?

	목 재					비 목 재			
	출입문		실내문			출입문		실내문	
	있다	없다	있다	없다		있다	없다	있다	없다
a. 프랑스 스타일 -----	1	2	1	2	-----	1	2	1	2
b. 장식없는 문 ----- (Flush)	1	2	1	2	-----	1	2	1	2
c. 장식된 문 ----- (Raised panel)	1	2	1	2	-----	1	2	1	2
d. 기타(자세히 기술)									
_____	1	2	1	2	-----	1	2	1	2
_____	1	2	1	2	-----	1	2	1	2
_____	1	2	1	2	-----	1	2	1	2

(수고하셨습니다)

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나무창과 나무문의 시장성 조사

교 수 Brian J. Greber
실험조교 Jun Yen Lee

이 설문조사서는 여러 나무문과 나무창들에 관한 질문들을 포함하고 있습니다. 여러분의 협조에 대해 대단히 감사드립니다

건설회사에 대한 조사

1. 다음의 창틀과 문들중 몇 퍼센트 정도를 건물건축에 사용하고 있습니까?
퍼센트를 표시하는 숫자 하나에 O표 하여 주십시오.

생 산 품:	외제품 (퍼센트)					국산품 (퍼센트)				
	0	25%	50%	75%	100%	0	25%	50%	75%	100%
a. 플라스틱 창틀 -----	1	2	3	4	5	1	2	3	4	5
b. 플라스틱 출입문 -----	1	2	3	4	5	1	2	3	4	5
c. 플라스틱 실내문 -----	1	2	3	4	5	1	2	3	4	5
d. 나무 창틀 -----	1	2	3	4	5	1	2	3	4	5
e. 나무 출입문 -----	1	2	3	4	5	1	2	3	4	5
f. 나무 실내문 -----	1	2	3	4	5	1	2	3	4	5
g. 알루미늄 창틀 -----	1	2	3	4	5	1	2	3	4	5
h. 알루미늄 출입문 -----	1	2	3	4	5	1	2	3	4	5
i. 알루미늄 실내문 -----	1	2	3	4	5	1	2	3	4	5
j. 쇠 창틀 -----	1	2	3	4	5	1	2	3	4	5
k. 쇠 출입문 -----	1	2	3	4	5	1	2	3	4	5
l. 쇠 실내문 -----	1	2	3	4	5	1	2	3	4	5
m. 기타(자세히 기술)										
_____	1	2	3	4	5	1	2	3	4	5
_____	1	2	3	4	5	1	2	3	4	5
_____	1	2	3	4	5	1	2	3	4	5

2. 당신이 건물을 지을 때 목재와 비목재 창틀의 이용가능성을 고려한다면, 다음 요소들은 얼마나 중요합니까?

요 소:	목재 창틀 (중요한 정도)					비목재 창틀 (중요한 정도)				
	매우	약간	별로	문제안됨		매우	약간	별로	문제안됨	
a. 가격 -----	1	2	3	4	-----	1	2	3	4	
b. 질 -----	1	2	3	4	-----	1	2	3	4	
c. 에프터 서비스 -----	1	2	3	4	-----	1	2	3	4	
d. 형태 -----	1	2	3	4	-----	1	2	3	4	
e. 기술적인 도움 -----	1	2	3	4	-----	1	2	3	4	
f. 공급의 지속성 -----	1	2	3	4	-----	1	2	3	4	
g. 친숙성 / 전통 -----	1	2	3	4	-----	1	2	3	4	
h. 기타(자세히 기술)										
_____	1	2	3	4	-----	1	2	3	4	
_____	1	2	3	4	-----	1	2	3	4	
_____	1	2	3	4	-----	1	2	3	4	

(다음 페이지로)

3. 당신이 건물을 지을 때 목재와 비목재 출입문의 가능성을 고려한다면, 다음 요소들은 얼마나 중요합니까 ?

요 소:	목재 출입문 (중요한 정도)				비목재 출입문 (중요한 정도)			
	매우	약간	별로	문제안됨	매우	약간	별로	문제안됨
a. 가격 -----	1	2	3	4	----- 1	2	3	4
b. 질 -----	1	2	3	4	----- 1	2	3	4
c. 에프터 서비스 -----	1	2	3	4	----- 1	2	3	4
d. 형태 -----	1	2	3	4	----- 1	2	3	4
e. 기술적인 도움 -----	1	2	3	4	----- 1	2	3	4
f. 공급의 지속성 -----	1	2	3	4	----- 1	2	3	4
g. 친숙성 / 전통 -----	1	2	3	4	----- 1	2	3	4
h. 기타(자세히 기술)								
_____	1	2	3	4	----- 1	2	3	4
_____	1	2	3	4	----- 1	2	3	4
_____	1	2	3	4	----- 1	2	3	4

4. 당신이 건물을 지을 때 목재와 비목재 실내문의 이용가능성을 고려한다면, 다음 요소들은 얼마나 중요합니까 ?

요 소:	목재 실내문 (중요한 정도)				비목재 실내문 (중요한 정도)			
	매우	약간	별로	문제안됨	매우	약간	별로	문제안됨
a. 가격 -----	1	2	3	4	----- 1	2	3	4
b. 질 -----	1	2	3	4	----- 1	2	3	4
c. 에프터 서비스 -----	1	2	3	4	----- 1	2	3	4
d. 형태 -----	1	2	3	4	----- 1	2	3	4
e. 기술적인 도움 -----	1	2	3	4	----- 1	2	3	4
f. 공급의 지속성 -----	1	2	3	4	----- 1	2	3	4
g. 친숙성 / 전통 -----	1	2	3	4	----- 1	2	3	4
h. 기타(자세히 기술)								
_____	1	2	3	4	----- 1	2	3	4
_____	1	2	3	4	----- 1	2	3	4
_____	1	2	3	4	----- 1	2	3	4

(다음 페이지로)

5. 당신은 여러 나라들로 부터 수입된 목재와 비목재 창틀의 유용성(모양, 수명 등등)에 대해 어떻게 생각하십니까 ?

목재 창틀						비목재 창틀				
매우좋다						매우좋다				
좋다						좋다				
보통						보통				
나쁘다						나쁘다				
모르겠다						모르겠다				
창틀 수입국:										
a. 미국 -----	1	2	3	4	5 ----	1	2	3	4	5
b. 캐나다 -----	1	2	3	4	5 ----	1	2	3	4	5
c. 북유럽 국가들 -----	1	2	3	4	5 ----	1	2	3	4	5
d. 국내 -----	1	2	3	4	5 ----	1	2	3	4	5
e. 기타(자세히 기술)										
_____	1	2	3	4	5 ----	1	2	3	4	5
_____	1	2	3	4	5 ----	1	2	3	4	5
_____	1	2	3	4	5 ----	1	2	3	4	5

6. 당신은 여러 나라들로 부터 수입된 목재와 비목재 출입문의 유용성(모양, 수명 등등)에 대해 어떻게 생각하십니까 ?

목재 출입문						비목재 출입문				
매우좋다						매우좋다				
좋다						좋다				
보통						보통				
나쁘다						나쁘다				
모르겠다						모르겠다				
문 수입국:										
a. 미국 -----	1	2	3	4	5 ----	1	2	3	4	5
b. 캐나다 -----	1	2	3	4	5 ----	1	2	3	4	5
c. 북유럽 국가들 -----	1	2	3	4	5 ----	1	2	3	4	5
d. 국내 -----	1	2	3	4	5 ----	1	2	3	4	5
e. 기타(자세히 기술)										
_____	1	2	3	4	5 ----	1	2	3	4	5
_____	1	2	3	4	5 ----	1	2	3	4	5
_____	1	2	3	4	5 ----	1	2	3	4	5

7. 당신은 여러 나라들로 부터 수입된 목재와 비목재 실내문의 유용성(모양, 수명 등등)에 대해 어떻게 생각하십니까 ?

목재 실내문						비목재 실내문				
매우좋다						매우좋다				
좋다						좋다				
보통						보통				
나쁘다						나쁘다				
모르겠다						모르겠다				
문 수입국:										
a. 미국 -----	1	2	3	4	5 ----	1	2	3	4	5
b. 캐나다 -----	1	2	3	4	5 ----	1	2	3	4	5
c. 북유럽 국가들 -----	1	2	3	4	5 ----	1	2	3	4	5
d. 국내 -----	1	2	3	4	5 ----	1	2	3	4	5
e. 기타(자세히 기술)										
_____	1	2	3	4	5 ----	1	2	3	4	5
_____	1	2	3	4	5 ----	1	2	3	4	5
_____	1	2	3	4	5 ----	1	2	3	4	5

(다음 페이지로)

8. 건물에 이용되는 국내제작 목재와 비목재 창틀중, 다음과 같은 집형태에는 어떤 재료를 추천하겠습니까 ?

형 태:	목재 창틀 (적합한 정도)				비목재 창틀 (적합한 정도)			
	매우	약간	별로	적합치 않음	매우	약간	별로	적합치 않음
a. 전통적인 기둥과 보 스타일	1	2	3	4	1	2	3	4
b. 아파트	1	2	3	4	1	2	3	4
c. 조립식 가옥	1	2	3	4	1	2	3	4
d. 미국의 가옥형태 (2 by 4 system)	1	2	3	4	1	2	3	4
e. 유럽의 가옥형태	1	2	3	4	1	2	3	4
f. 수리한 집	1	2	3	4	1	2	3	4
g. 기타(자세히 기술)								
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4

9. 건물에 이용되는 국내제작 목재와 비목재 출입문중, 다음과 같은 집형태에는 어떤 재료를 추천하겠습니까 ?

형 태:	목재 출입문 (적합한 정도)				비목재 출입문 (적합한 정도)			
	매우	약간	별로	적합치 않음	매우	약간	별로	적합치 않음
a. 전통적인 기둥과 보 스타일	1	2	3	4	1	2	3	4
b. 아파트	1	2	3	4	1	2	3	4
c. 조립식 가옥	1	2	3	4	1	2	3	4
d. 미국의 가옥형태 (2 by 4 system)	1	2	3	4	1	2	3	4
e. 유럽의 가옥형태	1	2	3	4	1	2	3	4
f. 수리한 집	1	2	3	4	1	2	3	4
g. 기타(자세히 기술)								
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4

(다음 페이지로)

10. 건물에 이용되는 국내제작 목재와 비목재 실내문중, 다음과 같은 집형태에는 어떤 재료를 추천하겠습니까 ?

형 태:	목재 실내문 (적합한 정도)					비목재 실내문 (적합한 정도)				
	매우	약간	별로	적합치	않음	매우	약간	별로	적합치	않음
a. 전통적인 기둥과 보 스타일	1	2	3	4	-----	1	2	3	4	
b. 아파트	1	2	3	4	-----	1	2	3	4	
c. 조립식 가옥	1	2	3	4	-----	1	2	3	4	
d. 미국의 가옥형태 (2 by 4 system)	1	2	3	4	-----	1	2	3	4	
e. 유럽의 가옥형태	1	2	3	4	-----	1	2	3	4	
f. 수리한 집	1	2	3	4	-----	1	2	3	4	
g. 기타(자세히 기술)										
	1	2	3	4	-----	1	2	3	4	
	1	2	3	4	-----	1	2	3	4	
	1	2	3	4	-----	1	2	3	4	

11. 건물에 이용되는 수입된 목재와 비목재 창틀중, 다음과 같은 집형태에는 어떤 재료를 추천하겠습니까 ?

형 태:	목재 창틀 (적합한 정도)					비목재 창틀 (적합한 정도)				
	매우	약간	별로	적합치	않음	매우	약간	별로	적합치	않음
a. 전통적인 기둥과 보 스타일	1	2	3	4	-----	1	2	3	4	
b. 아파트	1	2	3	4	-----	1	2	3	4	
c. 조립식 가옥	1	2	3	4	-----	1	2	3	4	
d. 미국의 가옥형태 (2 by 4 system)	1	2	3	4	-----	1	2	3	4	
e. 유럽의 가옥형태	1	2	3	4	-----	1	2	3	4	
f. 수리한 집	1	2	3	4	-----	1	2	3	4	
g. 기타(자세히 기술)										
	1	2	3	4	-----	1	2	3	4	
	1	2	3	4	-----	1	2	3	4	
	1	2	3	4	-----	1	2	3	4	

(다음 페이지로)

12. 건물에 이용되는 수입된 목재와 비목재 출입문중, 다음과 같은 집형태에는 어떤 재료를 추천하겠습니까 ?

형 태:	목재 출입문 (적합한 정도)					비목재 출입문 (적합한 정도)				
	매우	약간	별로	적합치	않음	매우	약간	별로	적합치	않음
a. 전통적인 기둥과 보 스타일	1	2	3	4	-----	1	2	3	4	-----
b. 아파트	1	2	3	4	-----	1	2	3	4	-----
c. 조립식 가옥	1	2	3	4	-----	1	2	3	4	-----
d. 미국의 가옥형태 (2 by 4 system)	1	2	3	4	-----	1	2	3	4	-----
e. 유럽의 가옥형태	1	2	3	4	-----	1	2	3	4	-----
f. 수리한 집	1	2	3	4	-----	1	2	3	4	-----
g. 기타(자세히 기술)	1	2	3	4	-----	1	2	3	4	-----
_____	1	2	3	4	-----	1	2	3	4	-----
_____	1	2	3	4	-----	1	2	3	4	-----
_____	1	2	3	4	-----	1	2	3	4	-----

13. 건물에 이용되는 수입된 목재와 비목재 실내문중, 다음과 같은 집형태에는 어떤 재료를 추천하겠습니까 ?

형 태:	목재 실내문 (적합한 정도)					비목재 실내문 (적합한 정도)				
	매우	약간	별로	적합치	않음	매우	약간	별로	적합치	않음
a. 전통적인 기둥과 보 스타일	1	2	3	4	-----	1	2	3	4	-----
b. 아파트	1	2	3	4	-----	1	2	3	4	-----
c. 조립식 가옥	1	2	3	4	-----	1	2	3	4	-----
d. 미국의 가옥형태 (2 by 4 system)	1	2	3	4	-----	1	2	3	4	-----
e. 유럽의 가옥형태	1	2	3	4	-----	1	2	3	4	-----
f. 수리한 집	1	2	3	4	-----	1	2	3	4	-----
g. 기타(자세히 기술)	1	2	3	4	-----	1	2	3	4	-----
_____	1	2	3	4	-----	1	2	3	4	-----
_____	1	2	3	4	-----	1	2	3	4	-----
_____	1	2	3	4	-----	1	2	3	4	-----

(다음 페이지로)

14. 당신은 얼마나 자주 다음의 중계업자를 통하여 목재와 비목재 창고를 주문하십니까 ?

중계업자:	목재 창고 (전체주문의 퍼센트)					비목재 창고 (전체주문의 퍼센트)				
	0	25%	50%	75%	100%	0	25%	50%	75%	100%
a. 외국무역회사 -----	1	2	3	4	5	1	2	3	4	5
b. 국내무역회사 ----- (수입업자)	1	2	3	4	5	1	2	3	4	5
c. 특별한 공급업자 ---	1	2	3	4	5	1	2	3	4	5
d. 국내제조업자 -----	1	2	3	4	5	1	2	3	4	5
e. 기타(자세히 기술)										
_____	1	2	3	4	5	1	2	3	4	5
_____	1	2	3	4	5	1	2	3	4	5
_____	1	2	3	4	5	1	2	3	4	5

15. 당신은 얼마나 자주 다음의 중계업자를 통하여 목재와 비목재 출입문을 주문하십니까 ?

중계업자:	목재 출입문 (전체주문의 퍼센트)					비목재 출입문 (전체주문의 퍼센트)				
	0	25%	50%	75%	100%	0	25%	50%	75%	100%
a. 외국무역회사 -----	1	2	3	4	5	1	2	3	4	5
b. 국내무역회사 ----- (수입업자)	1	2	3	4	5	1	2	3	4	5
c. 특별한 공급업자 ---	1	2	3	4	5	1	2	3	4	5
d. 국내제조업자 -----	1	2	3	4	5	1	2	3	4	5
e. 기타(자세히 기술)										
_____	1	2	3	4	5	1	2	3	4	5
_____	1	2	3	4	5	1	2	3	4	5
_____	1	2	3	4	5	1	2	3	4	5

(다음 페이지로)

16. 당신은 얼마나 자주 다음의 중계업자를 통해 목재와 비목재 실내문을 주문하십니까 ?

중계업자:	목재 실내문 (전체주문의 퍼센트)					비목재 실내문 (전체주문의 퍼센트)				
	0	25%	50%	75%	100%	0	25%	50%	75%	100%
a. 외국무역회사 -----	1	2	3	4	5	1	2	3	4	5
b. 국내무역회사 ----- (수입업자)	1	2	3	4	5	1	2	3	4	5
c. 특별한 공급업자 ---	1	2	3	4	5	1	2	3	4	5
d. 국내제조업자 -----	1	2	3	4	5	1	2	3	4	5
e. 기타(자세히 기술)										
_____	1	2	3	4	5	1	2	3	4	5
_____	1	2	3	4	5	1	2	3	4	5
_____	1	2	3	4	5	1	2	3	4	5

17. 참틀 공급자들의 전체적인 태도를 어떻게 평가하십니까 ?

	목재 참틀					비목재 참틀				
	매우나쁘다				매우좋다	매우나쁘다				매우좋다
a. 외국무역회사 -----	1	2	3	4	5	1	2	3	4	5
b. 국내무역회사 ----- (수입업자)	1	2	3	4	5	1	2	3	4	5
c. 특별한 공급업자 ---	1	2	3	4	5	1	2	3	4	5
d. 국내제조업자 -----	1	2	3	4	5	1	2	3	4	5
e. 기타(자세히 기술)										
_____	1	2	3	4	5	1	2	3	4	5
_____	1	2	3	4	5	1	2	3	4	5
_____	1	2	3	4	5	1	2	3	4	5

(다음 페이지로)

18. 문 공급자들의 전체적인 태도를 어떻게 평가하십니까 ?

	목재 문					비목재 문				
	매우나쁘다				매우좋다	매우나쁘다				매우좋다
a. 외국무역회사 -----	1	2	3	4	5	1	2	3	4	5
b. 국내무역회사 -----	1	2	3	4	5	1	2	3	4	5
(수입업자)										
c. 특별한 공급업자 ---	1	2	3	4	5	1	2	3	4	5
d. 국내제조업자 -----	1	2	3	4	5	1	2	3	4	5
e. 기타(자세히 기술)										
_____	1	2	3	4	5	1	2	3	4	5
_____	1	2	3	4	5	1	2	3	4	5
_____	1	2	3	4	5	1	2	3	4	5

19. 당신은 다음과 같은 국내에서 만들어지거나 수입된 창틀을 사용한 적이 있습니까 ?

	목재				비목재			
	국내제조품		외제품		국내제조품		외제품	
	있다	없다	있다	없다	있다	없다	있다	없다
a. 내리닫이 창 -----	1	2	1	2	1	2	1	2
(Double hung)								
b. 반원형 창틀 -----	1	2	1	2	1	2	1	2
(Bay)								
c. Bow -----	1	2	1	2	1	2	1	2
d. 기타(자세히 기술)								
_____	1	2	1	2	1	2	1	2
_____	1	2	1	2	1	2	1	2
_____	1	2	1	2	1	2	1	2

(다음 페이지로)

20. 당신은 다음과 같은 국내에서 만들어지거나 수입된 출입문을 사용한 적이 있습니까 ?

	목 재				비 목 재			
	국내제작품		외제품		국내제작품		외제품	
	있다	없다	있다	없다	있다	없다	있다	없다
a. 프랑스 스타일 -----	1	2	1	2	----- 1	2	1	2
b. 장식없는 문----- (Flush)	1	2	1	2	----- 1	2	1	2
c. 장식된 문 ----- (Raised panel)	1	2	1	2	----- 1	2	1	2
d. 기타(자세히 기술)								
_____	1	2	1	2	----- 1	2	1	2
_____	1	2	1	2	----- 1	2	1	2
_____	1	2	1	2	----- 1	2	1	2

21. 당신은 다음과 같은 국내에서 만들어지거나 수입된 실내문을 사용한 적이 있습니까 ?

	목 재				비 목 재			
	국내제작품		외제품		국내제작품		외제품	
	있다	없다	있다	없다	있다	없다	있다	없다
a. 프랑스 스타일 -----	1	2	1	2	----- 1	2	1	2
b. 장식없는 문----- (Flush)	1	2	1	2	----- 1	2	1	2
c. 장식된 문 ----- (Raised panel)	1	2	1	2	----- 1	2	1	2
d. 기타(자세히 기술)								
_____	1	2	1	2	----- 1	2	1	2
_____	1	2	1	2	----- 1	2	1	2
_____	1	2	1	2	----- 1	2	1	2

(수고하셨습니다)

Appendix F

Questionnaires on Wood Windows and Doors Importers and Builders in Taiwan

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門窗的行銷調查

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教授

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研究助理

本研究包括不同門窗產品的行銷調查，謝謝您的參與及寶貴意見

1. 下列各項門與窗產品佔您進口門窗多少百分比？
(請圈選數字以示進口百分比)

產品	外國製 (百分比)				
	0	25%	50%	75%	100%
a. 塑膠製窗.....	1	2	3	4	5
b. 塑膠製入口大門.....	1	2	3	4	5
c. 塑膠製室內門.....	1	2	3	4	5
d. 木製窗.....	1	2	3	4	5
e. 木製入口大門.....	1	2	3	4	5
f. 木製室內門.....	1	2	3	4	5
g. 鋁製窗.....	1	2	3	4	5
h. 鋁製入口大門.....	1	2	3	4	5
i. 鋁製室內門.....	1	2	3	4	5
j. 鐵製窗.....	1	2	3	4	5
k. 鐵製入口大門.....	1	2	3	4	5
l. 鐵製室內門.....	1	2	3	4	5
m. 其他(請說明)					
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5

2. 當考慮引進外國製窗戶時,下列因素的重要性為何?

因素	木窗 (重要性)				非木窗 (重要性)			
	非常	有點	不太	不	非常	有點	不太	不
a. 價格.....	1	2	3	4	1	2	3	4
b. 品質.....	1	2	3	4	1	2	3	4
c. 售後服務.....	1	2	3	4	1	2	3	4
d. 型式.....	1	2	3	4	1	2	3	4
e. 技術支援.....	1	2	3	4	1	2	3	4
f. 穩定的供給.....	1	2	3	4	1	2	3	4
g. 熟悉/傳統.....	1	2	3	4	1	2	3	4
h. 其他(請說明)								
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4

3. 當考慮引進外國製入口大門時,下列因素的重要性為何?

因 素	木製 (重要性)				非木製 (重要性)			
	非常	有點	不太	不	非常	有點	不太	不
a. 價格	1	2	3	4	1	2	3	4
b. 品質	1	2	3	4	1	2	3	4
c. 售後服務	1	2	3	4	1	2	3	4
d. 型式	1	2	3	4	1	2	3	4
e. 技術支援	1	2	3	4	1	2	3	4
f. 穩定的供給	1	2	3	4	1	2	3	4
g. 熟悉/傳統	1	2	3	4	1	2	3	4
h. 其他(請說明)	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4

4. 當考慮引進外國製室內門時,下列因素的重要性為何?

因 素	木製 (重要性)				非木製 (重要性)			
	非常	有點	不太	不	非常	有點	不太	不
a. 價格	1	2	3	4	1	2	3	4
b. 品質	1	2	3	4	1	2	3	4
c. 售後服務	1	2	3	4	1	2	3	4
d. 型式	1	2	3	4	1	2	3	4
e. 技術支援	1	2	3	4	1	2	3	4
f. 穩定的供給	1	2	3	4	1	2	3	4
g. 熟悉/傳統	1	2	3	4	1	2	3	4
h. 其他(請說明)	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4

5. 您對於從不同國家進口的木製及非木製窗的評價(外觀,耐用性等特徵)如何?

製造國	木製					非木製				
	極優	優	佳	差	不知	極優	優	佳	差	不知
a. 美國製	1	2	3	4	5	1	2	3	4	5
b. 加拿大製	1	2	3	4	5	1	2	3	4	5
c. 北歐國家製	1	2	3	4	5	1	2	3	4	5
d. 本國製	1	2	3	4	5	1	2	3	4	5
e. 其他(請說明)										
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5

6. 您對於從不同國家進口的木製及非木製入口大門評價(外觀,耐用性等特徵)如何?

製造國	木製					非木製				
	極優	優	佳	差	不知	極優	優	佳	差	不知
a. 美國製	1	2	3	4	5	1	2	3	4	5
b. 加拿大製	1	2	3	4	5	1	2	3	4	5
c. 北歐國家製	1	2	3	4	5	1	2	3	4	5
d. 本國製	1	2	3	4	5	1	2	3	4	5
e. 其他(請說明)										
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5

7. 您對於從不同國家進口的木製及非木製室內門評價(外觀,耐用性等特徵)如何?

製造國	木製					非木製				
	極優	優	佳	差	不知	極優	優	佳	差	不知
a. 美國製	1	2	3	4	5	1	2	3	4	5
b. 加拿大製	1	2	3	4	5	1	2	3	4	5
c. 北歐國家製	1	2	3	4	5	1	2	3	4	5
d. 本國製	1	2	3	4	5	1	2	3	4	5
e. 其他(請說明)										
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5

8. 下列房屋型式，您將會建議使用本國製的木或非木窗？

型 式	木製 (可能性)				非木製 (可能性)			
	非常	有點	不太	不	非常	有點	不太	不
a. 傳統樑柱型.....	1	2	3	4	1	2	3	4
b. 組合式.....	1	2	3	4	1	2	3	4
c. 美式(2x4型).....	1	2	3	4	1	2	3	4
d. 歐式.....	1	2	3	4	1	2	3	4
e. 重新裝潢.....	1	2	3	4	1	2	3	4
f. 公寓式.....	1	2	3	4	1	2	3	4
g. 其他(請說明)	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4

9. 下列房屋型式，您將會建議使用本國的木製或非木製的入口大門？

型 式	木製 (可能性)				非木製 (可能性)			
	非常	有點	不太	不	非常	有點	不太	不
a. 傳統樑柱型.....	1	2	3	4	1	2	3	4
b. 組合式.....	1	2	3	4	1	2	3	4
c. 美式(2x4型).....	1	2	3	4	1	2	3	4
d. 歐式.....	1	2	3	4	1	2	3	4
e. 重新裝潢.....	1	2	3	4	1	2	3	4
f. 公寓式.....	1	2	3	4	1	2	3	4
g. 其他(請說明)	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4

10. 下列房屋型式，您將會建議使用本國的木製或非木製的室內門？

型 式	木製 (可能性)				非木製 (可能性)			
	非常	有點	不太	不	非常	有點	不太	不
a. 傳統樑柱型.....	1	2	3	4	1	2	3	4
b. 組合式.....	1	2	3	4	1	2	3	4
c. 美式(2x4型).....	1	2	3	4	1	2	3	4
d. 歐式.....	1	2	3	4	1	2	3	4
e. 重新裝潢.....	1	2	3	4	1	2	3	4
f. 公寓式.....	1	2	3	4	1	2	3	4
g. 其他(請說明)								
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4

11. 下列房屋型式，您將會建議使用外國製的木或非木窗？

型 式	木製 (可能性)				非木製 (可能性)			
	非常	有點	不太	不	非常	有點	不太	不
a. 傳統樑柱型.....	1	2	3	4	1	2	3	4
b. 組合式.....	1	2	3	4	1	2	3	4
c. 美式(2x4型).....	1	2	3	4	1	2	3	4
d. 歐式.....	1	2	3	4	1	2	3	4
e. 重新裝潢.....	1	2	3	4	1	2	3	4
f. 公寓式.....	1	2	3	4	1	2	3	4
g. 其他(請說明)								
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4

12. 下列房屋型式，您將會建議使用外國的木製或非木製的入口大門？

型 式	木製 (可能性)				非木製 (可能性)			
	非常	有點	不太	不	非常	有點	不太	不
a. 傳統樑柱型.....	1	2	3	4	1	2	3	4
b. 組合式.....	1	2	3	4	1	2	3	4
c. 美式(2x4型).....	1	2	3	4	1	2	3	4
d. 歐式.....	1	2	3	4	1	2	3	4
e. 重新裝潢.....	1	2	3	4	1	2	3	4
f. 公寓式.....	1	2	3	4	1	2	3	4
g. 其他(請說明)								
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4

13. 下列房屋型式，您將會建議使用外國的木製或非木製的室內門？

型 式	木製 (可能性)				非木製 (可能性)			
	非常	有點	不太	不	非常	有點	不太	不
a. 傳統樑柱型.....	1	2	3	4	1	2	3	4
b. 組合式.....	1	2	3	4	1	2	3	4
c. 美式(2x4型).....	1	2	3	4	1	2	3	4
d. 歐式.....	1	2	3	4	1	2	3	4
e. 重新裝潢.....	1	2	3	4	1	2	3	4
f. 公寓式.....	1	2	3	4	1	2	3	4
g. 其他(請說明)								
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4

14. 您如何銷售您的進口門窗(行銷管道)? (例如: 進口商-->中盤商-->建築業者)

a. 窗: _____

b. 門: _____

15. 您如何評定台灣門窗市場的特性? (1- 表示特性非常低 5- 表示特性非常高)

因 素	窗					入口大門					室內門				
	非常低-->非常高					非常低-->非常高					非常低-->非常高				
a. 競爭密集性.....	1	2	3	4	5 ...	1	2	3	4	5 ...	1	2	3	4	5
b. 市場變換速度.....	1	2	3	4	5 ...	1	2	3	4	5 ...	1	2	3	4	5
c. 價格敏感性.....	1	2	3	4	5 ...	1	2	3	4	5 ...	1	2	3	4	5
d. 新產品引進															
的風險性.....	1	2	3	4	5 ...	1	2	3	4	5 ...	1	2	3	4	5
e. 顧客忠誠度.....	1	2	3	4	5 ...	1	2	3	4	5 ...	1	2	3	4	5
f. 熟悉/傳統.....	1	2	3	4	5 ...	1	2	3	4	5 ...	1	2	3	4	5
g. 政府政策的影響.....	1	2	3	4	5 ...	1	2	3	4	5 ...	1	2	3	4	5
h. 未來市場成長															
的可能.....	1	2	3	4	5 ...	1	2	3	4	5 ...	1	2	3	4	5
i. 品質.....	1	2	3	4	5 ...	1	2	3	4	5 ...	1	2	3	4	5
j. 其他(請說明)															
	1	2	3	4	5 ...	1	2	3	4	5 ...	1	2	3	4	5
	1	2	3	4	5 ...	1	2	3	4	5 ...	1	2	3	4	5
	1	2	3	4	5 ...	1	2	3	4	5 ...	1	2	3	4	5

16. 下列的進口阻礙因素對於外國門窗製造業者欲打入台灣市場的重要性？

因素	重要性			
	非常	有點	不太	不
a. 非關稅障礙..... (例如:建築法規)	1	2	3	4
b. 關稅及配額等.....	1	2	3	4
c. 貿易商的態度.....	1	2	3	4
d. 使用者的態度.....	1	2	3	4
e. 複雜的行銷管道.....	1	2	3	4
f. 語言障礙.....	1	2	3	4
g. 行銷人員的招募.....	1	2	3	4
h. 其他(請說明)	1	2	3	4
_____	1	2	3	4
_____	1	2	3	4
_____	1	2	3	4

17. 您是否進口下列窗戶？

	木製		非木製	
	是	否	是	否
a. 雙層式 (Double-hung).....	1	2	1	2
b. 海灣型 (Bay).....	1	2	1	2
c. 弓型 (Bow).....	1	2	1	2
d. 其他(請說明)	1	2	1	2
_____	1	2	1	2
_____	1	2	1	2
_____	1	2	1	2

18. 您是否進口下列入口大門及室內門？

	木製				非木製			
	入口門		室內門		入口門		室內門	
	是	否	是	否	是	否	是	否
a. 法式 (French).....	1	2	1	2	1	2	1	2
b. 平面式 (Flush).....	1	2	1	2	1	2	1	2
c. 雕花式 (Raised panel)....	1	2	1	2	1	2	1	2
d. 其他(請說明)	1	2	1	2	1	2	1	2
_____	1	2	1	2	1	2	1	2
_____	1	2	1	2	1	2	1	2
_____	1	2	1	2	1	2	1	2

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門窗的行銷調查

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本研究包括不同門窗產品的行銷調查，謝謝您的參與及寶貴意見

1. 下列各項門與窗產品佔您使用門窗多少百分比？
(請圈選數字以示使用百分比)

產品	外國製 (百分比)					本國製 (百分比)					
	0	25%	50%	75%	100%	0	25%	50%	75%	100%	
a. 塑膠製窗.....	1	2	3	4	5	.....	1	2	3	4	5
b. 塑膠製入口大門.....	1	2	3	4	5	.....	1	2	3	4	5
c. 塑膠製室內門.....	1	2	3	4	5	.....	1	2	3	4	5
d. 木製窗.....	1	2	3	4	5	.....	1	2	3	4	5
e. 木製入口大門.....	1	2	3	4	5	.....	1	2	3	4	5
f. 木製室內門.....	1	2	3	4	5	.....	1	2	3	4	5
g. 鋁製窗.....	1	2	3	4	5	.....	1	2	3	4	5
h. 鋁製入口大門.....	1	2	3	4	5	.....	1	2	3	4	5
i. 鋁製室內門.....	1	2	3	4	5	.....	1	2	3	4	5
j. 鐵製窗.....	1	2	3	4	5	.....	1	2	3	4	5
k. 鐵製入口大門.....	1	2	3	4	5	.....	1	2	3	4	5
l. 鐵製室內門.....	1	2	3	4	5	.....	1	2	3	4	5
m. 其他(請說明).....	1	2	3	4	5	.....	1	2	3	4	5
.....	1	2	3	4	5	.....	1	2	3	4	5
.....	1	2	3	4	5	.....	1	2	3	4	5
.....	1	2	3	4	5	.....	1	2	3	4	5

2. 當考慮選擇窗戶材料時,下列因素的重要性為何?

因 素	木窗 (重要性)				非木窗 (重要性)			
	非常	有點	不太	不	非常	有點	不太	不
a. 價格	1	2	3	4	1	2	3	4
b. 品質	1	2	3	4	1	2	3	4
c. 售後服務	1	2	3	4	1	2	3	4
d. 型式	1	2	3	4	1	2	3	4
e. 技術支援	1	2	3	4	1	2	3	4
f. 穩定的供給	1	2	3	4	1	2	3	4
g. 熟悉/傳統	1	2	3	4	1	2	3	4
h. 其他 (請說明)	1	2	3	4	1	2	3	4
.....	1	2	3	4	1	2	3	4
.....	1	2	3	4	1	2	3	4
.....	1	2	3	4	1	2	3	4

3. 當考慮選擇使用入口大門材料時,下列因素的重要性為何?

因 素	木製 (重要性)				非木製 (重要性)			
	非常	有點	不太	不	非常	有點	不太	不
a. 價格	1	2	3	4	1	2	3	4
b. 品質	1	2	3	4	1	2	3	4
c. 售後服務	1	2	3	4	1	2	3	4
d. 型式	1	2	3	4	1	2	3	4
e. 技術支援	1	2	3	4	1	2	3	4
f. 穩定的供給	1	2	3	4	1	2	3	4
g. 熟悉/傳統	1	2	3	4	1	2	3	4
h. 其他(請說明)	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4

4. 當考慮選擇使用室內門材料時,下列因素的重要性為何?

因 素	木製 (重要性)				非木製 (重要性)			
	非常	有點	不太	不	非常	有點	不太	不
a. 價格	1	2	3	4	1	2	3	4
b. 品質	1	2	3	4	1	2	3	4
c. 售後服務	1	2	3	4	1	2	3	4
d. 型式	1	2	3	4	1	2	3	4
e. 技術支援	1	2	3	4	1	2	3	4
f. 穩定的供給	1	2	3	4	1	2	3	4
g. 熟悉/傳統	1	2	3	4	1	2	3	4
h. 其他(請說明)	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4

5. 您對於從不同國家進口的木製及非木製窗的評價(外觀,耐用性等特徵)如何?

製造國	木製					非木製				
	極優	優	佳	差	不知	極優	優	佳	差	不知
a. 美國製	1	2	3	4	5	1	2	3	4	5
b. 加拿大製	1	2	3	4	5	1	2	3	4	5
c. 北歐國家製	1	2	3	4	5	1	2	3	4	5
d. 本國製	1	2	3	4	5	1	2	3	4	5
e. 其他(請說明)										
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5

6. 您對於從不同國家進口的木製及非木製入口大門評價(外觀,耐用性等特徵)如何?

製造國	木製					非木製				
	極優	優	佳	差	不知	極優	優	佳	差	不知
a. 美國製	1	2	3	4	5	1	2	3	4	5
b. 加拿大製	1	2	3	4	5	1	2	3	4	5
c. 北歐國家製	1	2	3	4	5	1	2	3	4	5
d. 本國製	1	2	3	4	5	1	2	3	4	5
e. 其他(請說明)										
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5

7. 您對於從不同國家進口的木製及非木製室內門評價(外觀,耐用性等特徵)如何?

製造國	木製					非木製				
	極優	優	佳	差	不知	極優	優	佳	差	不知
a. 美國製	1	2	3	4	5	1	2	3	4	5
b. 加拿大製	1	2	3	4	5	1	2	3	4	5
c. 北歐國家製	1	2	3	4	5	1	2	3	4	5
d. 本國製	1	2	3	4	5	1	2	3	4	5
e. 其他(請說明)										
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5
	1	2	3	4	5	1	2	3	4	5

8. 下列房屋型式，您將會使用木製的木或非木窗？

型 式	木製 (可能性)				非木製 (可能性)			
	非常	有點	不太	不	非常	有點	不太	不
a. 傳統樑柱型.....	1	2	3	4	1	2	3	4
b. 組合式.....	1	2	3	4	1	2	3	4
c. 美式(2x4型).....	1	2	3	4	1	2	3	4
d. 歐式.....	1	2	3	4	1	2	3	4
e. 重新裝潢.....	1	2	3	4	1	2	3	4
f. 公寓式.....	1	2	3	4	1	2	3	4
g. 其他(請說明)	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4

9. 下列房屋型式，您將會使用木製的木或非木製的入口大門？

型 式	木製 (可能性)				非木製 (可能性)			
	非常	有點	不太	不	非常	有點	不太	不
a. 傳統樑柱型.....	1	2	3	4	1	2	3	4
b. 組合式.....	1	2	3	4	1	2	3	4
c. 美式(2x4型).....	1	2	3	4	1	2	3	4
d. 歐式.....	1	2	3	4	1	2	3	4
e. 重新裝潢.....	1	2	3	4	1	2	3	4
f. 公寓式.....	1	2	3	4	1	2	3	4
g. 其他(請說明)	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4
	1	2	3	4	1	2	3	4

10. 下列房屋型式，您將會使用本國的木製或非木製的室內門？

型 式	木製 (可能性)				非木製 (可能性)			
	非常	有點	不太	不	非常	有點	不太	不
a. 傳統樑柱型.....	1	2	3	4	1	2	3	4
b. 組合式.....	1	2	3	4	1	2	3	4
c. 美式(2x4型).....	1	2	3	4	1	2	3	4
d. 歐式.....	1	2	3	4	1	2	3	4
e. 重新裝潢.....	1	2	3	4	1	2	3	4
f. 公寓式.....	1	2	3	4	1	2	3	4
g. 其他(請說明)	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4

11. 下列房屋型式，您將會使用外國製的木或非木窗？

型 式	木製 (可能性)				非木製 (可能性)			
	非常	有點	不太	不	非常	有點	不太	不
a. 傳統樑柱型.....	1	2	3	4	1	2	3	4
b. 組合式.....	1	2	3	4	1	2	3	4
c. 美式(2x4型).....	1	2	3	4	1	2	3	4
d. 歐式.....	1	2	3	4	1	2	3	4
e. 重新裝潢.....	1	2	3	4	1	2	3	4
f. 公寓式.....	1	2	3	4	1	2	3	4
g. 其他(請說明)	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4
_____	1	2	3	4	1	2	3	4

12. 下列房屋型式，您將會使用外國的木製或非木製的入口大門？

型 式	木製 (可能性)					非木製 (可能性)			
	非常	有點	不太	不		非常	有點	不太	不
a. 傳統樑柱型.....	1	2	3	4	.....	1	2	3	4
b. 組合式.....	1	2	3	4	.....	1	2	3	4
c. 美式(2x4型).....	1	2	3	4	.....	1	2	3	4
d. 歐式.....	1	2	3	4	.....	1	2	3	4
e. 重新裝潢.....	1	2	3	4	.....	1	2	3	4
f. 公寓式.....	1	2	3	4	.....	1	2	3	4
g. 其他(請說明)									
_____	1	2	3	4	.....	1	2	3	4
_____	1	2	3	4	.....	1	2	3	4
_____	1	2	3	4	.....	1	2	3	4

13. 下列房屋型式，您將會使用外國的木製或非木製的室內門？

型 式	木製 (可能性)					非木製 (可能性)			
	非常	有點	不太	不		非常	有點	不太	不
a. 傳統樑柱型.....	1	2	3	4	.....	1	2	3	4
b. 組合式.....	1	2	3	4	.....	1	2	3	4
c. 美式(2x4型).....	1	2	3	4	.....	1	2	3	4
d. 歐式.....	1	2	3	4	.....	1	2	3	4
e. 重新裝潢.....	1	2	3	4	.....	1	2	3	4
f. 公寓式.....	1	2	3	4	.....	1	2	3	4
g. 其他(請說明)									
_____	1	2	3	4	.....	1	2	3	4
_____	1	2	3	4	.....	1	2	3	4
_____	1	2	3	4	.....	1	2	3	4

14. 有多少百分比的木製及非木製窗是向下列業者訂購的？
(請圈選數字以示使用百分比)

業者	木製窗 (訂購百分比)						非木製窗 (訂購百分比)				
	0	25%	50%	75%	100%		0	25%	50%	75%	100%
a. 外國貿易商.....	1	2	3	4	5	.....	1	2	3	4	5
b. 本國貿易商.....	1	2	3	4	5	.....	1	2	3	4	5
c. 中盤商.....	1	2	3	4	5	.....	1	2	3	4	5
d. 國內製造業者.....	1	2	3	4	5	.....	1	2	3	4	5
e. 其他(請說明)	1	2	3	4	5	.....	1	2	3	4	5
_____	1	2	3	4	5	.....	1	2	3	4	5
_____	1	2	3	4	5	.....	1	2	3	4	5
_____	1	2	3	4	5	.....	1	2	3	4	5

15. 多少百分比的木製及非木製的入口大門是向下列業者訂購的？
(請圈選數字以示使用百分比)

業者	木製入口大門 (訂購百分比)						非木製入口大門 (訂購百分比)				
	0	25%	50%	75%	100%		0	25%	50%	75%	100%
a. 外國貿易商.....	1	2	3	4	5	.....	1	2	3	4	5
b. 本國貿易商.....	1	2	3	4	5	.....	1	2	3	4	5
c. 中盤商.....	1	2	3	4	5	.....	1	2	3	4	5
d. 國內製造業者.....	1	2	3	4	5	.....	1	2	3	4	5
e. 其他(請說明)	1	2	3	4	5	.....	1	2	3	4	5
_____	1	2	3	4	5	.....	1	2	3	4	5
_____	1	2	3	4	5	.....	1	2	3	4	5
_____	1	2	3	4	5	.....	1	2	3	4	5

16. 多少百分比的木製及非木製的室內門是向下列業者訂購的？
(請圈選數字以示使用百分比)

業者	木製室內門 (訂購百分比)						非木製室內門 (訂購百分比)				
	0	25%	50%	75%	100%		0	25%	50%	75%	100%
a. 外國貿易商.....	1	2	3	4	5	.....	1	2	3	4	5
b. 本國貿易商.....	1	2	3	4	5	.....	1	2	3	4	5
c. 中盤商.....	1	2	3	4	5	.....	1	2	3	4	5
d. 國內製造業者.....	1	2	3	4	5	.....	1	2	3	4	5
e. 其他(請說明)											
_____	1	2	3	4	5	.....	1	2	3	4	5
_____	1	2	3	4	5	.....	1	2	3	4	5
_____	1	2	3	4	5	.....	1	2	3	4	5

17. 你如何評估木製及非木製窗供應商的整體表現？(1-甚差, 2-差, 3-尚可, 4-佳, 5-甚佳)
(請圈選數字以示使用百分比)

業者	木製窗 (整體表現)						非木製窗 (整體表現)				
	甚差				甚佳		甚差				甚佳
a. 外國貿易商.....	1	2	3	4	5	.....	1	2	3	4	5
b. 本國貿易商.....	1	2	3	4	5	.....	1	2	3	4	5
c. 中盤商.....	1	2	3	4	5	.....	1	2	3	4	5
d. 國內製造業者.....	1	2	3	4	5	.....	1	2	3	4	5
e. 其他(請說明)											
_____	1	2	3	4	5	.....	1	2	3	4	5
_____	1	2	3	4	5	.....	1	2	3	4	5
_____	1	2	3	4	5	.....	1	2	3	4	5

18. 你如何評估木製及非木製門供應商的整體表現? (1-甚差, 2-差, 3-尚可, 4-佳, 5-甚佳)
(請圈選數字以示使用百分比)

業者	木製門 (整體表現)					非木製門 (整體表現)					
	甚差				甚佳	甚差				甚佳	
a. 外國貿易商.....	1	2	3	4	5	.....	1	2	3	4	5
b. 本國貿易商.....	1	2	3	4	5	.....	1	2	3	4	5
c. 中盤商.....	1	2	3	4	5	.....	1	2	3	4	5
d. 國內製造業者.....	1	2	3	4	5	.....	1	2	3	4	5
e. 其他(請說明)											
_____	1	2	3	4	5	.....	1	2	3	4	5
_____	1	2	3	4	5	.....	1	2	3	4	5
_____	1	2	3	4	5	.....	1	2	3	4	5

19. 你是否使用下列型式的本國製及非本國製窗?

	木製				非木製			
	本國製 是	否	外國製 是	否	本國製 是	否	外國製 是	否
a. 雙層式(Double-hung).....	1	2	1	2	1	2	1	2
b. 海灣型(Bay).....	1	2	1	2	1	2	1	2
c. 弓型(Bow).....	1	2	1	2	1	2	1	2
d. 其他(請說明)								
	1	2	1	2	1	2	1	2
	1	2	1	2	1	2	1	2
	1	2	1	2	1	2	1	2

20. 你是否使用下列型式的本國製及非本國製入口大門?

	木製				非木製			
	本國製 是	否	外國製 是	否	本國製 是	否	外國製 是	否
a. 法國式 (French)	1	2	1	2	1	2	1	2
b. 平面式 (Flush)	1	2	1	2	1	2	1	2
c. 雕花式 (Raised panel)	1	2	1	2	1	2	1	2
d. 其他 (請說明)								
_____	1	2	1	2	1	2	1	2
_____	1	2	1	2	1	2	1	2
_____	1	2	1	2	1	2	1	2

21. 你是否使用下列型式的本國製及非本國製室內門?

	木製				非木製			
	本國製 是	否	外國製 是	否	本國製 是	否	外國製 是	否
a. 法國式 (French)	1	2	1	2	1	2	1	2
b. 平面式 (Flush)	1	2	1	2	1	2	1	2
c. 雕花式 (Raised panel)	1	2	1	2	1	2	1	2
d. 其他 (請說明)								
_____	1	2	1	2	1	2	1	2
_____	1	2	1	2	1	2	1	2
_____	1	2	1	2	1	2	1	2