

THE OPERATIONS OF THE USED REFRIGERATOR MARKET INTERVIEWS WITH USED REFRIGERATOR DEALERS: A QUALITATIVE ASSESSMENT

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Abstract

This report presents the results of a set of in-depth interviews with refrigerator dealers operating in the secondary market (used appliance market) and presents a detailed examination into how this market acquires, reconditions and sells used refrigerators within the state of Wisconsin. Interviews were completed with 20 businesses that sell used refrigerators. These secondary appliance dealers are located across the state of Wisconsin and represent the majority of the Wisconsin dealers currently operating in this market who are listed in the 2003 Yellow Pages under “used appliances.” This paper describes the two different unit acquisition streams that feed the secondary refrigerator market and describes the differences between these supply streams and how the supply streams influence the number of units that can be sold. The paper also discusses the overall used refrigerator market and indicates how refrigerator pick-up programs, such as Wisconsin’s Appliance Turn-In Program (APTI,) may significantly effect the number of units that are sold in the secondary market for a part of the market, but not for the majority market. The paper also provides a discussion of the research results and how these results can impact the design, operation and acceptance of refrigerator collection programs.

Methodology

Market operations interviews were conducted with used appliance dealers conducting business in the State of Wisconsin. The interviews focused on obtaining information about how businesses obtain, recondition and sell used refrigerators including detailed information pertaining to their sales volumes, product pricing, opinions about the market and the effects on the market of refrigerator collection programs. By using internet and business directories we were able to identify 46 potential contacts, of these 8 had disconnected telephone numbers and could not be reached for interviews, 4 refused the interview and 6 did not sell used refrigerators. Of the 28 remaining contacts 8 could not complete the interview within the data collection period because of scheduling and contact barriers with the dealer responsible for used appliance sales or could not be reached during the interview period. TecMarket Works interview staff interviewed the remaining 20 contacts. These calculations indicate that there are about 32 practicing used refrigerator dealers operating in the state of Wisconsin who are listed in the yellow page directories. However, this does not include dealers who sell used refrigerators but who are not listed in the yellow pages as used appliance dealers. At this time, we do not know the total population of used appliance dealers in Wisconsin.

Because of the low number of used appliance dealers listed in Wisconsin yellow pages, the interview process targeted the entire identifiable population rather than a sample of the population. As a result, interviews were completed with secondary market actors who are widely distributed across the state. Most contacts resulted in one interview per city, with the exception of Madison and Milwaukee. These two cities have a number of used appliance dealers and are more represented in the sample of completed interviews. The typical Wisconsin city or village may not have a used appliance dealer or at most, have only one. Larger population centers may have more than one dealer.

The vast majority of the dealers interviewed for this effort are the owners of the stores in which they work. Sixteen (80 percent) of the 20 dealers interviewed are store owners, one individual identified himself as the foreman of the store, one identified himself as the store manager, and one indicated that he is the vice president of operations. One individual indicated that she is the spouse of the owner and works at the store with the owner. Eighty percent of the dealers contacted sell only used appliances. However, during the interview several dealers made comments that indicated that they are also in the appliance service and repair business.

The Operations of the Used Refrigerator Market

Survey results indicate that there are two primary supply routes for used refrigerators moving into the secondary appliance market. However, one route is about 4 times larger than the second route and dominates how used units enter the secondary market. These two routes represent the vast majority of the units entering this market through the type of dealers interviewed in this study. The primary unit acquisition routes in Wisconsin are, at this time, from new appliance dealers who recover used appliances when they sell a new unit and the general public who provide used units directly to secondary dealers.

Often new appliance dealers deliver a new unit and recover a used refrigerator. These dealers will pay a fee for the used unit or charge a fee to cover the costs of handling and recycling of the old unit. In many cases the secondary market actor will go to the new dealer, pick up the units, and take them to their shop. This data suggests that the agreement to purchase a new unit often results in the collection of a used unit that is moved to the secondary market stream and that this condition is the result of a formal or informal agreement between the new appliance dealer and the secondary market dealer. Secondary appliance dealers who have collection agreements with new appliance dealers report that they have a steady, but limited supply of used units. The supply is limited to the units picked up as part of an agreement to buy a new unit. Most all of these dealers indicate that refrigerator collection programs do not have a significant effect on their supply of used refrigerators and all of these dealers report that they sell all the units they receive that they determine to be in good operating condition, or can be made to operate reliably with minimal repair and cleaning time. On average, about 61 percent of the units picked up through the new appliance dealer stream are placed in the secondary market for sale. The interview data suggests that on average, used refrigerator dealers who received their supply from new dealers obtain about 364 units per year and sell about 223 of these in the secondary market. About 39 percent of the units collected via the new dealer supply route are not placed in the secondary market and are used as parts and/or are recycled.

The second major supply stream is from the general public. In these cases, individuals who own a used refrigerator and want to get rid of the unit or can be convinced to get rid of it can sell or give the unit to the secondary appliance dealer, or will pay the dealer a fee for removing the unit. Secondary dealers will advertise for units to maintain their supply and will monitor the newspaper to acquire units being sold from private homes via ads placed in the newspaper. They rely on word-of-mouth networking (among other promotional methods) within their communities to both acquire and sell used units. This group is more selective of the units they obtain and are able to sell most of the units they pick-up. Dealers who acquire their units from the public are able to place about 89 percent of the units they obtain into the secondary market compared to about 61 percent of the market that obtains their supplies from new dealers.

No matter how a unit is obtained, there are no units left unsold once a dealer determines that they should place a unit in the secondary market. All dealers interviewed report that they sell all the units they put up for sale. However, dealers who obtain their supply from the public do not obtain the supply

volume that new dealers provide. On average, dealers supplied from the public collect about 57 units per year and place about 51 of these units in the secondary market. This compares to about 364 units obtained by dealers who obtain their supplies from new dealers who place about 223 of these units in the secondary market. Businesses that obtain their units from the public obtain and sell fewer units than businesses that obtain their units from new appliance dealers.

There are several other minor supply routes reported by interviewed dealers. These include:

- Warehouse located in Illinois. One dealer obtains and sells about 125 units a year from this source.

- Owners of multi family facilities (private or public) who are changing out their refrigerators. Only one dealer indicated that he had in the past “occasionally” obtained units from multi family facilities but in this case the sale was arranged through the manufacturer rather than the multi family facility itself. Another dealer indicated that this was a possible supply stream, but noted that he had tried this once and found all the units with cut cords and holes punched through the doors.

- Public or private recycling programs that use secondary dealers in the collection and disposal stream. For example, in one Wisconsin public recycling program, secondary dealer contact information is published by the city and private citizens can call one of the listed dealers to pick up their unit.

- Organizations like St. Vincent dePaul and the Salvation Army. One dealer indicated that they get about 10 percent of their units from organizations like St. Vincent dePaul after these units are collected through the organization’s contribution systems.

- Other miscellaneous streams. For example, people can give their units away or sell them to friends, neighbors or to the public through such routes as garage sales or through ads in the newspaper or local community flyers. Likewise, owners can move their units directly to recycling centers or to trash collection and processing facilities without going through secondary dealers.

Using the collection and sales estimates provided by the interviewed dealers we think that the total number of used units obtained through all methods for all of the dealers interviewed equals about 7,529 units per year, of which about 3,145 are selected for sale and are sold in the used refrigerator market, indicating that about 42 percent of the units collected are sold in the secondary market, with no units remaining unsold once they are placed in the market. However, caution should be stressed in using these estimates to represent the full operations of the Wisconsin used appliance market for the following reasons: 163,000 new refrigerators were shipped to new appliance dealers in Wisconsin in 2001. The estimated 7,529 units moving through the contacted dealers represent about 5 percent of the new units entering the state. While not all of the new units shipped into the state end up replacing a used unit, it is clear that we do not understand where the majority of the used units are going.

While we interviewed most of the yellow-page listed used appliance dealers we do not know if the listed dealers represent a minority or majority of the facilities that sell used refrigerators as a normal part of their business. There may be a number of non-listed dealers that sell used appliances. We do not understand the volume or condition of used units sold via other methods or through other supply routes, such as through garage sales or newspaper ads. This may be a substantial part of the used appliance market.

We do not understand the primary routes by which used refrigerators enter and move through the appliance recycling stream. We also do not understand the population of units that move through this stream. The following table provides the estimated counts and percentages of units moving into the interviewed yellow-page listed secondary appliance dealer facilities and the number that are placed into the market for sale.

Table 1. Estimated Used Refrigerators Moving through the Yellow Page Listed Dealers by Supply Source

Source of used refrigerators	Number of respondents	Average number obtained per dealer	Average number sold/dealer	Average percent sold/dealer	Total units entering used market from supply stream
Mostly or all new dealers	9	364	223	61%	2007
Mostly or all general public	5	57	51	89%	255
New dealers and general public*	4	945**	182	19%	728
Warehouses	1	125	125	100%	125
Other ***	1	60	30	50%	30
Average total	20	376	157	42%	
Sum of all interviews	20	7,529		42%	3,145

* Report that they obtain 50% from dealers and 50% from the public.

** One dealer obtained 200 units and one dealer obtained 2500 units per year; the dealer that obtained 2,500 units places about 250 of the units into the secondary market.

*** The single individual listed in the “other” category obtains their units from a new dealer and from a city recycling program.

Because some respondents could not detail the exact breakdown of the sources of their units, the above table includes some level of crossover between groups. In further reviewing the details of the comments provided by the respondents we obtained an indication of the majority of the sources of their supplies. However, we estimate that somewhat less than half of all secondary market dealers probably obtain their supplies from more than one of the routes described above, typically there is some level of overlap between the new dealer supply routes and units that come from the public. Likewise about a third of the dealers indicate that they obtain units from new appliance dealers and less than 25 percent indicate that they obtain units only from the public. The group that obtains their units from new dealers and the public indicated that they get about half of their units from new dealers and half from the general public.

As indicated in the table above, about 2,007 units are sold in the secondary market that is supplied primarily through new dealers (9 dealers x 223 units per dealer = 2007) and about 255 units are sold by dealers who obtain their units primarily from the public (5 dealers x 51 units per dealer = 255). In addition, the dealers who obtained their units from both new dealers and the general public indicate that they get about 50 percent from the public and 50 percent from their new dealers suppliers. If this group is split according to the reported supply distributions, this means that new dealers supply about 364 units and the public provides about 364 units (4 dealers x 182 units = 728 units from both sources or about 364 through each route). This data indicates that 79 percent of the units entering the market through both new dealers and the public are provided by the new dealers with only about 21 percent provided from the public ($((2007 + (728/2)) / ((2007 + (728/2)) + ((255 + 728/2))) = 79$ percent). However, the uncertainty of the supply distribution and the limited number of secondary market actors included in this study makes these splits a distribution-estimation assessment rather than a distribution-accounting assessment. We cannot be more precise than this distribution-estimation from the data obtained from the 20 dealers. As a result the distribution breakouts included in this report should be considered estimated distributions.

While several of the secondary appliance dealers could not provide an accurate accounting of the number of units entering or being sold in their stores, most dealers could provide an estimate or an estimated range of the average number of units. When a dealer provided an estimated range, the midpoint of that range was used in this analysis. Summing the number of units estimated by the dealers

who could provide an estimate yields a total of about 7,529 units collected by the 20 interviewed dealers with about 3,145 of these units entering the secondary market. If this ratio holds across the 30 directory-listed appliance dealers we believe currently operate in Wisconsin (this does not count the dealers who are not directory listed) the estimated number of units collected by the 30 dealers would be about 11,300 units of which about 4,700 are sold. Again, caution is advised using the average number of units as a unit movement predictor. The capabilities of these dealers varies enormously from the small single-person shops to shops that have the capability to collect, clean and sell 750 units a year. Figure 1 provides an overview of the operations of the used refrigerator market in Wisconsin.

Placing Units Into the Used Appliance Sales Stream

Appearance of the used refrigerator is a primary consideration in determining if a unit should be put up for sale. Many dealers will not sell units that are colored (gold, brown, green), as they are considered old or out-dated. Units that are white or almond are preferred. A few dealers indicated that they paint units in order to sell them if they appear in good condition. Dealers report that they are willing to make minor repairs and reconditioning efforts to make units ready for sale. These measures include checking temperatures, cleaning units, fixing seals, replacing fans, fixing defrost heaters and timers, replacing or repairing sensors, and replacing motors and door seals. Most dealers will make major repairs, such as repairing or replacing compressors if they are able to swap parts off other units that are not put out for sale or obtain new parts at reasonable costs. However, dealers cannot afford to put much money in units that do not have a good appearance.

Dealers indicate that on average about 42 percent of the units they obtain can be sold in the secondary market. However, seven of the dealers indicated that they can sell 90 percent or more of the units they obtain. Yet, one dealer reported that he can only sell about 10 percent of the units he receives and three dealers indicated that they can sell between 20 and 30 percent. The dealers that sell higher percentages of their supplies are more likely to be dealers that acquire their units from the public. Yet, used dealers that acquire their units from new dealers or from new dealers and the public report a wide distribution of the percent of the units that they receive and that can be sold. Dealers who obtain units from the public, or who are able to pick units they want (such as the dealer who obtains his units from a warehouse) can generally sell most or all of the units they collect. The rest are not considered marketable from an appearance perspective or have major operational problems. On a per-unit basis for each of the individual supply routes, about 61 percent of the units arriving via new dealer routes can be sold in the secondary market compared to 89 percent of the units that come from the public. Summing all supply routes and the number of units that can enter the market from each route indicates that on average, 42 percent of the units obtained by used appliance dealers can be placed in the used market and sold, however this statistic is skewed by one dealer who obtains 2,500 units per year but can only sell 10 percent of these. This individual is primarily a scrap dealer who also has a store in which he sells used units that are not recycled. The units not sold are typically used for parts (if needed) and are then disposed of.

The percent of units that can be sold also seems to be a function of the selection process of the individual dealer. Some dealers may be more selective than others and only buy and sell units that meet specific standards. For example, some dealers informed us that they only sell units 10 years old or less, others said 15 years old or less, others prefer units that use Freon-12 because they are more reliable machines.

Typical reasons why units are rejected for sale include: poor appearance; the color is outdated; they need Freon service; repairs are too expensive to recover the cost within the price window needed for a used unit; because parts are missing; or the units are too old.

Acquiring Units from Out-of-state Suppliers

It has been suggested that appliance turn-in programs similar to the APTI Program may not affect the secondary market because used dealers can go to different market areas, such as across state lines or even out of the country to acquire a steady stream of used units if their supplies are restricted. We found some evidence that dealers can and have obtained units from out-of-state locations, but to a limited degree. Of the 20 dealers interviewed, one dealer indicated that they had once obtained a load of units from a housing authority in Michigan. A Milwaukee dealer said that he obtains his units from a local warehouse in Illinois. One dealer said that he had once obtained units from Tennessee, but also indicated that this was too expensive a process for them, and another dealer had obtained units from Texas, but commented they can no longer acquire them in this way. However, in response to a question on market restriction coping strategies (discussed later in this report), one dealer indicated that if the used refrigerator market was significantly reduced he would need to look at acquiring supplies from out-of-state suppliers to help offset a restricted market.

Questions not addressed in this study include: a.) If other states located near Wisconsin have used appliance markets that are demand or supply-constrained such that there is an under-supply or an over-abundance of units in these states beyond what can be sold within their markets; or, b.) If the market demand for units is tight enough that dealers must bid against other dealers and search across state borders to find enough units to sell. These issues were not addressed in this research that focused only on Wisconsin dealers. However, some dealers did provide some anecdotal comments that provide an indication of out-of-state conditions. For example, one dealer noted that the APTI Program had shut down his supply to the point where he must look at closing his shop. This medium-large dealer called us back a week after completing the evaluation interview and said that he had been unable to find new supplies and was being forced to close his doors. Another dealer indicated that they were looking at closing their business if they could not find additional supplies to offset a restricted market. This individual indicated that they were successful in finding a new appliance dealer to supply them and that they “occasionally” have been successful at finding supplies from out-of-state sources. This is the same dealer that found a manufacturer that changed out a multi family facility in Michigan. Another dealer provided a hearsay comment that he had once heard that the Wisconsin market was getting tighter because units were being shipped from Wisconsin to Illinois.

This research did not address the availability of surplus supplies of used refrigerators located in other states. Therefore, while we did receive comments from respondents on this practice, we cannot draw conclusions about the availability of out-of-state suppliers that are currently capable of supplying the Wisconsin market if the local supply of used units were restricted as a result of refrigerator collection programs or other efforts.

Current Market Condition

The study attempted to characterize the current condition of the market to assess if it is balanced, supply-constrained, or demand-constrained. If the used refrigerator market is selling all the units that are placed into the market over a period of time, with no surplus of units left unsold, the market is a balanced market that results in one unit into the used appliance stream and one unit sold. If the market is a demand-constrained market the dealers will not be able to sell the units they obtain and will not need to engage in efforts to maintain or increase their supply. Instead they will need to spend efforts to dispose of the units they are not able to sell. If the market is supply-constrained dealers will not have enough units to sell and will not be able to find enough units to meet customer demand.

Because we did not know if the Wisconsin market is supply-constrained, balanced or demand-constrained we wanted to include a question in the interview that provided some evidence as to the condition of the Wisconsin market. One approach to this issue is to directly ask the question in a way that forces dealers to respond to the issue via a closed-ended forced-choice response. To measure the current condition of the used refrigerator market the following question was asked of the dealers interviewed:

I would like you to tell me, in your opinion, which of the following three phrases most closely describes the used refrigerator market in your area?

- 1. It is a supply-constrained market. That is, if you could obtain more units that were in reasonably good condition you could sell them in a reasonable amount of time.*
- 2. It is a demand-constrained market. If you could obtain more units that were in reasonably good condition you would not be able to sell them in a reasonable amount of time.*
- 3. The market is a balanced market in which your current supply is about equal to your ability to sell them in a reasonable amount of time.*

Seventeen respondents were able to answer this question explicitly. Of these, 10 dealers said it was a balanced market, 3 indicated it was a demand-constrained market, and 4 indicated that it was a supply-constrained market. There is no correlation between the size of the dealers and their response to this question.

The responses to this question suggest the market is balanced, with supply equaling demand. We supplemented this question with a question about the amount of time needed to sell a unit. We asked if there were times when they put units out for sale but were unable to sell them and needed to get rid of them rather than sell them. In response to this question all respondents indicated that they were able to sell all the units that they placed in the market. No dealers indicated that they were unable to sell any units once a decision is made to place the unit into the secondary market stream.

We also asked the dealers if they are able to obtain enough units to meet their customer's demands. Nineteen of the 20 dealers answered this question. Of these responses 3 indicated that they could not obtain enough units to meet their customer's demands for used units. Two dealers indicated that they can usually obtain enough, but there are times when they cannot meet demand. One dealer indicated that they could not get enough to meet demand last year, but were okay this year and one indicated that during the summer months they could not meet demand. One additional dealer said that he can usually get enough units and 13 dealers said that they are able to get enough to meet demand. The following table summarizes the responses to the question of ability to meet demand.

Table 2. Ability to Meet Demand

Response	Number of dealers
Not able to get enough units to meet demand	3
Periodically not able to get enough (reoccurring shortages)	2
Usually able to get enough (has enough most all of the time)	1
Able to get enough	13

The dealers who reported they could not get enough units to meet their needs reported several reasons for this condition. One individual reported that he thinks that some of the units are being shipped across the state line to other secondary market dealers, making the local markets more restrictive.

Another individual indicated that the APTI Program is cutting their ability to obtain used units. Another said that when the economy is bad, people hang on to their units longer making the market tighter.

We also included a question that provides some insight into how a significant reduction in available units would impact their business and how dealers would respond to a significant supply reduction. If the market were significantly over-supplied we would not expect even a sizable reduction in available supply to have a large affect once coping strategies are implemented. If the market were balanced, under-supplied, or over-supplied (but not significantly over-supplied), we would expect this reduction to end in the businesses reporting that they would have to close or experience reduced sales. In constructing this question we wanted to ask about a reduction in supply that would seriously stress the market unless it was significantly over supplied. As a result, we asked the following question:

If your current used refrigerator stream was reduced in half, how would that effect your sales of used refrigerators?

In response to this question, 80 percent of the dealers indicated that a reduction of this magnitude would have a significant affect on their sales. Five of the dealers (25 percent) indicated it would put them out of business. However, three dealers (20 percent) indicated that it would not affect them a great deal. One dealer in Milwaukee said that it would not affect him because he drives to Illinois to pick the units he sells. (He interpreted this question to mean a reduction in units available in Wisconsin.) Two dealers indicated that they rely more on sales of other products and services more than they rely on used refrigerator sales. These results indicate that the used refrigerator market would be severely harmed by a 50 percent reduction in unit availability, with several dealers going out of business because of lack of supply. This is not unexpected, as most markets that are in balance, supply-constrained, or over-supplied (but not significantly over-supplied), would be seriously affected. There is no relationship between size of business and anticipated effect.

We also asked dealers what kinds of things they would do if their supply were reduced in half. Several dealers provided responses to this question indicating that they would need to employ more aggressive and potentially costly acquisition strategies in their attempt to recover from a reduction in unit availability. Actions reported include:

- Sell more new units to replace the short-fall,
- Pay for advertising to find more units in the residential market,
- Pay higher prices to increase unit collections,
- Make more repairs to units that would not be put out for sale now,
- Approach new appliance stores and multi-family facilities for units,
- Purchase more units from out-of-state suppliers,
- Pick up units for free instead of charging for them, and
- Attend auctions to find units and bid against others.

The responses indicated that the dealers have coping strategies that can be employed to help offset a reduced supply. When asked if these actions would be successful in filling the hypothetical void of a 50 percent reduction in supply, most dealers indicated that they would not be successful in filling the void or that it would be difficult. However, three dealers think that they would be successful to some degree. Others were not sure.

Together, the results of these questions viewed in conjunction with previously reported results indicate that the Wisconsin market is a balanced market.

The Pricing Structure for Used Units

According to interview results, the average sale price of a used refrigerator is about \$209 per unit, but can go from an average low of about \$125 to \$150 to a high of about \$300 or more. The average cost to obtain, repair and ready a unit for sale is about \$85 per unit, ranging from a low of having no direct costs and only requiring labor costs for cleaning, to a cost of \$200 or more for major repairs. This means that the typical used refrigerator dealer puts \$85 into a unit that he typically sells for an average of \$209, making the dealer an average profit of about \$124 per unit before other shop costs are considered.

Ten of the dealers provided an estimate of what their customers require in cost savings in order for them to consider the purchase of a used unit. Together these 10 dealers report that the average used unit must save the typical customer about \$250 or they will purchase a new unit instead. However, some of the dealers indicated that their customers must buy a used unit because they have no choice in the purchase decision. They just do not have the money or the credit to obtain a new unit.

With the average cost to acquire, repair, clean, possibly paint and sell a used unit at \$85 per unit, and the average price of a used unit selling at \$209, there is not much room within this market for added costs if the average customer must save \$250 on the typical unit. Adding the cost of the sale of a used unit (\$209) to the estimated savings that the average buyer demands (\$250) brings the total decision price of the unit to about \$459. It is possible to obtain new full-size frost-free units for less than this amount. We are uncertain why customers would spend, on average, an amount of money that could acquire a new unit in a big-box discount store in order to acquire a used unit. This consideration is outside of the scope of this research, but we suspect that this relationship is influenced by the availability of discount stores in local areas, the comparable options and option costs between new and used equipment, the perceptions of customers about the cost difference between new and used units, the level of credit available from new and used dealers and other considerations. These considerations are beyond the scope of this effort.

One dealer added to this response by saying; *“New units can run as cheap as \$400 so many [people] can get a new one for about the price of a used one. Best Buy will give them credit and delay payments; I can’t compete with that.”* This response suggests that the market for used refrigerators may have shrunk as a result of lower priced units made available through big-box outlet stores that sell discounted refrigerators. The effects on the demand for used units resulting from lower-cost new units were not addressed in this study. However, programs like the APTI Program should consider that the market for used units may be significantly lower now than the demand for these units were prior to the availability of discount appliance dealers. We do not know if the availability of discount stores is currently reducing demand for used units in Wisconsin or if this lower-cost supply has been around long enough that the market has already reacted, however this is an aspect that should be considered by appliance turn-in programs. It may be that while the program is reducing the supply of used units, the availability of big-box discount stores is simultaneously reducing the demand for used units, helping to keep the market in balance. This is not to say that the an appliance turn-in program is not impacting the market, but only to say that this market may be in a demand reduction condition compared to previous years, or may be currently in a demand reducing condition.

Why Dealers Think People Buy Used Appliances

The majority of used appliance sales are to people who must save money in their appliance purchase. Ninety percent of all 20 dealers indicated that customers buy used appliances because they cannot afford new units. Comments suggested that young people just starting out on their own, new

couples that do not have extra money, people with low incomes, and people who are frugal with their money are the main consumers of used refrigerators. However, 25 percent of the dealers said that owners of multi family facilities purchase used appliances to put in their rental units. Comments suggested that these owners also want to save money or avoid having renters destroy or damage new appliances. Ten percent of respondents (2) said that people buy used units as a second unit for their home or for their cottage or vacation home. Finally, one dealer said businesses buy them to put in their offices or break rooms.

These results indicate that while a minority of units may go in as secondary units most sales of refrigerators go predominantly to the poor and to people who need to save money. Programs like the APTI Program need to recognize that if they are impacting the secondary market by removing units, resulting in more new units being sold, the primary consumers being impacted by this effect are the poor. The following table presents the results of the question on why people buy used refrigerators.

Table 3. Why Dealers Think Their Customers Buy Used Refrigerators

Reason for purchase	Responses	Percent
People who need to save money	18	90
Multi family owners not needing new units	5	25
Need a second unit in their home or for their cottage	2	10
Businesses who need one for their break room	1	5

How Units Are Used

Nine dealers (45 percent) were able to provide a percent estimate of how the units they sell are used by the customer. An additional eight dealers (40 percent) were unable to give a percent estimate, but indicated that “most” of the used units they sell are used as the primary units going into homes or apartment buildings. The nine dealers, who were able to provide an estimate of the percent of their sales that are sold as primary units, said that on average 75 percent go into homes as a primary unit. These results indicate that used units are typically plugged in and running all of the time if they are used for primary food storage. The rest of the units are used as secondary units. Because dealers indicate that 25 percent of the units are used as secondary units, we expect that many of these are also operating much of the time. However, we also expect that an unknown portion of the secondary units are used on an as-needed basis and may not be plugged in and operating all of the time.

Awareness of the APTI Program

Seventy percent of the contacted dealers report that they are aware of the Focus on Energy’s Appliance Turn-in Program and indicate that they have heard about or know about the APTI Program and are familiar with the operations of the Program to some degree. However, we cannot be sure that the dealers are familiar with the Focus version of the program. A few of the respondents indicated that they have heard of the program that collects used refrigerators and pays people to collect them. However, we cannot be sure if the dealers responding to these questions are referring to the Focus program or to one or more of the programs that have been offered in the past or are currently being offered. We expect that there is a considerable level of confusion in the market concerning the difference between the Focus program operated by CSG and other programs offered by CSG or other utilities or organizations. The survey was not designed as a program recognition survey that probes for the level of knowledge associated with each of the appliance collection programs offered across the state in a way that would allow us to differentiate dealer’s knowledge levels associated with different current or past programs. As

a result, at this time we cannot reliably say that 70 percent of dealers are aware of the Focus program, but we can conclude that 70 percent of the dealers report that they are aware of the Focus program. The remaining 30 percent of the respondents interviewed indicated that they are unaware of the Focus program.

Opinions About the Affect of the APTI Program

We obtained a mixed set of responses when we asked secondary market dealers how the APTI Program has affected their operations. While all respondents indicated that their responses were about the Focus APTI Program we are not certain that they were speaking directly about the Focus APTI Program or one of the other current or past programs operated in Wisconsin. As a result, these responses should be interpreted as the dealer's opinions of how appliance turn-in programs affect their market rather than how the Focus APTI Program affects their market. We report the responses (below) as being directly associated with the Focus APTI Program, but we cannot be sure of this aspect as we did not ask program segregation questions that would allow us to know if they were able to segregate the different programs (current and past) and respond only about the APTI Program.

Seven of the thirteen dealers that responded to this question and provided specific information on how their operations are affected indicated that the APTI Program has not had a significant affect on the operations of their markets. In all of these cases the dealers acquire their used units directly from new appliance dealers who pick up the used appliances when the new one is delivered or from a used appliance warehouse. Only one dealer which also that obtains their supplies from new dealers, indicated the APTI Program is affecting his supply. This individual indicated that the APTI Program is "hurting our business, it reduces the supply that we need to stay in business."

An additional dealer that acquires units from both new dealers and the public said that the APTI Program was not harming his business at first, but he also indicated that he is now being harmed because the program is picking up newer units. Three dealers that obtain their units from the public said that the program is harming their business. One said that the "program is taking a lot of units" from him; one said that it "definitely decreases the units that are available;" and one said, "20 percent [of his sales] has been reduced as a result of the program."

One dealer also indicated that the program will harm him in the future if it continues, but suggests that it might not be harming him at this time. This dealer gets his supply from a city recycling program and from a new dealer. He indicated that It will be "hard [for him] to compete" with the program. He said, "The program could hurt this aspect of [his] business dramatically." The rest of the respondents did not know if the program affected their business. There is no relationship between the size of the dealers and those indicating the program is harming them, or would harm them in the future.

Of the 13 respondents who were able to judge whether the APTI Program was harming their business, six (46 percent) indicated that the program was harming or will harm their business. These results indicate that the Focus APTI Program that picks up used refrigerators impact the operations of the used refrigerator market, but especially the part of the market that acquires their products from the public.

This group of dealers attribute that affect specifically to the Focus APTI Program. However, we did not test to see if the program to which they were referring was actually the Focus program run by CSG or another program operated by CSG or another utility or service provider.

About seventy percent of respondents who report that they are affected by the APTI Program report a need to change their operations as a result. Two of these dealers also reported that they had to go out of business or find new suppliers. One who found a new supplier continues to operate and one who did not had to go out of business. This contact called the interview staff four days after the interview and reported that they had decided to close their shop because of the lack of supply from the

public and their inability to find new appliance dealers who will sell them used units. Impacts reported during the interviews include:

- No effect (for dealers who obtain units from new dealers),
- Reduction in the supply of units available from the public,
- Increase in unit costs as a result of needing to pay more than the program in order to obtain units,
- Establishing new supply routes to compensate for reduction in supply routes from the public,
- Reduction of the total supply of sellable used units available in the market, and
- Reduction in jobs in the used appliance market shops.

These responses indicate that the APTI Program or other refrigerator collection programs similar to APTI are not significantly affecting the chain of supply that comes through new appliance dealers; but is significantly affecting the supply of units that are typically obtained from the public. The APTI Program does not target new appliance dealers and is not expected to directly impact the flow of units out of this market. However, the program may indirectly affect the flow of units into new dealers which in-turn would affect the flow of units into the secondary market. However, for the part of the market that relies on the collection and sales of units obtained through the public, the APTI and other refrigerator collection programs similar to the APTI are directly affecting the supply of units into this market.

How Used Refrigerator Dealers Market Their Products

Used appliance dealers typically do not conduct a lot of advertising or marketing of their products or of their business. However, all but three dealers market their products using at least one method and some use multiple methods. Sixty percent of the interviewed dealers place ads in the newspaper to advise the market that they have used appliances for sale. Another 45 percent said that they rely on word-of-mouth within their market area. This group is made up of six dealers who directly said they rely on word-of-mouth and three dealers who said that they do not promote, indicating that they also rely on word-of-mouth. Another 40 percent said that they place ads or listings in the yellow pages. However, because all of the interviews were with dealers who are listed in the yellow pages, we were surprised that only 40 percent of these dealers consider listing in the yellow pages as a form of advertising. Interestingly, three (15 percent) of the dealers said that they rely on their relationships with apartment owners and landlords to help move their products; for at least these three dealers, providing units to multi family facilities is a key factor in their operations, and supporting a theory that the multi family sector is a key consumer of used appliances. Other dealers said that they use radio ads, church bulletins, “Red Book” ads, flyers, paper placemats in their local McDonalds, and plastic phone book covers given to people in their community. The following table provides the number and percent of respondents who reported advertising approaches. All 20 respondents provided responses to this question.

Table 4 Advertising methods

Promotion	Respondents	Percent
Ads in newspaper	12	60
Word-of-mouth	9	45
Yellow pages/phone book	8	40
Relationships with apartment owners & landlords	3	15
Radio ads	1	5
Church bulletins	1	5
Red book ads	1	5
Flyers	1	5
Placemats at McDonald's	1	5
Phone book covers	1	5

Six dealers said they rely on word-of-mouth and an additional 3 said that they do not advertise, indicating that they also rely on word-of-mouth. This table combines these responses.

Opinions Relating To Refrigerator Collection Programs

The following are the opinions of the author relating to the findings presented in this report and the experiences of the research effort and are not the opinions of any other individual or organization.

Programs that collect units from the general public reduce the number of units made available for sale in the secondary market for only those dealers who obtain their supply from the public, and as a result, will directly influence the number of more efficient new units sold.

Programs that do not collect units from dealers that supply new units are missing the majority of used units entering the secondary market. This market path is currently a lost opportunity and represents the majority of the units moving into the secondary market for the interviewed dealers listed in the Yellow Pages.

The market is, in general, a balanced market; one in which the supply of units seem to be equal to the supply of units coming into the market, except for the dealers who obtain their supply from the public. This market path appears to be more supply-constrained than the path that supplies used units from dealers selling new units.

This market is dependant on the sales of new units that, in turn, free-up a used unit for the secondary market. This in itself represents a limited supply chain. There is no factory ready to wind up production of used units so that the market can be re-supplied if refrigerator turn-in programs become successful at reducing the supply of used units into this market. The market is limited in what it can do to overcome a reduction in supply should refrigerator turn-in programs reduce the stream of used units coming from new appliance dealers. If this market were significantly reduced it would have an immediate and dramatic effect on the used refrigerator market.

There is a limited amount of evidence that used dealers may be able to acquire additional supplies from out-of-state sources that could potentially make up for a supply reduction caused by used refrigerator collection programs. While this does not appear to be a reliable or consist supply route for obtaining used units, this alternative supply option needs to be investigated before a statewide appliance tune-in program that targets new dealers is developed. It would make little sense to deploy a successful program targeting new dealers only to have supplies shipped in from other states that have an over-supply of units.

Judging from the comments we received from used appliance dealers (who obtain their supplies from the public) regarding the difficulty of finding enough units to sell, programs that target new dealers may well be met with a significant level of complaints from the used appliance industry and perhaps also the new dealer industry. Collection programs that obtain units directly from the public may harm only a

small number of used dealers that obtain their units from the same source. These dealers tend to be smaller in size and sell fewer units than dealers who obtain their supplies from new dealers. Used appliance dealers who obtain their units directly from new dealers may not view public-targeted collection programs as harmful (but instead helpful) to their sales levels and therefore not resist collection programs that help remove their competition from the market. This hypothesized perception, if true, would change when collection programs begin to focus on the new dealer supply routes. Program managers should be ready to deal with increased levels of complaints from the secondary market if program begin to target new dealer supply routes in a way that harms these dealers.

We also suggest program designers keep in mind that new dealers must have business arrangements that allow them to rapidly and efficiently get rid of their used units. If a program were to target new dealers and be successful to the point that this supply stream would be significantly impacted, it would need to be designed in a way that does not delay or reduce the movement of units from new dealers who need to get them out of their inventory as rapidly as possible to make room for new units. If the program were to operate in a way that caused delays in the removal of used units from new dealers it could rapidly equate to lost sales, decreased productivity, increased costs, storage problems, and potential retaliatory measures by the impacted new and used dealers.

Program designers should also consider the impact of their programs on the low-income market. People in this market may not have enough money or credit to obtain a new unit when a unit is needed. It appears that most used sales go to people who cannot afford a new unit or do not have enough credit to finance a new unit. In addition, the data from this study suggests that most of the used units sold are primary units rather than secondary units, suggesting that a significant portion of these sales may be as a result of a failed unit in need of replacement. Used refrigerators sold in the low-income market should be considered a “health and safety” appliance (warm food quickly decays into a poisonous condition) and program managers should consider the impact of a decision that reduces the ability of a low-income customer to obtain a unit at a price they can afford. Program managers may want to consider a low-income incentive program to off-set the price difference between a new and used unit for low-income customers who may be harmed by a comprehensive program that significantly reduces the availability of used units within their price range.

There remains a large majority of the used refrigerator market that is not addressed in this report. There are potentially large numbers of units that are removed from homes and businesses that do not seem to enter the secondary market stream through dealers who are Yellow Page listed. This aspect needs to be investigated before program designers consider programs that target this market. We need to identify and investigate this “missing link” in the used refrigerator market.

