2006 HOUSEHOLD APPLIANCE INDUSTRY OUTLOOK

Household Appliance Manufacturing Industry Definition, NAICS 3352

> *The household appliance manufacturing industry (NAICS 3352) is comprised of establishments primarily engaged in manufacturing either small electrical appliances (NAICS 33521) or major appliances (NAICS 33522). Subsectors in these categories are electric housewares and household fans (NAICS 335211), household vacuum cleaners (NAICS 335212), household cooking appliances (NAICS 335221), household refrigerators and home freezers (NAICS 335222), household laundry equipment (NAICS 335224), and other major household appliance (NAICS 335228).*

The U.S. appliance industry is a relatively mature industry with 3 dominant companies, Whirlpool, General Electric, and Electrolux, producing full lines of major household appliances - cooking, refrigeration, and laundry. This follows Whirlpool's recent acquisition of Maytag Corporation, the fourth full line producer, in March 2006. Many other companies specialize in more narrow lines of product categories. There are also several companies producing small household appliances. Since most of the appliances now being produced have changed little in recent decades, there is often relatively little to differentiate one manufacturer's products from another's. The result has been intense price competition, as consumers have tended to consider appliances more like commodities.

Since the late 1980s, there have been several international acquisitions, consolidations, and restructurings in the industry. Today, the two global market leaders are Whirlpool and Sweden's Electrolux with a strong presence in most of the important markets around the world. In addition, there are several other manufacturers, such as General Electric, Bosch und Siemens Hausgerate, Matsushita, LG Electronics, Haier, Merloni, and Samsung, that also compete in most markets.

Product shipments of U.S. household appliances were an estimated $23.3 billion in 2005, up 3.5 percent from in 2004 in constant dollars. While total retail market sales of appliances in the United States in recent years have been aided by an expanding economy, a high rate of housing construction, and low interest rates, increasing imports continue to capture a greater share of the market at the expense of domestic production. U.S. appliance shipments are expected to increase 1 percent during 2006 in constant dollars.

<u>Economic Factors</u>

The appliance industry is a cyclical industry with most sales dependent on replacements and new construction. The saturation levels for the various appliance categories are fairly steady but do change somewhat over an economic cycle as some consumers delay replacing certain appliances during a recession. Factors affecting sales include new housing construction, home remodeling, interest rates, employment, and consumer confidence.

Currently, the outlook for the economy has darkened in recent months. The Federal Reserve (Fed) has raised the federal funds interest rate steadily from a low of 1 percent to 5.25 percent over the past two years, although they did pause in raising the rate at their August 2006 meeting. While the Fed remained concerned about inflation, there was rising unease as economic growth had moderated from its strong pace earlier in the year, reflecting cooling of the housing market and lagged effects of the increases in interest rates and energy prices.

Interest rates for 30-year conventional mortgages have increased over the past few years. They reached 6.68 percent in June 2006. The lowest rate in recent years had been about 5.23 percent reached in June 2003. The relatively low mortgage interest rates of recent years have resulted in high levels of housing starts and housing prices. However, sales have slowed in 2006 with sharply higher inventories of unsold homes in many areas of the country and slower price appreciation if not price cuts.

Additional economic uncertainty has been caused by the large number of adjustable rate mortgages that were issued in recent years. Nationally, about $2.7 trillion of these mortgages will adjust their rates upward from their initial rates over the next 2 years. A substantial number of recent homebuyers could find the higher monthly payments to be unmanageable and will be forced to put their houses on the market. This will add pressure to an already slowing real estate market. In addition, with a slow down in rising home prices, fewer consumers can be expected to withdraw equity from their homes when refinancing their mortgages, thereby reducing consumer spending. Likewise unfavorable for the economy is the rising cost of oil and natural gas. This will affect consumers through higher energy bills leaving less money for other spending.

Industry Consolidation

As mentioned above, Whirlpool Corporation acquired Maytag Corporation in March 2006. This resulted in consolidation of the major full line producers to just three companies which now account for most sales of major appliances. A similar consolidation occurred among the small electric appliance manufacturers in 2006 as NACCO Industries spun-off Hamilton Beach/Proctor-Silex which then acquired Applica Incorporated. Applica markets and distributes small electric appliances under licensed brand names, such as Black & Decker, and its own brand names, such as Windmere and Applica. Following the merger, Hamilton Beach products will account for about half of the market share for several small electric appliances.

Industry Employment

Employment in the appliance industry fell from 92,200 in 1997 to an estimated 79,300 in 2005. Prior to 2002, most of the loss in employment was among manufacturers of electric housewares and fans. Since then, substantial employment reductions have also been recorded among producers of vacuum cleaners and refrigerators. Employment for producers of electric housewares and fans and vacuum cleaners fell nearly 50 percent during the 8-year period while refrigerator producer employment fell nearly 15 percent. These reductions reflect the continued shifting of additional production to foreign plants.

Production of electric housewares and fans generally moved to Asia, primarily China, while refrigerator production moved to Mexico.

Raw Material Prices

Commodity prices have been in a strong bull market since 1999. Supplies for many commodities are restricted since there was relatively little capital investment in the mining and other extractive industries during the bear market prior to 1999. In addition, on the demand side, there has been substantially increased demand from several countries due to increased economic activity such as China and India, which benefited from recently opening their economies to global competition. Both China and India have increased demand for the many commodities needed to develop their infrastructures.

Nearly all commodity prices reached record levels in 2006. For example, the price of copper reached $3.42 per pound in late August, up from $1.70 a year before. Aluminum was $1.14 per pound compared to $.86 the year before. Average prices for hot-rolled steel sheet reached $630 per ton in mid 2006, compared to $435 per ton the year before. This was the highest price since September 2004, when prices reached an all-time high of $760 per ton, boosted by unprecedented demand from China. Prices for plastic resins, derived from petroleum, have also been rising.

The price of crude oil, which fell below $10 per barrel in 1998, rose to over $70 per barrel in September 2005 when Hurricane Katrina damaged several drilling rigs and oil refineries. A record price of $78.40 was later reached in July 2006 during North Korea's missile tests and the crises in the Middle East involving Israel's incursion into Lebanon and Iran's nuclear program. While high, these prices did not exceed the inflation-adjusted peak of the 1980 shock, when prices then rose to $90 a barrel in today's dollars.

Natural gas prices rose from an average of about $2.00 per million Btu in the 1990s to nearly $9 per million Btu in 2005, spiking to $15 per million Btu following hurricane Katrina. In 2006, prices fell back to under $6 during the summer. However, futures markets then anticipated prices rising to $9 per million Btu in 2007. Although natural gas prices have increased all over the world, natural gas prices in the United States are far higher than natural gas prices in much of the world. For example, in 2005, when the U.S. cost for natural gas was nearly 9 per million Btu, the cost per million Btu was about $6 in South Korea and Japan, $5 in China, $3 in India, and less than $1 in Saudi Arabia. The high price in the United States is partially the result of U.S. policies that encouraged the use of natural gas as a fuel for power production to reduce emissions. However, domestic production has not increased to satisfy this demand but has remained flat. So, over the past decade while the industrial sector reduced its use of natural gas, the power sector increased its use sharply.

Many commodity experts to not expect prices to fall soon but instead forecast the bull market in commodities to continue over the next few years. If so, appliance producers will be forced to raise their prices due to the increased costs. This will be quite a reversal from the past decade when appliance prices fell steadily due to increased import competition and improvements in productivity.

Appliance Prices

Prices for most appliance categories fell steadily over the past decade until recently. (See the attached table.) The exceptions were small electrical appliances and other major appliances. The former has the most import penetration while the latter has the least. Domestic manufacturers of small appliances have long been under import pressure, so they had already squeezed excess costs substantially by 1997 with little left to cut. The other category, other major appliances, includes such appliances as water heaters, dishwashers, trash compactors, and garbage disposers. Imports have not made substantial inroads into these product sectors other than garbage disposers. Since vacuum cleaners are currently the category under the most import pressure, it is to be expected that their prices would have fallen the most. It is interesting to note that the prices for most appliance categories have been rising since at least 2004 as rising commodity prices have begun to force appliance price hikes. Vacuum cleaners remain the only category with prices still falling in mid-2006.

Appliance Energy Efficiency

The U.S. Department of Energy (DOE) has had authority to set national energy efficiency standards for major household appliances including refrigerators, water heaters, dishwashers, laundry equipment, and ranges and ovens since 1987. In recent years, it has tightened standards for several appliance categories. In addition to setting energy efficiency standards, DOE with the U.S. Environmental Protection Agency created the Energy Star label in 1996, which is used to identify the more energy-efficient products on the market. Energy Star-labeled appliances significantly exceed existing DOE energy standards.

Another label is the Energy Guide label, which has been required by the U.S. Federal Trade Commission since 1980 for several household appliances including refrigerators, freezers, dishwashers, clothes washers, and water heaters. That label shows the estimated kilowatt-hours of electricity consumed per year on a horizontal graph, with the end points showing the highest and lowest amounts consumed by models of similar size. The estimated annual operating cost also is provided. These labels encourage consumers to purchase more energy efficient appliances.

To address rising energy prices, Congress passed the Energy Policy Act of 2005 that provides tax incentives and loan guarantees for energy production of various types. Some of the Act's provisions directly benefit the U.S. appliance industry. One provision encourages production of energy efficient appliances by providing tax benefits in 2006 and 2007 to appliance manufacturers producing refrigerators, clothes washers, and dishwashers that meet the Energy Star ratings. The Act also sets new standards for clothes washers and dishwashers to qualify for the Energy Star rating. In addition, energy efficiency standards were established for the first time for several additional products including dehumidifiers and ceiling fans.

Waste of Electrical and Electronic Equipment (WEEE)

As the appliance industry becomes increasingly global, manufacturers must comply with an increasing number of standards and regulations in both home and foreign markets. For example, the European Union's (EU) WEEE Directive became effective in 2005. It calls for mandatory collection and recycling of electrical and electronic equipment to stem Europe's growing waste problem. Companies must register their product with a member state and pay for the collection and treatment of e-waste, either by setting up their own system or by joining a collective scheme. Registration rules are often confusing since each jurisdiction has its own program, and not all countries have fully developed WEEE programs in place.

Restrictions on Hazardous Substances (RoHS)

The European Union, Japan, Korea, and China are moving to restrict or identify the use of certain environmentally hazardous materials. Beginning July 1, 2006, the EU under its RoHS Directive began to restrict lead, mercury, cadmium, hexavalent chromium, and certain polybrominated flame-retardants from electrical and electronic equipment. Companies have had to change their manufacturing processes in order to make products with substitute materials.

Japan has amended its recycling laws to require RoHS substance labeling of certain home appliances, including microwave ovens, refrigerators, and laundry equipment, for the same six substances regulated under the EU's RoHS. The amendment became effective July 1, 2006. South Korea has proposed to regulate the use of hazardous materials for electrical/electronic products. It would require producers/importers to declare the use and concentration of hazardous substances, mandate use of recyclable materials, make producers/importers responsible for the recycling of their products, and allow for recycling dues. The legislation is similar to the EU's RoHS and WEEE Directives. The legislation is scheduled to go into effect July 1, 2007.

China's "Administrative Measures for Pollution Control of Electro-Information Products," is known in the United States as "China RoHS." While the scope of products covered under China RoHS will initially be much smaller than the EU's RoHS, the regulations are more complex because of unique certification, testing, and labeling requirements and the delayed nature of Chinese guidance and supporting legislation. China's RoHS currently controls the same hazardous substances as those in the EU's RoHS Directive, although other substances can be added later. A Priority Products Catalog will list covered products and timelines for restrictions. Listed products will be subject to compulsory certification and testing being before sale in China, and imports of products in the Catalog will be subject to authentication and inspection upon arrival in Chinese ports. The Catalog, testing requirements, testing lab certification, and related issues are in development. Various requirements are expected to become effective in 2007.

Standby Power – One-Watt Plan

Standby power is the electricity consumed by appliances while switched off or not performing their primary functions, such as a television continuing to draw a little power after the user switches it off with the remote control. Standby power consumption for

most devices is small, typically ranging from 0.5 to 10 watts, but the number of devices drawing standby power is large. A typical U.S. home may contain up to 20 devices drawing standby power. These include all devices with remote controls and external power supplies (or adapters), and permanently illuminated digital displays and LEDs. As a result, standby power can be responsible for up to 5 or 10 percent of total electricity used in some homes.

New technologies have become available that make it possible to reduce standby power by as much as 90 percent while maintaining all the features that customers want. The most important innovations are higher efficiency power supplies and improved design of circuitry.

The International Energy Agency has proposed that all countries harmonize energy policies to reduce standby power use to no more than one watt per device. Participating countries would seek to lower standby power to below one watt in all products by 2010, adopt the same definitions and test procedures, and use measures and policies appropriate to their circumstances. Australia and Korea have formally adopted the one-watt plan.

Foreign Trade

U.S. imports of household appliances have been increasing steadily over a decade. Between 1997 and 2005, imports as a percentage of consumption increased from 25.4 percent to 41.7 percent. The trend does not show any signs of slowing with total 2005 appliance imports reaching $13.4 billion, an increase of 13.3 percent from 2004. During the first six months of 2006, imports increased a further 19.8 percent. China dominated imports, accounting for 46.5 percent of total imports in 2005. The other leading suppliers to the United States were Mexico, South Korea, Canada, and Germany.

U.S. exports of household appliances, after declining gradually for most of the past decade, have been increasing since 2003. U.S. appliance exports in 2005 were $3.1 billion, an increase of 16.9 percent from 2004. Canada, Mexico, Germany, Netherlands and the United Kingdom were the leading export markets.

The globalization trend in the appliance industry has been stimulated by the reduction of tariffs over the past few decades. Today, there are no U.S. tariffs on many large appliances and tariffs of only 1.4 to3.4 percent on the remainder. For small appliances, U.S. tariffs range from 2 to 5.3 percent.

The collapse of the WTO Doha negotiations in July 2006 due to differences over agriculture means that there is decreased likelihood of a multilateral tariff agreement any time soon. Since the fast-track negotiating powers of the President will expire in July 2007, there is little time for any resumed Doha negotiations to succeed unless fast-track is extended, which is questionable at this time. However, there are several U.S. bilateral agreements, either recently negotiated or in the negotiation pipeline. These include the Andean group, Australia, Bahrain, Central America-Dominican Republic, Jordan, Malaysia, Morocco, Oman, Panama, the Republic of Korea, Singapore, the South African Customs Union, Thailand, and the United Arab Emirates. It is likely that some of the

current negotiations still in the pipeline will be completed and passed by the Congress before fast-track authority ends.

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REFERENCES

Call the U.S. Bureau of the Census at (301) 763-4100 for information about how to order Census documents.

Appliance Magazine, Dana Chase Publications, Inc., 1110 Jorie Boulevard, Oak Brook, IL 60522. (630) 990-3484.

Appliance Design, BNP Media, 755 W. Big Beaver Rd., Suite 1000, Troy, MI 48084.

Dealerscope, North American Publishing Co., 401 North Broad Street, 5th floor, Philadelphia, PA 19108. (215) 238-5300.

HFN Home Furnishing News, Fairchild Publications, 7 West 34 St., New York, NY 10001. (212) 630-4000.

Electric Housewares and Fans: 2005, Current Industrial Reports, MA-335E, Bureau of the Census, U.S. Department of Commerce, Washington, DC 20233. (301) 763-4673.

Major Household Appliances: 2005, Current Industrial Reports, MA-335F, Bureau of the Census, U.S. Department of Commerce, Washington, DC 20233. (301) 763-4673.

Electric Housewares and Household Fan Manufacturing, 2002 Economic Census, EC02M-311-335221, Bureau of the Census, U.S. Department of Commerce, Washington, DC 20233.

Household Vacuum Cleaner Manufacturing, 2002 Economic Census, EC02M-311-335212, Bureau of the Census, U.S. Department of Commerce, Washington, DC 20233.

Household Cooking Appliance Manufacturing, 2002 Economic Census, EC02M-311-335221, Bureau of the Census, U.S. Department of Commerce, Washington, DC 20233.

Household Refrigerator and Home Freezer Manufacturing, 2002 Economic Census, EC02M-311-335222, Bureau of the Census, U.S. Department of Commerce, Washington, DC 20233.

Household Laundry Equipment Manufacturing, 2002 Economic Census, EC02M-311-335224, Bureau of the Census, U.S. Department of Commerce, Washington, DC 20233.

Other Major Household Appliance Manufacturing, 2002 Economic Census, EC02M-311-335228, Bureau of the Census, U.S. Department of Commerce, Washington, DC 20233.

2004 Annual Survey of Manufacturers, Bureau of the Census, U.S. Department of Commerce, Washington, DC 20233.

2001 Annual Survey of Manufacturers, Bureau of the Census, U.S. Department of Commerce, Washington, DC 20233.