



Statistics on Consumer Durables Manufactured, By Season

James Tanoos, PhD

Email: jtanoos@smwc.edu

INTRODUCTION

Historically, consumer confidence and the willingness of American and European customers to increase both production and consumption of consumer durables have had a sizable impact on the health of the American and EU economies, as well the broader global economy. However, a notable feature of the recent global downturn was a significant decrease in the demand for consumer durables (Black & Cusbert, 2010). A comprehensive awareness of the general patterns of consumer durable purchases is important for American economists due to their connectivity to the domestic and global economies. While there have been studies outlining the effects of consumer durable purchases on business cycles and productivity growth, none has presented variations and trends in consumer durables by month. Awareness of the most likely seasons to export consumer durables would be particularly useful to foreign consumers, who stand to benefit from knowing the most cost-effective times to buy industrial products from American producers.

BACKGROUND-CONSUMER DURABLES

Consumer durables tend to be tangible, manufactured goods intended for continuous usage for more than three years (BEA, 2003; Jalava & Kavonius, 2008) such as household furniture or appliances. These items generally comprise the more productive, higher-wage, technology-reliant segment of manufacturing output (Helper et al., 2012). Consumer durable purchases in the US have increased over the past decades (see figure below) as the economy strengthened, until they began to decrease during the recession starting in 2008.

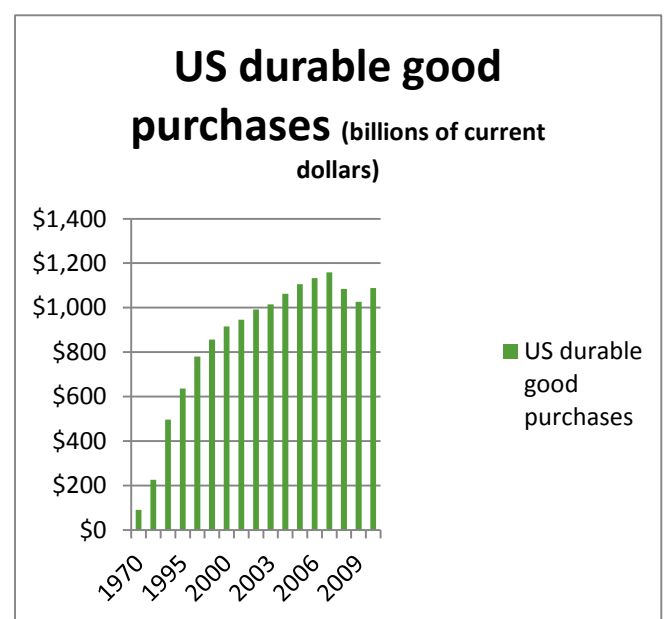




Figure 1. *US Consumer Durables, purchases and trends*

Because consumer durables tend to be more illiquid and thus more of a long-term investment than most other goods, changes in consumer confidence can directly affect buying and production patterns of all domestic economic activity (Cole, 1962; Mishkin, 1978; Folsom, 2005). Baxter (1996) noted that consumer durable purchases play a “central role” in the generation of business cycles, and Black and Cusbert (2010) commented that consumer durable spending patterns in the US have “long been identified as an important feature of the business cycle” (p. 11). In fact, economic fluctuations are often triggered in the US by purchasing patterns of consumer

durables. These purchasing patterns are reported to have the same type of effect on GDP rates for the US economy as European domestic consumer durable purchases for the EU market (Jalava and Kavonius, 2008; Eurostat, 2009).

When there are spikes in the production and/or purchase of consumer durables, the local and/or regional economy receives positive net benefits. The following table compares domestic economic growth in the US with consumer durable purchases. The big drop in consumer durable purchases in 2008 reflects the economic stagnation patterns in the domestic and world economies that year.

Table 1. *Domestic Economic Growth by Year, Contrasted with Consumer Durable Purchases*

	2003	2004	2005	2006	2007	2008	2009	2010
US Durable Good Purchases % Change	6	6.6	5.2	4.1	4.2	-5.2	-3.7	7.7
US Real GDP growth rate	2.5	3.5	3.1	2.7	1.9	-0.3	-3.1	2.4

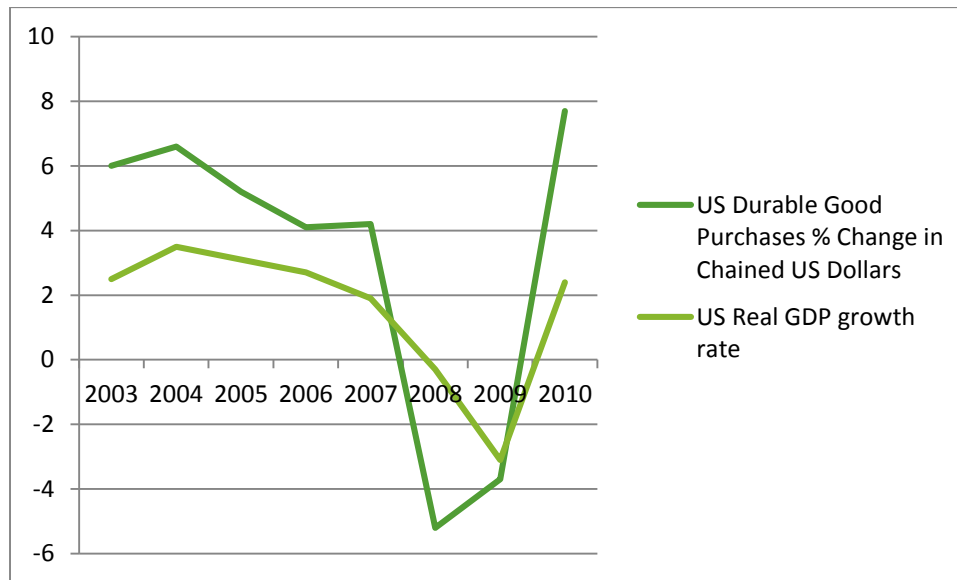


Figure 2. Domestic Economic Growth by Year, Contrasted with Consumer Durable Purchases

According to the US Department of Commerce, the value of manufacturers' new orders for durable consumer goods rose from approximately \$20 billion in 1992 to nearly \$38 billion in 2006, before dropping back down sharply to approximately \$20 billion in 2009 in the midst of the domestic and global financial downturn (Federal Reserve Bank of St. Louis, 2013). During a brief recovery of the domestic economy, the number of manufacturing jobs increased by 2.6% from December 2009 through September 2011. These gains were concentrated in durable goods manufacturing (Helper et. al, 2012). This was during a time in which the unemployment rate in the US was higher than it had been.

Consumer durables are a staple statistic tracked and monitored by financial groups. The

Survey of Current Business, a public monthly report by the US government, is considered the primary source for data related to key economic measuring sticks such as GNP, personal income, and consumer durables (US Census Bureau, 2012). Statistics about consumer durables are utilized by the Federal Reserve Board in analyzing interest rate changes and other capital flows (Tran, 2005; BEA, 2010). Consumer durable stocks are routinely clustered and included in stock market metrics such as a three-month average as predictors of current and future market performance (Diewert et al., 2010; CNN, 2013). In addition, stock market reactions based on consumer confidence and economic activity might necessitate a comparison with annual monthly averages rather than with the preceding month's activity. As such, an understanding of the most likely months which consumer durables would be



bought and sold would benefit speculators just like predicting stock market trends would benefit a Wall Street buyer or seller. The importance of the consumer durable industry insists that economists track and consult these important economic metrics.

Overall worldwide demand for consumer durables affects different stages of the supply chain, ranging from obtaining raw materials to the consumer purchase. As such, the bullwhip effect, a phenomenon resulting from inconsistent and costly inventory misvaluations due to lags in communication regarding forecasting demand at different stages in the supply chain, might be minimized if vendors can more accurately predict consumer durable patterns from general calendar averages.

Consumer durable purchases affect not only the domestic economy, but the interconnected global economy as well. Statistics on consumer durables are utilized by the Federal Reserve Board in analyzing “international comparisons of profitability” as well as by the European Central Bank (Beblavy, 2007) when determining strategies in monetary policy (Gordon, 2007; BEA, 2010). They are also seen as providing stable pricing between international countries as a predictor of overall costs, more so than prices of services which can vary greatly from region to region (Eurostat, 2009). Consumer

durables have even been labeled as a “key transmission mechanism of the uncertainty associated with the global financial crisis to the broader economy” (Black & Cusbert, 2010, p. 11) and a direct, “sensitive” impact on interest rate changes for advanced economies (Feldman et. al, 2002).

Consumer durables also have a direct connection with European business cycles. Their sales dropped sharply in conjunction with the global recession in production and consumption over the past several years; in fact, consumer durable purchases have tended to coincide with the falling value of prices of goods in Europe during the past decades (Jovanovic, 2002; Eurostat, 2009). Consumer durable purchases tend to be a favorite of European consumers because they are generally bought with disposable income and are seen as reflecting a high standard of living within a country. Consumer durable purchases are more volatile than nondurable purchasing (Baxter, 1996), and studies published by the EU have commented on the consumption of consumer durables as having net positive effects on the pan-European economy (Reuvid, 2006; Eurostat, 2009). After the general EU economic decline during 2008 and 2009, the economy increased by 2% in 2010, which economists directly attributed to a 6% demand increases in Eastern Europe, consisting primarily



of increases in consumer durable purchases (Electrolux, 2010).

Consumer durable goods buying and/or intentions to buy often provide a key indicator of future national economic prospects in Europe. For instance, consumer durable demand was healthy in Germany during an otherwise gloomy economy in 2012 in which the German economy suffered much less than other EU member-states (Market Monitor, 2012). By contrast, the declining purchasing power for consumer durables and the predicted downward trends in domestic buying patterns have caused economists to predict further stagnation of the Dutch economy in the future (Market Monitor, 2012). Truly, consumer durables are an important metric for the EU economy.

It would behoove economists and those determining interest rates, financial policies, and forecasting to fully understand the general ebbs and flows of consumer durable purchases since they have such a direct impact on the health of the American, European, and global economies.

BACKGROUND-SEASONAL

Statistics on consumer durables are not published in real time like reports on unemployment or consumer confidence, but instead are published months later (BEA, 2010). The US Census Bureau of the US Department of

Commerce monitors values of US manufacturers' shipments based on a non-seasonally-adjusted rate (regular rate), as well as a seasonally-adjusted rate. This seasonally-adjusted technique eliminates the variable that may shift depending on the time period in which they occur in order to reveal more underlying trends such as increases from the prior month. These seasonal mathematical calculations are not consistent and vary from year to year due to unforeseen changes and are adjusted annually (Institute for Supply Management, 2013).

The Department of Commerce's annual seasonal adjustment factors take into account unusual variations in weather, non-movable holidays, and other factors used to adjust the index in advance (Institute for Supply Management, 2013). Seasonal adjustment factors contribute to official data in areas such as new orders, production, employment, and supplier deliveries (Institute for Supply Management, 2013). Seasonal factors do not actually take into account the usual changing of the weather but instead utilize dramatic variations in the normal weather patterns from past years, such as changes due to hurricanes. In the monthly Institute for Supply Management *Report On Business*, seasonal adjustments are utilized to "allow for the effects of repetitive intra-year variations resulting primarily from normal differences in weather conditions, various institutional arrangements, and differences attributable to non-movable



holidays”(Institute for Supply Management, 2013, p. 1). When seasonal factors are revised and computed the following year, the final seasonally adjusted consumer durable numbers are then calculated and published. (which body does what kind of report? Are u saying htat there is a forecast report tht sort of guesses at what will happen based on what has happened in the past as well as a post-report based on what actually happened? Then the new report is used to forecast the next year?

US government officials do not publically publish or comment on seasonal trends or factors as they relate to these calculations and their connections to manufacturing output. Hall (2013) of the US Census Bureau stated that “we don't publish seasonal factors separately” and Savage (2013) noted:

“We do not publish the factors for each industry (or), each cycle of our publication. Seasonal factors are revised on an annual basis; each year when the monthly data is benchmarked to either the Annual Survey of Manufactures or the Economic Census. This is generally in mid-May. The most recent seasonal adjustment occurred when we benchmarked on May 17, 2013.”

These annual seasonal changes reflect variations unique to each year and not traditional patterns of buying and selling during the calendar year.

Methods/Results

Economists and other monetary policymakers would benefit from an understanding of the times of the year with the highest number of consumer durable sales and purchases. This study uses longitudinal analysis of government data spanning several decades to assess which seasons are most likely to elicit the highest number of exports of American manufactured consumer durables out of the American marketplace. In the absence of an official public seasonally-adjusted rate, archives from yearly reports on consumer purchases of durables were examined.

Data were extracted from the US federal government's International Accounts Products for Detailed Goods Trade Data, including a file under their US Trade in Goods “Historical Series” data. There were 5,500 different classifications in total, including wheat and rice, coals and related fuels, plastic materials, etc., based on the specific EU description. “Consumer durables manufactured” was the classification that most closely aligned and was utilized for purposes of this analysis.

The table below constitutes the “consumer durables manufactured” data for every year available, showing the export of consumer durable goods from 1989-2011.



Table 2. "Consumer Durables Manufactured" Exported Goods, by month

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	90	132	152	129	161	142	94	122	149	96	189	121
1990	139	148	162	138	155	165	147	163	135	160	157	126
1991	132	164	168	135	165	129	127	148	139	147	163	119
1992	120	140	158	128	135	121	113	120	174	137	156	132
1993	131	147	174	132	159	188	106	169	145	176	159	158
1994	149	168	187	180	176	216	135	212	196	193	212	158
1995	180	206	238	184	193	291	135	208	221	201	211	198
1996	192	209	223	201	256	286	159	203	210	255	241	212
1997	196	187	227	217	240	324	187	262	220	230	219	236
1998	229	226	241	247	225	264	190	259	285	265	253	265
1999	283	278	291	245	248	401	299	113	340	364	356	325
2000	275	338	409	266	376	440	289	405	458	407	400	370
2001	410	362	468	352	403	458	299	381	344	312	336	308
2002	366	355	366	387	399	451	374	488	404	450	396	399
2003	427	417	451	361	417	501	412	491	481	538	513	468
2004	424	512	558	533	533	705	615	677	722	677	685	703
2005	623	646	867	640	655	874	748	727	928	669	762	769
2006	751	704	1,032	663	949	1,057	710	795	875	823	837	791
2007	875	846	1,084	885	879	1,200	888	1,112	1,098	1,081	1,270	1,110
2008	1,195	1,335	1,334	1,158	1,356	1,965	1,361	1,250	1,319	1,113	1,010	855
2009	624	746	805	631	696	1,063	918	822	1,158	983	1,008	1,029
2010	971	1,035	1,331	1,045	1,061	1,750	1,241	1,194	1,385	1,358	1,222	1,278
2011	1,340	1,659	1,711	1,430	1,455	2,517	1,531	1,458	1,881	1,273	1,597	1,380

Source: US Department of Commerce



These figures, based on data from the International Accounts of goods, were added to show the total number of consumer durable exports during this time period. The table below provides a monthly summation of consumer durable exports from 1989-2011.

Table 3. *Monthly Summations for “Consumer Durables manufactured” Exported Goods*

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
total	10,123	10,958	12,636	10,285	11,289	15,508	11,078	11,778	13,267	11,908	12,352	11,509

The figure below, which depicts the general monthly trend of consumer durable purchases over time, indicates that the summer months see the highest rate of these exports.

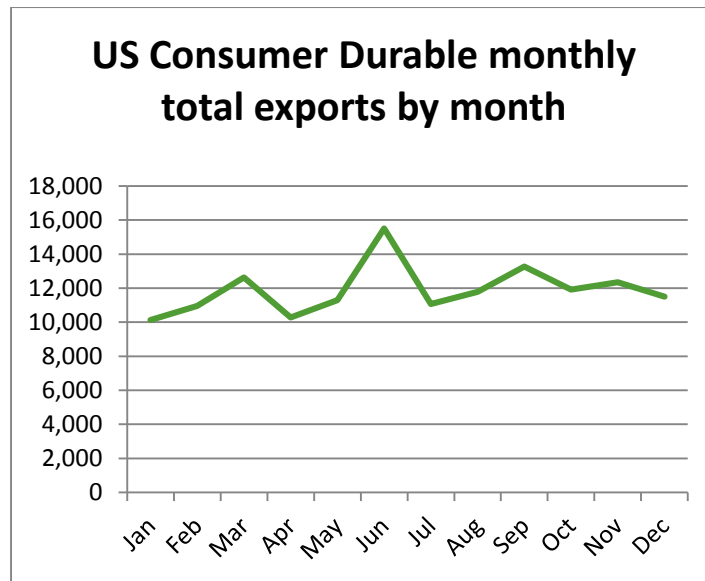


Figure 3. *Composite Monthly Totals: Export of Consumer Durable Goods, 1989-2011*

This data was subsequently clustered by season to discover the average of consumer goods exported. The winter season included December, January, and February; the spring season included March, April, and May; the summer season included June, July, and August; and the fall season included September, October, and November. As shown in the table below, summer showed the highest average, followed by the fall.

Table 4. *Average Monthly Exports of “Consumer Durables Manufactured” By Season*



Season	Avg. goods exported, '89-'11
Winter	10,863
Summer	12,788
Spring	11,403
Fall	12,509

The following table illustrates changes by decade for each season of US consumer durable exports. This includes the fall and summer exports of consumer durables entirely in the midst of the global economic stagnation period, from 2010-2011. This period trended similarly to past decades, whereas summer and fall maintained their status as the most likely times to export.

Table 5. "Consumer Durables Manufactured" By Season, by Decade

'89-'11	season	% change	'89-'99	season	% change	'00-'09	season	% change	'10-'11	season	% change
1,339	spring	1.05	190	spring	1.06	591	spring	1.04	1,339	spring	1.01
1,615	summer	1.21	188	summer	0.99	663	summer	1.12	1,615	summer	1.21
1,453	fall	0.90	205	fall	1.09	659	fall	0.99	1,425	fall	0.88
1,277	winter	0.88	178.67	winter	0.87	568.14	winter	0.86	1,329	winter	0.93

REACTIONS/FUTURE STUDIES

While economists have utilized consumer durable sales as input for interest rate adjustments and other financial metrics, calendar trends have not been published or reported. Summer and fall

months have been most likely to elicit comparatively higher data.

Future studies might assess whether similar seasonal patterns exist for European exports or explore what happens in the months of March and April in some regions that may lead to



low spring consumer durable buying patterns. Since consumer durable production has such a powerful impact on the health of the global economy, additional economic data and sociological information on psychological patterns in consumer behavior could be warranted. Finally, a subsequent inquiry might ascertain if organizations in Europe purchase bulk amounts of consumer durables to stock for holiday purchases in December.

REFERENCES

Baxter, M. (February, 1996). Are Consumer Durables Important for Business Cycles? *The Review of Economics and Statistics*, 78(1), 147-155.

Beblavy, M. (2007). *Monetary Policy in Central Europe*. New York, NY: Routledge Publishing.

BLACK, S. & CUSBERT, T. (SEPTEMBER, 2010). *DURABLE GOODS AND THE BUSINESS CYCLE*. RESERVE BANK OF AUSTRALIA, 13-18.

Bureau of Economic Analysis. (2010). Customer Guide. U.S. Department of Commerce. Measuring the Nation's Economy. Economics and Statistics Administration.

Bureau of Economic Analysis. (September, 2003). US Department of Commerce: Fixed Assets and Consumer Durable Goods in the United States, 1925-97. US Government Pricing Office: Washington, DC.

CNN Money. (2013). Consumer Durables sector data. A Service of CNN, Fortune, and Money. http://money.cnn.com/data/sectors/consumer_durables/

Cole, A. (1962). Durable Consumer Goods and American Economic Growth. *The Quarterly Journal of Economics*, 76(3), 415-423.

Diewert, W., Greenlees, J., & Hulten, C. (2010). Price Index Concepts and Measurement. National Bureau of Economic Research. Studies in Income and Wealth, Volume 70. University of Chicago Press: Chicago, IL.

Electrolux. (2010). *Consumer Durables Europe, Middle East and Africa*. Annual Report 2010, Part 1: Operations, Business Areas, 20-21.

Eurostat -European Commission. (2009 edition). *Consumers in Europe-Luxembourg*: Office for Official Publications of the European Communities. Theme: General and regional statistics. Collection: Statistical books.

Federal Reserve Bank of St. Louis. (2013). Value of Manufacturers' New Orders for Consumer Goods: Consumer durable goods industries. Economic Research. <http://research.stlouisfed.org/fred2/series/ACDGN>

Feldman, R., Watson, C., & Doyle, P. (2002). *Into the EU: Policy frameworks in Central Europe*. International Monetary Fund Publication Services: Washington, DC.

Folsom W. (2005). *Understanding American Business Jargon: A dictionary*. 2nd edition. Greenwood Publishing Group: Westport, CT.

Gordon, R. (2007). *The Measurement of Durable Goods Prices*. National Bureau of Economic Research. University of Chicago Press: Chicago, IL.



Hall, A. (June, 2013). Personal communication. Section Chief, Manufacturing and Construction Division: Manufacturers' Shipments, Inventories, and Orders Survey (M3). U.S. Census Bureau.

Helper, S., Krueger, T., & Wial, H. (February, 2012). *Why Does Manufacturing Matter? Which Manufacturing Matters?: A policy framework*. Metropolitan Policy Program at Brookings.

Institute for Supply Management. (2013). U.S. Department of Commerce Makes Annual Adjustments to Seasonal Factors for ISM Manufacturing PMI and Diffusion Indexes and ISM Non-Manufacturing NMI and Diffusion Indexes. Supply Chain Resilience Series.

Jalava, J. & Kavonius, K. (September, 2008). The Effect of Durable Goods and ICT on Euro Area Productivity Growth. Working Paper Series, No. 940. European Central Bank.

Jovanovic, M. (2002). *Geography of Production and Economic Integration*. Routledge Press: New York, NY.

Market Monitor. (March, 2012). *Credito y Caucion*. Atradius Group. Focus on Consumer Durables Retail Current Performance and Outlook, 1-32.

Mishkin, F. (1978). *Consumer Sentiment and Spending on Durable Goods*. The Brookings Institution. Brookings Papers on Economic Activity, 1, 217-232. University of Chicago.

Reuvid, J. (2006). *Corporate Investment Opportunities in the New Europe*. Kogan Page Limited Publishing: London, UK.

Savage, C. (June, 2013). Chief, Manufacturers' Shipments, Inventories and Orders Branch (M3) Manufacturing and Construction Division: U.S. Census Bureau.

Tran, V. (2005). *Advances in Household Economics, Consumer Behaviour And Economic Policy*. Ashgate Publishing Ltd.: Burlington, VT.

U.S. Census Bureau. (2012). Statistical Abstract of the United States. *Income, Expenditures, Poverty, and Wealth*. Section 13, 431-470.