

Historic Tipping Fees and Commodity Values

U.S. Environmental Protection Agency

Office of Resource Conservation and Recovery

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Background

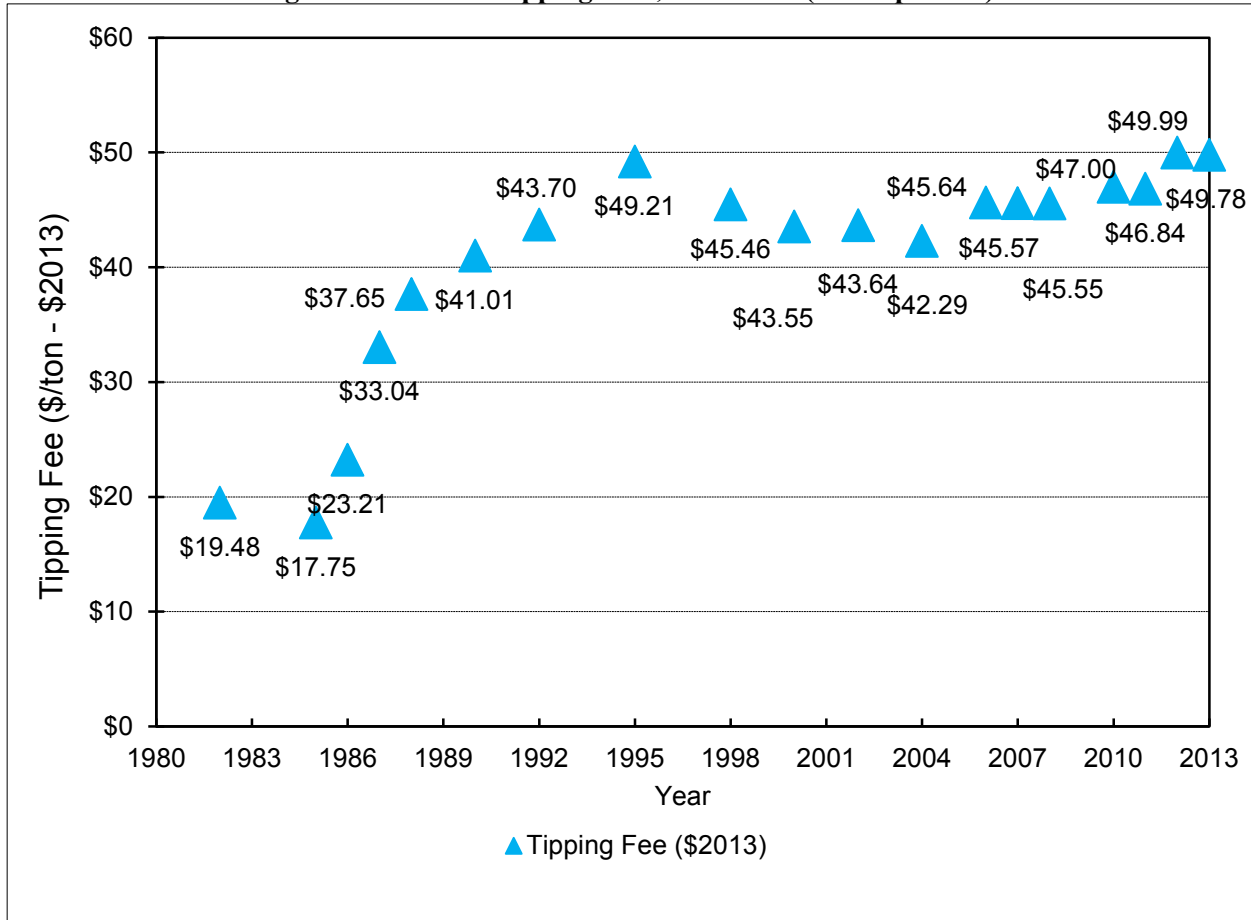
EPA's contractor explored the historical data for tipping fees and commodity values of several recyclable materials. The following section presents the available data for potential inclusion in fact sheets and EPA's municipal solid waste characterization report series. For commodity values, EPA's contractor searched for data to fill the data gap from 1997 to 2004 for several commodities but could not find data that aligned with that available before 1997 and after 2004.

EPA's contractor created historical graphs of national tipping fees from 1982 to 2013 and commodity values for Polyethylene terephthalate (PET) plastic, high density polyethylene (HDPE), aluminum used beverage containers (UBC), steel cans, old newspaper (ONP) grade 6, and old corrugated containers (OCC) grade starting in 1970 for OCC and ONP and 1990 for the other commodities. The commodity values showed price volatility (frequent dramatic increases and decreases through the years), and the tipping fees dramatically increased from 1982 to 1995, slightly decreased through 2005, and have slowly and steadily increased since.

Tipping Fees

Figure 1 shows the national mean annual tipping fees from 1982 to 2013. National Solid Wastes Management Association (NSWMA) average U.S. landfill tipping fee data for intermittent years between 1982 and 2013 were used (NSWMA, 2012; Waste and Recycling News, 2013). Tipping fees were normalized to constant \$2013 using the consumer price index (CPI) from the Bureau of Labor Statistics (BLS) (BLS, 2013) to allow meaningful comparisons. Figure 1 shows a rapid increase in tipping fees from 1985 to 1995 (\$3.15 average increase per year) followed by a steady decrease from 1995 to 2004 (\$0.77 average decrease per year) and a steady increase from 2004 to 2013 (\$0.83 average increase per year).

Figure 1. National Tipping Fees, 1982-2013 (\$2013 per ton)



Commodity Values

EPA compiled average annual commodity values for PET plastic, HDPE plastic, aluminum UBC, steel cans, ONP grade 6, and OCC grade 11. These were compiled from in-house data that were supplemented by data purchased from Secondary Materials Pricing and Secondary Fiber Pricing (SFP and SMP, 2013) to attain commodity value data from 2005-2011 for aluminum UBC, steel cans, PET plastic, and HDPE plastic, and from 2003-2011 for ONP and OCC. There is a gap in data between 1997 and 2004 for a number of commodities. EPA’s contractor could not find consistent data for these in-between years.

Table 1 shows available commodity values from 1970 to 2012, normalized to \$2013 using the CPI from BLS to account for inflation. Data were not available for plastic and metal recyclable commodities from 1970-1989 and 1997-2004. Data were not available for ONP from 1997-2002.

Figure 2 depicts the annual values of the recyclable plastic and metal commodities from Table 1 in an indexed line graph. This allows the relative price changes (in \$2013 per ton) for all four commodities to be compared relative to their 1990 commodity values, which are indexed to 1. For example, the commodity value of HDPE was \$248 (in \$2013) in 1990 and \$769 in 2005; thus, the indexed value in 2005 is approximately 3 (300 percent or three times the adjusted 1990 price). HDPE, PET, and aluminum cans experienced a large price spike in 1995 and

again in 2011. Interestingly, corresponding increases did not occur for steel cans. All four commodities showed sharp price decreases from 1995 to 1996 and 2008 to 2009.

Table 1. Commodity Values by Year (\$2005 per ton)

Year	HDPE Natural Baled End User	PET Clear Baled End User	Aluminum UBC End User	Steel Can End User	ONP (6) Mill FOB Seller's Dock	OCC (11) Mill FOB Seller's Dock
1970	-	-	-	-	\$114	\$132
1971	-	-	-	-	\$101	\$107
1972	-	-	-	-	\$111	\$120
1973	-	-	-	-	\$118	\$186
1974	-	-	-	-	\$171	\$204
1975	-	-	-	-	\$88	\$83
1976	-	-	-	-	\$142	\$125
1977	-	-	-	-	\$151	\$131
1978	-	-	-	-	\$134	\$125
1979	-	-	-	-	\$95	\$150
1980	-	-	-	-	\$150	\$141
1981	-	-	-	-	\$98	\$114
1982	-	-	-	-	\$75	\$75
1983	-	-	-	-	\$107	\$120
1984	-	-	-	-	\$113	\$133
1985	-	-	-	-	\$74	\$73
1986	-	-	-	-	\$79	\$93
1987	-	-	-	-	\$106	\$146
1988	-	-	-	-	\$99	\$117
1989	-	-	-	-	\$34	\$69
1990	\$248	\$269	\$1,854	\$127	\$21	\$61
1991	\$228	\$202	\$1,499	\$92	\$27	\$67
1992	\$223	\$214	\$1,264	\$105	\$22	\$50
1993	\$240	\$223	\$1,035	\$110	\$26	\$44
1994	\$321	\$245	\$1,451	\$107	\$75	\$123
1995	\$628	\$573	\$1,973	\$99	\$151	\$196
1996	\$316	\$401	\$1,595	\$88	\$34	\$76
1997	-	-	-	-	-	\$110
1998	-	-	-	-	-	\$77
1999	-	-	-	-	-	\$98
2000	-	-	-	-	-	\$107
2001	-	-	-	-	-	\$53
2002	-	-	-	-	-	\$88
2003	-	-	-	-	\$63	\$84
2004	-	-	-	-	\$78	\$110
2005	\$769	\$501	\$1,511	\$182	\$77	\$100
2006	\$724	\$335	\$1,909	\$193	\$66	\$90
2007	\$723	\$404	\$1,906	\$218	\$97	\$134
2008	\$729	\$376	\$1,810	\$209	\$86	\$111
2009	\$425	\$229	\$1,147	\$88	\$42	\$64

Year	HDPE Natural Baled End User	PET Clear Baled End User	Aluminum UBC End User	Steel Can End User	ONP (6) Mill FOB Seller's Dock	OCC (11) Mill FOB Seller's Dock
2010	\$562	\$420	\$1,572	\$128	\$77	\$148
2011	\$709	\$651	\$1,771	\$126	\$86	\$169
2012	\$616	\$472	\$1,522	\$125	\$61	\$126

Figure 2. Recyclable Plastic and Metal Commodity Values 1990-2012 (\$2013 per ton, indexed to 1990)

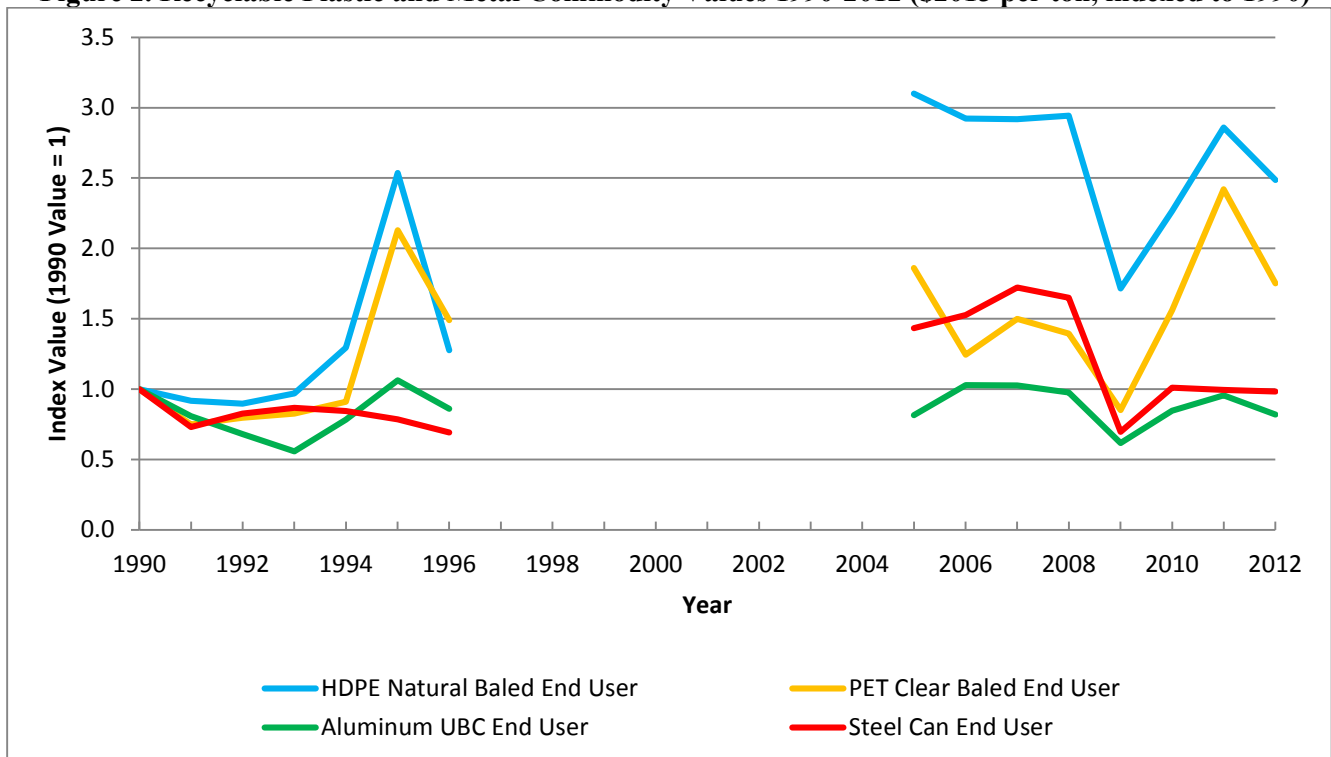


Figure 3. ONP and OCC Commodity Values 1970-2012 (\$2013 per ton, indexed to 1970)

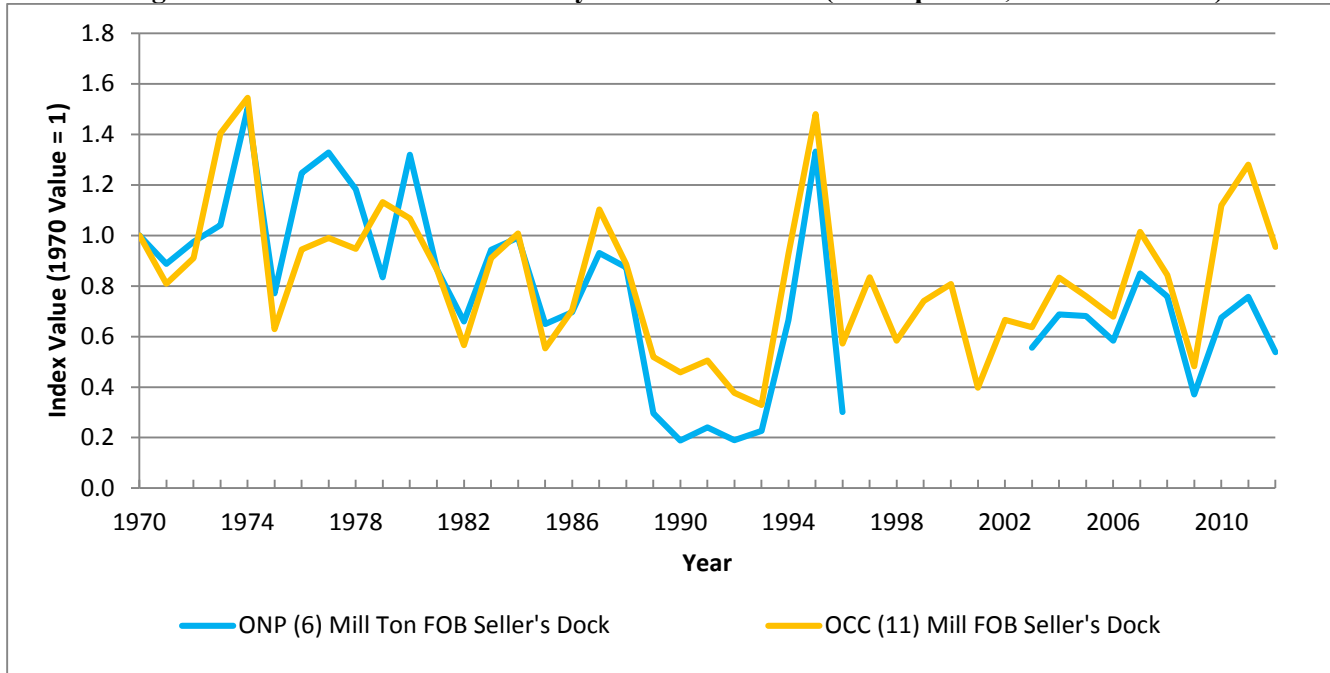


Figure 3 depicts a similar indexed line graph for ONP and OCC to show their price fluctuations relative to their 1970 commodity value on a \$2013 per ton basis. Both commodity values were volatile, with sudden large increases and decreases in value. Both ONP and OCC experienced large price spikes in 1974, 1984, and 1987. They also experienced a pronounced price spike in 1995 and another one in 2011, which is the same period that HDPE, PET, and aluminum cans also experienced one. Both ONP and OCC experienced large dips in value in 1975, 1982, and 1986. Similar to HDPE, PET, and aluminum cans, ONP and OCC also experienced dips in commodity values in 1996 and 2009.

Commodity values increase and decrease in response to market demands. In addition to domestic market demands, international demand for commodities helps drive up the price or if demand falls (such as in a time of an economic downturn), there may be a dip.

References

BLS (Bureau of Labor Statistics). 2013. Table Containing History of CPI-U U.S. All Items Indexes and Annual Percent Changes From 1913 to Present. Released June. <http://www.bls.gov/cpi/>

NSWMA (National Solid Wastes Management Association). 2012. Municipal Solid Waste Landfill Facts. October.

Waste and Recycling News. 2013. Average Tipping Fees at MSW Landfills. May 27.

SFP and SMP (Secondary Materials Pricing and Secondary Fiber Pricing). 2013. Released July 2013. Available at <http://www.recyclingmarkets.net/> (for-purchase data).