

# Agricultural and Construction Equipment 2008 Outlook

Federal Reserve Bank of Chicago  
Economic Outlook Symposium

November 30, 2007

Socrates: So right opinion is something no less useful than knowledge.

Meno: Except that the man with knowledge will always be successful, and the man with right opinion only sometimes.

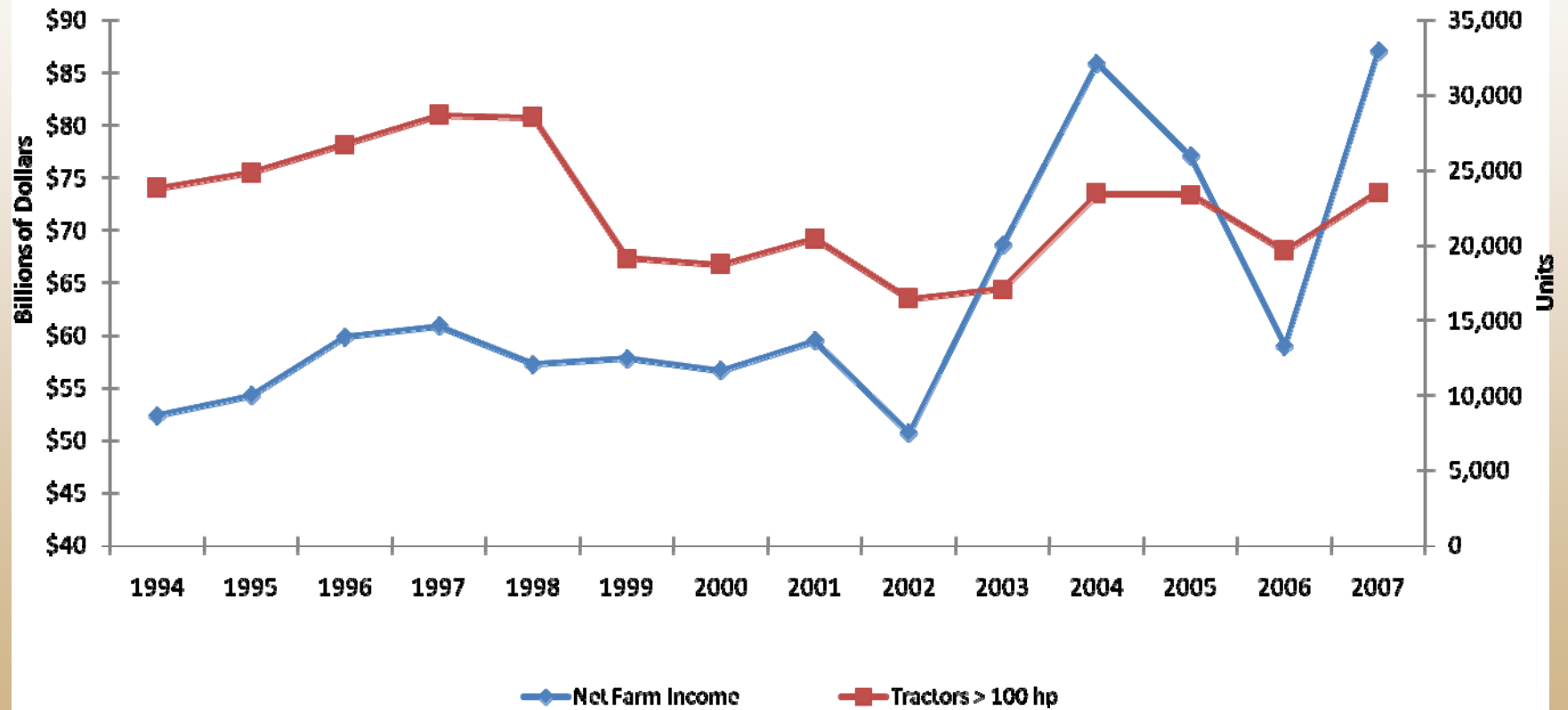
# Agenda

- **Agricultural Machinery**
  - Current Situation
  - Demand Factors
  - 2008 Outlook
- **Construction and Mining Machinery**
  - Current Situation
  - Demand Factors
  - 2008 Outlook
- **Questions and Comments**

# Agricultural Equipment Markets

- Life Is Good
- Strong Commodity Prices To Continue
- Government Direct Payments To Continue
- Ethanol – Big ???

## Net Farm Income and Tractor Sales >100 hp

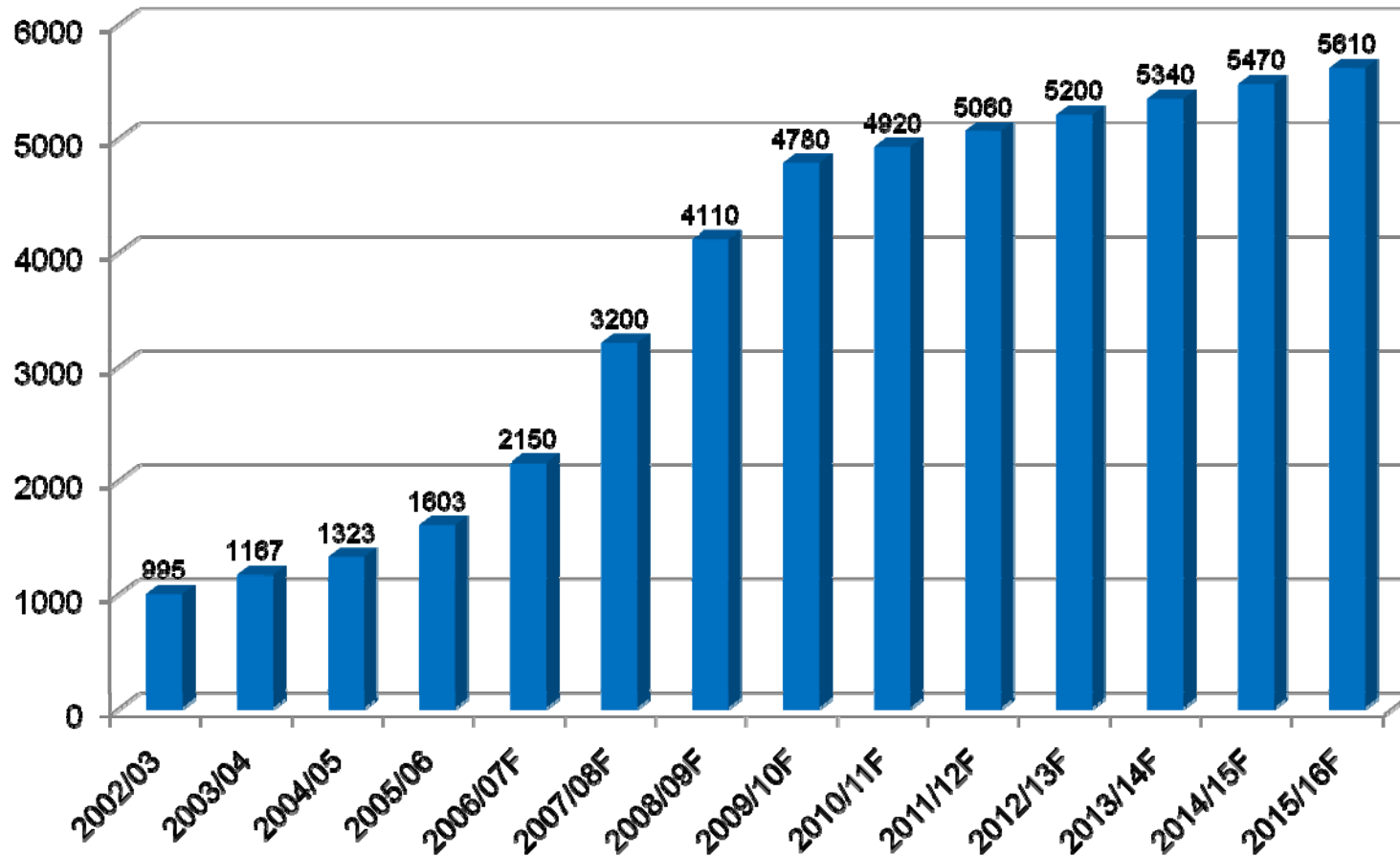


# Commodity Prices

## \$/bushel

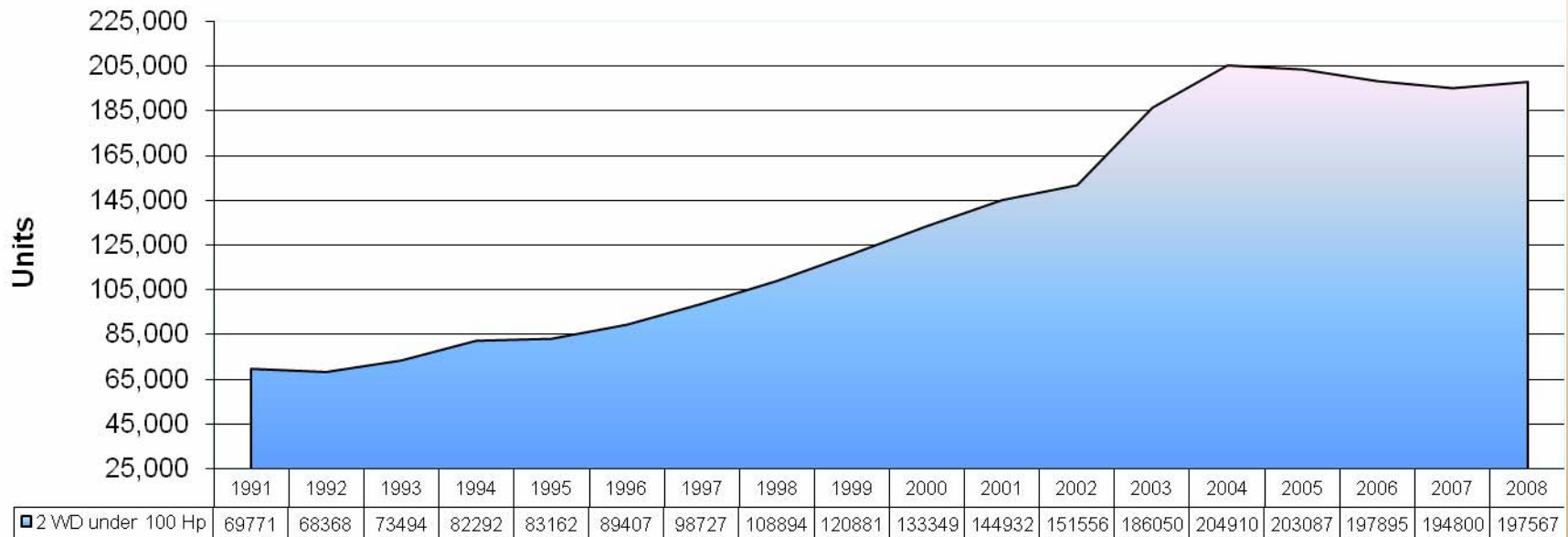
	<u>2005</u>	<u>2006</u>	<u>2007</u>
Corn	\$2.20	\$2.55	\$3.81
Soybean	\$5.75	\$5.52	\$10.96
Wheat	\$3.80	\$4.59	\$8.96

## Ethanol: Estimated Growth MM Bushels of Corn Used – U.S.



Data source: Informa Economics

# U.S. Farm Equipment Market 2 Wheel Drive Tractors Under 100 Hp



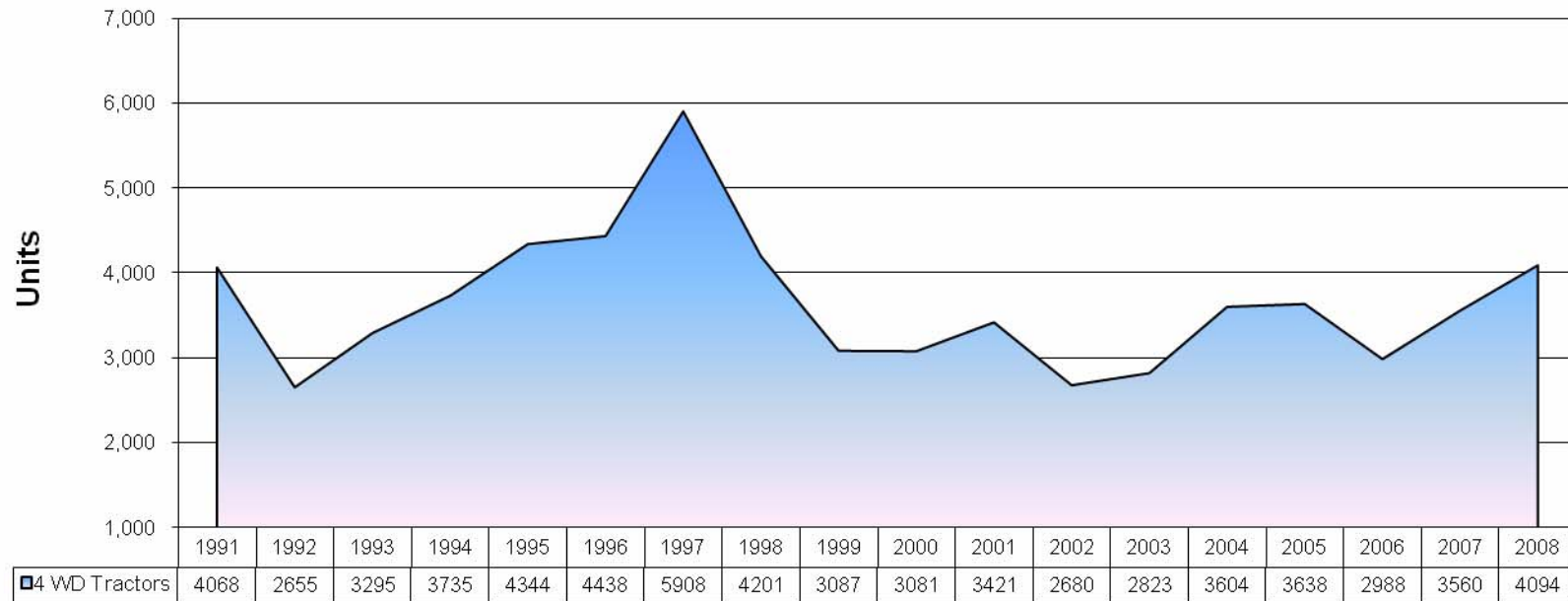


# U.S. Farm Equipment Market

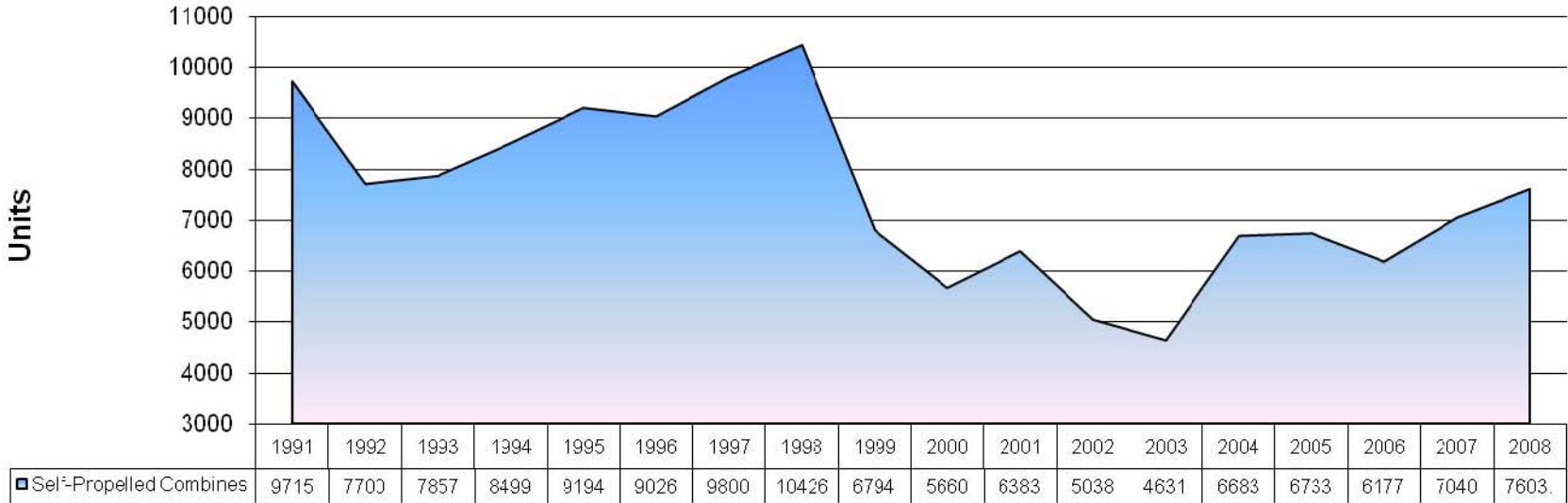
## 2 Wheel Drive Tractors over 100 HP



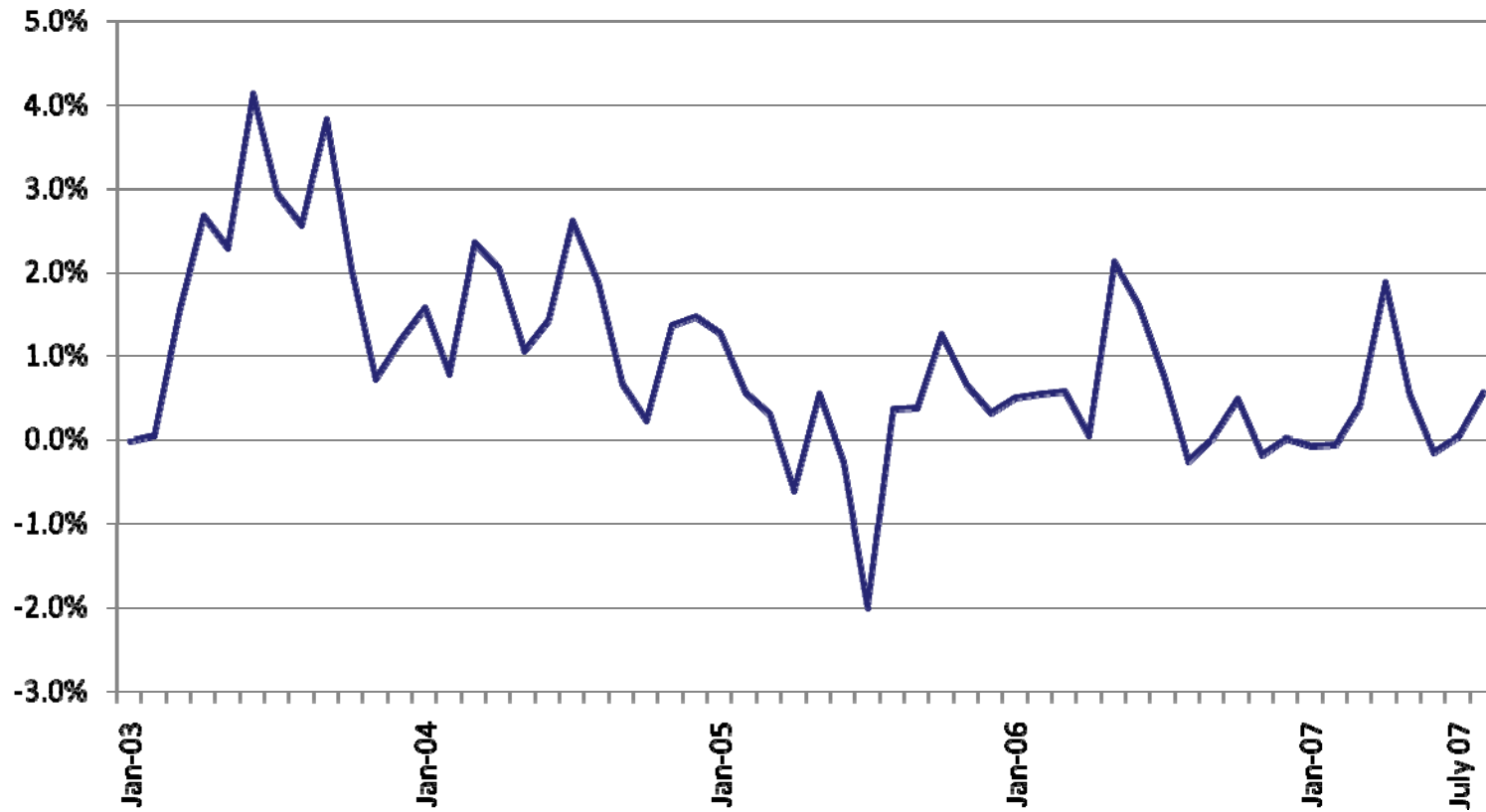
# U.S. Farm Equipment Market 4-Wheel Drive Tractors



# U.S. Farm Equipment Market Self-Propelled Combines



# Agricultural Equipment Rate of Change



Source: Equipment Data Associates

## U.S. Agricultural Equipment Markets

	<u>2006</u>	<u>2007 E</u>	<u>2008 F</u>	<u>% chg.</u>
<b>2 Wheel Drive Tractors</b>				
Under 40 hp	122,340	116,220	115,058	-1.0%
40 to 100 hp	75,555	78,580	82,509	5.0%
100 hp and over	16,682	20,020	22,022	10.0%
<b>Total 2 Wheel Drive</b>	<b>214,577</b>	<b>214,820</b>	<b>219,589</b>	<b>2.2%</b>
<b>4 Wheel Drive Tractors</b>	<b>2,988</b>	<b>3,560</b>	<b>4,094</b>	<b>15.0%</b>
<b>Total Farm Wheel Tractors</b>	<b>217,565</b>	<b>218,380</b>	<b>223,683</b>	<b>2.4%</b>
<b>Combines</b>	<b>6,177</b>	<b>7,040</b>	<b>7,603</b>	<b>8.0%</b>

# Construction And Mining Machinery Markets



## Construction and Mining Machinery Current Situation

- Housing down 30% to 40%
- Non-residential markets up 10% to 12%
- Heavy – publicly funded projects up 5% to 10%
- Mining very strong – equipment shortages
- High commodity prices
  - Copper
  - Iron
  - Coal

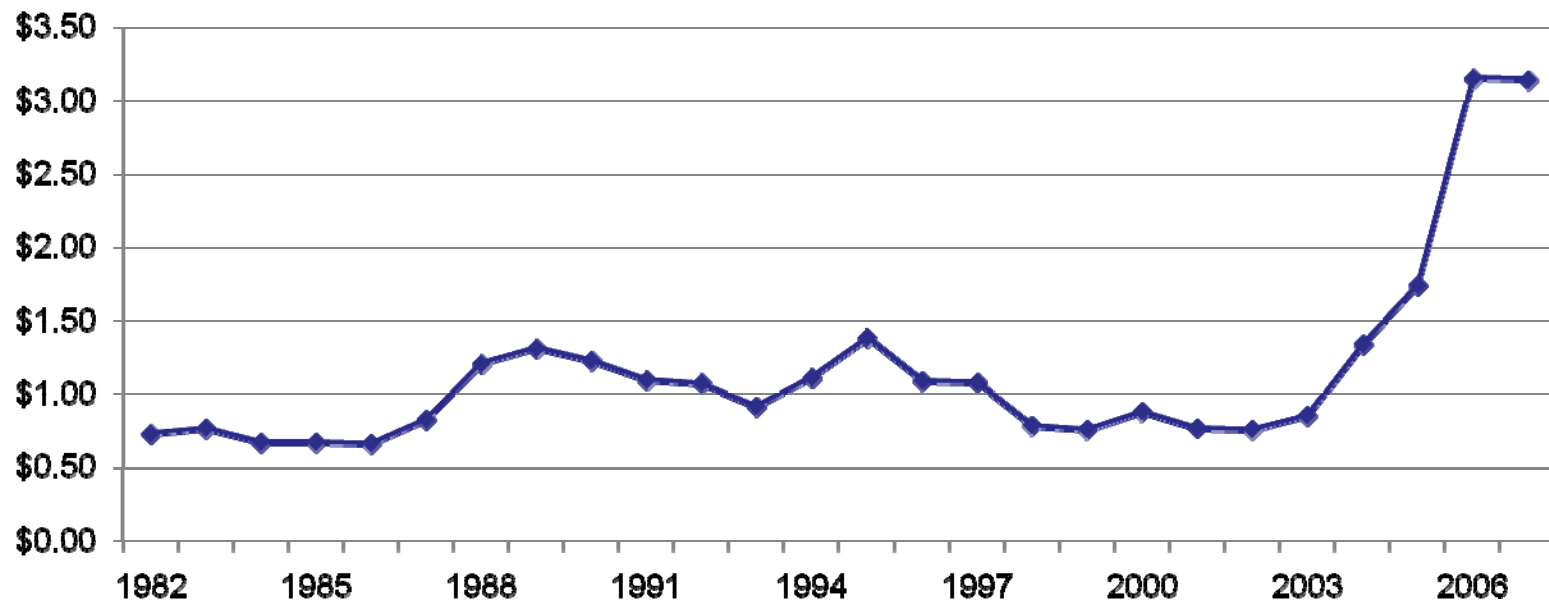


**What do  
these  
have  
in  
common?**

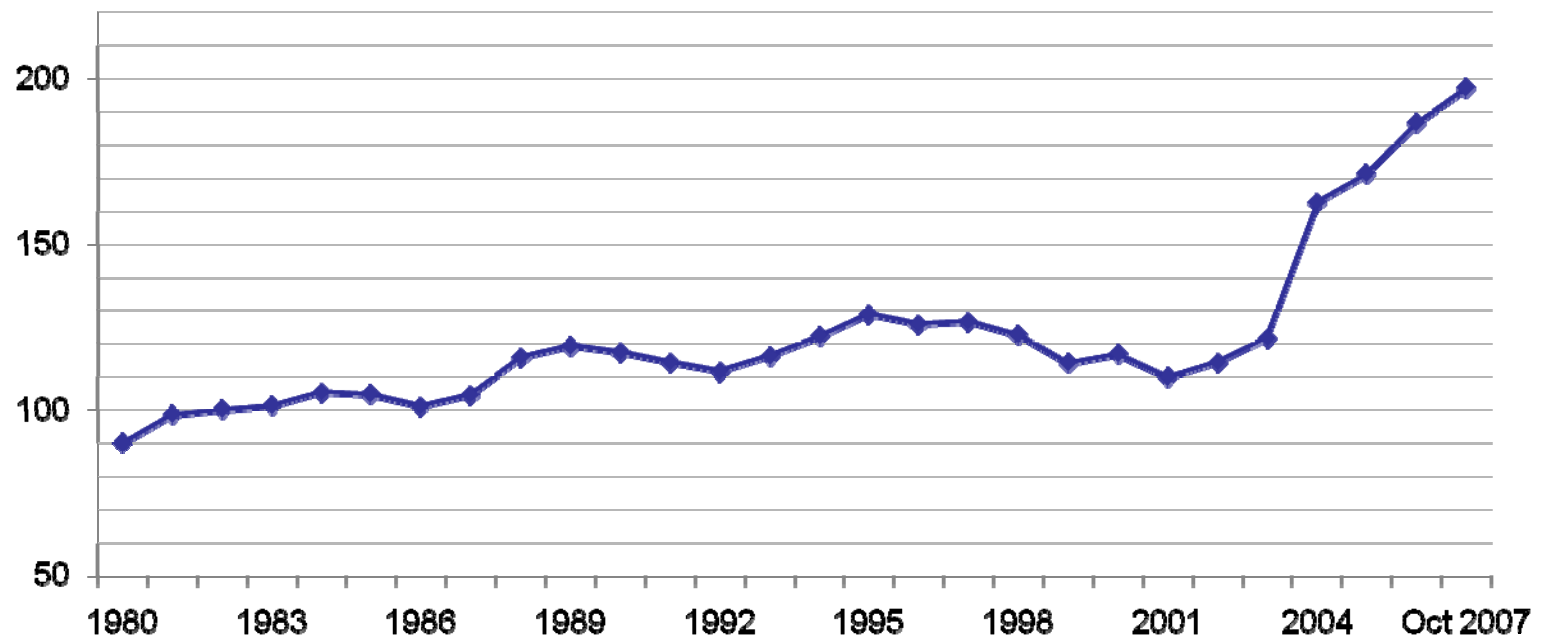




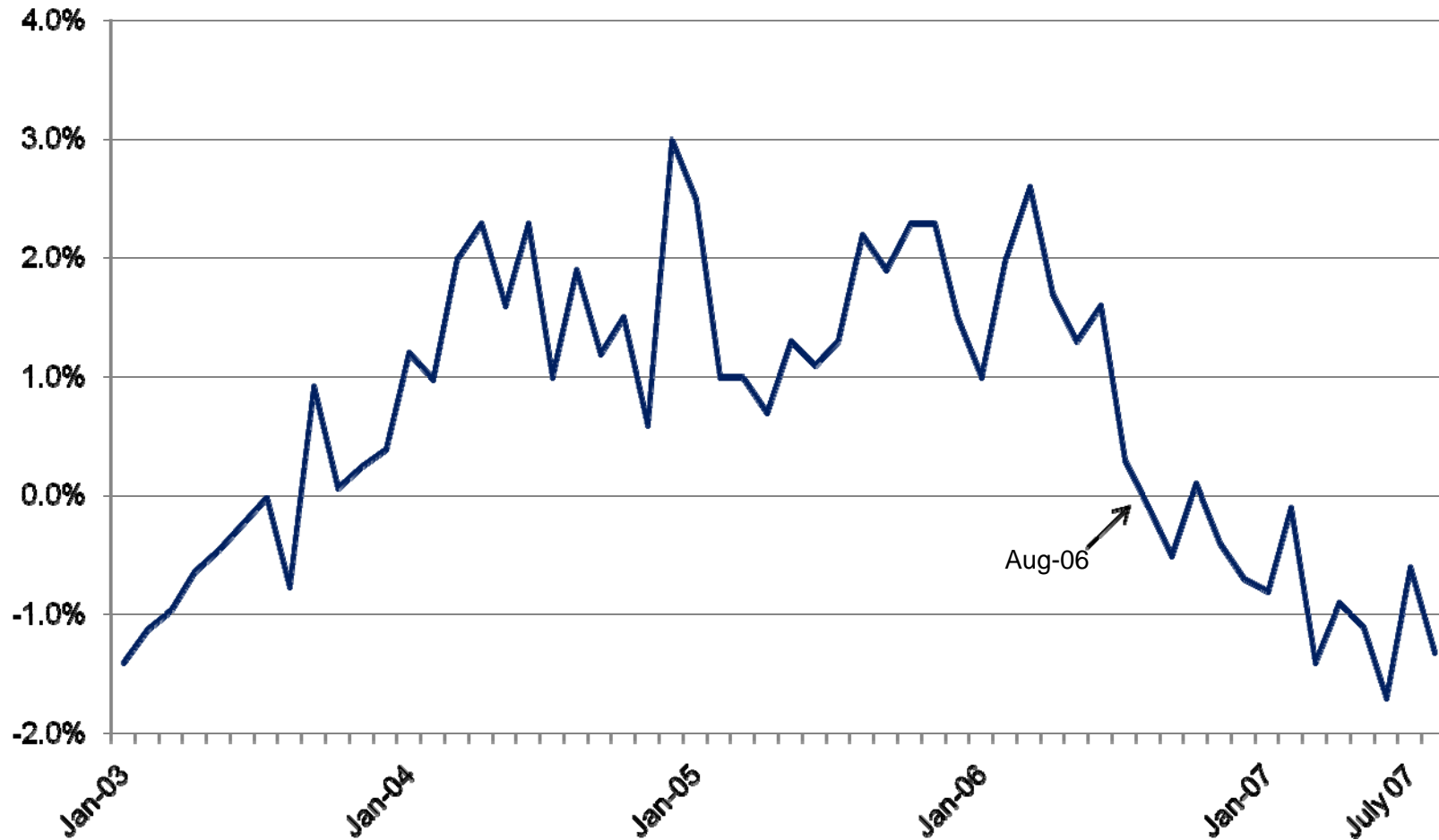
## Copper Producer Price (dollars/lbs.)



# Iron & Steel Price Index

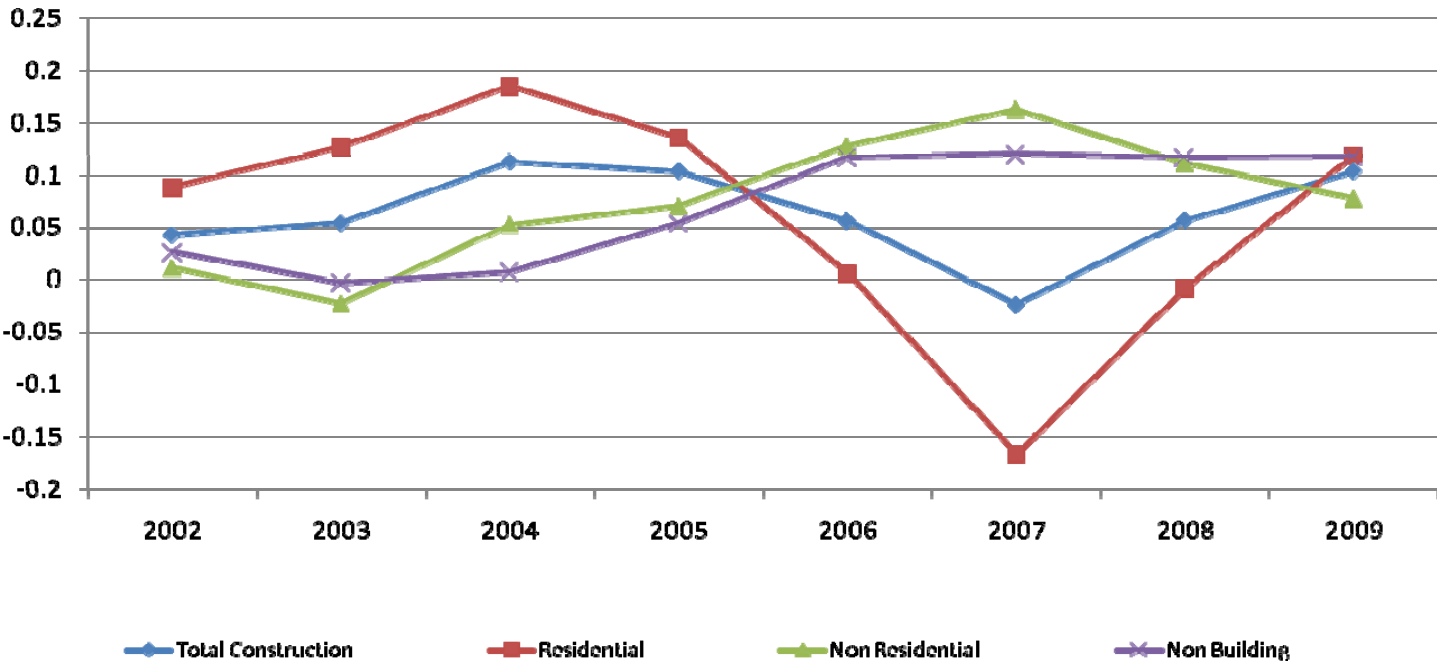


# Construction Equipment Rate of Change



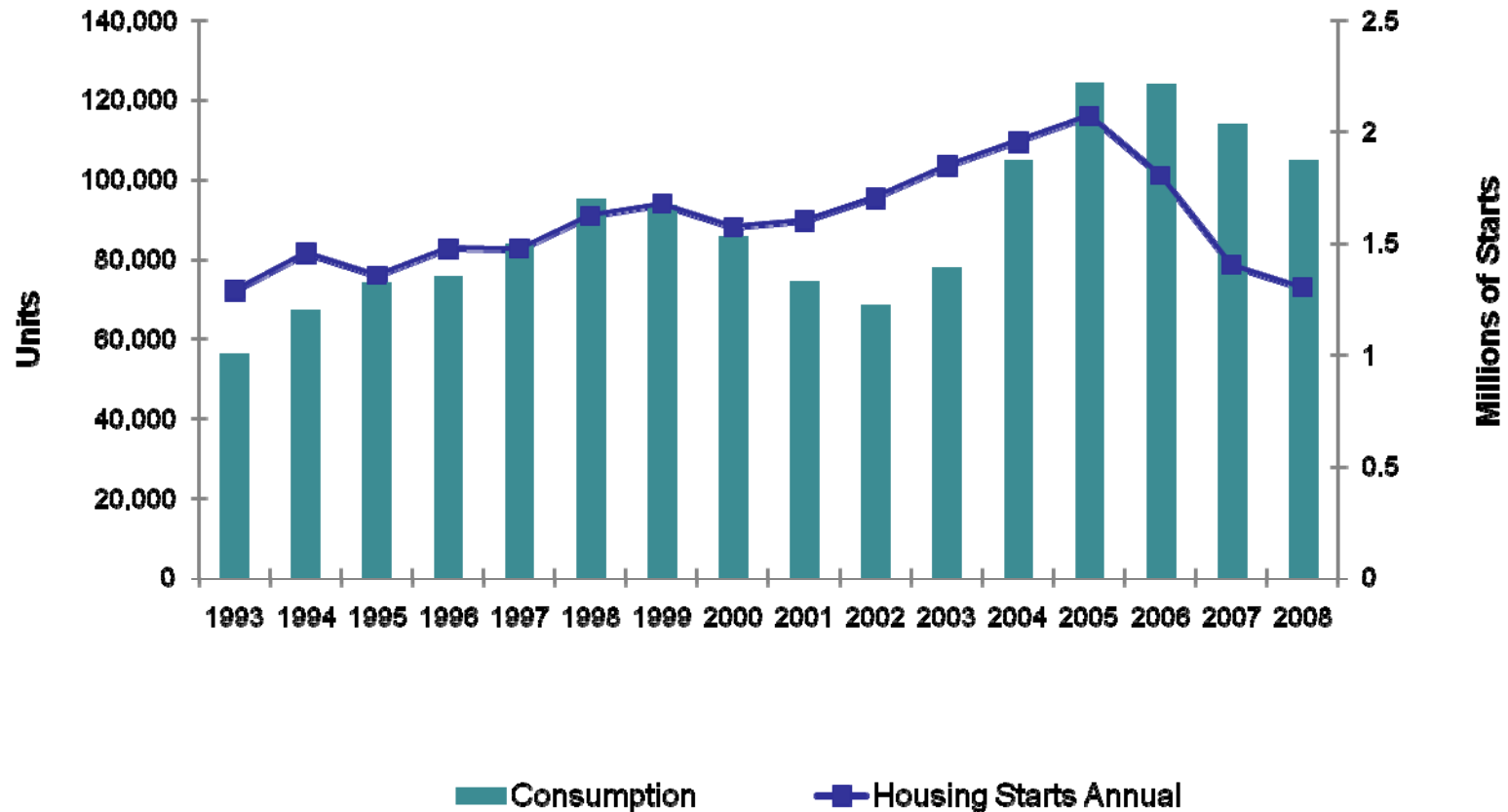
Source: Equipment Data Associates

# Construction Spending Rate of Change

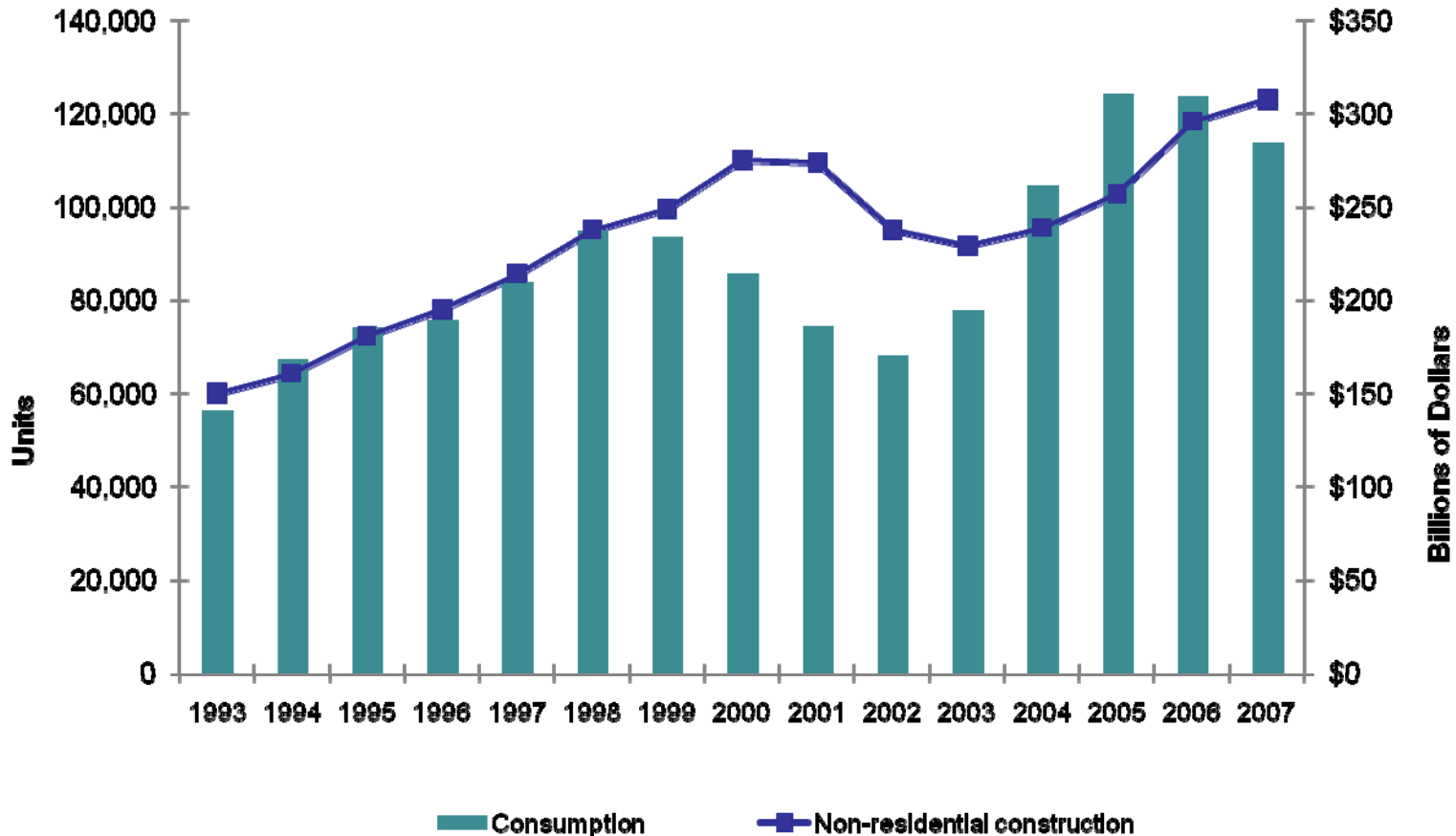


Source: Reed Construction Data

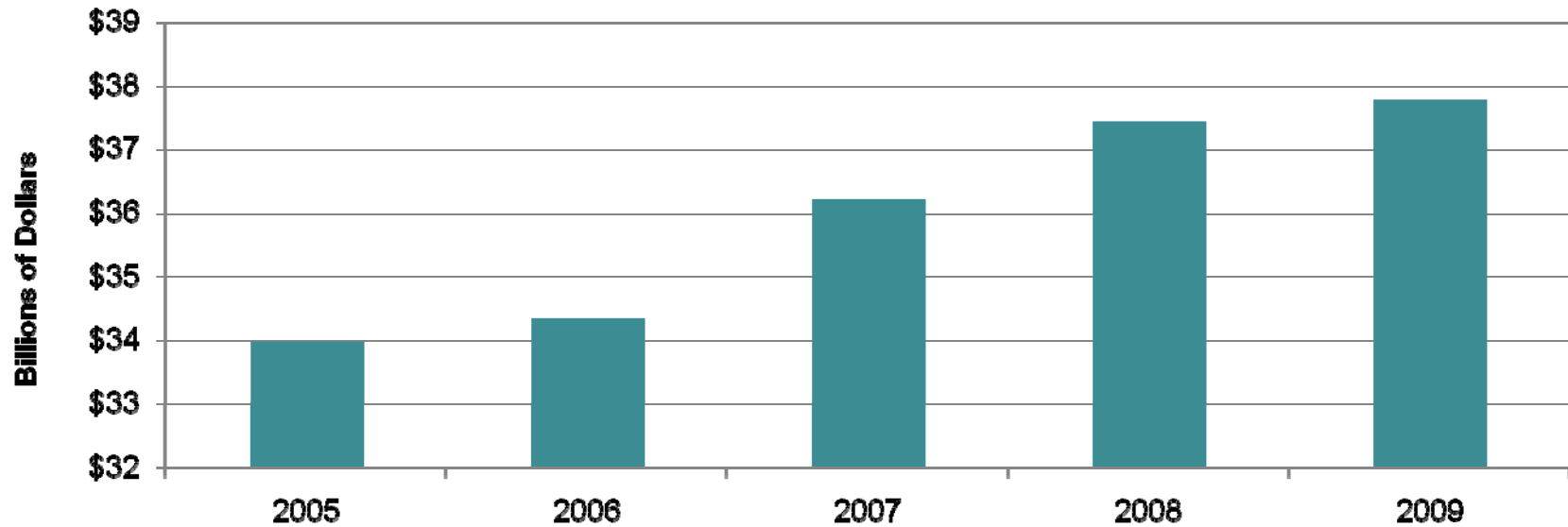
# Housing Starts vs. Earthmoving Equipment Consumption



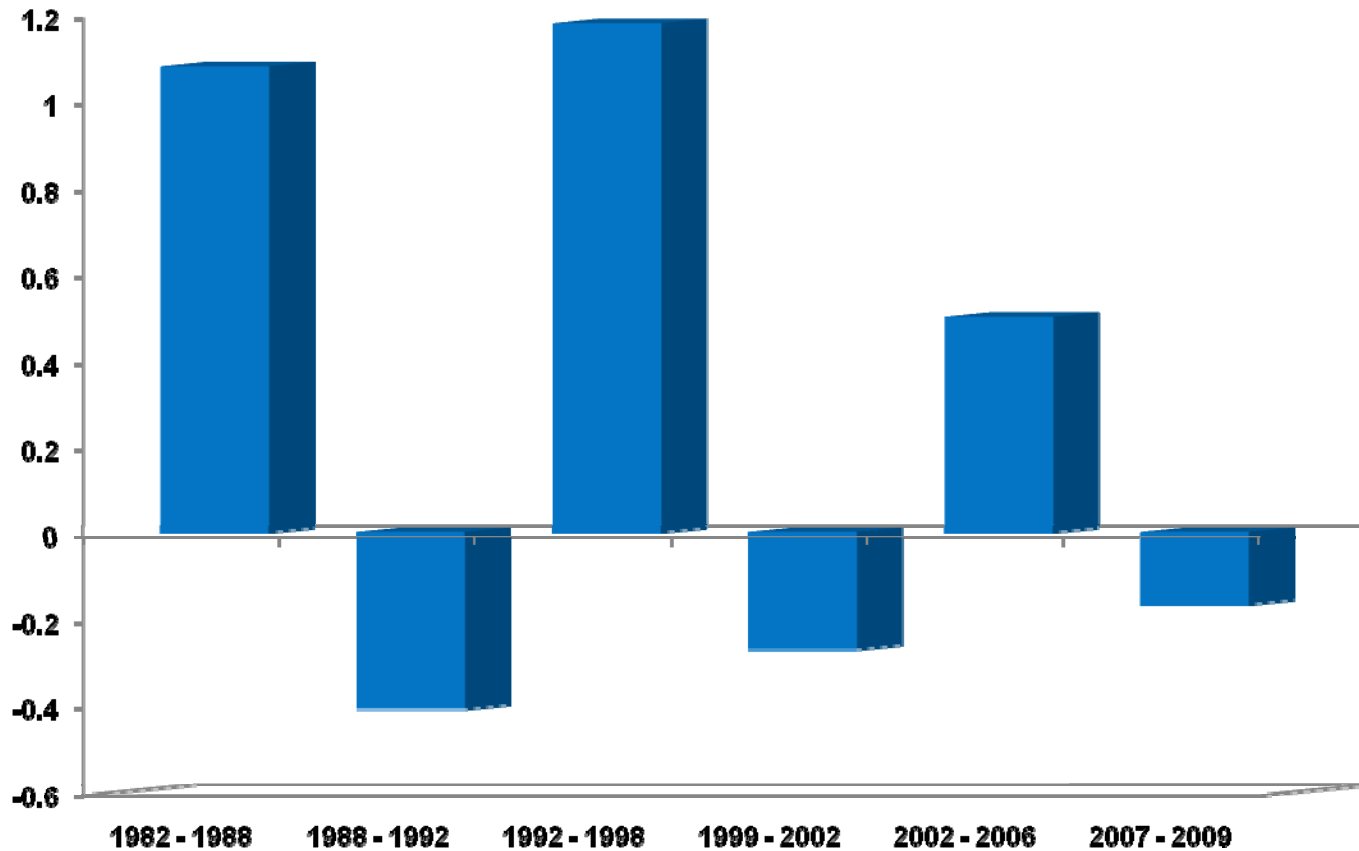
# Non-Residential Construction vs. Earthmoving Equipment Consumption



## SAFETEA-LU Funding by Year (Billions of Dollars)



# Earthmoving Equipment % Change Peak to Trough





# Construction Machinery Estimated U.S. Market (Units)

<u>Product</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>Forecast % Change</u>		<u>Forecast % Change</u>	
					<u>2007</u>	<u>07 vs 06</u>	<u>2008</u>	<u>08 vs 07</u>
Asphalt Pavers	1,360	1,986	2,185	2,092	2,100	0.4%	2,100	0.0%
Compactors	5,950	8,600	10,700	10,297	9,300	-9.7%	8,300	-10.8%
Cranes	930	900	1,039	1,302	1,700	30.6%	2,050	20.6%
Crawler Loaders	1,300	1,700	1,750	1,550	1,300	-16.1%	1,100	-15.4%
Crawler Tractors	9,580	13,700	16,100	16,300	16,300	0.0%	15,500	-4.9%
Hydraulic Excavators	25,000	36,000	46,000	47,500	44,000	-7.4%	39,600	-10.0%
Loader Backhoes	19,800	22,000	23,500	21,000	17,800	-15.2%	16,300	-8.4%
Motor Graders	2,700	3,207	3,900	4,400	4,200	-4.5%	4,000	-4.8%
Haulers - Rigid	200	400	550	650	750	15.4%	870	16.0%
Haulers - Articulated	1,900	2,800	3,300	3,600	3,400	-5.6%	3,200	-5.9%
RT Forklifts	9,250	13,100	18,445	22,559	17,000	-24.6%	15,000	-11.8%
Rubber Tracked Loaders	8,500	14,000	18,000	21,000	24,000	14.3%	24,000	0.0%
Skid Steer Loaders	53,000	61,000	61,200	52,500	44,500	-15.2%	40,000	-10.1%
Wheel Loaders	11,500	16,700	19,100	19,440	17,500	-10.0%	16,600	-5.1%
<b>Total</b>	<b>150,970</b>	<b>196,093</b>	<b>225,769</b>	<b>224,190</b>	<b>203,850</b>	<b>-9.1%</b>	<b>188,580</b>	<b>-7.5%</b>

# Manfredi & Associates, Inc. □

[www.manfredi.com](http://www.manfredi.com)



# Appendix



# Construction Machinery Estimated U.S. Market (Units)

<u>Product</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>% Change 06 vs 05</u>	<u>Forecast 2007</u>	<u>% Change 07 vs 06</u>	<u>Forecast 2008</u>	<u>% Change 08 vs 07</u>
Asphalt Pavers	1,535	1,360	1,986	2,185	2,092	-4.3%	2,100	0.4%	2,100	0.0%
Compactors	5,450	5,950	8,600	10,700	10,297	-3.8%	9,300	-9.7%	8,300	-10.8%
Cranes	1,160	930	900	1,039	1,302	25.3%	1,700	30.6%	2,050	20.6%
Crawler Loaders	1,200	1,300	1,700	1,750	1,550	-11.4%	1,300	-16.1%	1,100	-15.4%
Crawler Tractors	8,400	9,580	13,700	16,100	16,300	1.2%	16,300	0.0%	15,500	-4.9%
Hydraulic Excavators	20,200	25,000	36,000	46,000	47,500	3.3%	44,000	-7.4%	39,600	-10.0%
Loader Backhoes	18,000	19,800	22,000	23,500	21,000	-10.6%	17,800	-15.2%	16,300	-8.4%
Motor Graders	2,800	2,700	3,207	3,900	4,400	12.8%	4,200	-4.5%	4,000	-4.8%
Haulers - Rigid	240	200	400	550	650	18.2%	750	15.4%	870	16.0%
Haulers - Articulated	1,500	1,900	2,800	3,300	3,600	9.1%	3,400	-5.6%	3,200	-5.9%
RT Forklifts	9,100	9,250	13,100	18,445	22,559	22.3%	17,000	-24.6%	15,000	-11.8%
Rubber Tracked Loaders	5,000	8,500	14,000	18,000	21,000	16.7%	24,000	14.3%	24,000	0.0%
Skid Steer Loaders	50,000	53,000	61,000	61,200	52,500	-14.2%	44,500	-15.2%	40,000	-10.1%
Wheel Loaders	10,010	11,500	16,700	19,100	19,440	1.8%	17,500	-10.0%	16,600	-5.1%
<b>Total</b>	<b>134,595</b>	<b>150,970</b>	<b>196,093</b>	<b>225,769</b>	<b>224,190</b>	<b>-0.7%</b>	<b>203,850</b>	<b>-9.1%</b>	<b>188,580</b>	<b>-7.5%</b>