

# Agricultural and Construction Equipment 2012 Outlook

**Federal Reserve Bank of Chicago**  
2012 Outlook Symposium  
Friday, December 2, 2011

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## Agenda

- Agricultural Machinery
  - Current Situation
  - Demand Factors
  - 2012 Outlook
- Construction and Mining Machinery
  - Current Situation
  - Demand Factors
  - 2012 Outlook
- Overseas Markets
- Questions and Comments



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### Agricultural Equipment Markets Current Situation

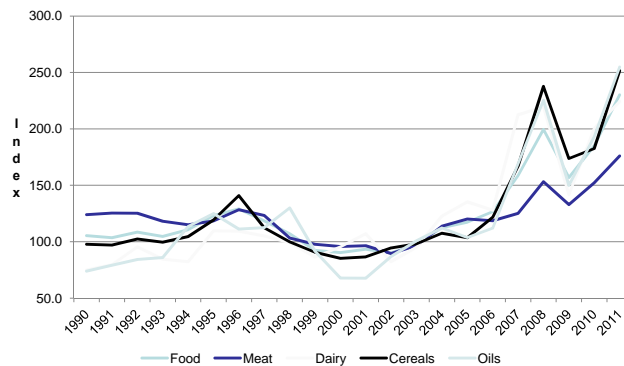
- Life Is Good
- Commodity Prices Remain At High Level
- Government Direct Payments Slowing
- Ethanol – Will Use 30% Of Corn Crop
- Land Prices Continue Up
- Farmers Balance Sheet Couldn't Be Better



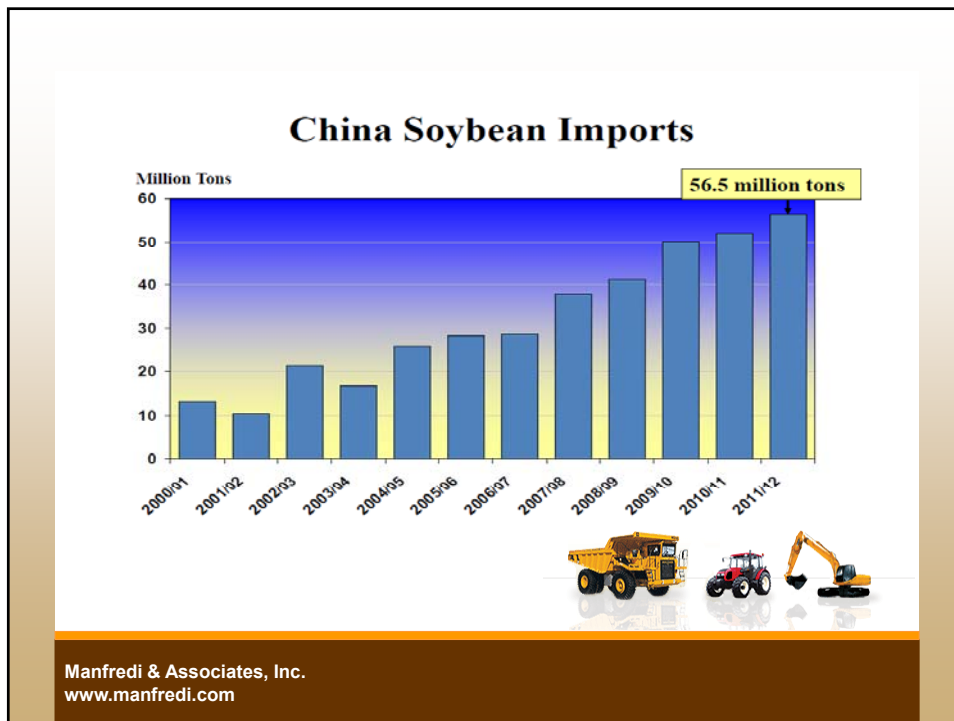
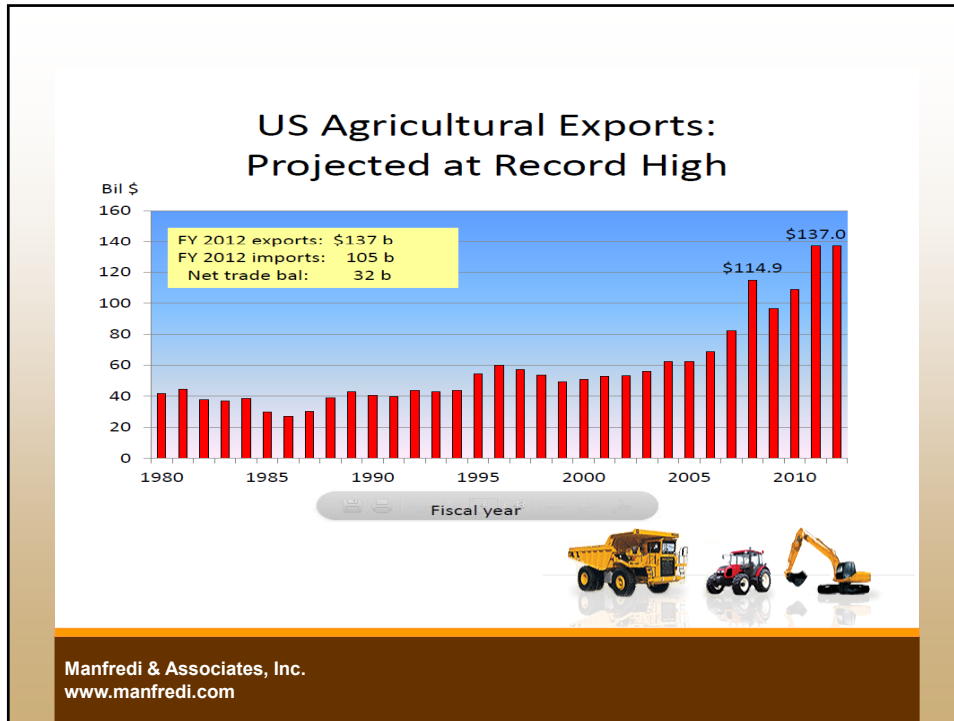
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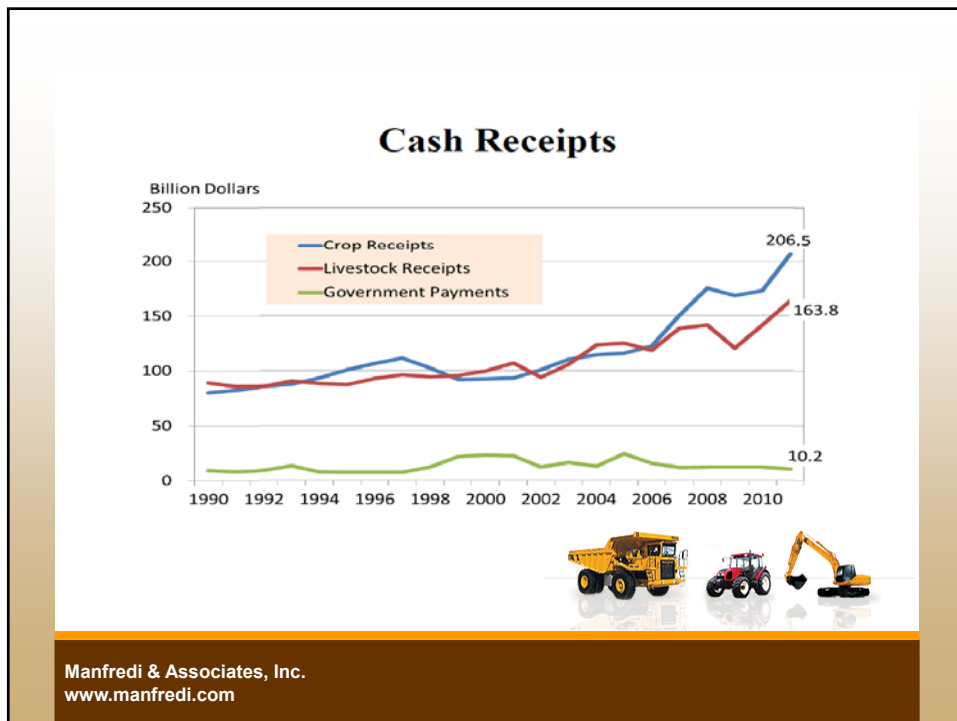
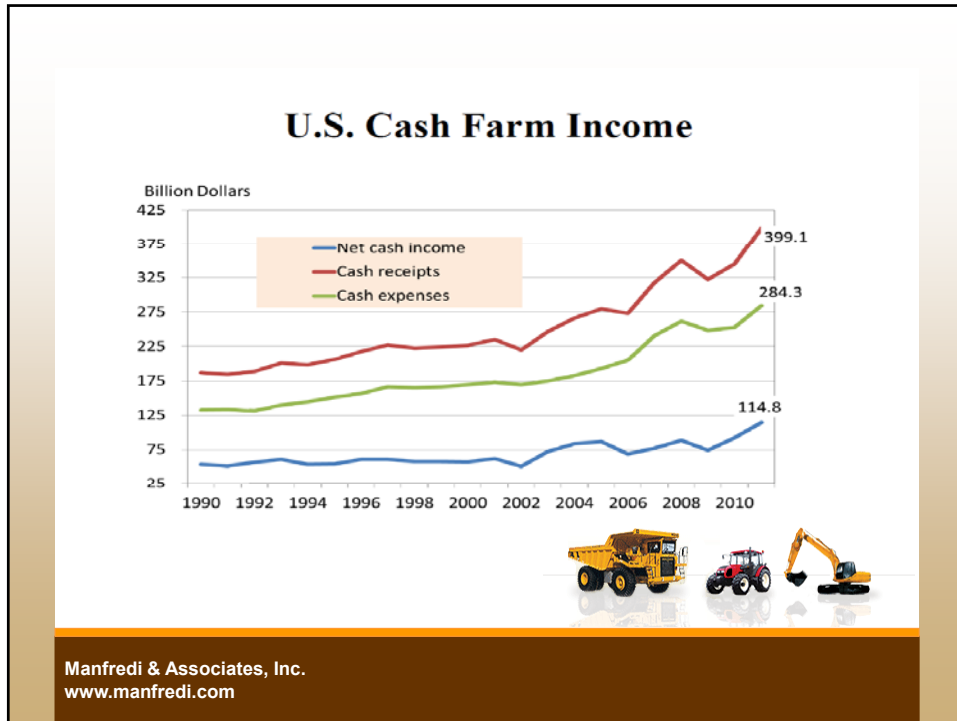
### FAO Food Price Index

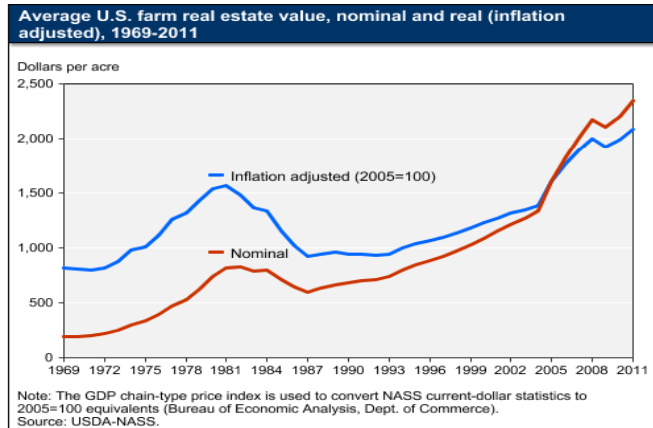
2002 – 2004 = 100



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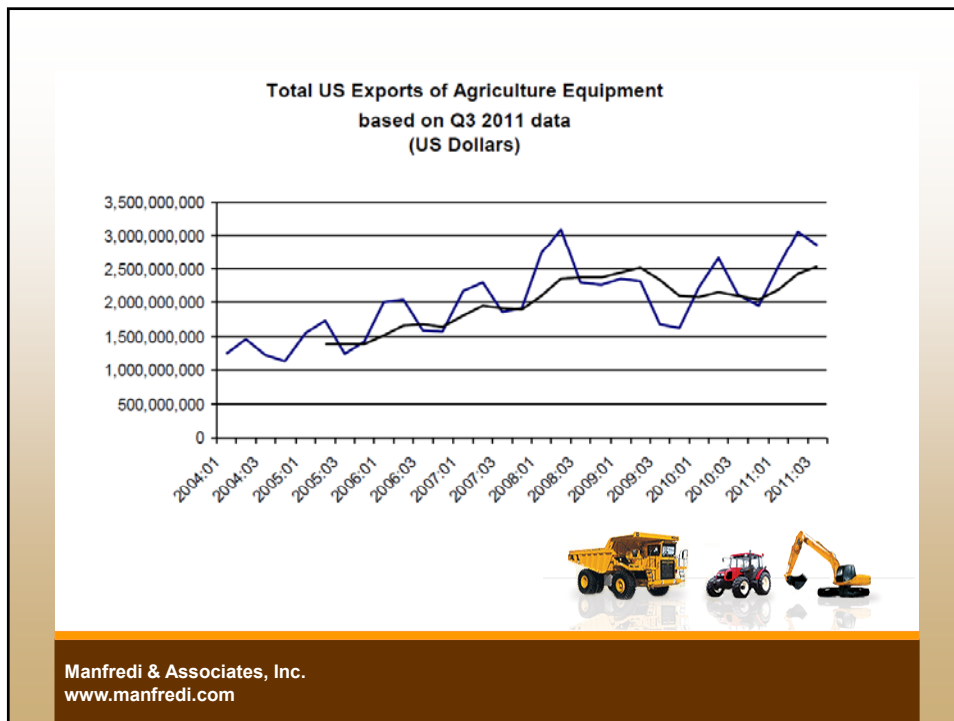
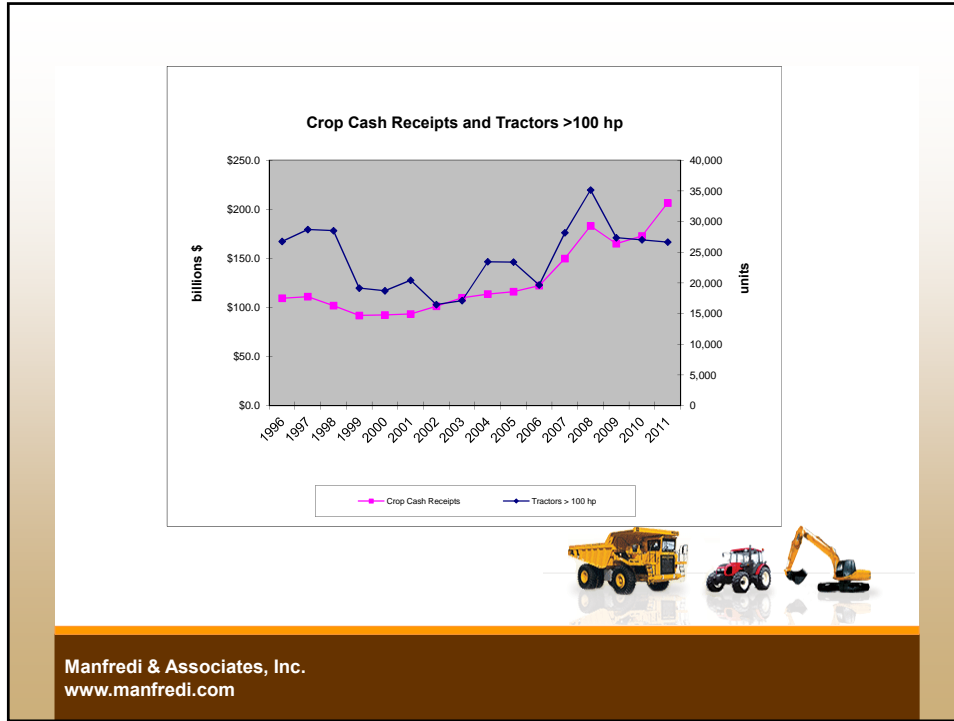
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**Farm Income and Costs: Farm Sector Income Forecast**

Balance sheet of the U.S. farming sector, 2007-2011F								
Financial measures	2007	2008	2009	2010	2011f	% chng 08-09	% chng 09-10	% chng 10-11
08/30/2011	\$ million					Percent		
Farm assets	2,055,276	2,023,302	2,054,378	2,179,669	2,324,165	1.54%	6.10%	6.63%
Real estate	1,751,386	1,702,961	1,724,412	1,841,672	1,972,799	1.26%	6.80%	7.12%
Livestock and poultry	80,649	80,607	79,785	81,372	80,527	-1.02%	1.99%	-1.04%
Machinery and motor vehicles 1/	114,706	123,380	125,971	127,940	132,639	2.10%	1.56%	3.67%
Crops stored 2/	22,703	27,610	32,887	35,595	40,256	19.11%	8.23%	13.09%
Purchased inputs	7,019	7,167	7,217	7,345	7,567	0.70%	1.77%	3.03%
Financial assets	78,812	81,577	84,106	85,746	90,376	3.10%	1.95%	5.40%
Total farm debt 3/	214,063	241,611	241,882	246,859	242,093	0.11%	2.06%	-1.93%



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### World Wheat Production

Country or Region	2010/11	2011/12	Change from
	estimate	forecast	2010/11
	<i>Million Tons</i>		<i>Percent</i>
World	648.2	681.2	<b>5.1</b>
United States	60.1	54.7	<b>-9.0</b>
Foreign	588.1	626.5	<b>6.5</b>
Argentina	15.0	13.5	<b>-10.0</b>
Canada	23.2	24.2	<b>4.5</b>
Australia	26.0	26.0	<b>0.0</b>
European Union	135.6	136.3	<b>0.5</b>
Russian Federation	41.5	56.0	<b>34.9</b>
Ukraine	16.8	22.0	<b>30.6</b>
Kazakhstan	9.7	19.0	<b>95.9</b>
China	115.2	117.0	<b>1.6</b>
India	80.8	85.9	<b>6.3</b>



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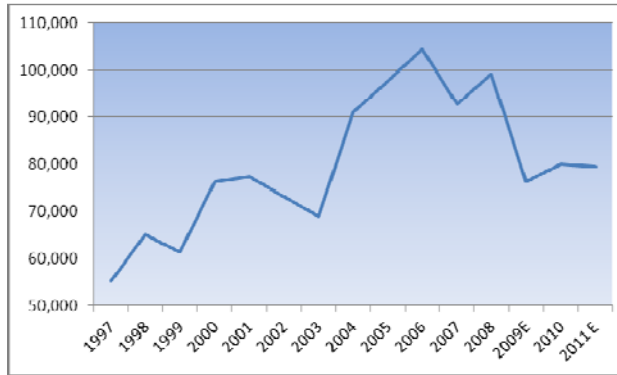
### World Corn Production

Country or Region	2010/11	2011/12	Change from
	estimate	forecast	2010/11
	<i>Million Tons</i>		<i>Percent</i>
World	828.3	860.1	<b>3.8</b>
United States	316.2	315.8	<b>-0.1</b>
Foreign	512.1	544.3	<b>6.3</b>
Argentina	22.5	27.5	<b>22.2</b>
Brazil	57.5	61.0	<b>6.1</b>
Mexico	20.6	24.0	<b>16.5</b>
Canada	11.7	10.0	<b>-14.6</b>
European Union	55.9	61.0	<b>9.1</b>
FSU-12	18.6	31.1	<b>67.6</b>
Ukraine	11.9	21.0	<b>76.2</b>
South Africa	11.8	12.5	<b>5.9</b>
China	177.2	182.0	<b>2.7</b>



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### Total Farm Tractor Inventories



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### U.S. Agricultural Equipment Markets

(units)

	2008	2009	2010	Estimate 2011	% change 2011 v 2010	Forecast 2012	% change 2012 v 2011
<b>2 Wheel Drive Tractors</b>							
Under 40 hp	98,976	79,659	83,989	88,598	11.2% ↑	93,914	6.0%
40 to 100 hp	67,885	48,416	48,443	49,963	3.2% ↑	51,462	3.0%
100 hp and over	26,291	22,863	27,031	26,661	16.6% ↑	29,327	10.0%
<b>Total 2 Wheel Drive</b>	<b>193,152</b>	<b>150,938</b>	<b>159,463</b>	<b>165,222</b> ↑	<b>9.5%</b>	<b>174,703</b>	<b>5.7%</b>
<b>4 Wheel Drive Tractors</b>	<b>4,431</b>	<b>4,512</b>	<b>5,790</b>	<b>6,000</b>	<b>33.0%</b> ↑	<b>6,900</b>	<b>15.0%</b>
<b>Total Farm Wheel Tractors</b>	<b>197,583</b>	<b>155,450</b>	<b>165,253</b>	<b>171,222</b> ↑	<b>10.1%</b>	<b>181,603</b>	<b>6.1%</b>
<b>Combines</b>	<b>8,460</b>	<b>9,690</b>	<b>10,691</b>	<b>9,650</b>	<b>-9.7%</b>	<b>9,070</b>	<b>-6.0%</b>



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## Construction And Mining Machinery Markets



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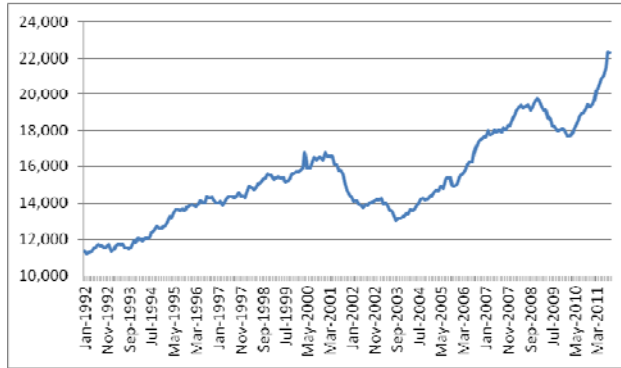
### Construction and Mining Machinery Current Situation

- Housing starts at historic lows, slow improvement
- Non-residential markets bottomed, slow growth
- Heavy – publicly funded projects up slightly
- Mining orders extremely strong
- Commodity prices down slightly, but won't deter investments
- Rental companies buying heavily
- Highway legislation extended, to be flat to down slightly



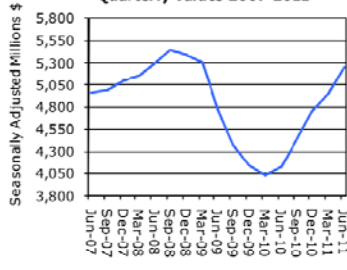
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Machinery — Seasonally Adjusted Finished Goods Inventories  
 [Millions of Dollars]

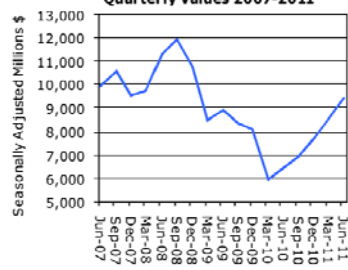


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Construction Equipment Inventories:  
 Quarterly Values 2007-2011



Construction Equipment Unfilled Orders:  
 Quarterly Values 2007-2011



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### History and Forecast Assumptions

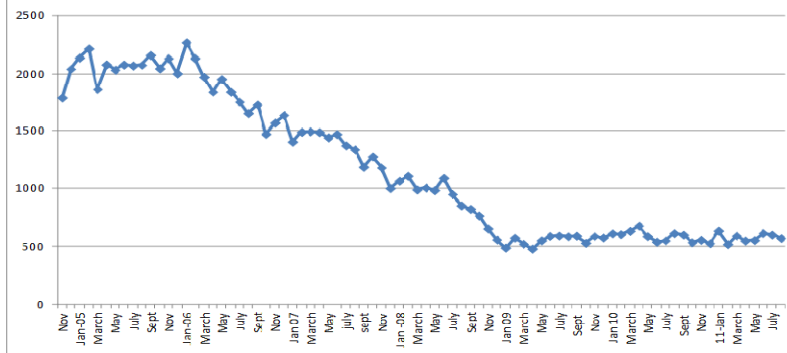
(current dollars)

	<u>2010</u>	<u>2011</u>	<u>2012</u>
<b>Total Construction Spending</b>	-11%	-5%	5%
<b>Nonresidential</b>	-23%	-5%	5%
<b>Heavy</b>	-3%	-1%	7%
<b>Residential</b>	-4%	-6%	3%



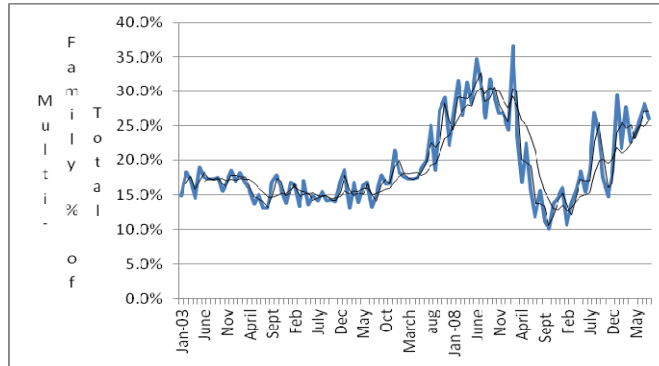
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**Total Housing Starts**  
 Seasonally Adjusted Annual Rate



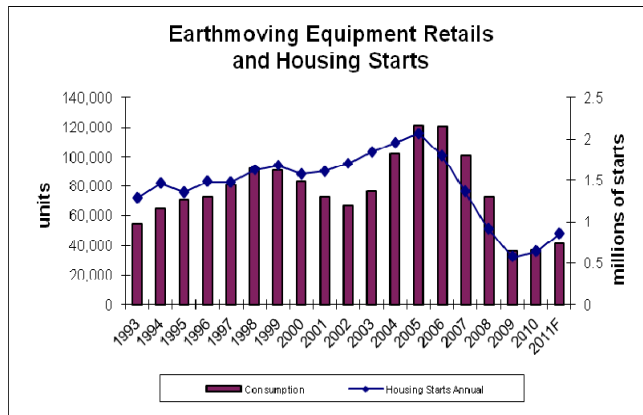
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### Multi-Family Homes/Percent of Total

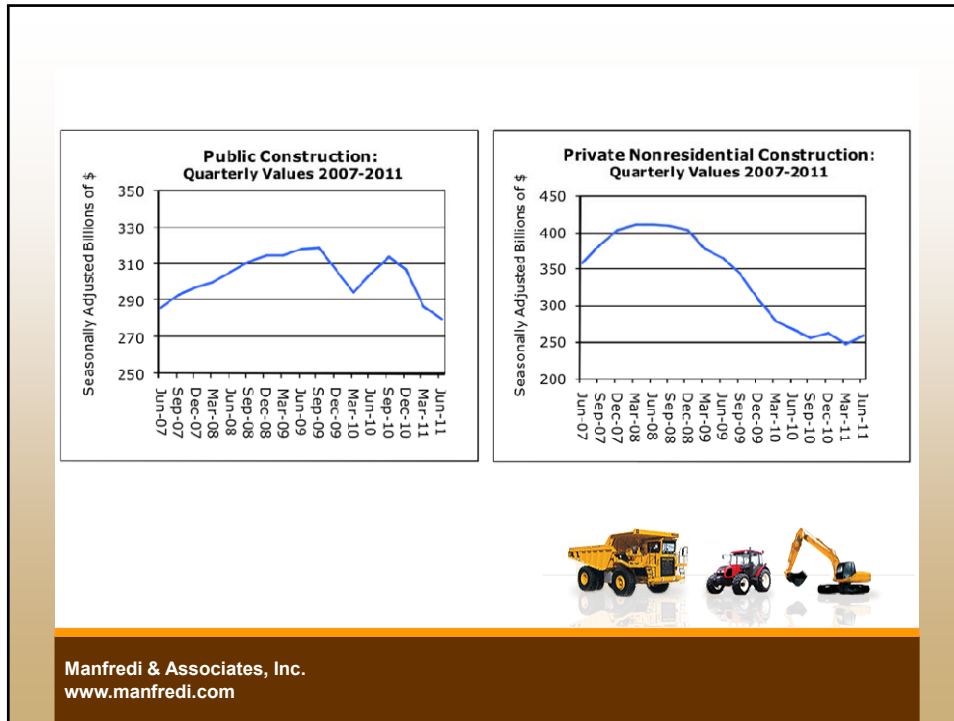


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### Earthmoving Equipment Retails and Housing Starts



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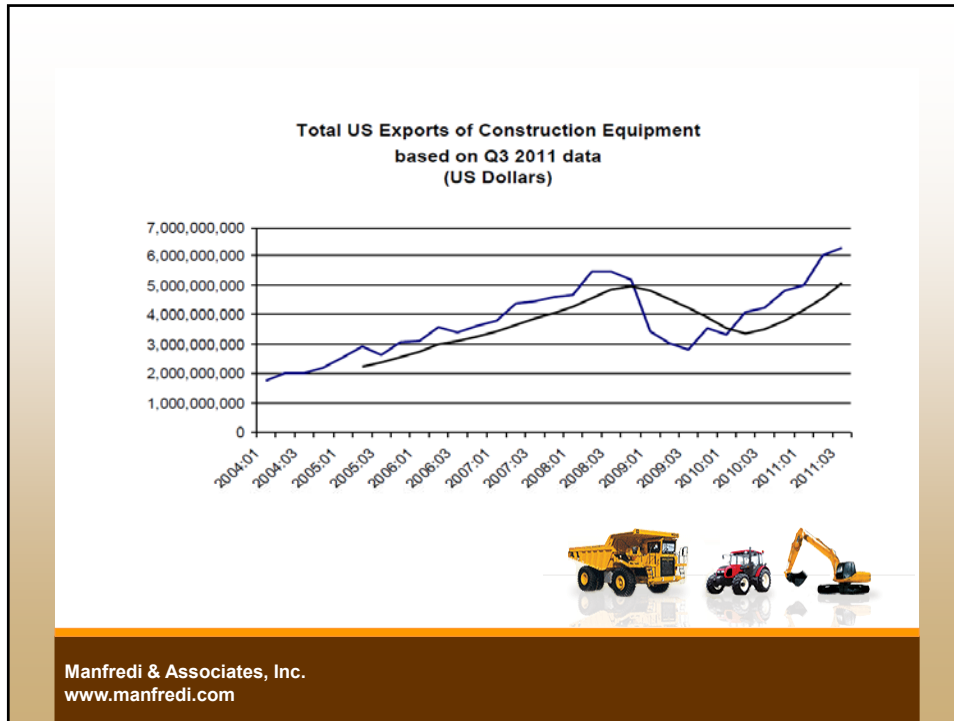


## Highway Construction

- Political Football
- Portrayed as Jobs Bill
- Current Program Funded at 2009 Level
  - SAFETEA-LU
  - MAP-21 (consolidates 5 Federal programs)



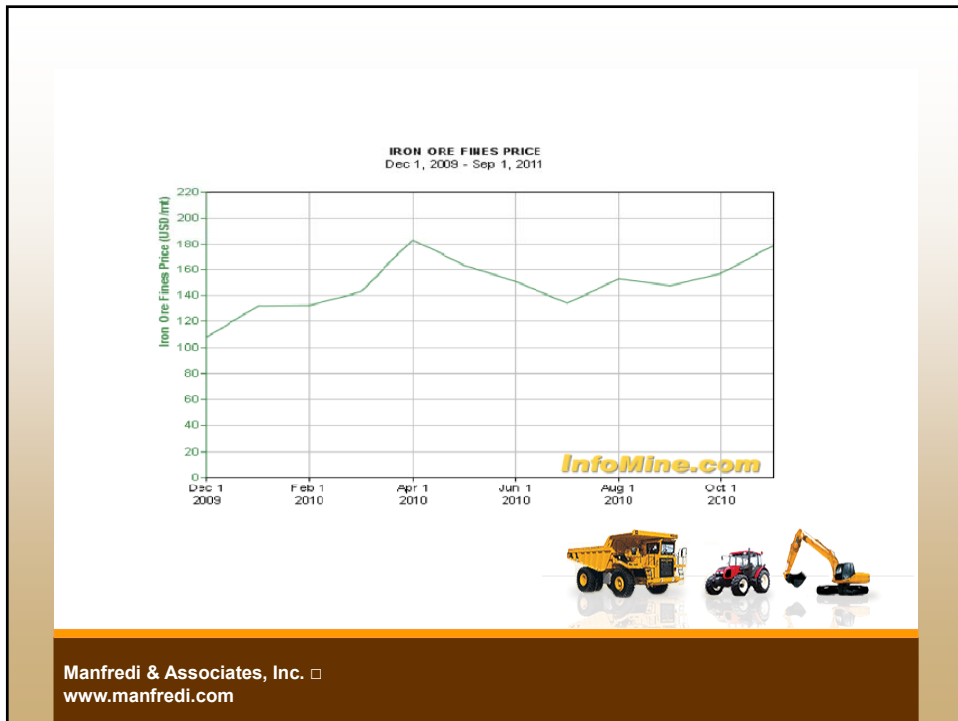
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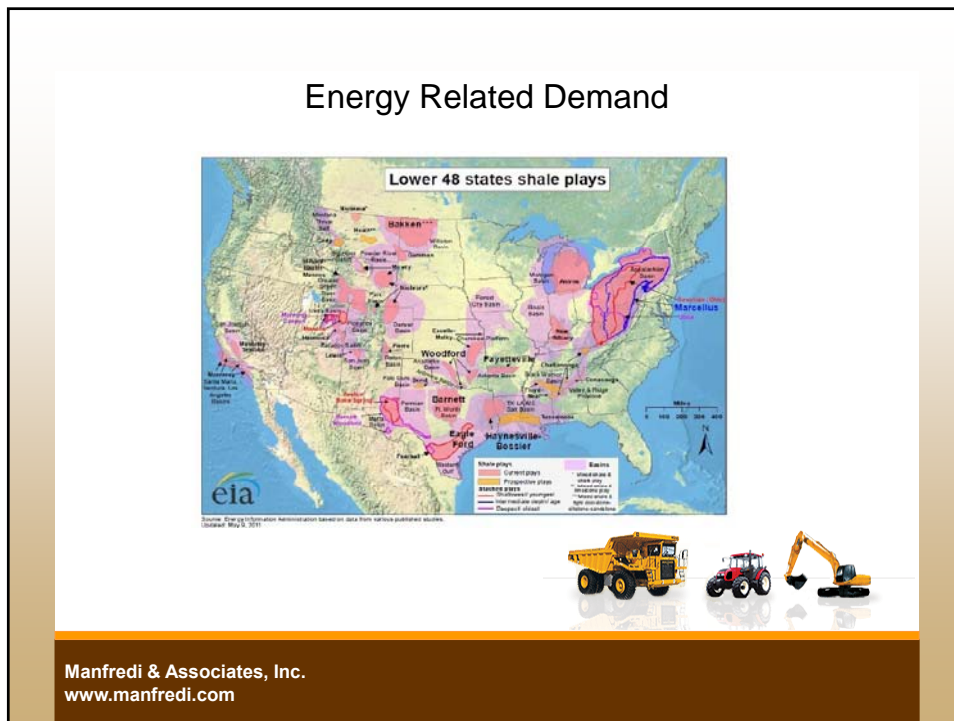


# Mineral Commodities

Stabilized at a High Level

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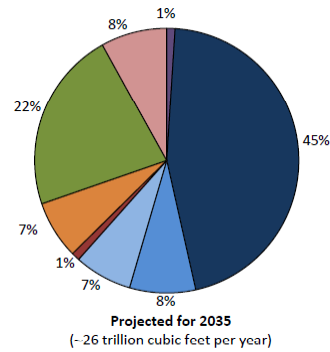






## Shale Gas

- 28% of 1998 gas production
- 2035 to be 60%
- Shale gas 14% in 2009
- Shale gas 45% by 2035



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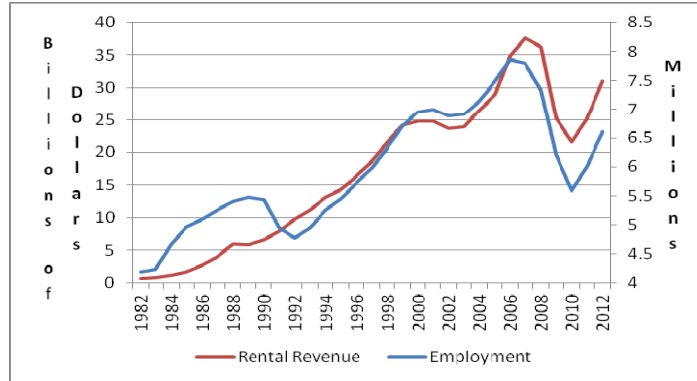
## Rentals

- Becoming more “normal” to rent
- Tier IV concerns will favor rent vs. buy
- Fleets getting larger
- Rental companies must deal with issue of higher residual value risk



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## Rental Revenue vs. Construction Employment

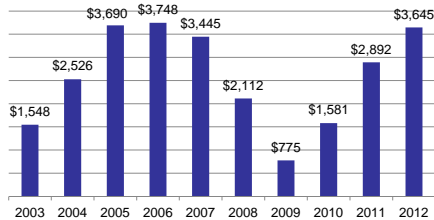


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## National Rental Company Capital Equipment Spending (millions of dollars)

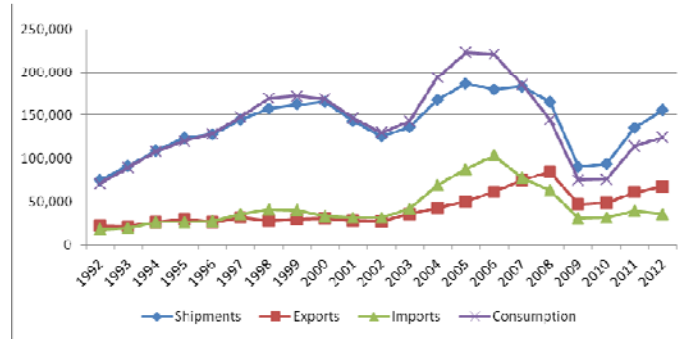
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
United Rental	\$379	\$586	\$746	\$873	\$870	\$624	\$260	\$346	\$775	\$1,000
RSC	\$244	\$420	\$692	\$721	\$580	\$259	\$46	\$327	\$600	\$750
Herz	\$368	\$650	\$885	\$818	\$678	\$267	\$60	\$303	\$525	\$650
Nations	\$155	\$167	\$278	\$100						
Ameco	\$60	\$95	\$140	\$175	\$175	\$180	\$175	\$70	\$220	\$250
NES	\$34	\$80	\$100	\$100	\$100	\$106	\$48	\$60	\$95	\$50
Sunbelt	\$94	\$153	\$258	\$280	\$352	\$217	\$70	\$275	\$400	\$600
Neff	\$35	\$98	\$180	\$130	\$92	\$35	\$12	\$28	\$75	\$95
Home Depot	\$100	\$125	\$100	\$135	\$100	\$105	\$50	\$50	\$65	\$50
H&E	\$30	\$82	\$183	\$221	\$258	\$168	\$25	\$102	\$120	\$175
Ahern	\$49	\$70	\$128	\$195	\$240	\$151	\$28	\$20	\$17	\$25
<b>Total</b>	<b>\$1,548</b>	<b>\$2,526</b>	<b>\$3,690</b>	<b>\$3,748</b>	<b>\$3,445</b>	<b>\$2,112</b>	<b>\$775</b>	<b>\$1,581</b>	<b>\$2,892</b>	<b>\$3,645</b>

Source: Dan Kaplan



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### U.S. Construction and Mining Machinery Consumption (units)



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

Estimated U.S. Construction Machinery Market  
(units)

Product	2007	2008	2009	Estimated 2010	% Change 10 vs 09	Estimated 2011	% Change 11 vs 10	Forecast 2012	% Change 12 vs 11
Asphalt Pavers	1,636	1,408	921	1,050	14.0%	1,225	16.7%	1,400	14.3%
Compactors	9,600	7,758	2,661	2,965	11.4%	3,350	13.0%	3,500	4.5%
Cranes	1,750	2,100	1,600	876	-35.0%	840	-13.8%	950	13.1%
Crawler Tractors	12,800	9,700	3,284	4,400	34.0%	5,475	24.4%	6,000	9.6%
Hydraulic Excavators	39,000	25,700	7,370	10,250	39.1%	14,500	41.5%	15,500	6.9%
Loader Backhoes	18,000	15,500	8,940	10,800	17.4%	15,800	46.6%	16,500	5.8%
Motor Graders	3,500	2,700	1,700	1,800	5.9%	2,340	30.0%	2,500	6.8%
Haulers - Rigid	1,755	1,835	585	810	43.4%	1,100	35.8%	1,300	36.4%
Haulers - Articulated	3,000	1,900	655	640	-2.3%	1,000	56.3%	1,200	20.0%
RT Forklifts	16,477	10,823	5,000	4,500	-10.0%	6,100	35.6%	7,000	14.8%
Rubber Tired Loaders	19,000	15,500	9,000	11,300	25.6%	17,000	50.4%	19,000	11.8%
Skid Steer Loaders	44,500	36,000	19,630	27,560	40.4%	33,000	19.7%	33,000	6.1%
Wheel Loaders	16,000	13,120	8,295	9,340	12.6%	12,600	34.9%	14,500	15.1%
<b>Total</b>	<b>167,016</b>	<b>146,145</b>	<b>69,321</b>	<b>80,080</b>	<b>23.6%</b>	<b>114,130</b>	<b>32.6%</b>	<b>124,530</b>	<b>8.1%</b>



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# China



- Real Estate Price Bubble
- 12<sup>th</sup> Five Year Plan
- Inflation



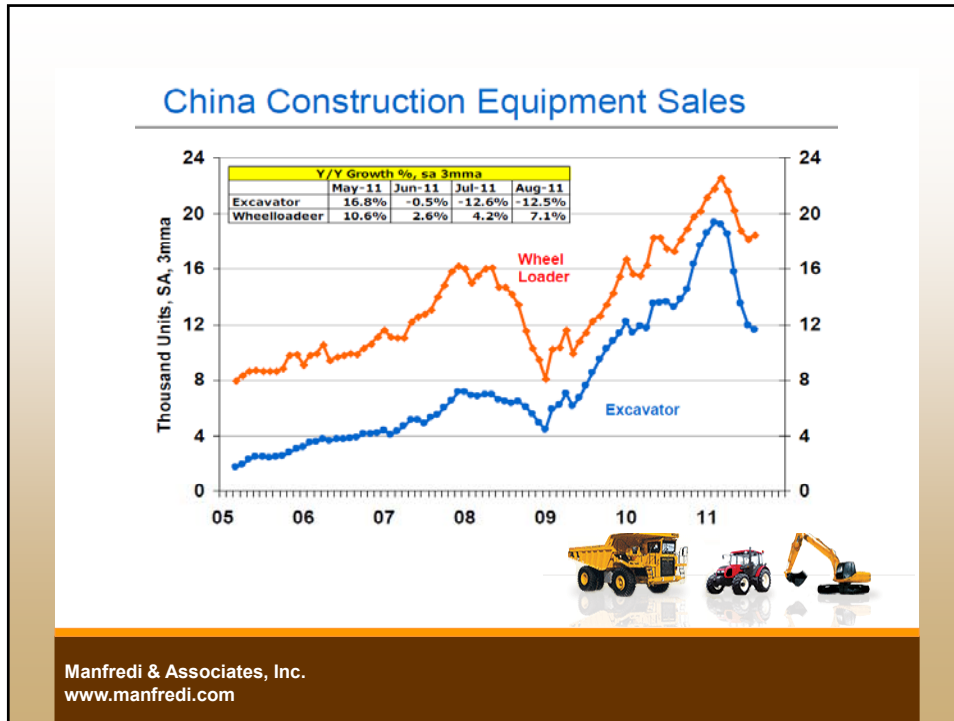
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## Estimated Chinese Construction Equipment Market Selected Years (units)

	<u>1997</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2006</u>	<u>2009</u>	<u>2010</u>
Compactors	3,965	8,767	9,600	8,920	8,740	16,333	25,581
Cranes	2,418	6,560	9,932	11,283	14,465	27,263	35,143
Crawler Tractors	3,240	4,856	7,969	6,959	5,925	8,599	13,918
Excavators - Crawler	10,491	22,257	62,365	53,270	49,625	95,012	165,804
Wheel Loaders	17,544	42,692	81,737	91,534	129,834	143,355	216,690
<b>Total</b>	<b>37,658</b>	<b>85,132</b>	<b>171,603</b>	<b>171,966</b>	<b>208,589</b>	<b>290,562</b>	<b>457,136</b>



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- ### Beyond 2012
- World markets will split along emission regulation lines. Silo markets.
  - Expect used equipment residual values to drop in North America.
  - Rentals will become the main channel-to-market for many types of equipment.
  - Electrics will become the new green.
  - China will make an assault on North America that will be no more successful than the Japanese in the 1990s.
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