

Agricultural and Construction Equipment 2014 Outlook

Federal Reserve Bank of Chicago

2013 Outlook Symposium

December 6, 2013

Agenda

- Agricultural Machinery
 - Current Situation
 - Demand Factors
 - 2014 Outlook
- Construction and Mining Machinery
 - Current Situation
 - Demand Factors
 - 2014 Outlook
- Impact of Emission Regulations
- Questions and Comments



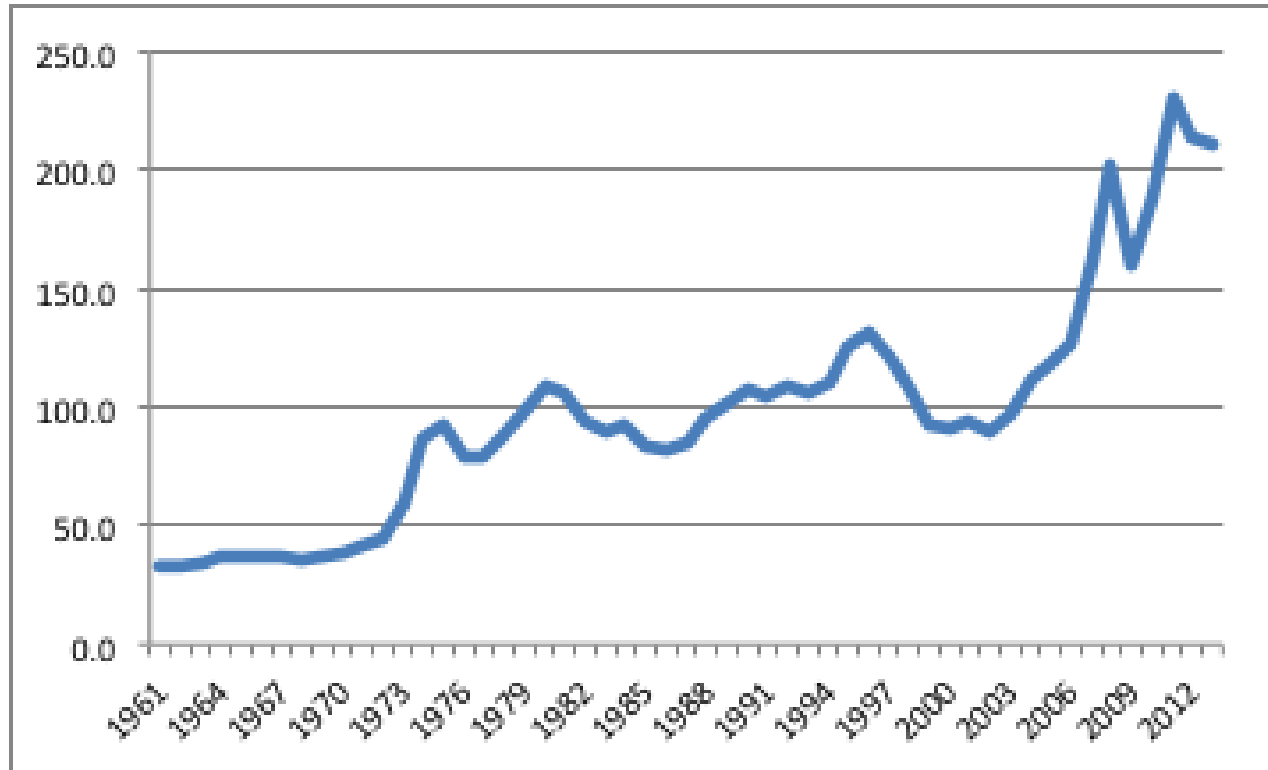
Agricultural Equipment Markets

Current Situation

- Commodity Prices Down But Relatively High Level
- Government Direct Payments Slowing
- Ethanol – Will Use 30% Of Corn Crop
- Land Prices Continue Up
- Farmers Have Strong Balance Sheets



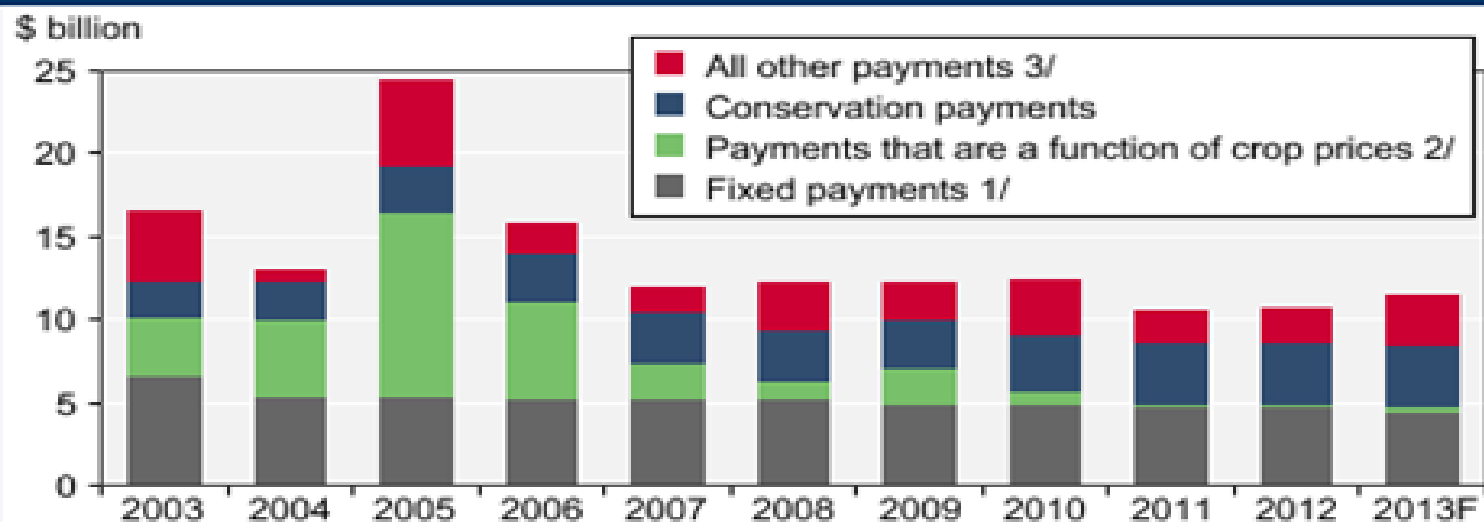
WW Food Price Index



Source: United Nations



Government payments to farm producers, 2003-2013F



F = Forecast.

1/ Production flexibility contract payments and direct payments whereby payment rates are fixed by legislation.

2/ Counter-cyclical payments, average crop revenue election (ACRE) payments, loan deficiency payments, marketing loan gains, and certificate exchange gains in which commodity payment rates vary with market prices. The certificate exchange program ended after making payments for the 2009 crop year.

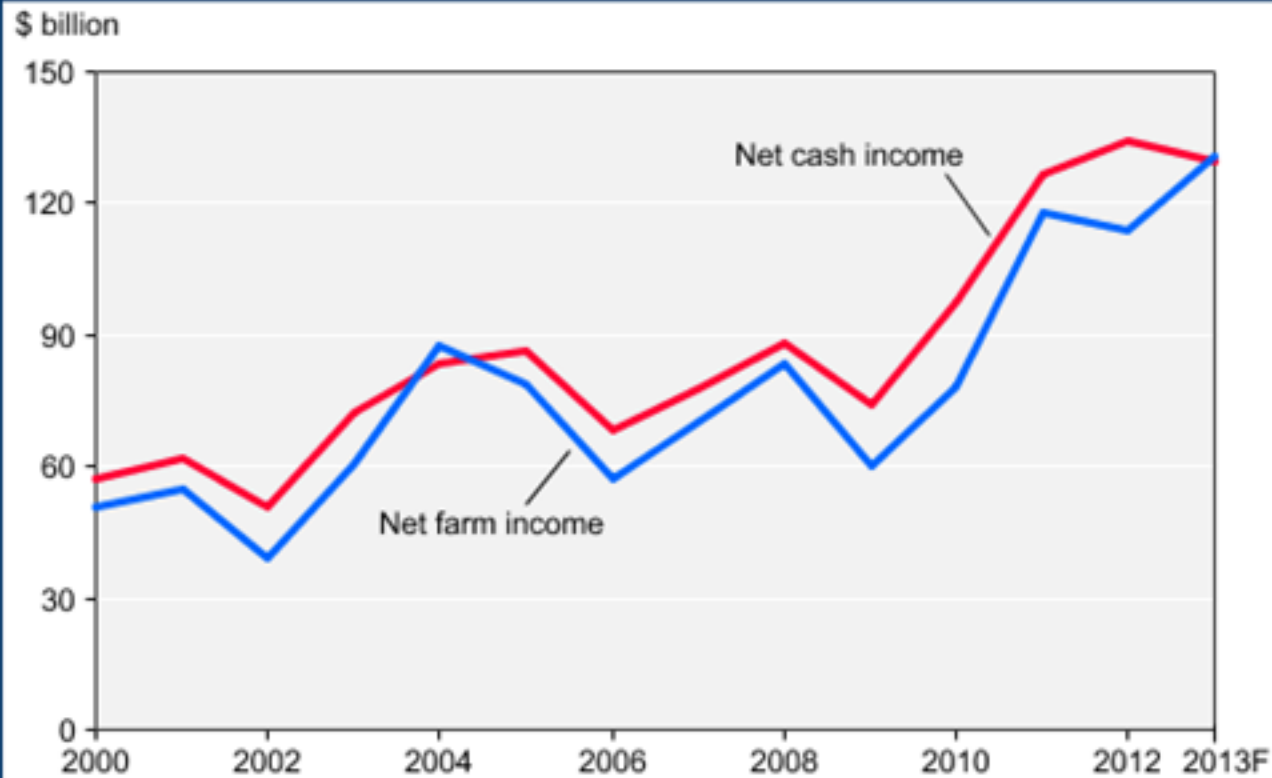
3/ All other payments include disaster relief payments, tobacco transition payments, and dairy program payments.

Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.

Data as of November 26, 2013.



Net farm income and net cash income, 2000-2013F



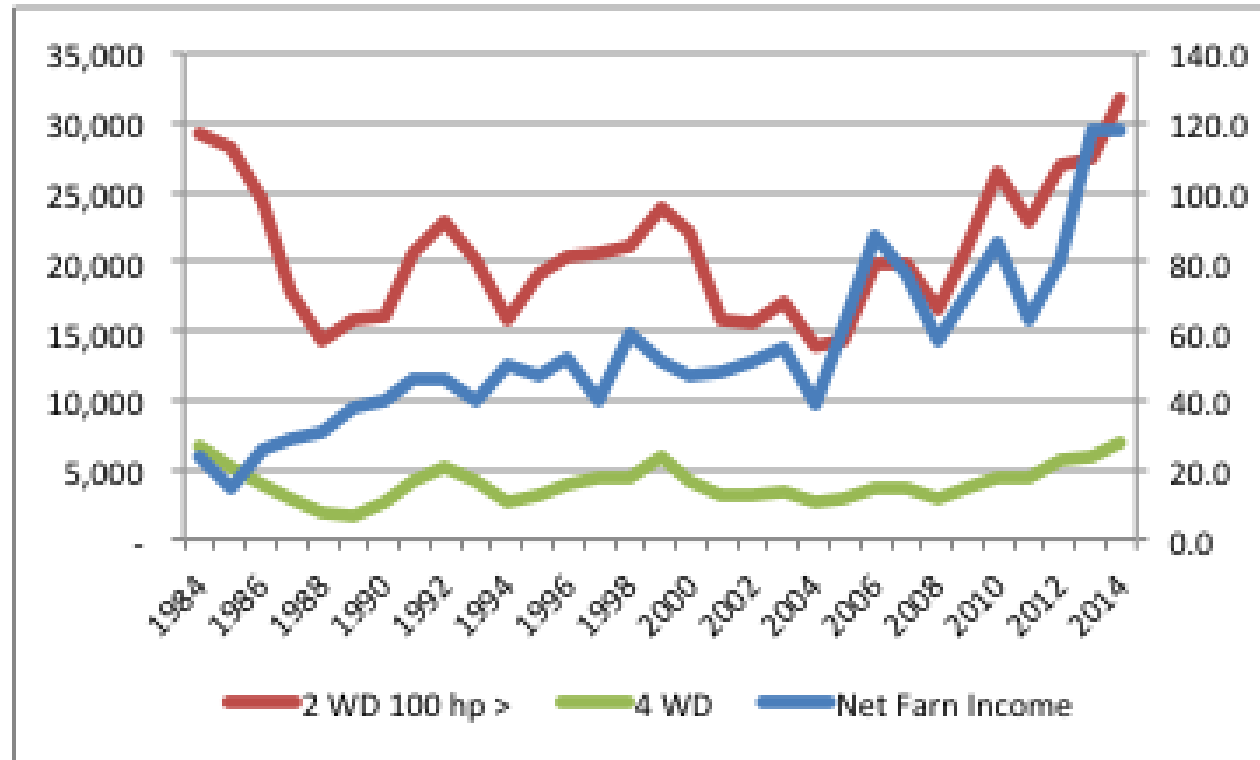
F = Forecast.

Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.
Data as of November 26, 2013.



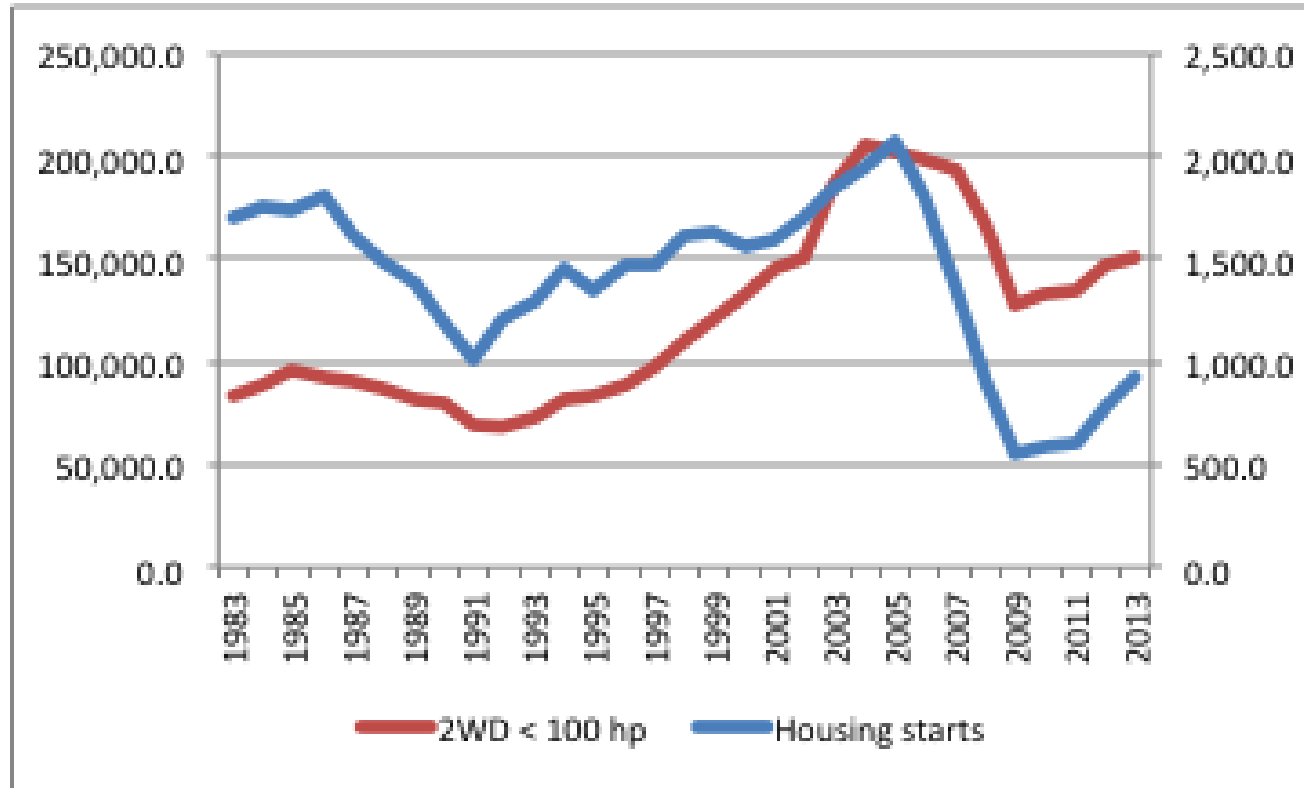
Retail Sales Farm Tractors vs. Net Farm Income

(units)



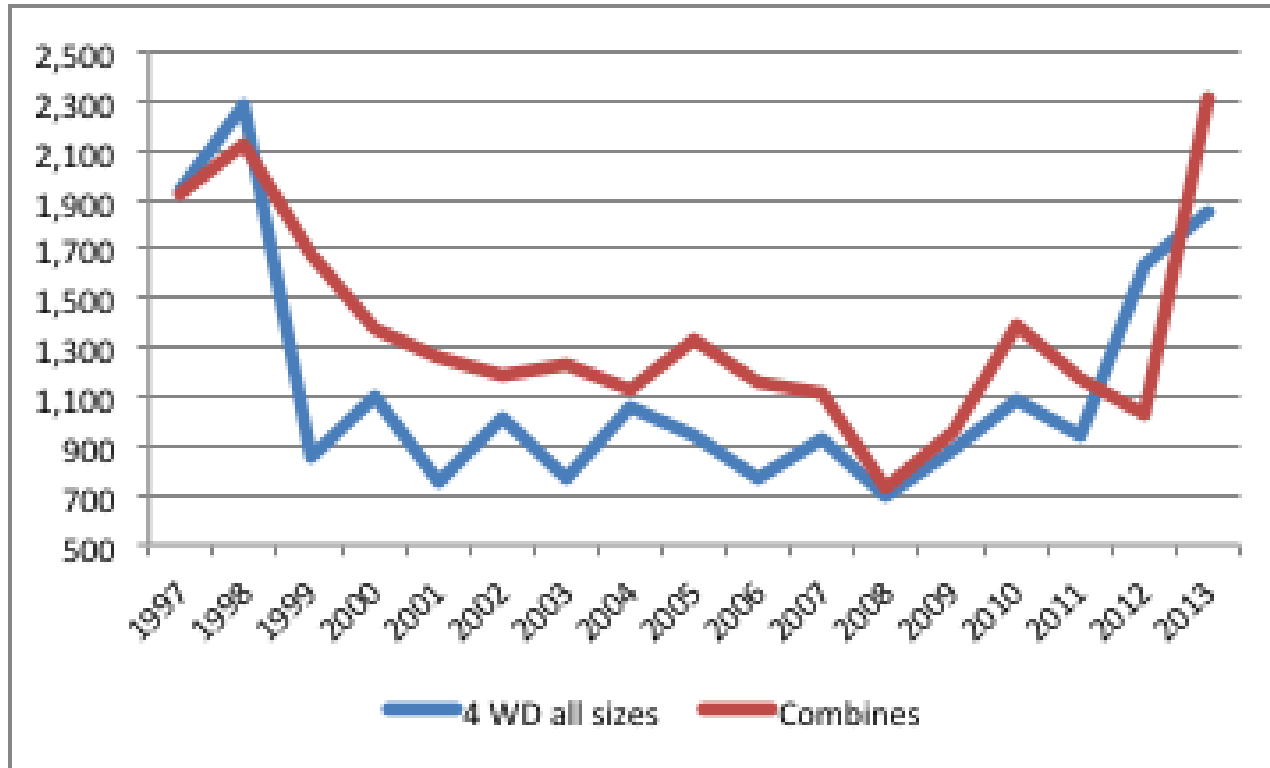
Farm Tractor Sales vs. Housing Starts

(units)



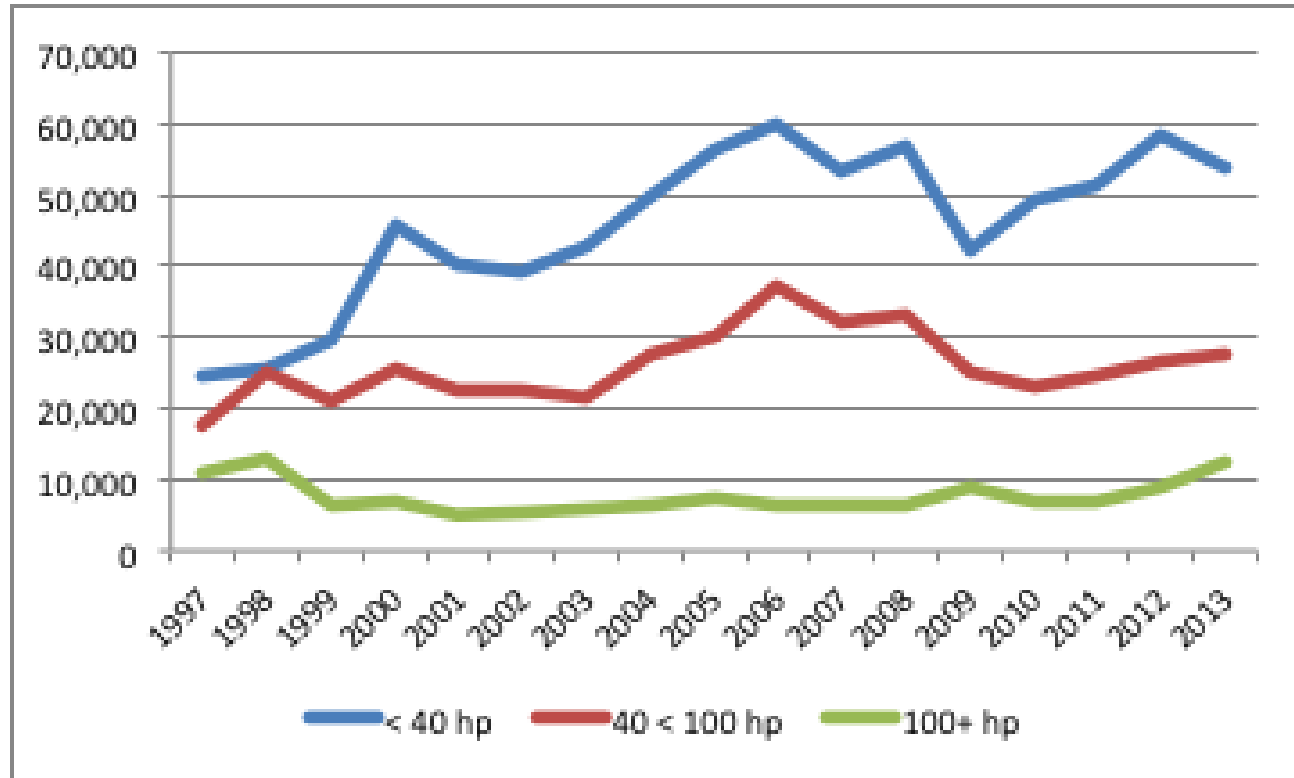
Tractor and Combine Inventories

(units)



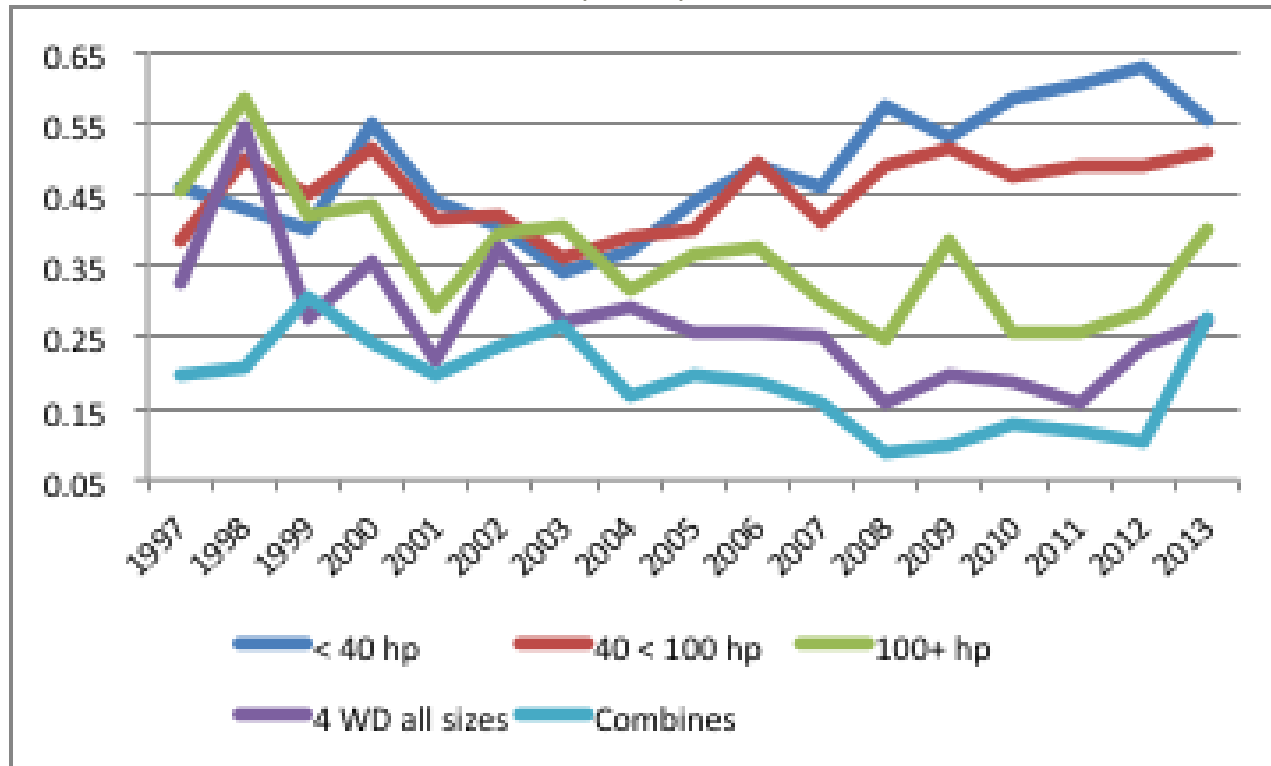
Farm Tractor Inventories

(units)



Farm Equipment Inventory to Sales Ratio

(units)



Estimated U.S. Farm Equipment Sales

(units)

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>Forecast 2013</u>	<u>% Chg 13 vs. 12</u>	<u>Forecast 2014</u>	<u>% Chg 14 vs. 13</u>
2WD Farm Tractors							
< 40 hp	83,999	84,594	92,207	96,697	4.9%	104,000	8%
40 < 100 hp	48,318	50,036	54,276	54,128	-0.3%	53,000	-2%
100 hp >	<u>26,971</u>	<u>27,427</u>	<u>31,732</u>	<u>30,583</u>	-3.6%	<u>27,525</u>	-10%
Total 2WD	159,288	162,057	178,215	181,408	1.8%	184,525	2%
4 WD Farm Tractors	5,784	5,977	6,935	6,810	-1.8%	5,789	-15%
Total Tractors Sold	165,072	168,034	185,150	188,218	1.7%	190,313	1%
Combines	10,678	9,898	9,820	10,049	2.3%	9,547	-5%



Construction And Mining Machinery Markets



Construction and Mining Machinery

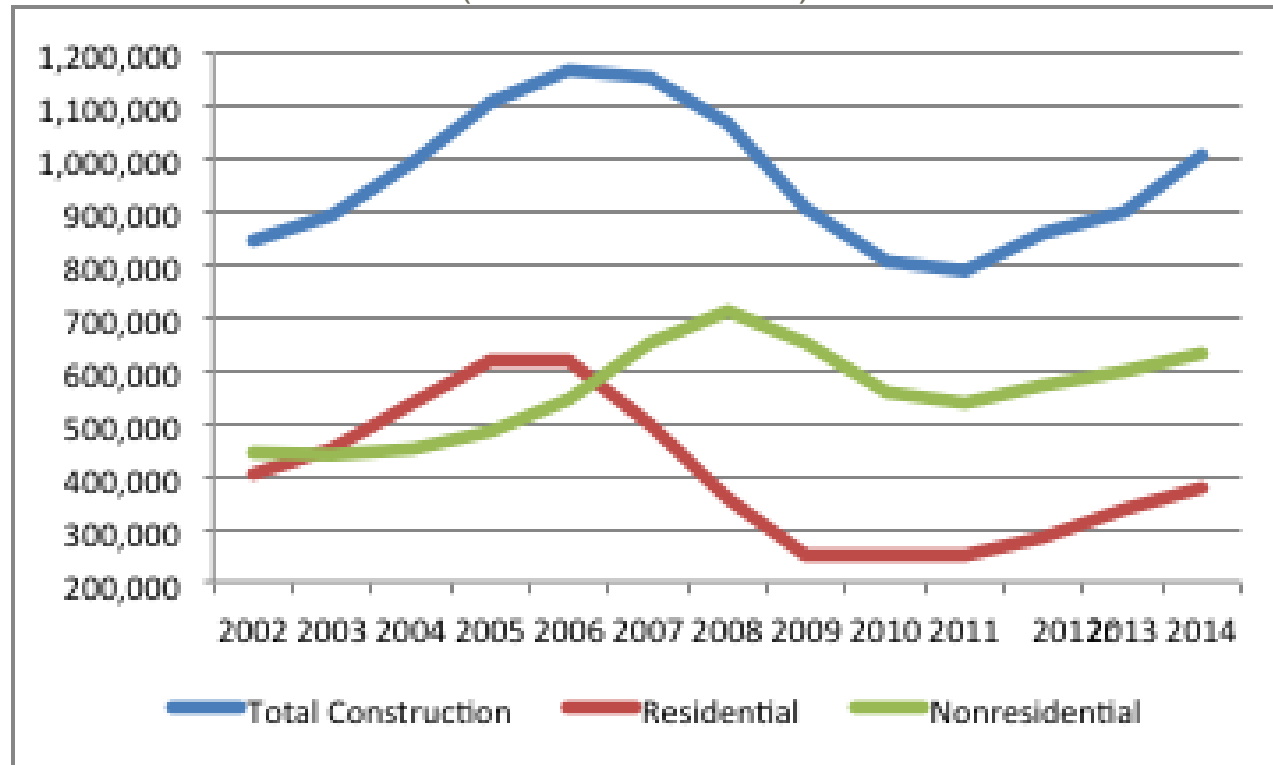
Current Situation

- Housing starts improving slowly
- Non-residential markets gaining for 3 consecutive years
- Heavy – publicly funded projects down
- Mining orders plunged
- Commodity prices down slightly
- Mining companies curtailed investments, rebuilding balance sheets
- Rental companies buying heavily
- Highway legislation extended, to be flat to down slightly

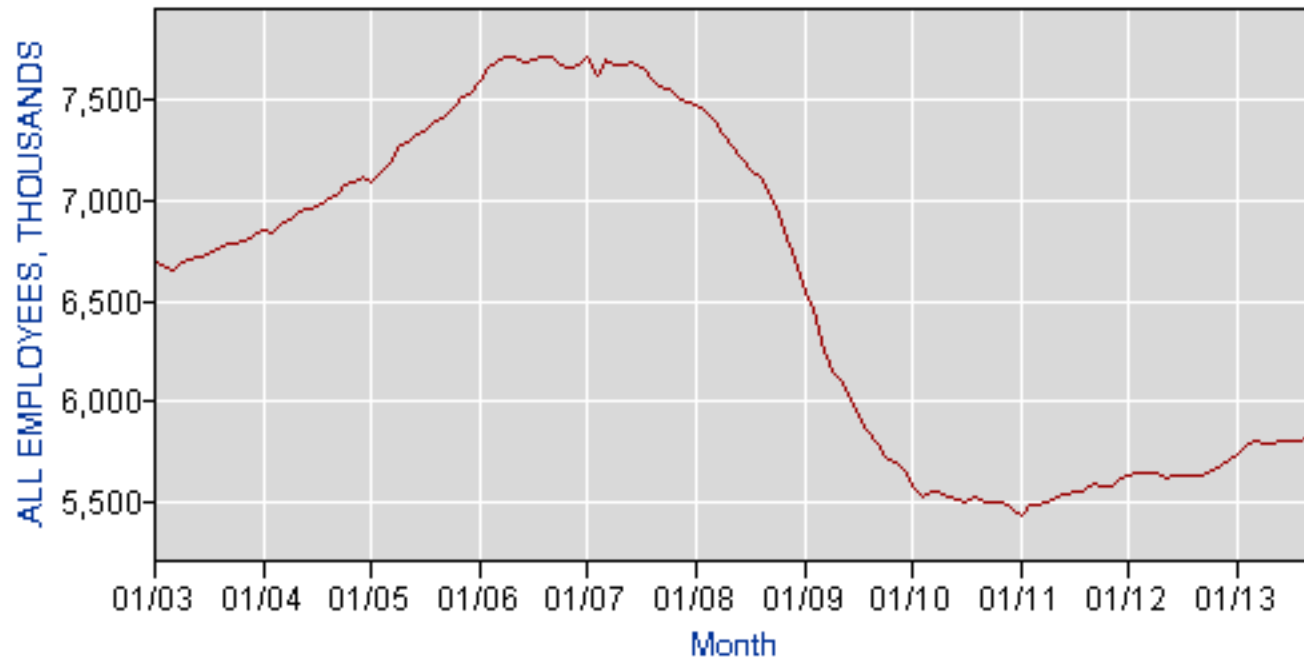


U.S. Construction Put-In-Place

(millions of dollars)

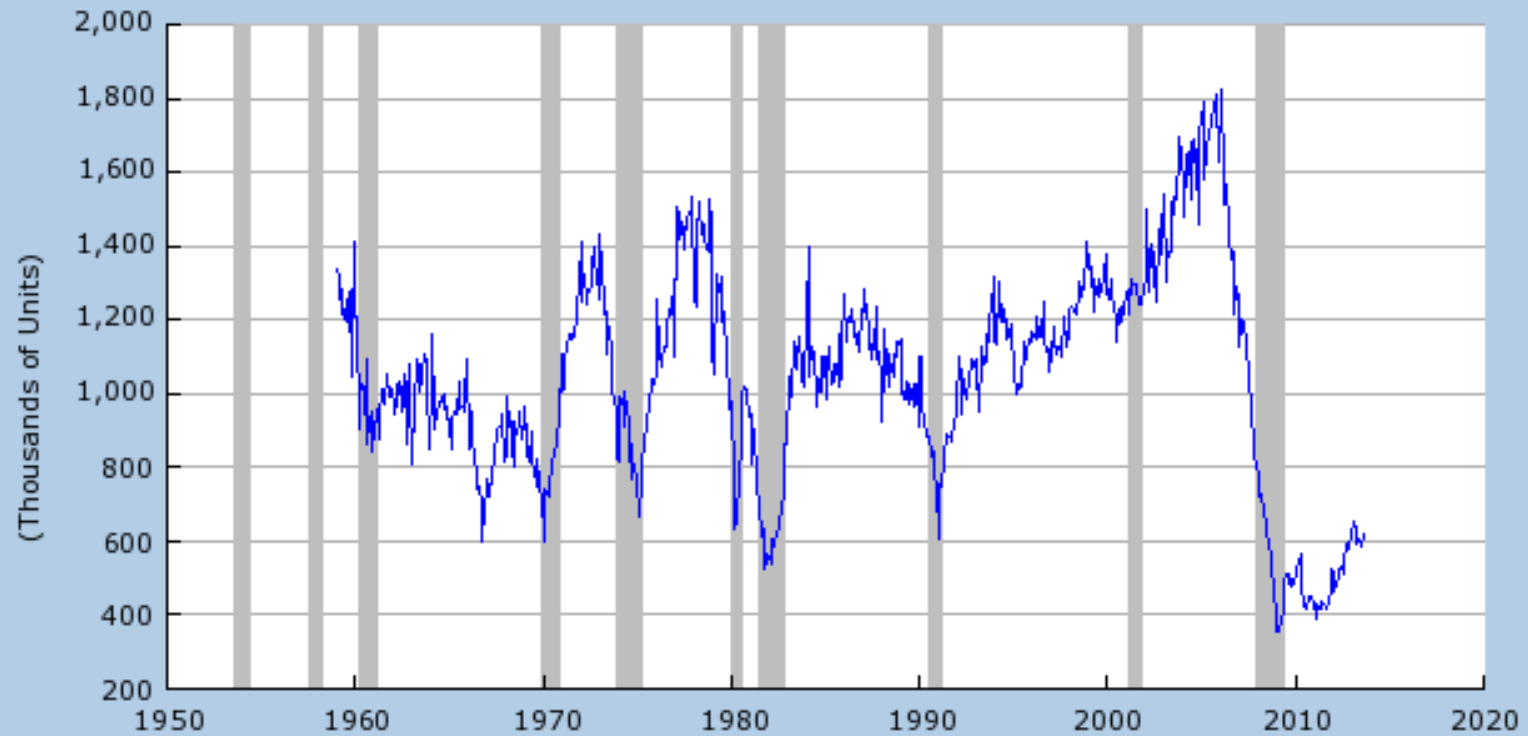


Construction Employment



Privately Owned Housing Starts: 1-Unit Structures (HOUST1F)

Source: U.S. Department of Commerce: Census Bureau



FRED

Shaded areas indicate US recessions.

2013 research.stlouisfed.org



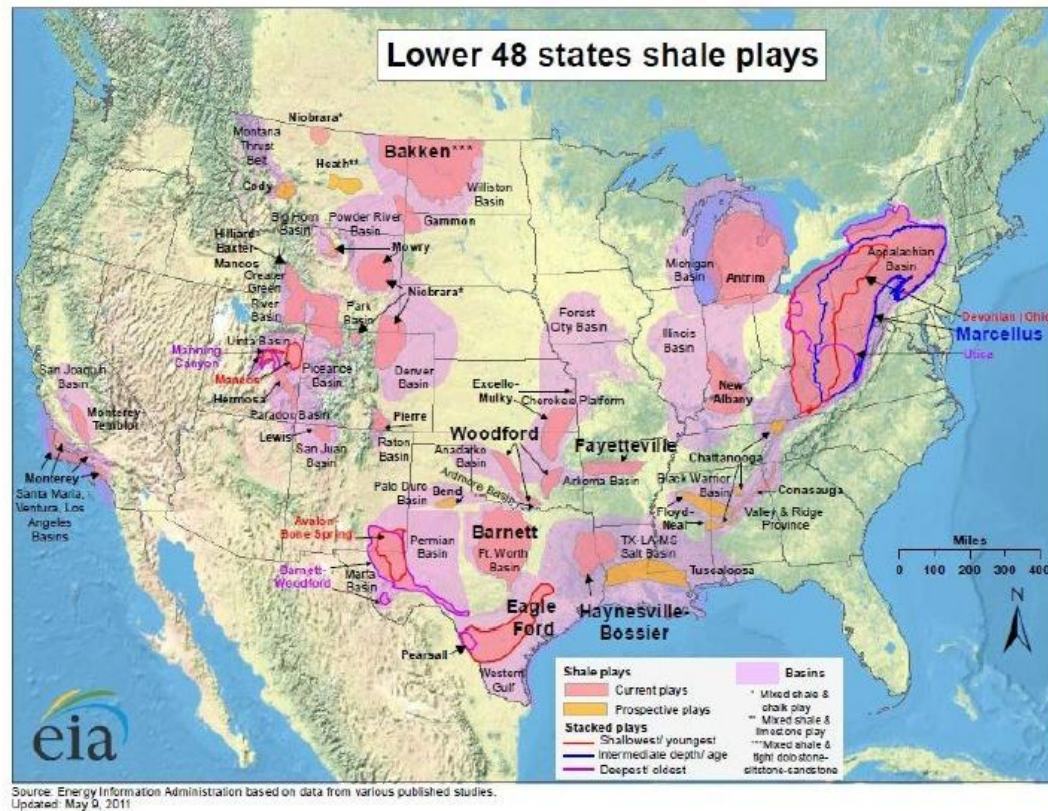
Highway Construction

(same slide used 2 years ago)

- Political football, extended in 2 year increments.
- Portrayed as Jobs Bill
- Current Program Funded at 2009 Level
 - MAP-21 (consolidates 5 Federal programs)



Energy Related Demand



Mineral Commodities

Stabilized at a High Level



Copper Price
3.18 USD/lb
2 Dec '13



Thermal Coal CAPP Price

51.89 USD/st

3 Dec '13



Natural Gas Price
3.97 USD/mmbtu
3 Dec '13



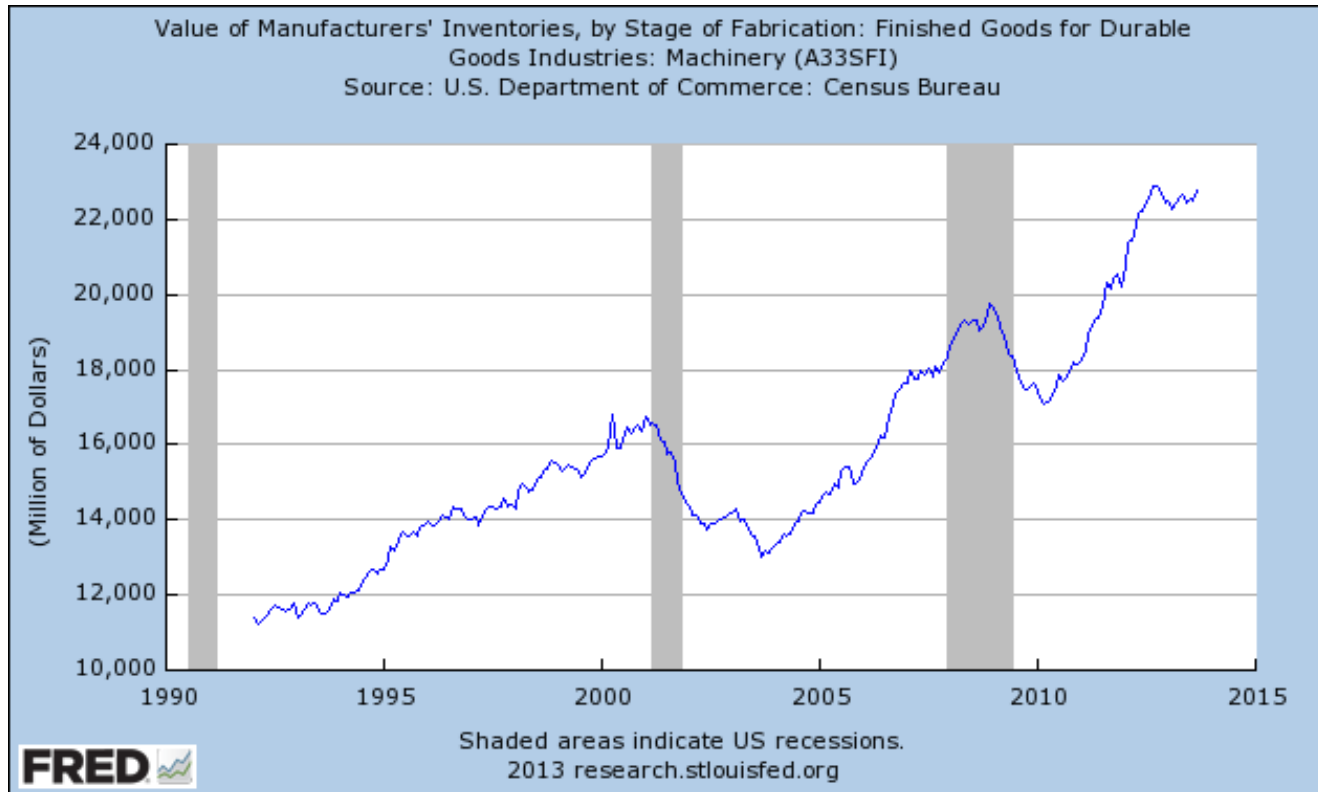
Iron Ore Fines Price

133.50 USD/t

31 Oct '13



Finished Goods Inventories, Machinery

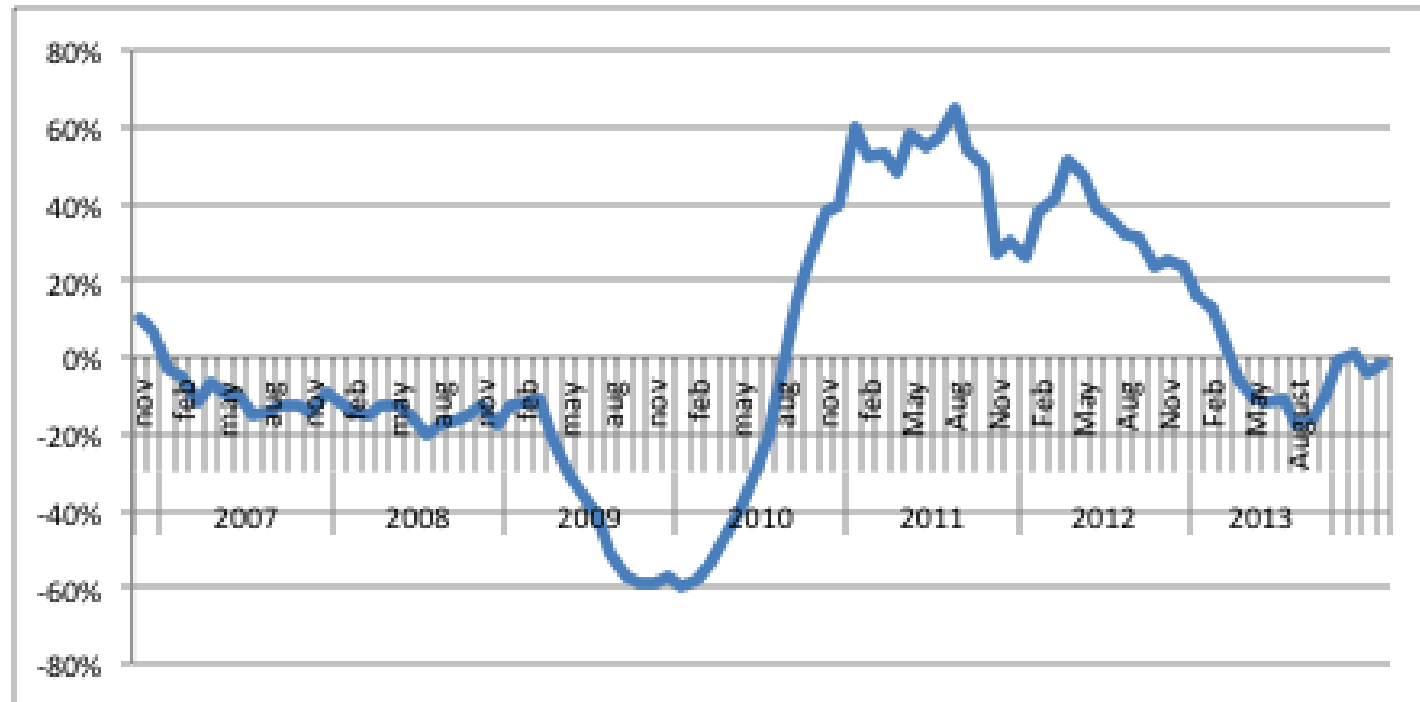


(% Change, 3 Month MOV)



Caterpillar Monthly North America Dealer Retail Sales

(% change not including mining)



North America Dealer Retails

Caterpillar vs. Komatsu



Estimated U.S. Construction Machinery Market
(units)

<u>Product</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>Estimated % Change</u> <u>13 vs 12</u>	<u>Forecast</u> <u>14 vs 13</u>	<u>% Change</u> <u>14 vs 13</u>
Asphalt Pavers	1,051	1,167	1,285	1,275	-0.8%	1,340	5.1%
Compactors	3,945	3,900	4,115	4,315	4.9%	4,530	5.0%
Cranes	632	1,255	1,660	1,830	10.2%	2,050	12.0%
Crawler Tractors	4,400	5,010	5,440	5,700	4.8%	6,100	7.0%
Hydraulic Excavators	21,285	32,120	38,175	39,000	2.2%	42,300	8.5%
Loader Backhoes	12,050	14,435	15,025	16,000	6.5%	15,200	-5.0%
Motor Graders	1,800	2,100	2,495	2,695	8.0%	2,800	3.9%
Haulers - Rigid	775	780	910	895	-1.6%	850	-5.0%
Haulers - Articulated	850	1,800	2,000	1,300	-35.0%	1,500	15.4%
RT Forklifts	3,748	9,400	14,110	15,090	6.9%	15,800	4.7%
Rubber Tracked Loaders	11,300	19,000	21,000	23,200	10.5%	25,500	9.9%
Skid Steer Loaders	30,030	35,006	40,019	41,027	2.5%	45,000	9.7%
Wheel Loaders	10,880	16,265	18,500	19,000	2.7%	21,000	10.5%
Total	102,746	142,238	164,734	171,327 	4.0%	183,970	7.4%

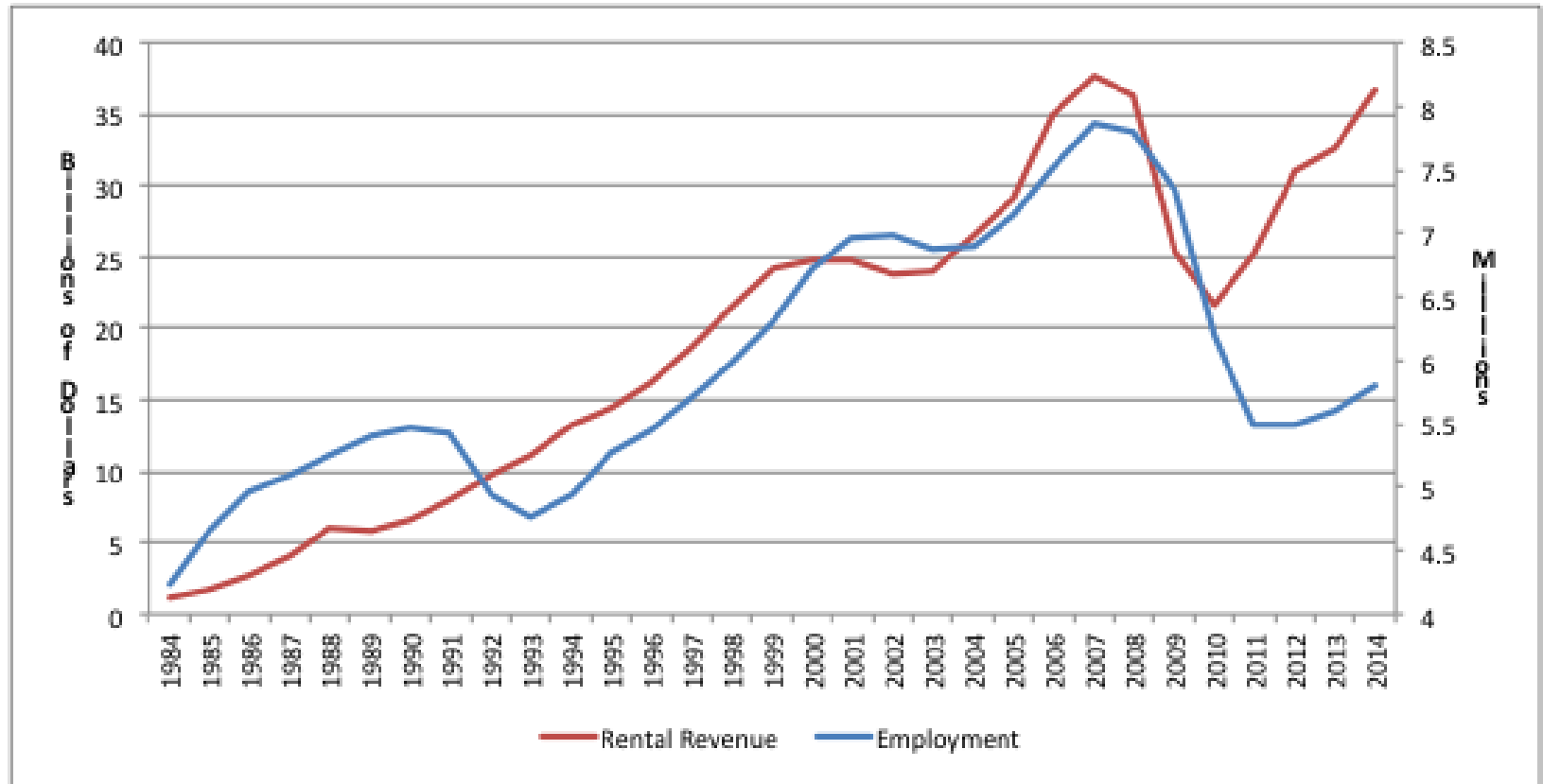


Rentals

- 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

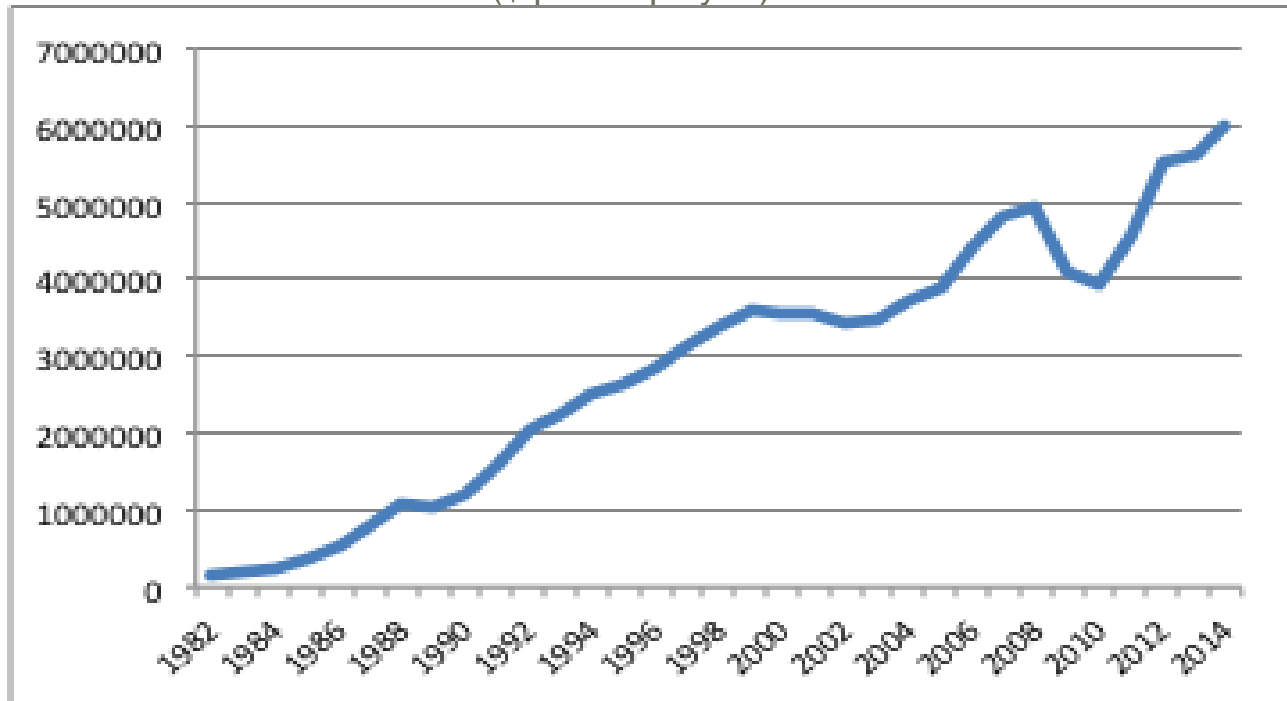


Rental Revenue vs. Construction Employment



Construction Employment vs. Rental Revenues

(\$ per employee)

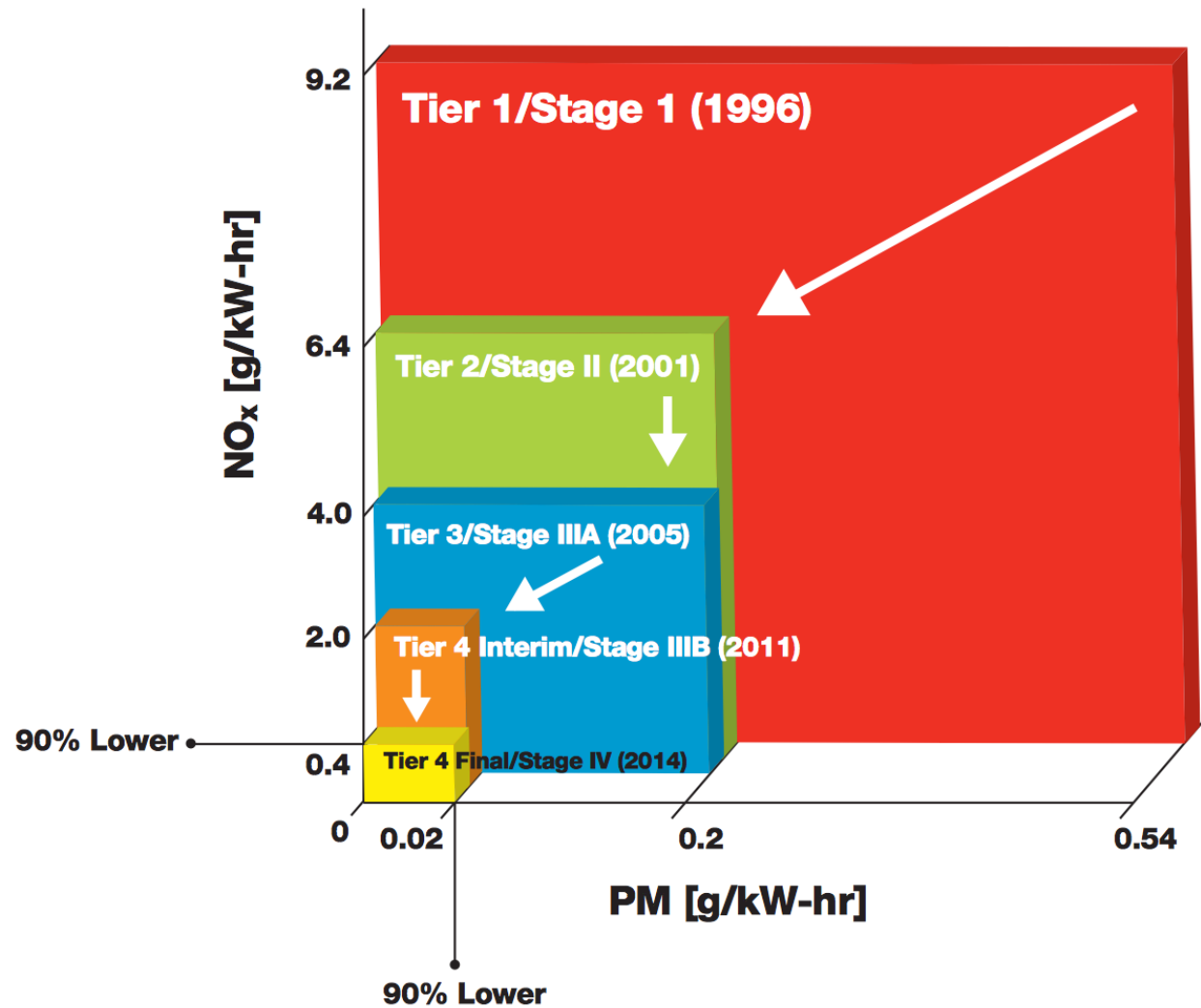


Impact of Emission Regulations On Equipment Demand

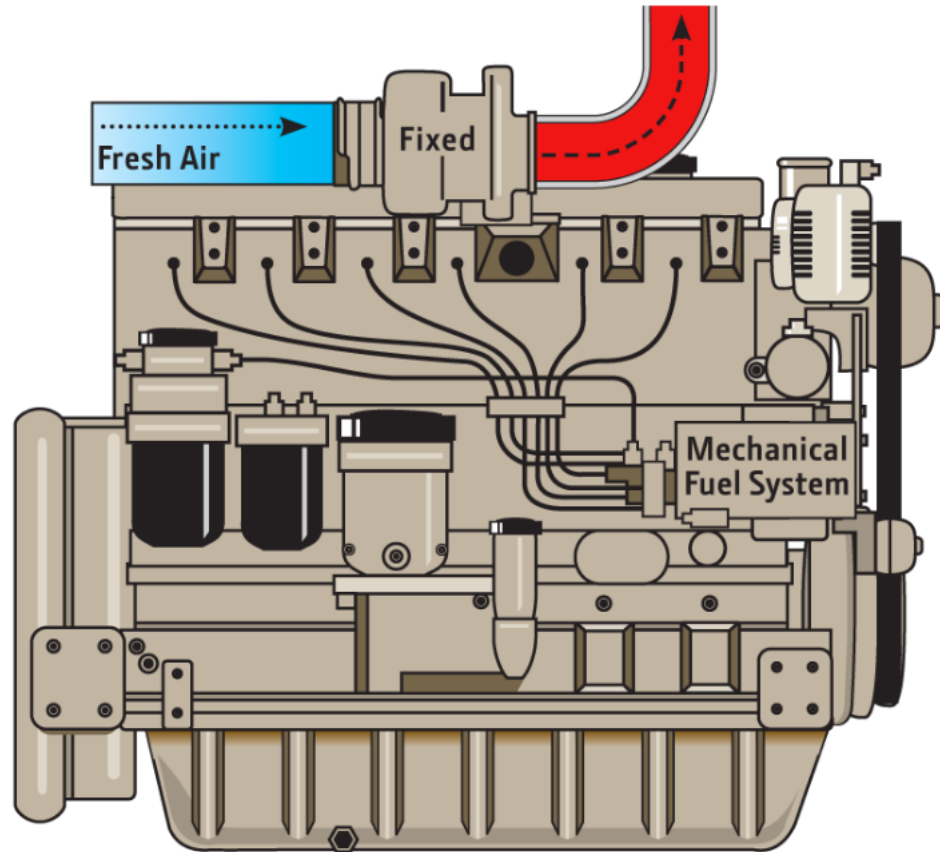
Regulated Markets vs. Less
Regulated Markets



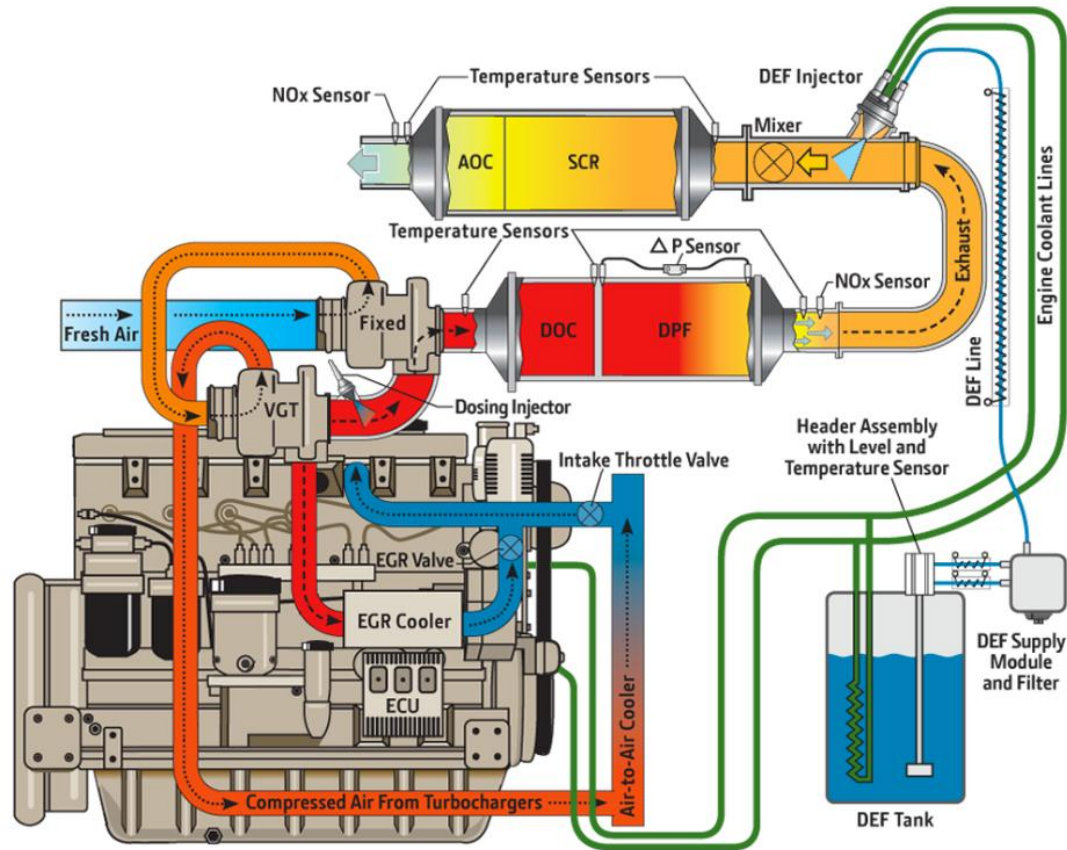
Off-Highway Emissions Evolution.



1996 Tier I Diesel Engine

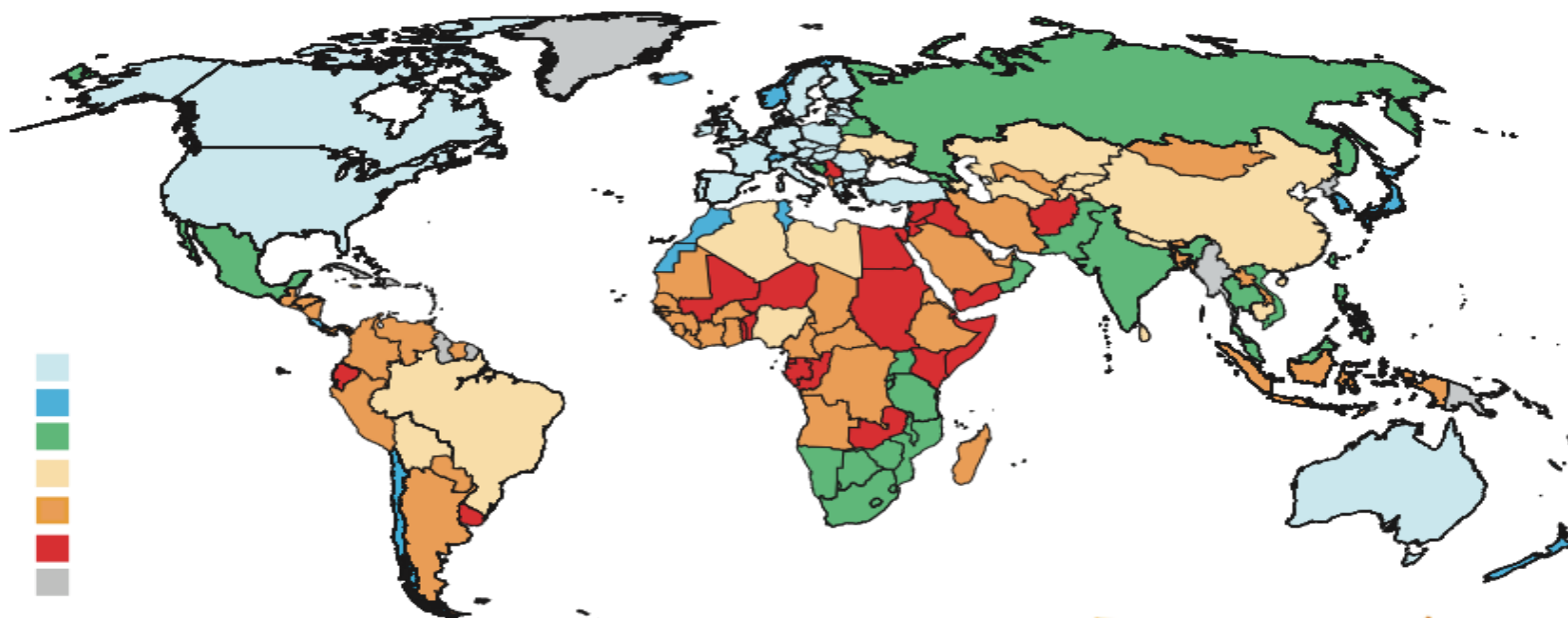


Tier IV Final Diesel Engine



ultra Low Sulphur Diesel Fuel Availability

Isolating Impact of Emission Regulations

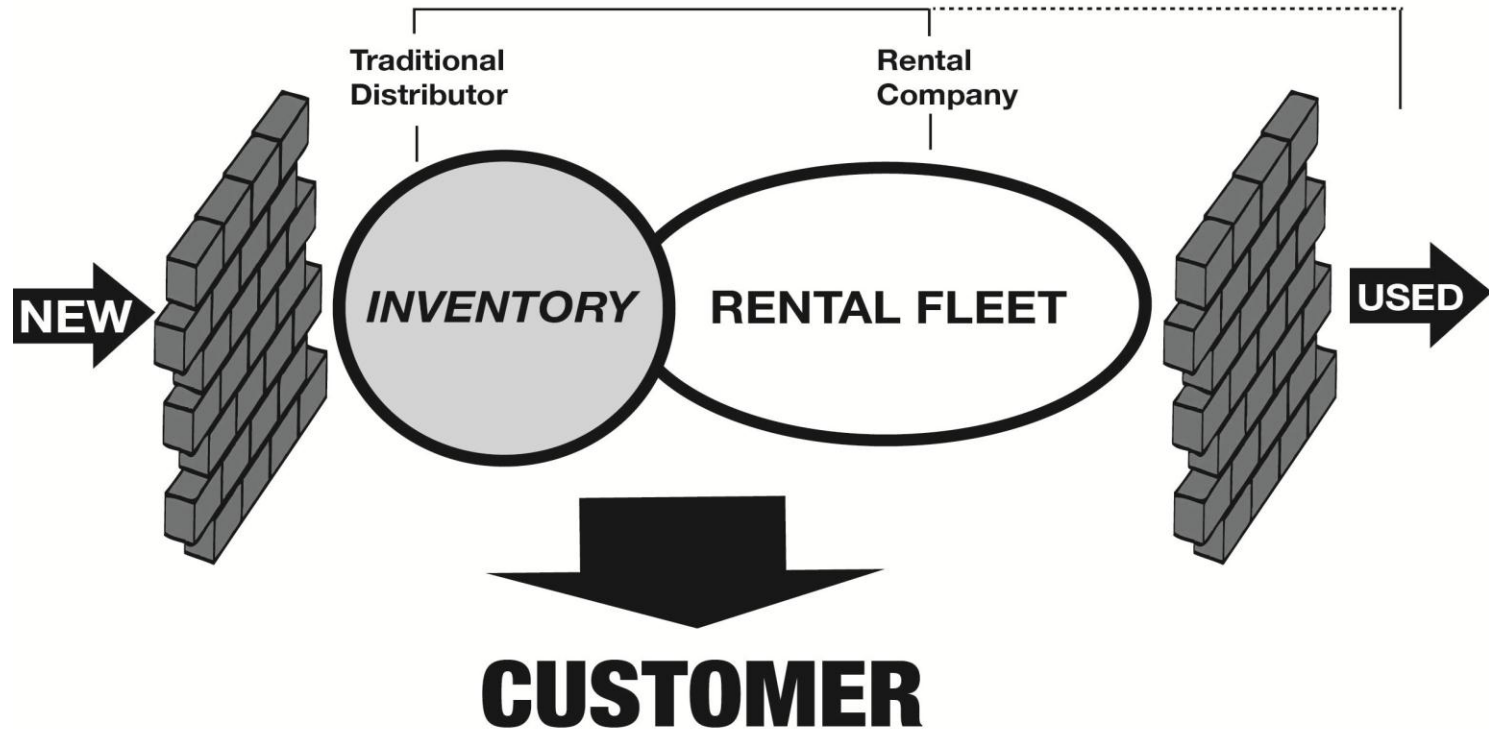


Regulated versus Non-Regulated Markets

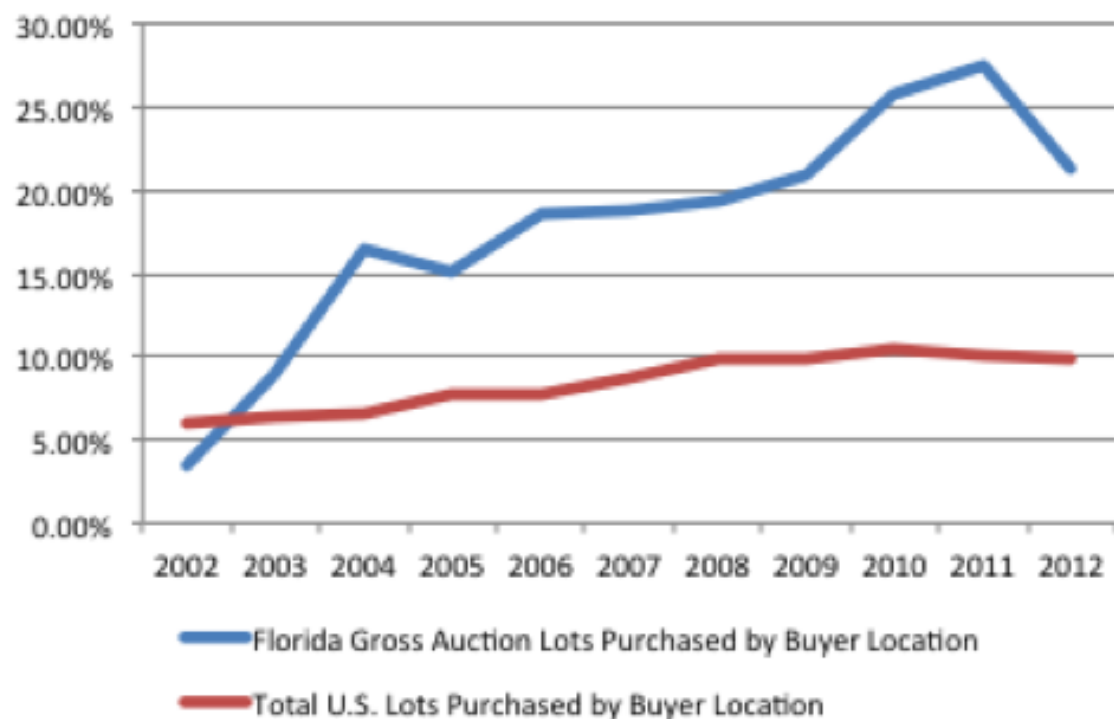


The New “Normal”

MANUFACTURER



Percent of Buyers Located in Tier III or Lower Countries



Used Equipment Export Market

Importance for residual values

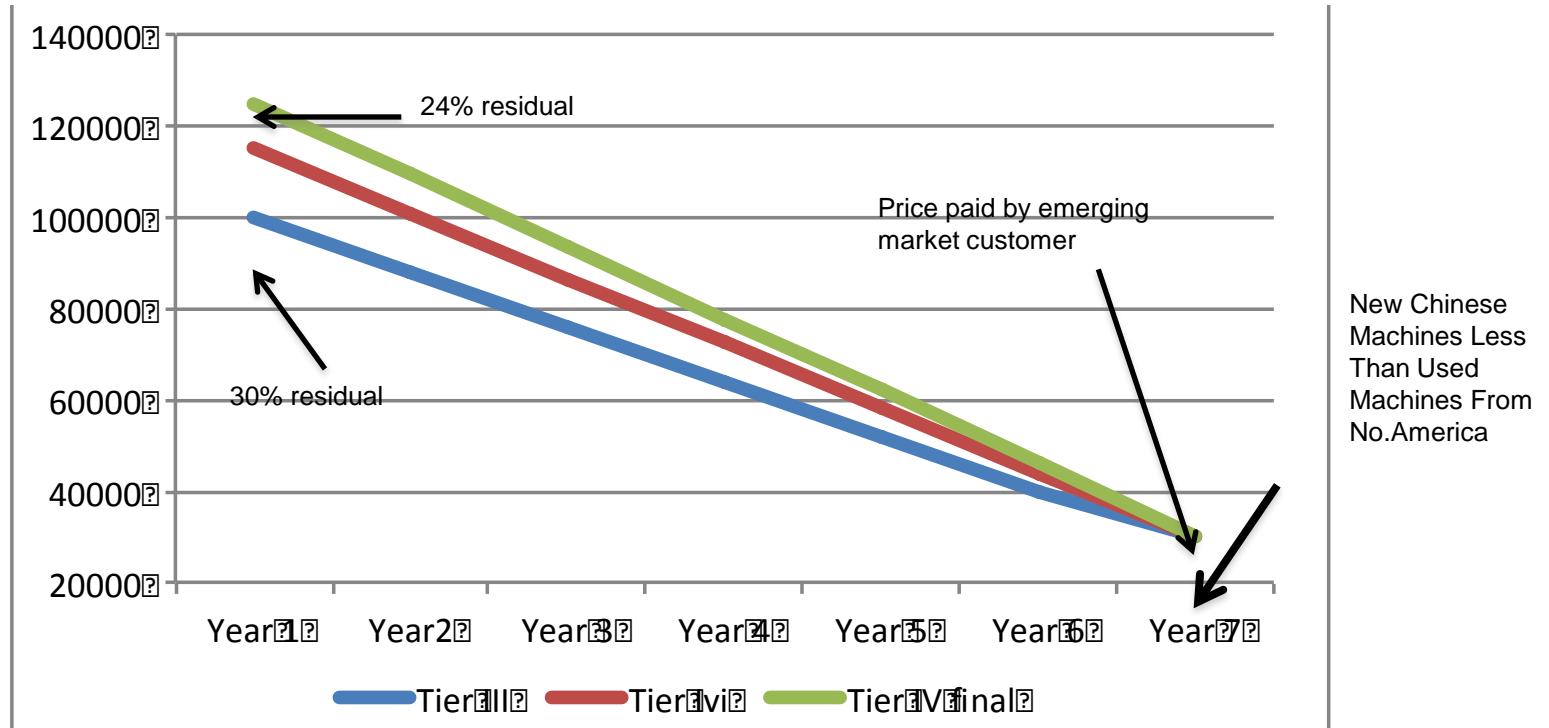
Estimated Annual Exports of Used Machines To Tier III Markets (units)

	Quantity of Machines <u>(units)</u>	Estimated <u>Percent</u>
Estimated U.S. Construction Equipment Park	3,000,000	
Estimated Used Fleet Sold Annually	600,000 to 900,000	20% to 30%
Estimated Fleet Sold Annually at Auctions	180,000 to 270,000	30%
Auctioned Machines Sold to Tier III markets	18,000 to 27,000	10%



Equipment Seller's Dilemma

Value of Used Machine Same No Matter What Tier Level



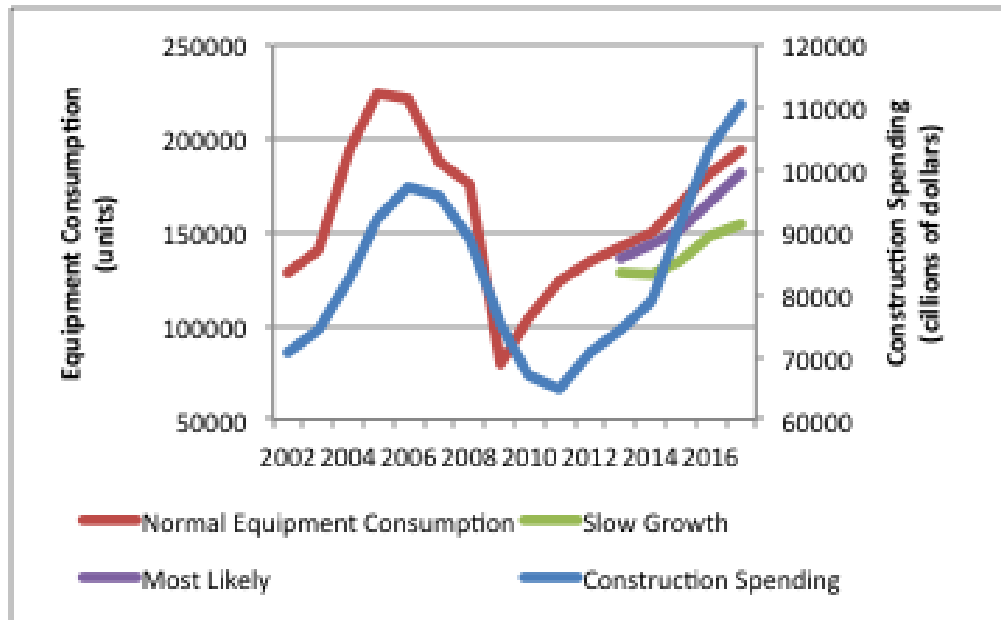
Equipment Demand

- 2012 demand pulled forward 15%
- 2013 demand lowered by 10% or more
- 2014 forward, regulations will shave 10% to 15% off “normal” peak
- Section 179 Uncertainty



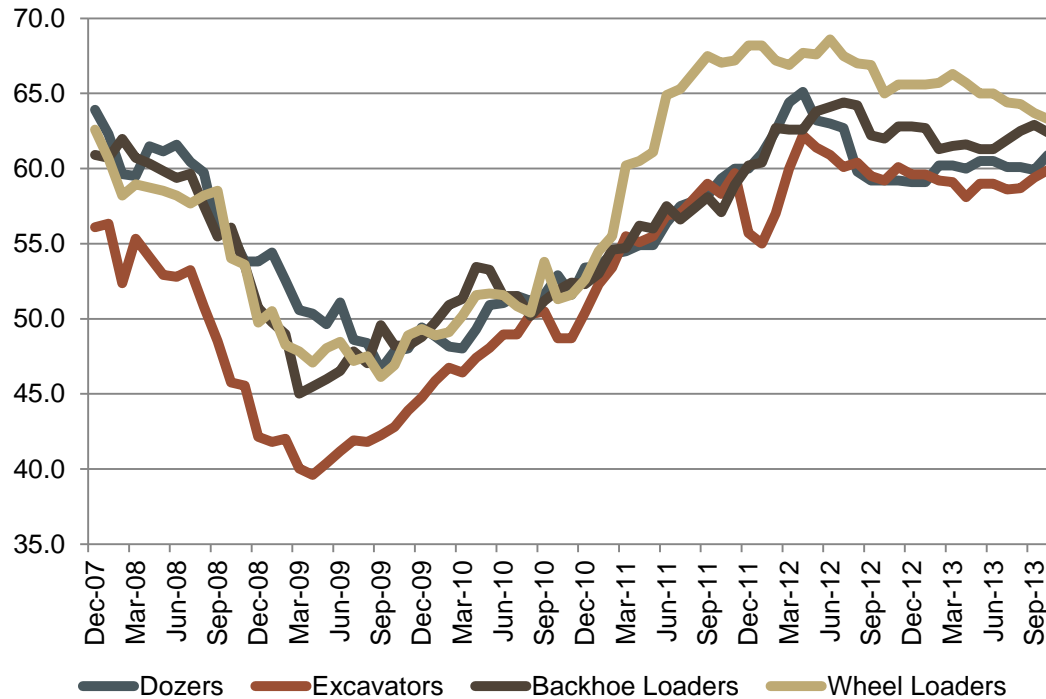
Export Market Absence = Increased Supply of Tier IV Equipped Machines

Forecast Construction Spending and Equipment Consumption
3 Scenarios



Used Construction Equipment Price Trends

(% of Original Equipment Value)



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.



Manfredi & Associates, Inc.

www.manfredi.com

