

The Durable Goods Report

May 2013

Executive Summary of US Economic Activity



Manufacturing Data Release of 5/3/2013 (March Preliminary)

Employment Data Release of 5/3/2013 (April Preliminary)

Retail Data Release of 4/13/2013 (March Advanced)

Industrial Production Data Release of 4/15/2013 (March Advanced)

Housing Data Release of 4/19 & 26/ 2013 (March Advanced)

Source Data: US Census Bureau, US Bureau of Labor Statistics, US Department of Commerce, Energy Information Administration, Federal Reserve Board, Baker Hughes

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The Durable Goods Report – A Service of Time Compression Strategies

By the Numbers

Durable Goods Key Measures			
	Current Mo	Prior Mo	Prior Yr
New Orders-Durable	215,960	229,373	219,106
12 month moving average	219,288		212,345
% Change from Prior Year	3.3%		
Growth Index - Durable New Orders	1.011	1.030	1.050
Unshipped Orders - Durable	990,072	997,182	974,867
% Change from Prior Year	1.6%		
Value of Shipments - Durable	230,438	229,314	220,130
Inventory - Durables	376,242	376,641	360,710
% Change from Prior Year	4.3%		
Inv to shipments ratio - Durable	1.63	1.64	1.64
US Economy Key Measures			
	This period	Last period	Change
GDP 2012 Q4 (current \$)	16,010.2	15,864.1	0.9%
Industrial Production	2,587.9	2,566.6	0.8%
Capacity Utilization %	78.5	78.3	0.2
Manufacturing %	77.1	77.3	-0.2
Durable Goods %	76.4	76.7	-0.3
Primary Metals %	73.6	75.6	-2.0
Autos and Parts %	76.4	74.4	2.0
Machinery %	84.0	83.6	0.4
Durable Goods (\$Mil SA)			
New orders	215,960	229,373	-5.8%
Shipments	230,438	229,314	0.5%
Inventory	376,242	376,641	-0.1%
Unshipped Orders	990,072	997,182	-0.7%
Retail ex Food Service (\$Mil SA)	372,733	374,888	-0.6%
Autos and Parts	70,985	71,368	-0.5%
Gasoline	46,565	47,595	-2.2%
Core retail (ex auto, gas)	248,378	249,020	-0.3%
Employment (000's SA)			
Civilian employed (Household Survey)	143,579	143,286	293
% of potential workforce (HS)	58.6%	58.5%	0.1%
Civilian not employed (HS)	101,596	101,709	(113)
Non-Farm (Establishment Survey)	135,474	135,309	165
Private (ES)	113,630	113,454	176
Government (fed, state, local) (ES)	21,933	21,941	(8)
Goods Producing (ES)	18,644	18,653	(9)
Manufacturing (ES)	11,990	11,990	-
Construction (ES)	5,790	5,796	(6)
Durable Goods Mfg (ES)	7,460	7,452	8
Housing (000s of Units SA)			
Total housing starts	1036	968	7.0%
Single family starts	619	650	-4.8%
Single family sales (new)	417	411	1.5%
Single family for sale (new)	153	152	0.7%

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US Economy – Quick Look:

US GDP

Q1 2013 GDP first estimate reported as 2.5% SAAR (3.4% YtY).

Industrial Production

Industrial production excluding industrial supplies increased 0.8%. Now stands 4% above last year's same month.

Durable Goods

New orders for durable goods decreased 5.8%% to \$216 billion. Growth index decreased to 1.011, down from 1.030 last month and 1.050 last year.

Retail:

Retail sales (ex food service) decreased 0.6% to \$373 billion. Core retail (ex food service, autos, gasoline) decreased 0.3% to \$248 billion.

Employment:

Working-age population increased by 180,000.

Household survey shows: Employed: up 293,000. Not employed: down 113,000. 58.6% (up 0.1%) of working age population employed.

Establishment survey shows: 165,000 jobs added. Durable goods employment increased 8,000.

Annual population adjustments were included in the employment numbers and inflated the jobs numbers.

Housing:

Total starts: +7% to 1,036,000 (first time above 1 million since 2008). Single family starts: -4.8 to 619,000. Single family sales: +1.5% to 417,000. Median value: stable at \$246,900 (3mma).

Random Thoughts, Stray Data and Rants:

Economy

- Finally. A clear explanation of the debt limit debate:
<http://www.youtube.com/embed/Li0no7O9zmE>
- EU economy slips further. Unemployment over 12%.
- Recent employment numbers are a train wreck. % of population employed stuck since 2009 at about 58.6%. See the charts for details.
- The “saving class” is being destroyed across the globe. Cyprus is the latest proof. It seems unique only because it’s more visible.
- "We have tried spending money. We are spending more than we have ever spent before and it does not work....After eight years of this administration we have just as much unemployment as when we started...and an enormous debt to boot!" Henry Morgenthau, FDR Treasury Secretary, in 1937 speech in New York.
- Why is gold (or silver) a “safe haven” investment? The theory is that it has a limited supply that cannot be manipulated by governments. But what sets the value of metals? It’s set by supply and demand, just like everything else. In the end the value of gold and silver depends on there being someone else to buy it. In a major crisis the value of everything collapses. Except maybe food.
- From Baron’s article (paraphrase) in the 1970s: You buy a stock because you are convinced it will go up. You bought it from someone equally convinced it will go down.

Energy: *this critical commodity drives much of the cost of durable goods. More importantly it is a key driver of wealth, surplus wealth and demand. Used as a labor multiplier it generates wealth and improves living standards.*

- In November 2012 the United States surpassed Saudi Arabia to become the world’s largest oil producer.
- Plans continue in the US for increased exports of LNG and coal.
- The dramatic decline of natural gas prices launched a trend of manufacturers moving from the EU to the US. UK fights back by reducing corporate taxes.
- The marginal cost of oil (the cost to get the next barrel) is about \$65. This would suggest an incentive price (the price that encourages exploration) of about \$85 per barrel.
- There have been 11 recessions since the end of WWII. Nine of them have been triggered by a spike in energy prices. All price spikes have been triggered by the actions of some government.

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- Our current energy economy, and the related geopolitics, can be traced to the decision of Winston Churchill to convert the Royal Navy from coal to oil in 1911. It reduced the Navy's resupply labor by half. This decision started a scramble to secure oil supplies and resulted in the rising importance of the Mid-East, the current political boundaries and several regional wars. It also resulted in Pearl Harbor when the Japanese feared that the US would block their conquest of oil-rich Indonesia. . <http://www.epmag.com/archives/digitalOilField/5911.htm>
- Doubling down on a prior prediction: Energy will become so abundantly available that the price will drop below the cost to meter and bill. At that point it will become a % add on to the water bill or something. Similar to what happened to long distance phone bills.
- What if we never run out of oil? The Atlantic has a great piece by Charles Mann that covers the coming revolution from methane hydrates. If you don't know what that is you'd better study up. It's going to make fracking look like a car phone. You do remember car phones, don't you?
http://www.theatlantic.com/magazine/archive/2013/05/what-if-we-never-run-out-of-oil/309294/?single_page=true
 - o Mann also authored "1491", a marvelous piece of research about the Americas before Columbus. Get ready to have your perceptions permanently shattered.
 - o He also has another research-heavy book out, "1493." Haven't read it yet, but I'll bet it's the same caliber. On the list for this year's beach trip.
- The research on methane hydrates has discovered another source of hydrocarbon replenishment – bacterial production in the deep ocean. Add that to the physical processes in the Earth's mantle and it increasingly makes the "fossil fuel" argument look silly. Hydrocarbons are being replenished daily in prodigious quantities.
- Freeman Dyson's quote on biological productivity stands out in the crowd of crisis cultists. He points out that burning coal and oil helps food production, causes no serious harm, and we should do more.
- Peak oil (the point where civilization starts to collapse due to oil production decline) refuses to show up. The assumption that oil is a finite resource is the most common error. Hydrocarbons are continually being produced biologically and in the mantle of the Earth as shown by the 2005 robot trip to the mid-Atlantic Ridge. But even without this there is so much recoverable oil that it will continue to be available for centuries.
- The stone age did not end because of a lack of stones. The age of coal and oil will not end due to a shortage of supply or from government regulation. Coal and oil will eventually be driven out by economic processes of the free market.

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- Small, modular uranium reactors are moving forward in the US. But India and China continue to pursue Thorium designs that are scalable to even smaller size.
- The important point here is that engineers are moving toward distributed generation and away from the massive plants and grid distribution. The idea of the “smart grid” was always a stopgap to get around resistance to power plant site selection.
- There is still no example of a renewable energy source other than natural gas and oil. Ethanol, solar and wind are still net consumers of energy. Forget about the economics, the thermodynamics have yet to be demonstrated in practice or on paper.

- **Government:** *"Government is the great fiction through which everybody endeavors to live at the expense of everybody else." F. Bastiat.*

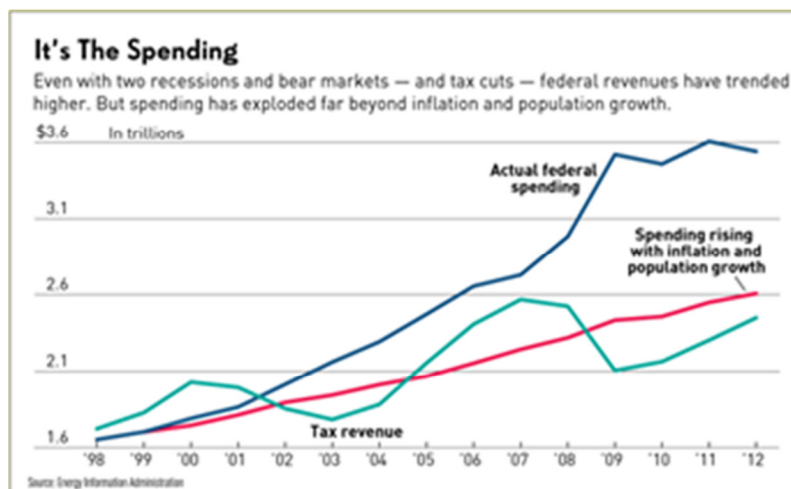
- Senator Feinstein claims she has no plans to confiscate any guns. Only to dry up the supply. So she wants to deny guns to my grandkids? OK. I get it. No.
- It is currently illegal for the government to retain a database of gun owners. Background checks are made against lists of felons and others. But the new proposals move in the direction of arbitrary additions to the list.
- In New York authorities have subpoenaed the records of two psychiatrists. Their stated goal is to find who is taking anti-depressant drugs with the goal of confiscating their guns. But what about HIPPA? What if the drugs are working?
- Background check proposal requires a check against the terrorist suspect database (currently 850,000 strong). A secret list compiled by bureaucrats and inaccessible to mere mortals. Of course that would never be manipulated for political purposes, would it? Right? Right? Just askin'.
- Update on the forever Gun Debate:
 - o The Boston Bombers looked pretty normal before the event. It raises a question on universal background checks. Who decides who will be in the database that they check against? Professionals have only been successful predicting who will turn violent in about 20% of the cases. Doesn't that suggest the system is assured of failure? Or becoming a political tool? But I repeat myself.
 - o Of course there is no risk of abuse, right? How about recent government publications (HHS and Pentagon) listing Catholics, Evangelicals, Tea Party members as categories to watch for domestic terror? Looks like we've finally accepted the common sense idea of profiling. Just need to tweak the target definitions.

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- Newtown shooter Lanza reportedly (leaked from locals) is seen on a surveillance camera at the high school first, but saw multiple cop cars there on a drug related issue. Went on to the softer target at the grade school. Too many good guys with guns, I guess.
- Chicago Police Superintendent claims gun rights groups are corrupt for helping gun owners avoid more regulation. But 70 million gun owners did not commit a felony or have an accident yesterday.
- This whole debate seems to center on the idea that in the world of wolves the solution is to create more sheep.
- Concealed carry permit holders have the lowest violent crime rate of any studied category. Even lower than off-duty law enforcement officers.
- All public policy is a trade-off between the good and bad effects. Each year there are 2.1 million (FBI) to 2.5 million (Florida State Univ) violent crimes prevented by armed citizens. Each year there are 83 fatal gun accidents. Fewer than 400 fatalities involve rifles. Total gun deaths about 8,000. The logic of gun control is so perverse as to be tragic.
- Ammunition shortages are not a result of government purchases. Current government buy is about 300 million rounds per year, similar to prior years. Industry produces 10 billion rounds per year. But if 70 million gun owners bought an additional 100 rounds each it would demand an extra 7 billion rounds, or a 70% increase in production. Not likely.
- Vice President Biden has offered several pieces of advice on how to defend against intruders. All of his recommendations are illegal in Maryland.
- Sen. Cruz endorses VP Biden's shotgun proposal for cases where you're attacked by a flock of geese. Must admit I hadn't considered that threat.
- Tar & Feathers Award Nominees:
 - VP Joe Biden for offering advice that got a 22 year old arrested in Virginia for "reckless use" after shooting his shotgun through the bedroom door at two masked and armed intruders,
 - The principal of a high school student who was given a suspension after breaking up an attempted gun assault at his school.
 - Massachusetts authorities who charged a 76 year old homeowner for shooting an aggressive 400 pound bear in his back yard.
- We have 22,000 gun laws in the US. Sen. Diane Feinstein asks us to believe that 22,001 will be magic. Buffoons all.
- How about this. The right to self-defense is unrestricted. Period. This position has the advantage of being endorsed by serious theologians from St. Augustine to Pope John Paul II.

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- The sequester is now in effect. Teachers will be thrown out of the school rooms. The world as we know it will end. Oh, wait. Never mind.
- BTW: In one state study administrators now outnumber teachers.
- Mitch Daniels (former IN governor) is now president of Purdue University. In his introduction letter to the community he commented that Purdue had hired 780 people in the prior budget year, 80 of them teachers.
- Since 1970 the ratio of school employees to students has increased 300%. Test scores have been flat. Has class size gone down? Maybe cutting school budgets isn't such a bad idea. Sounds like we should be cutting budgets, but it doesn't need to affect teachers.
- The FAA budget went from \$15.15 billion to \$15.34 billion after sequester. The increase was so stunningly small that it shocked management into drastic and immediate action, a 10% cut in air traffic controllers work hours. Screwed up the route system. SAY WHAT? This is a teen aged tantrum executed against the American people.
- Leaked USDA internal memo: Managers should implement cuts to maximize pain to the public.
- The political class and the bureaucrat class keep doing this because they never suffer consequences. That needs to change.
- The bureaucrats have declared war on the American people. But it happened long ago and we missed the announcement.
- The amount of student loan debt now exceeds the total credit card debt. And the new grads can't get jobs. This won't end well.
- Anything that can't go on forever, won't.

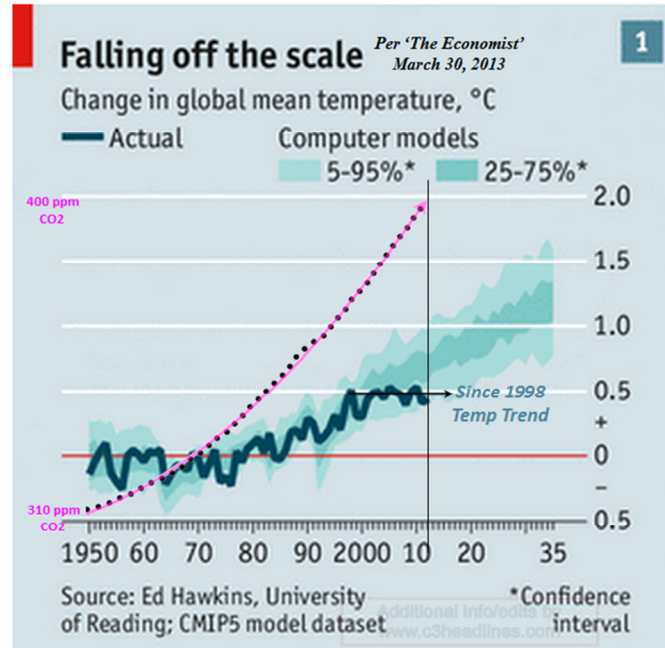


Climate & Environment: The scare topic du jour (actually, of the last 24 years) is used to justify higher taxes and more regulation. The effect on energy cost and operating costs for durable goods is dramatic.

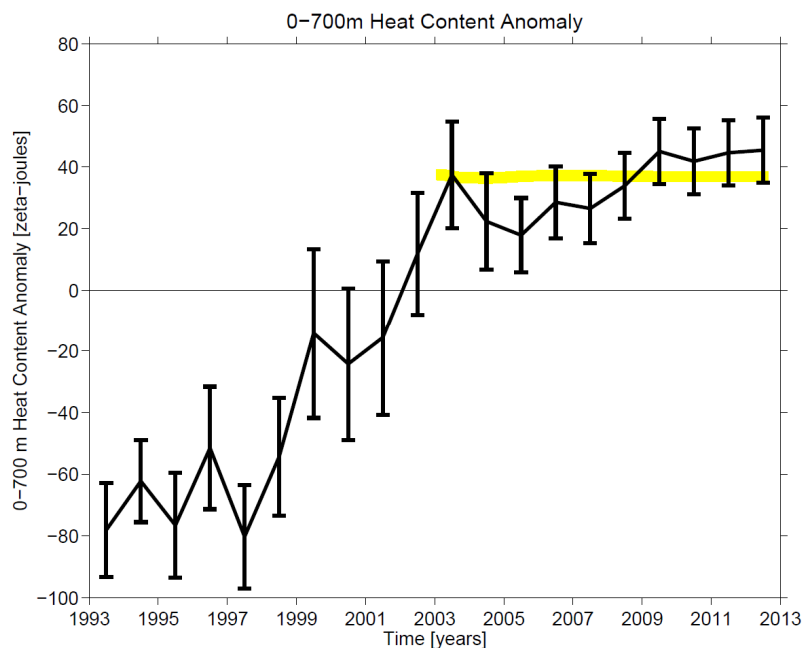
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- Three German scientists have completed the most important climate study to date. They used Fourier analysis to isolate the cyclical patterns from non-cyclical variability in the temperature record.
 - o Their finding shows that all of the temperature variability over the past 2000 years is explained by multiple cyclical patterns. There is no detectable non-cyclical component, including during the period after 1950 when CO2 emissions started to climb.
 - o If CO2 has any role it is too small to measure.
 - o <http://wattsupwiththat.com/2013/05/04/periodic-climate-oscillations/#more-85561>
 - o Read the whole thing.
- The US State Department study finds no significant risk of environmental damage from the Keystone Pipeline project. Eco community is outraged that they have no reason to be outraged.
- Germany and Spain are backing off the green energy subsidies. Maybe political stupidity isn't a permanent condition.
- "Finally, after a 12-year delay caused by opponents of genetically modified foods, so-called 'golden rice' with vitamin A will be grown in the Philippines. Over those 12 years, about 8 million children worldwide died from vitamin A deficiency. Are anti-GM advocates not partly responsible?" (from Slate.com)
- We've been genetically modifying food for at least 6,000 years. Now it's scary?
- Climate alarmists are silent on why I-94 was shut down from Montana to Minnesota on April 15. Why Arkansas has the first ever snow in May.
- Climate alarmists are now the denialists. There is no longer any doubt.
 - o CO2 doesn't influence temperature in any measureable way.
 - o Temperatures haven't increased since 1998 despite continued increases in CO2.
 - o CO2 continues to increase despite the drop in output from human activity during the recession.
- The great global warming retreat has started. The press has been a willing accomplice to the conspirators trying to create a global threat to enhance their power and wealth. Now they're having increasing difficulty justifying the positions they've taken. No Cat 3+ hurricane landfall in 2,750 days. Lowest tornado count in history so far this year. Coldest April on record. Now they argue that the things coming in opposite to their predictions are due to climate change.
- Tom Friedman at the New York Times gets the lifetime buffoon award. Boston bombing is due to climate change. Really? I think he was serious.
- "The Economist" finally admits the obvious. Temps are flat.

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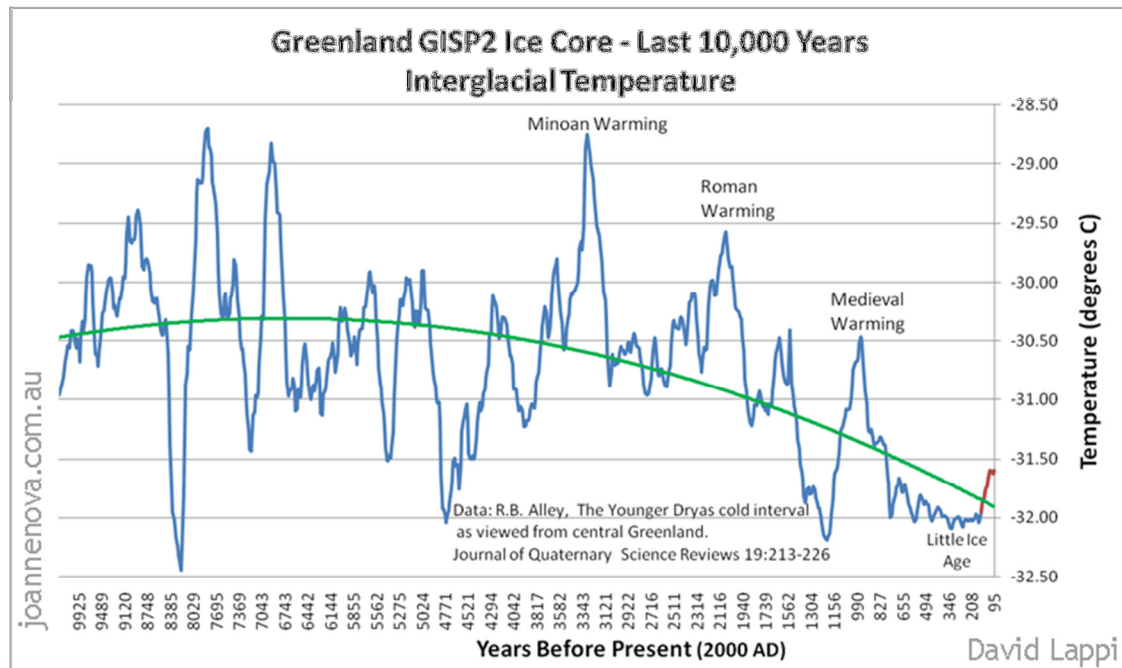


- The total heat energy of the oceans is also stuck in neutral (below). This is more important than land based temperatures because 1) 65% of the Earth's surface is water and 2) the land based temperatures have been "adjusted" by activists, and 3) water stores about 1,000x as much heat energy per pound as air.



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- The long term history shows an ominous decline in the periodic temperature peaks. Since the Minoan warming (c. 1300BC) each successive warming peak has been lower than the prior.



Corruption of the Language Department

- George Orwell is best known for his popular book "1984." But he was a prolific writer against tyranny and pointed out that it was always dependent on the ability of the elites to redefine and corrupt the meaning of the language. Hence this new department where we can collect modern examples. To make this list the phrase only needs to be intentionally misleading, mathematically impossible, or oxymoronic.
 - o "Common sense gun-control": Today it means "Disarm the victims." If you need to point out that your proposal is "common sense" it probably isn't.
 - o "...post- industrial economy": Means that math and science was too hard and my self-esteem coach told me that soon no one would need them. Sorry, your self-esteem coach was happy-talking you. There's no such thing as the "Post-industrial economy." Only failed economies.
 - o "Obstructionist" is anyone who refuses to cave in and do it my way.
 - o "Fair and Balanced": means talking heads concurrently reciting opposing talking points no matter how unbalanced. (thanks to Rollie in Austin)
 - o "Security": now means the absence of civil rights (thanks to Rollie in Austin).
 - o "It's for the Children": Nothing that involves government debt is a positive for the children. It's a cover story for stealing their future before they can vote against the idea.

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- “Affordable housing”: I don’t know about you, but I’ve always lived in an affordable house. When this term is used by politicians it means government subsidized housing. That means you pay for someone else’s mortgage. Giving free stuff to voters.
- “We’re all in this together” means “it’s not my fault.”
- “Sharing” (when used by a politician) means they covet your money.
- “Fair share”: would that mean everyone paying the same %? Guess not.
- “Social Justice”: I thought justice was a matter of law. Silly me.
- “Targeted tax cuts”: The real issue is that someone besides the market gets to pick winners. Taxpayers are always the losers.
- “Living wage”: You deserve a good wage even if you don’t produce that much value. In that case your job goes away and you no longer receive the embarrassment of a low wage.
- We’ll keep the list growing as we get time.

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US GDP

GDP estimate for Q1 2013 was reported at 2.5% (chained \$). Based on current \$ it comes in at 3.4% above prior year same period. Pretty weak performance, overall.

Interesting milestone. First time above \$16 trillion.

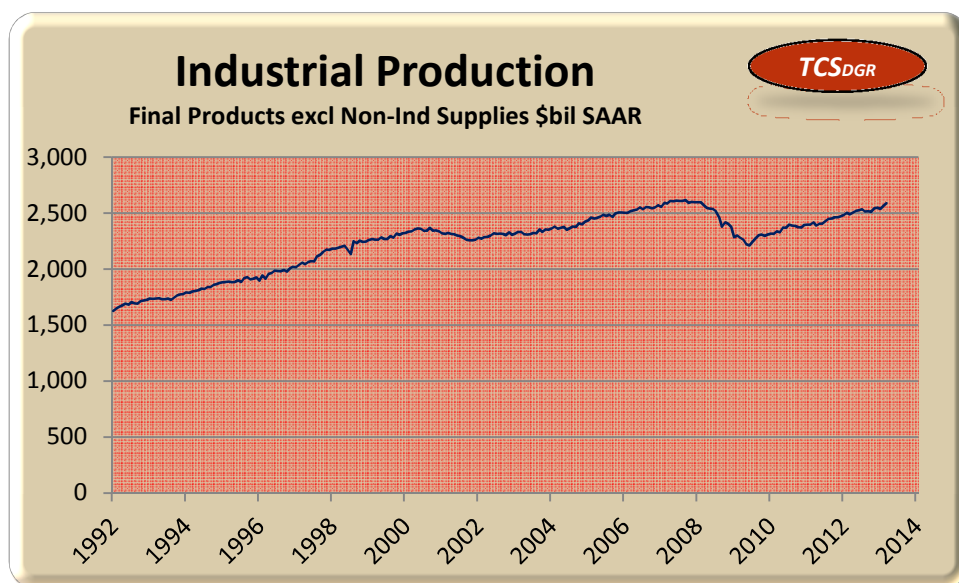
Gross Domestic Product				
Year	Qtr	GDP \$b (SAAR)	Chg from Prior Pd	Chg from Prior Year
2008	1	14,273.9	0.1%	3.7%
2008	2	14,415.5	1.0%	3.1%
2008	3	14,395.1	-0.1%	1.9%
2008	4	14,081.7	-2.2%	-1.2%
2009	1	13,893.7	-1.3%	-2.7%
2009	2	13,854.1	-0.3%	-3.9%
2009	3	13,920.5	0.5%	-3.3%
2009	4	14,087.4	1.2%	0.0%
2010	1	14,270.3	1.3%	2.7%
2010	2	14,413.5	1.0%	4.0%
2010	3	14,576.0	1.1%	4.7%
2010	4	14,735.9	1.1%	4.6%
2011	1	14,814.9	0.5%	3.8%
2011	2	15,003.6	1.3%	4.1%
2011	3	15,163.2	1.1%	4.0%
2011	4	15,321.0	1.0%	4.0%
2012	1	15,478.3	1.0%	4.5%
2012	2	15,585.6	0.7%	3.9%
2012	3	15,811.0	1.4%	4.3%
2012	4	15,864.1	0.3%	3.5%
2013	1	16,010.2	0.9%	3.4%

Industrial Production (excluding industrial supplies)

Industrial production increased 0.8% in March. The year to year comparison is now 4% above the same month prior year. Solid performance overall.

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Industrial Production - Final products \$bil SAAR				
Year	Mo	Ind Prod - Value of Prod	Chg from Prior Pd	Chg from Prior Year
2011	1	2,396.6	0.1%	3.3%
2011	2	2,399.0	0.1%	3.7%
2011	3	2,416.4	0.7%	3.4%
2011	4	2,387.9	-1.2%	2.5%
2011	5	2,405.3	0.7%	1.4%
2011	6	2,405.2	0.0%	1.5%
2011	7	2,427.9	0.9%	1.2%
2011	8	2,447.9	0.8%	2.5%
2011	9	2,452.1	0.2%	2.8%
2011	10	2,463.1	0.4%	3.7%
2011	11	2,462.6	0.0%	3.9%
2011	12	2,473.3	0.4%	3.3%
2012	1	2,483.6	0.4%	3.6%
2012	2	2,502.3	0.8%	4.3%
2012	3	2,488.1	-0.6%	3.0%
2012	4	2,502.9	0.6%	4.8%
2012	5	2,521.5	0.7%	4.8%
2012	6	2,527.6	0.2%	5.1%
2012	7	2,533.8	0.2%	4.4%
2012	8	2,516.1	-0.7%	2.8%
2012	9	2,518.8	0.1%	2.7%
2012	10	2,510.8	-0.3%	1.9%
2012	11	2,544.4	1.3%	3.3%
2012	12	2,548.1	0.1%	3.0%
2013	1	2,538.3	-0.4%	2.2%
2013	2	2,566.6	1.1%	2.6%
2013	3	2,587.9	0.8%	4.0%



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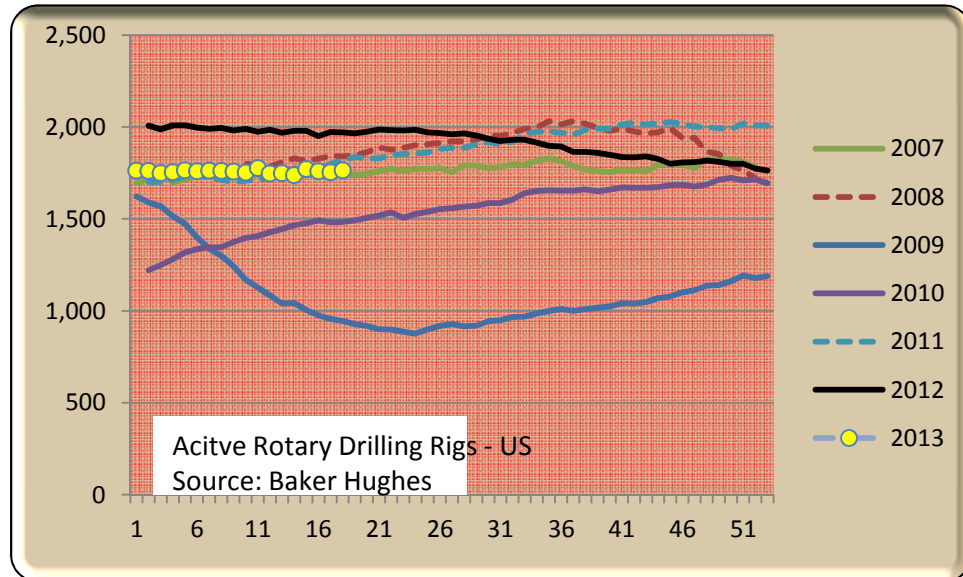
Capacity Utilization:

Capacity utilization increased 0.2 points. Primary metals was off 2 points; Manufacturing off 0.2; Durable off 0.3; Autos up 2; Machinery up 0.4.

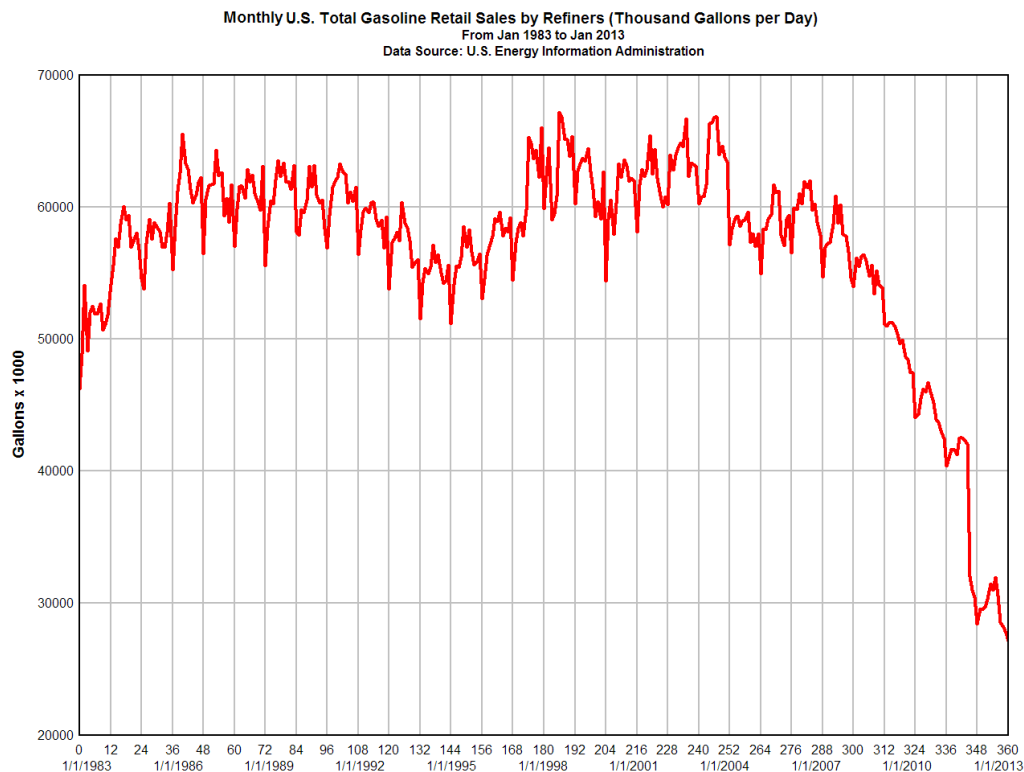
Capacity Utilization %							
Year	Month	Ind Prod	Mfg	Durable	Primary Metals	Auto	Machinery
2010	1	71.0	68.3	64.5	65.0	55.1	64.5
2010	2	71.5	68.5	64.7	66.5	53.4	65.2
2010	3	72.2	69.5	66.1	69.3	55.5	65.8
2010	4	72.6	70.4	67.2	69.0	55.6	68.2
2010	5	73.9	71.6	68.7	69.9	60.2	70.2
2010	6	74.2	71.7	69.0	71.4	60.0	70.8
2010	7	74.8	72.4	70.0	68.7	64.6	71.5
2010	8	75.1	72.6	70.0	69.3	61.3	72.2
2010	9	75.4	72.8	70.3	69.8	62.4	72.7
2010	10	75.2	72.9	70.5	69.4	62.2	74.1
2010	11	75.5	73.1	70.9	70.8	60.8	75.2
2010	12	76.2	73.6	71.1	72.2	60.2	76.7
2011	1	76.1	73.8	71.6	72.8	61.0	78.8
2011	2	75.7	73.8	71.9	72.3	63.3	79.0
2011	3	76.5	74.3	72.2	73.7	65.7	78.5
2011	4	76.0	73.7	71.2	73.0	60.9	77.4
2011	5	76.1	73.9	71.7	72.7	61.9	78.2
2011	6	76.2	73.9	71.6	72.7	61.7	78.8
2011	7	76.5	74.4	72.0	73.0	63.5	79.3
2011	8	76.8	74.5	72.4	73.2	65.2	79.1
2011	9	76.7	74.7	72.6	74.1	65.5	79.4
2011	10	77.0	75.1	73.1	75.1	67.7	79.7
2011	11	77.0	74.9	73.2	75.9	66.6	80.1
2011	12	77.3	75.6	74.0	76.6	69.4	81.7
2012	1	77.7	76.3	74.9	76.8	72.2	83.0
2012	2	77.9	76.7	75.4	77.4	71.9	83.6
2012	3	77.3	76.2	75.2	74.8	72.4	84.0
2012	4	77.7	76.6	75.7	76.3	74.0	83.9
2012	5	77.8	76.3	75.4	74.9	73.4	83.3
2012	6	77.7	76.5	75.8	73.5	74.4	85.0
2012	7	77.9	76.6	75.9	75.4	75.3	82.3
2012	8	77.2	76.0	75.0	75.1	72.5	81.4
2012	9	77.2	75.9	74.7	71.7	71.2	81.6
2012	10	77.0	75.5	74.5	72.6	71.1	79.6
2012	11	77.8	76.4	75.8	74.6	74.6	80.2
2012	12	77.7	77.0	76.4	77.4	76.3	80.4
2013	1	77.6	76.7	75.7	75.3	73.1	83.0
2013	2	78.3	77.3	76.7	75.6	74.4	83.6
2013	3	78.5	77.1	76.4	73.6	76.4	84.0
Year	Month	Ind Prod	Mfg	Durable	Primary Metals	Auto	Machinery

Energy:

Drilling activity looks to have stabilized at year end levels. Over the past year rig counts dropped 13% from 2,008 units (Jan 2012) to the current level of 1764.



As the price of gasoline has increased the consumption has plummeted. Consumers have reduced driving activity to reduce costs. About half where we were in 2007.



Energy Density measured by Heat of Combustion

The following energy density analysis is repeated from prior reports to address the continued stream of questions on the viability of various liquid fuels. Before you write about your latest wonder-scheme, check out these numbers.

The table below tells the story of energy concentration of various fuel sources, measured in energy per unit weight (mega-joules per kilogram) and energy per unit volume (mega-joules per liter). In the process of searching for an alternate energy source it's important to understand the handling characteristics, and these two measures provide an easy way to rank the options.

For the space shuttle the most important consideration is weight. Putting anything into orbit means picking a fight with gravity. Hydrogen has the highest energy concentration per unit weight by far compared to any other fluid source. But its energy per unit volume (mega-joules per liter) is terrible. To take advantage of the low weight engineers are willing to go to technical extremes (high pressure, refrigeration) to condense the hydrogen gas to a liquid.

On the other hand, coal is the most concentrated per unit of volume, so it is efficient to transport by rail.

For autos and trucks the ideal is pretty much where we ended up a century ago (gasoline and diesel). If you were going to invent the perfect energy source for transportation it would look like gasoline. But propane isn't too bad. A modest amount of pressure will keep it liquid and it's been a big business for 50 years. Methane (LNG or CNG) is harder, but still viable.

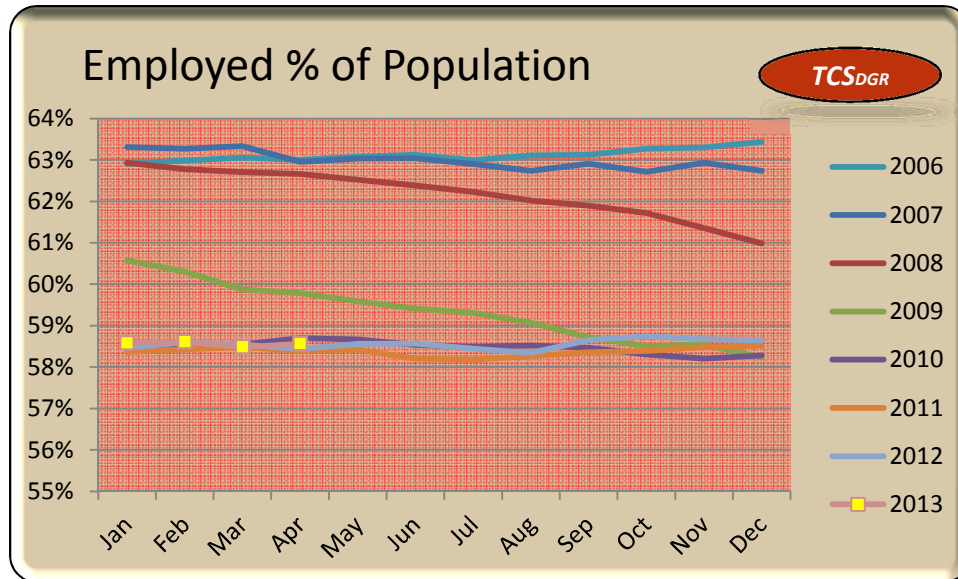
Batteries are not a source of energy. They replace the fuel tank as a storage device. But we included them to give you an idea of what a really bad idea an electric vehicle is.

Measurements are in mega-Joules per kilogram (energy per unit weight) and mega-Joules per liter (energy per unit volume).

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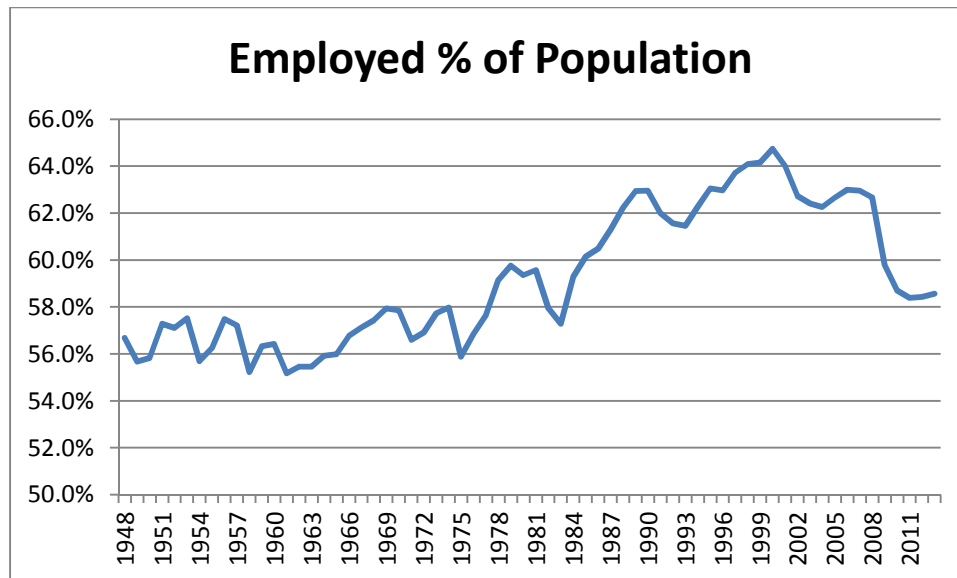
Heat of Combustion		
	MJ/KG	MJ/L
Hydrogen	143	0.01
Methane, CH ₄	56	0.04
Ethane, C ₂ H ₆	52	29.7
Propane C ₃ H ₈	50	29.2
Butane C ₄ H ₁₀	50	30.0
Gasoline	47	34.0
100LL AvGas	47	34.0
Jet fuel - Kerosene	47	38.0
Diesel	46	39.0
Paraffin Wax	46	
Kerosene	46	36.0
Pentane	45	28.2
Body fat metabolism	38	35.0
Gasahol e85	33	26.0
Coal, Anthracite	32	72.0
Ethanol	31	24.0
Wood	22	
Methanol	20	18.0
Carb metabolism	17	26.0
Coal, Lignite	15	
Peat - damp	6	
Battery Lithium Ion	0.72	2.20
Battery, NiMH	0.25	0.50
Battery, NiCd	0.14	1.08
Battery, Lead Acid	0.14	0.36

Employment:



The excitement over the April employment report was unwarranted. Nothing happened. The employed % of the non-institutional population was at 58.6% in April. This key measure has been stagnant since the beginning of the recession in late 2008. The now-irrelevant unemployment rate measure decreased from 7.6% to 7.5%, but it was due to drop outs and the annual population adjustments. The number not employed improved slightly from 101.7 million to 101.6 million. But this might be to the annual adjustment in population data.

The establishment survey showed 165,000 new jobs. The household survey showed 293,000 more employed after last month's drop of 206,000. The working age population grew by 180,000.



April Employed % since 1948

The long term history (above) of the employed % shows the situation more dramatically. Employment is stuck at 1984 levels and has been since the start of the current recession. In terms of employment there has been no recovery. In terms of hours and income the picture continues to erode.



Durable goods employment increased 8,000 in April. Between 2007 and 2010 employment dropped from 8.8 million to 7 million. About 0.5 million of those jobs have been recovered. The other 1.3 million jobs may be permanently gone. Manufacturers

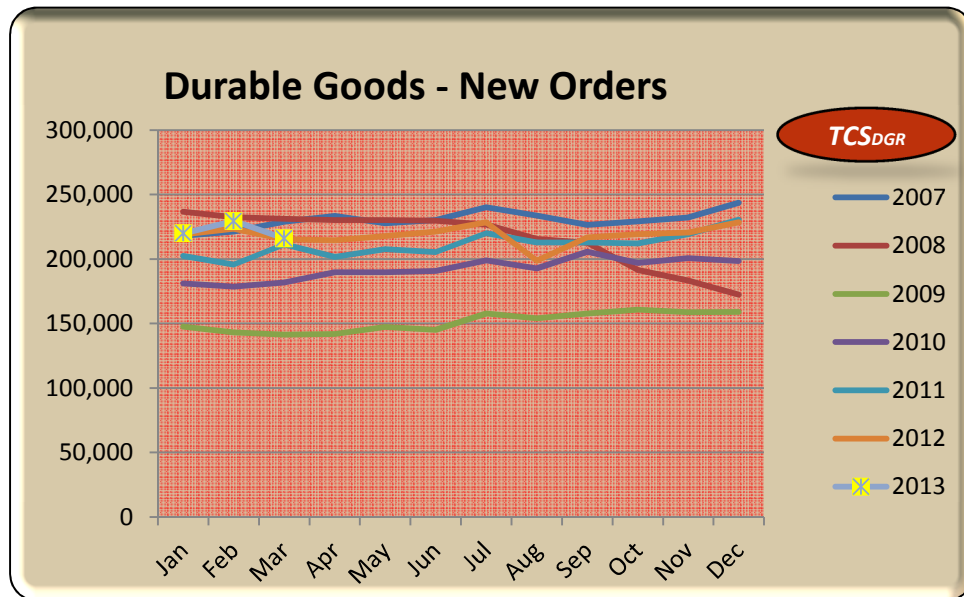
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continue to look for ways to avoid hiring because the cost of full time employees continues to surge.

Sector Detail

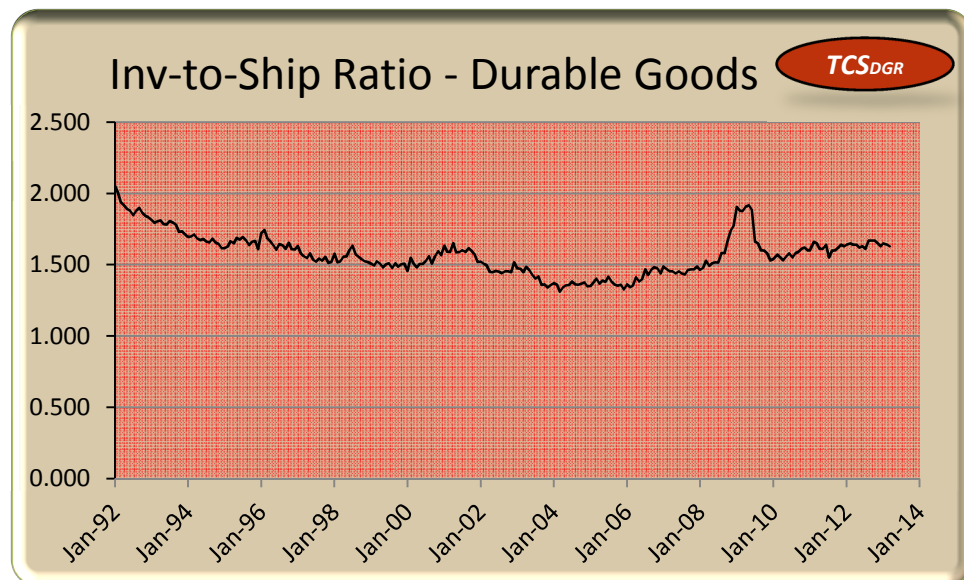
The Durable Goods Sector:

New Orders: Durable new orders decreased 5.8% to \$217 billion in March. The primary cause was declines in aircraft and machinery.



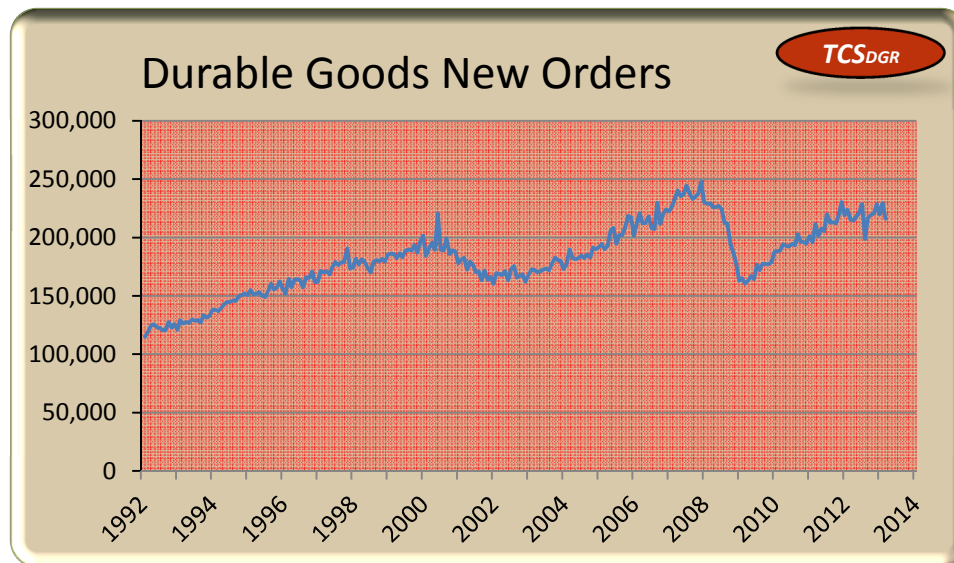
Inventory to shipments ratio drifted lower to 1.63.

The Book to Bill ratio dropped from 1.0 to 0.94 (order/shipments).

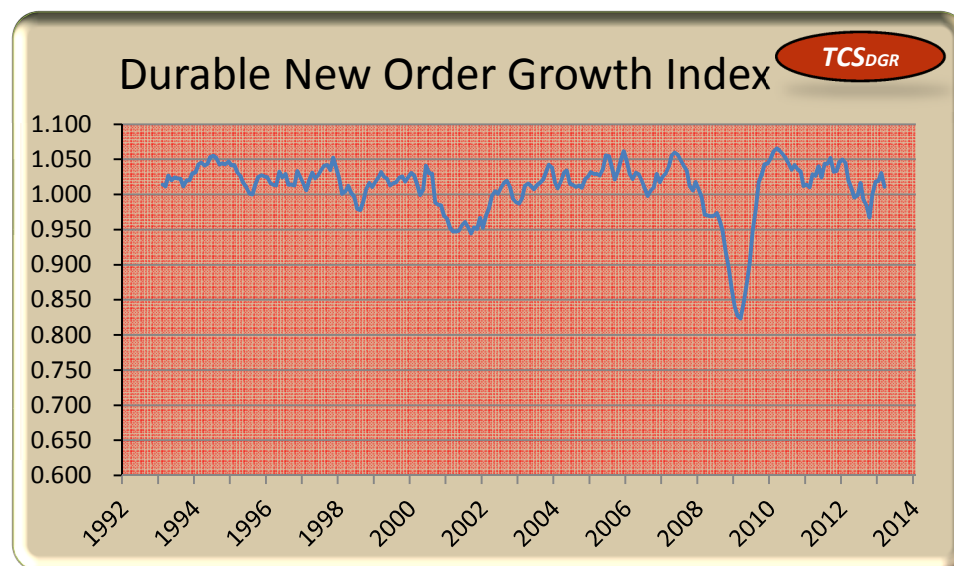


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The long term chart for new orders below provides added perspective. The growth in new orders has been stalled for several months.

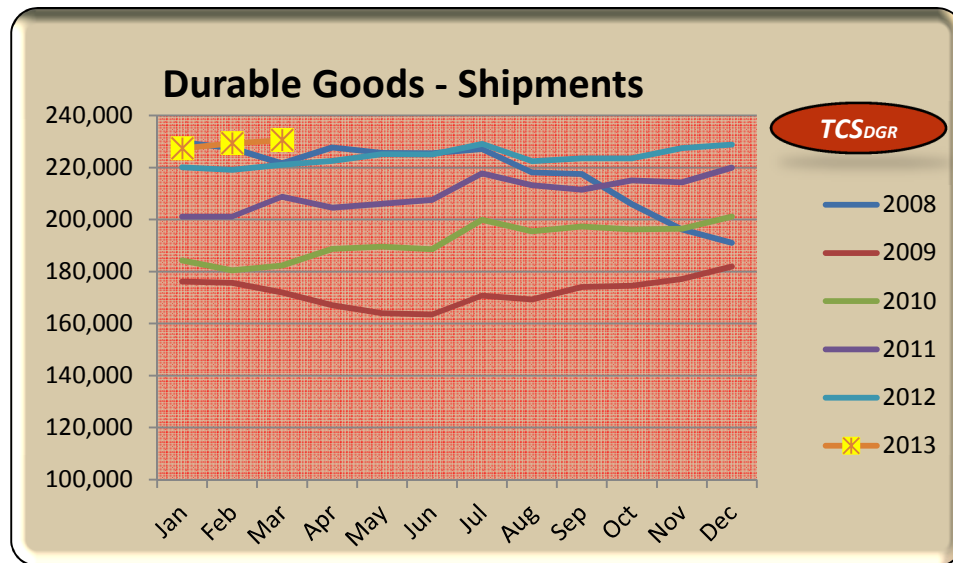


Growth Index for new orders ($3\text{mma}/12\text{mma}$ = slope of the order curve) has retreated to 1.011 from 1.030 last month and 1.050 last year.



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Shipments increased 0.5% to \$230 billion.

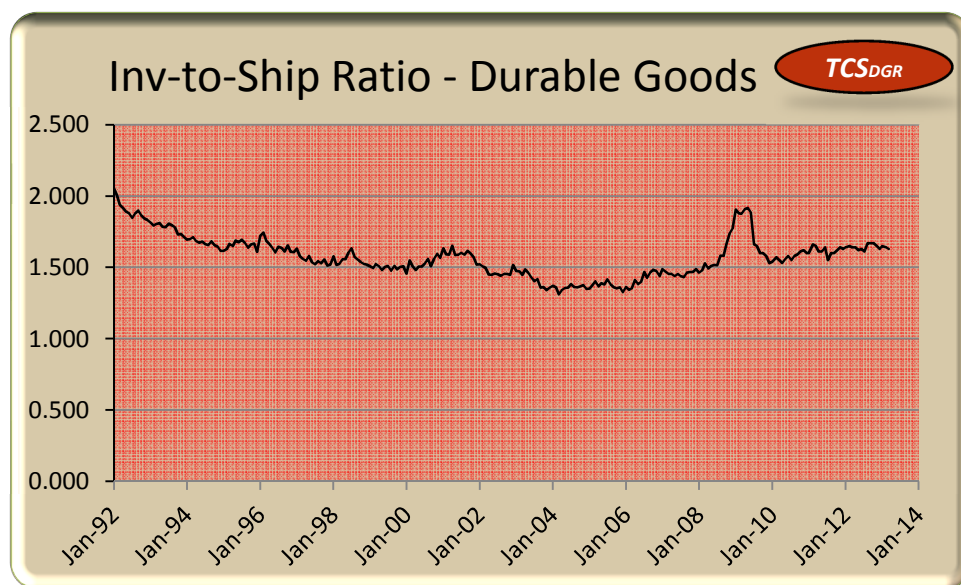
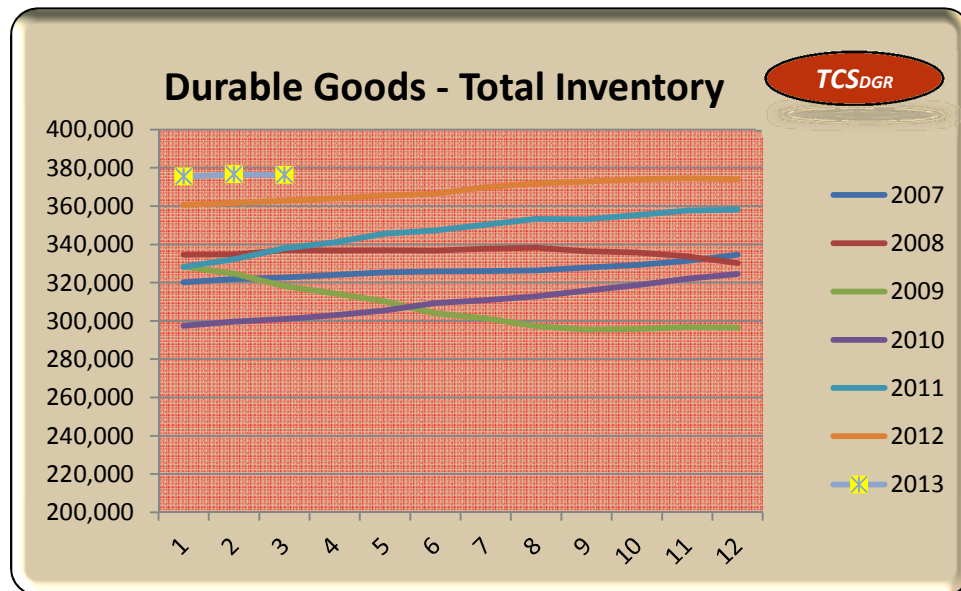


Unfilled Orders decreased 0.7% to \$990 billion.

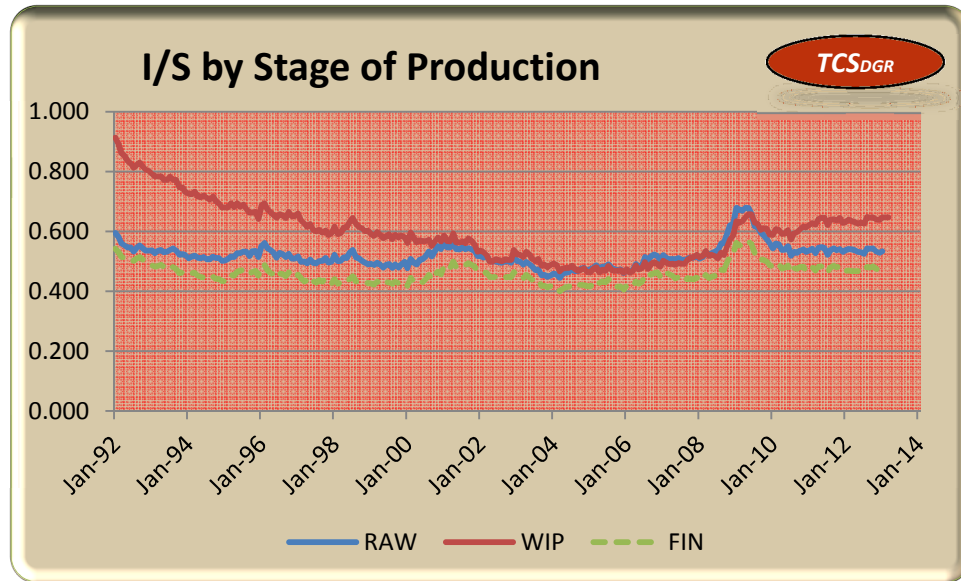


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Inventory: Total inventory decreased 0.1% to \$376 billion. Inventories are above the levels of the best years, but seem in reasonable control relative to shipments.



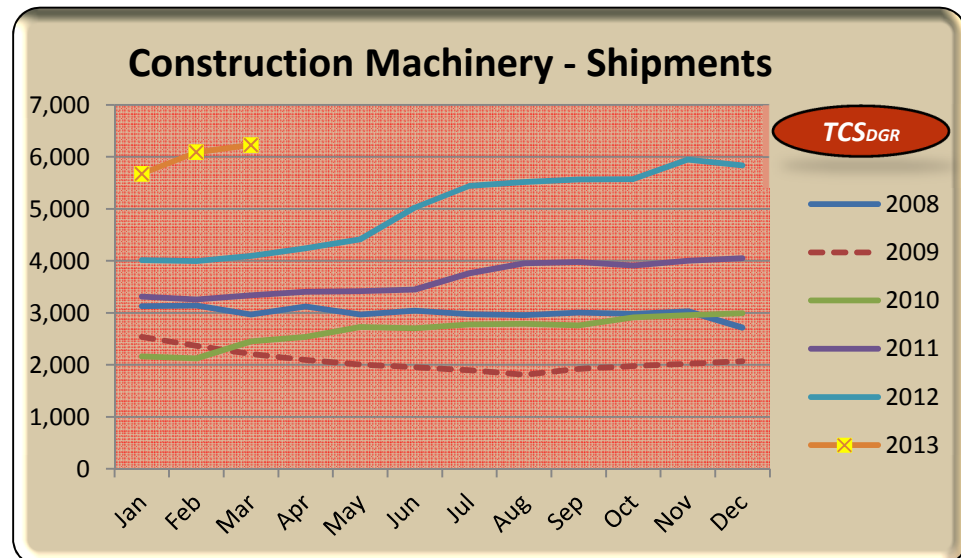
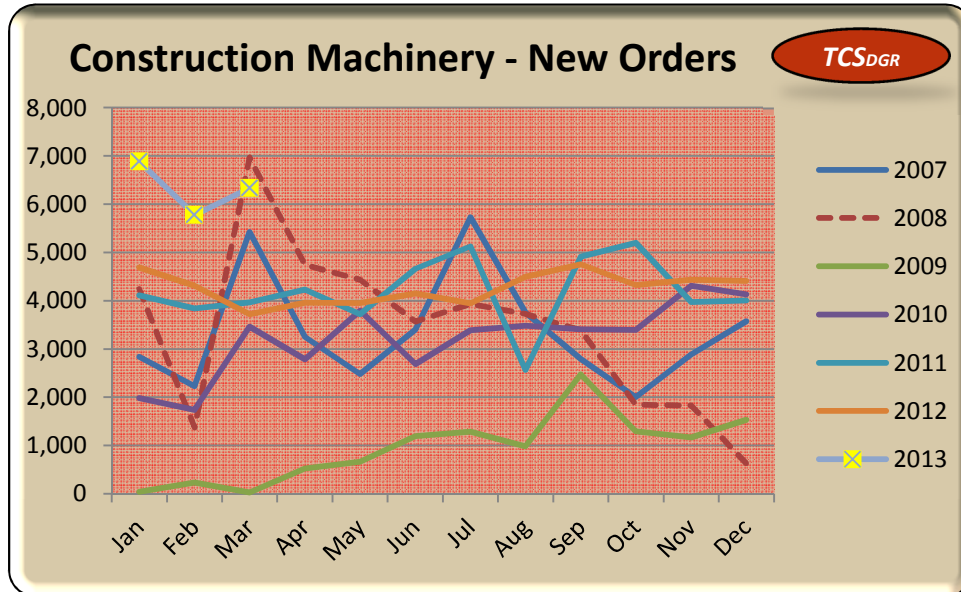
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The I/S ratio by stage of production (a DGR exclusive) remained steady. The response of manufacturers to the changes order rate and mix has improved from the prior two declines. Maintaining synchronization and velocity is a complicated business, but it seems to be getting the attention needed to pull it off.

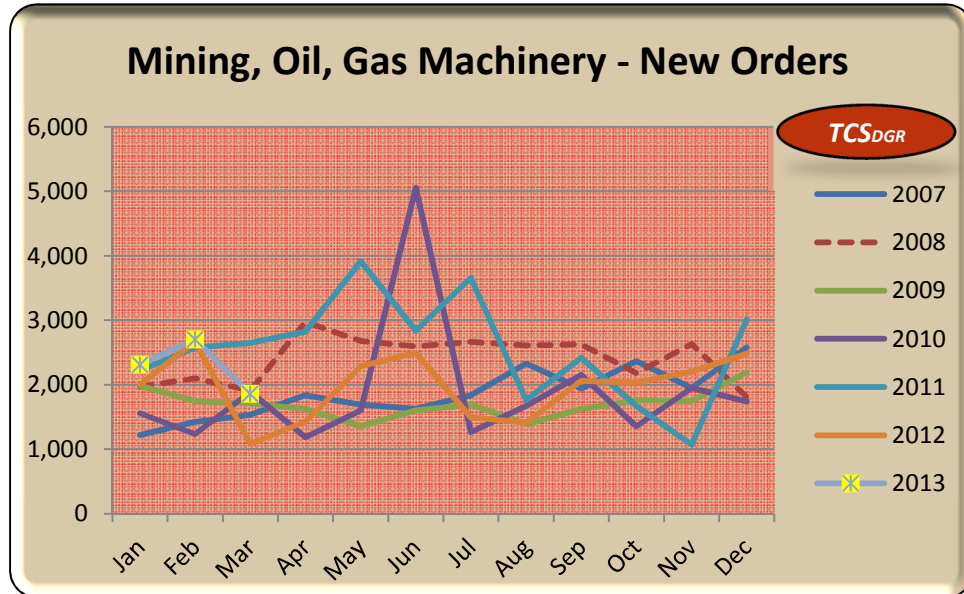
Durable goods sub sectors:

Construction machinery new orders increased 9.7% to \$6.3 billion. Shipments increased 2.2% to \$6.2 billion. Book to Bill ratio is balanced 1.02 (long term average 1.01). Unfilled orders held steady at about \$20 billion, down from \$28 billion a year ago. Despite the current solid performance there are signs of a slowdown across the globe with few exceptions.

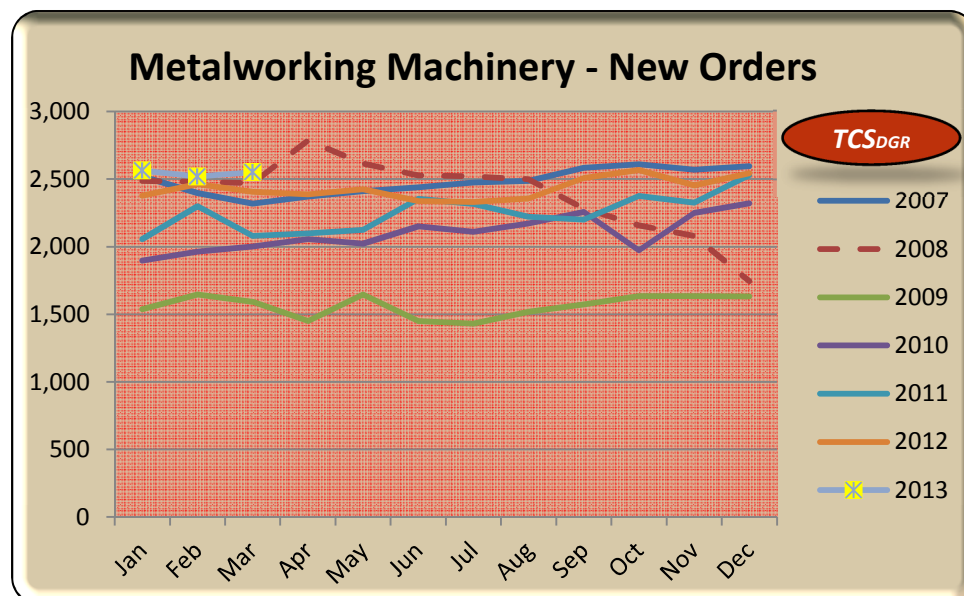


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Mining, oil and gas machinery new orders decreased 31% to \$1.9 billion. Book to bill ratio dropped to 0.93. (long term average = 1.03).

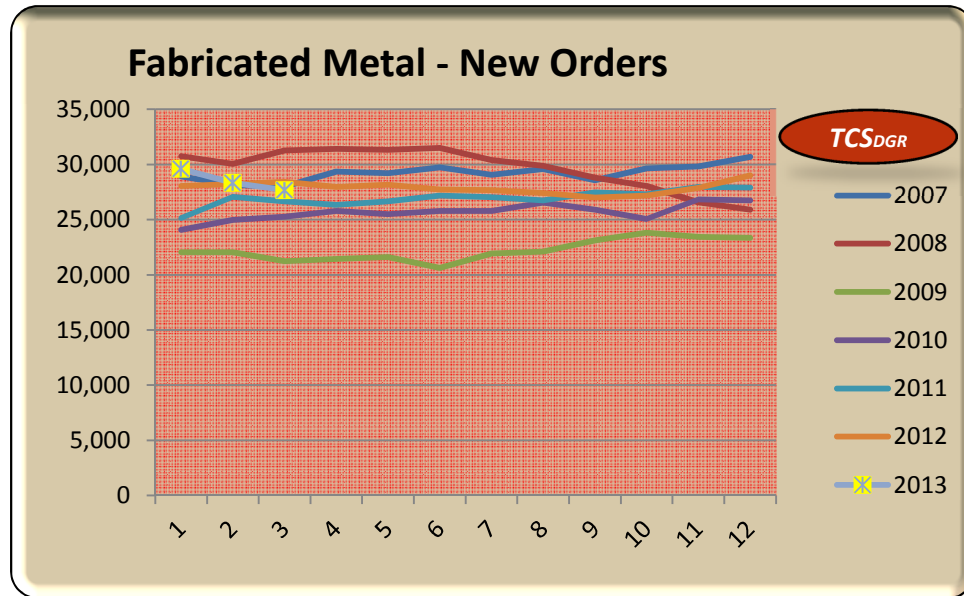


Metalworking machinery new orders increased 1.3% to \$2.6 billion, Book to bill ratio increased to 0.94 (long term average = 1.00).

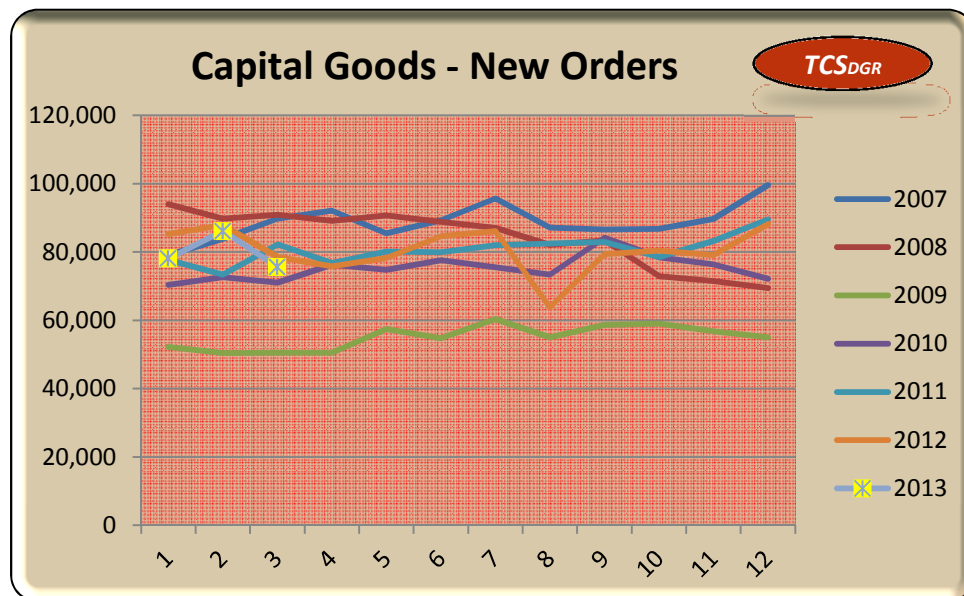


Fabricated metal new orders decreased 2.4% to \$27.7 billion. Book to bill ratio dropped to 0.99 (long term average = 1.00).

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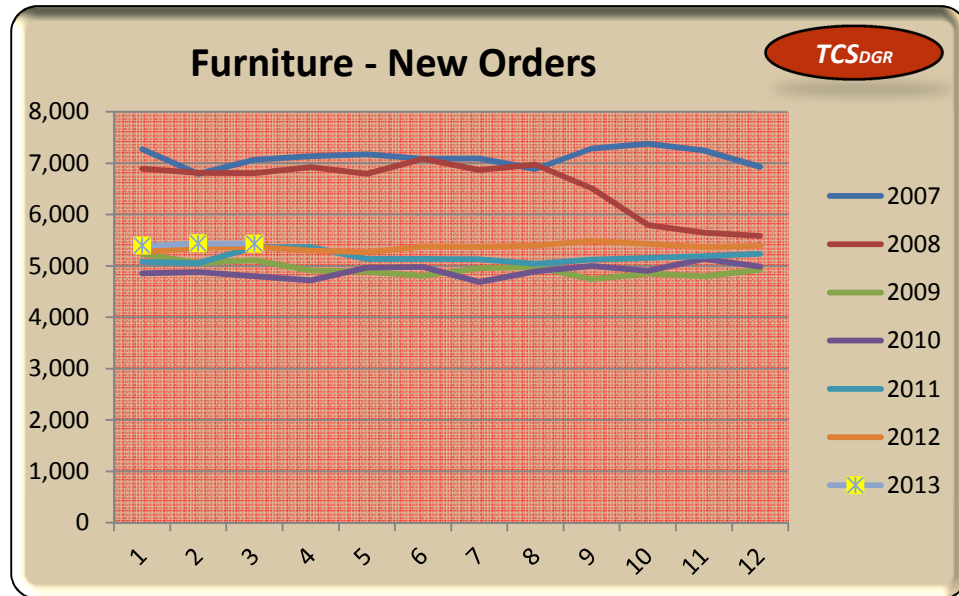


Capital goods decreased by 12.2% to \$75.6 billion. Book to bill ratio dropped to 0.96 (long term average = 1.01).



Furniture: New orders decreased 0.1% to \$5.4 billion. The book to bill ratio remained steady at 0.99.

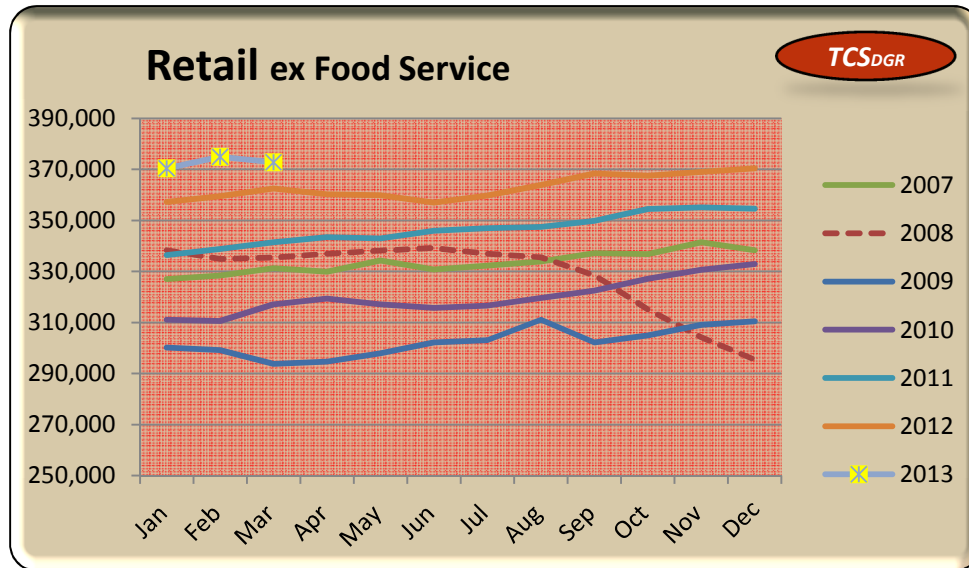
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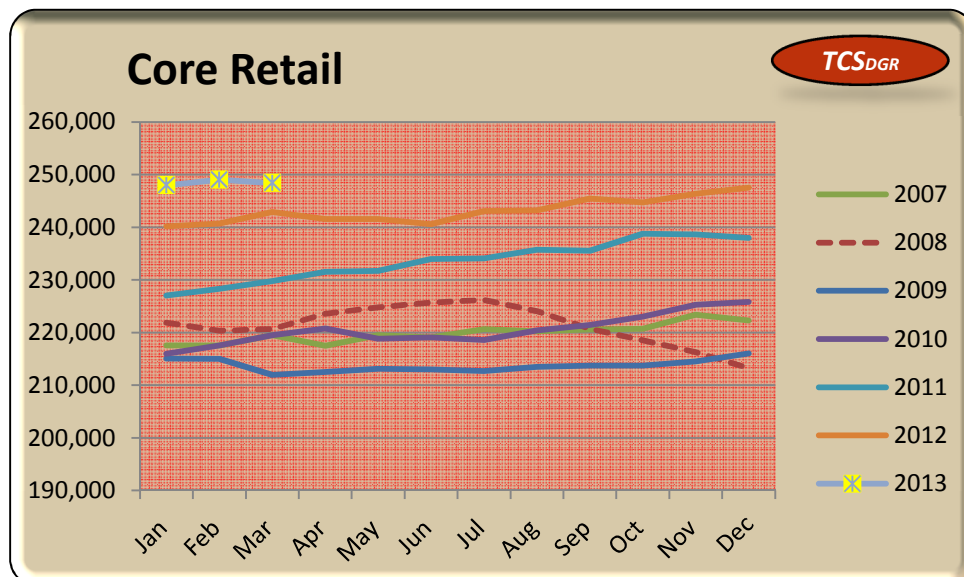
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Retail Data (Advanced Release)

Retail Sales (excluding food service) decreased 0.6% to \$372.7 billion.

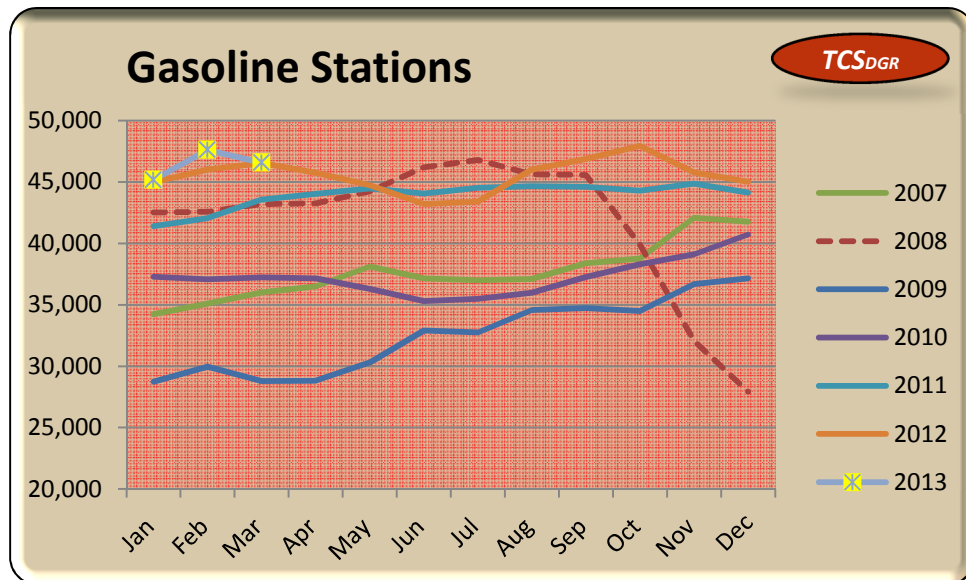


Core retail (excludes food service, gasoline, autos and parts) decreased 0.3% to \$248.4 billion.

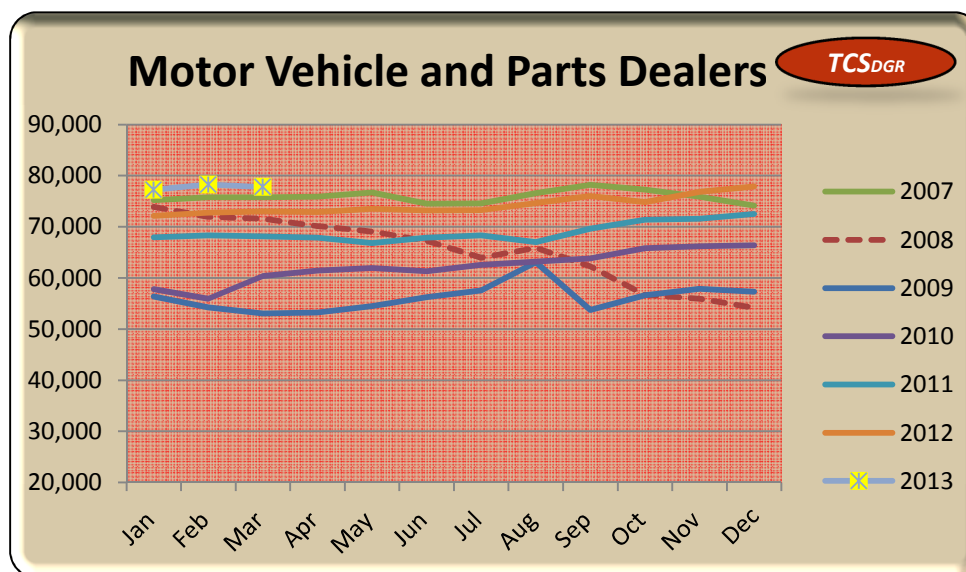


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Gasoline sales decreased 2.2% to \$46.6 billion.

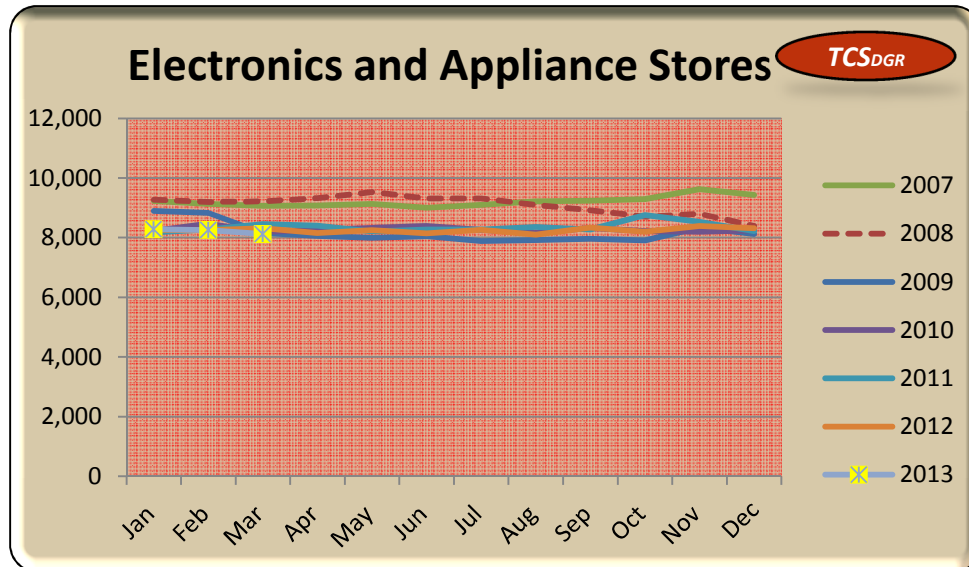


Auto sales decreased 0.6% to \$77.8 billion.

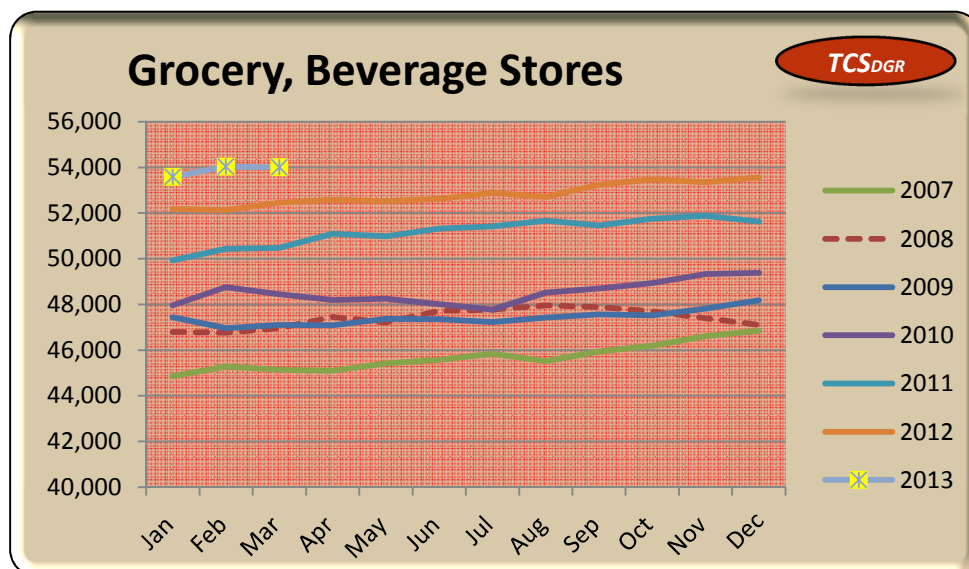


Electronics and Appliance Stores sales decreased 1.6% to \$8.1 billion.

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Grocery and Beverage stores sales decreased 0.1% to \$54 billion. Grocery sales stands about 3.7% above prior year, about double population growth.



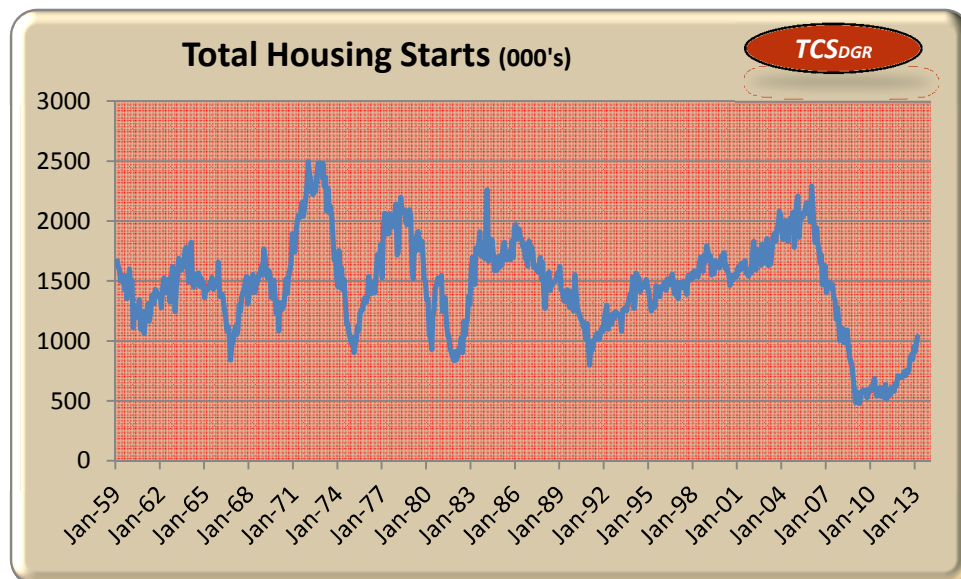
Housing:

Total housing starts increased to 7% to 1,036,000 in March. First time above 1 million since mid-2008. Single family starts decreased 4.8% to 619,000. New single family sales increased 1.5% to 417,000 units. Inventory of unsold new single family homes increased slightly to 153,000.

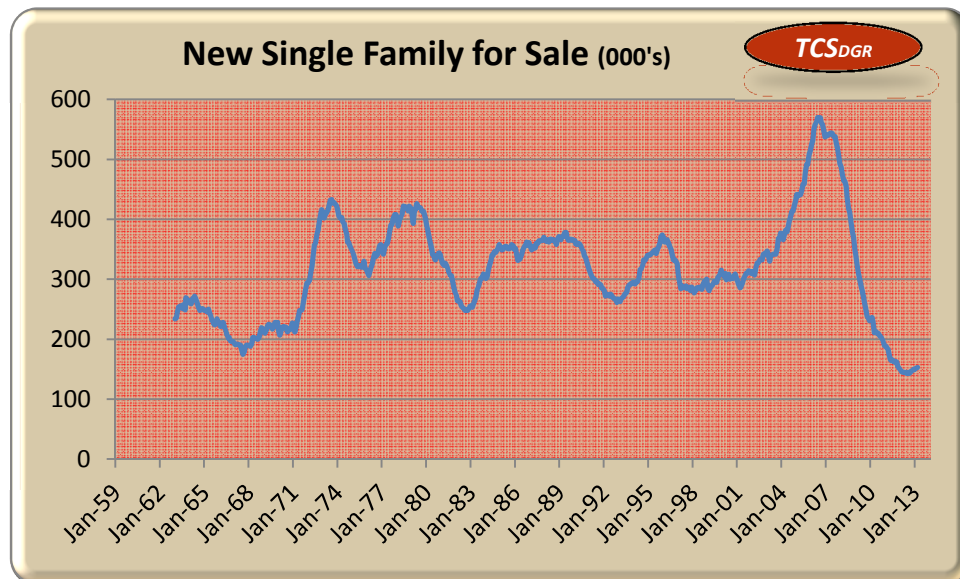
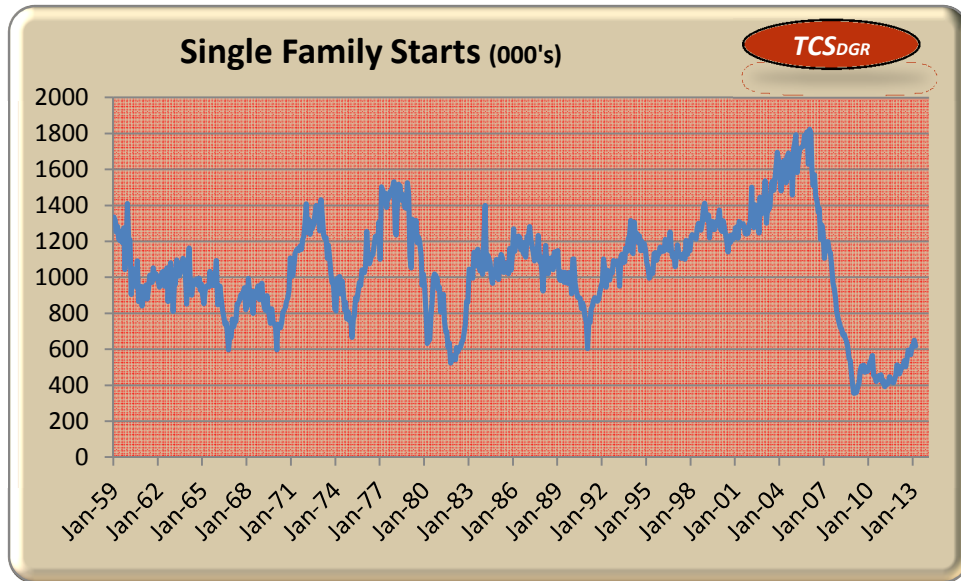
Median sales price (3MMA) remained steady at 246,900, but dropped to 8% above last year. Note the slope of the median value chart and compare it to the slope just prior to the collapse.

These numbers are getting closer to a “normal” level of activity. The bad news is that the housing recovery is unlikely to support much additional GDP growth.

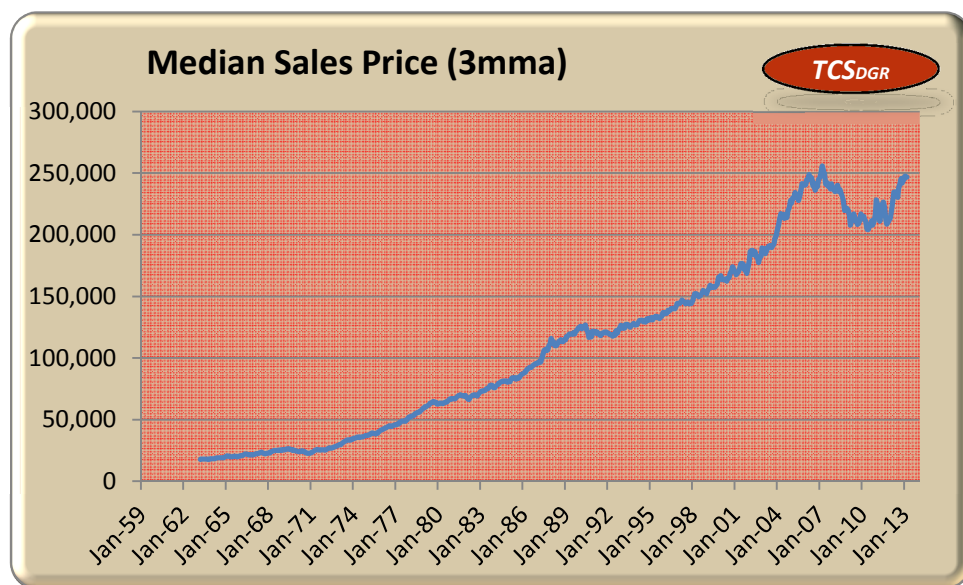
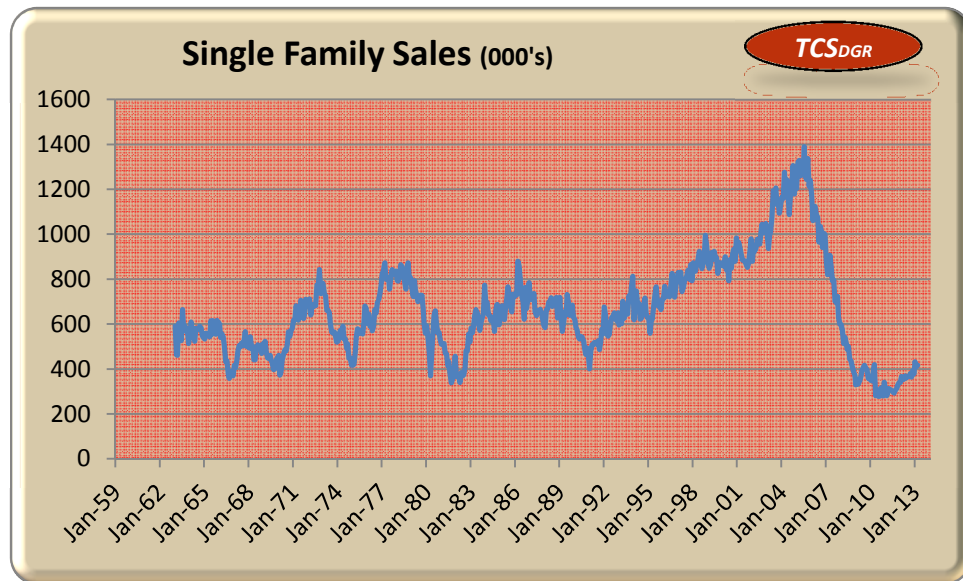
The trends continue to confirm the movement away from single family home ownership. Single family share of total starts dropped dramatically from 67% to 60% in the month. The proportion during the Bush-Clinton-Bush years (strong promotion of home ownership) averaged 81%. While the current numbers are probably below a natural rate (no government intervention in the markets), the general trend is positive. It was unrealistic to expect 80% of the adult population to fit into the single family home ownership lifestyle. The evidence once again shows that subsidizing the markers of the middle class (a chicken in every pot, two cars in every garage, single family home) cannot produce the characteristics of middle class behavior (hard work, deferred gratification, prudent finances). In fact it likely undermines them.



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About Time Compression Strategies and the Durable Goods Report

TCS provides business consulting and information technology support to high performance organizations. Our focus is on manufacturing and telecom. Through our business partners we support health care, energy and other rapid-response business sectors.

The goal of the Durable Goods Report is to offer context for the published monthly statistics on durable goods manufacturing in the US. The analysis is historical in nature, and includes no forecasts beyond what may be obvious from current conditions. The analysis of historic patterns provides a necessary framework for understanding plausible scenarios. Since a high percentage of durable goods go through retail, this sector serves as a leading indicator of future durable goods activity.

The Durable Goods Report uses source data from the US Census Bureau, Bureau of Labor Statistics, Energy Information Administration, and the Federal Reserve. Rig count data source is the Baker Hughes Corp. For data sourced from the US government, the “preliminary” publication is used wherever possible. The preliminary release occurs about 5 weeks after the end of the period. An earlier publication (advanced release) is available about 3 weeks after the end of the period, but is often subject to substantial revisions, and is not considered adequately reliable for growth trend analysis except for retail. Wherever the advanced release is used it is noted. Tracking reports are available for several durable goods sub sub-sectors. Contact TCS for details about this subscription based service.

Technical Note: The “TCS Growth Index” is measured as the ratio of the 3 month moving average divided by the 12 month moving average. This removes some of the natural noise in the industry data, but also results in a slight response lag. An index value greater than 1.000 is a sign of recent growth.

About the Author:

John Layden serves as CEO of Time Compression Strategies Corp (TCS), a management consulting and information technology company serving manufacturing, distribution, and their supporting technologies. He also serves as Chairman of Temporal Dynamics, Inc. (TDI), the developer of the patented Ancelus high performance database. TCS has developed a suite of high-performance real-time applications systems in support of their client industries.

Prior to launching TCS, Layden’s career included 22 years’ in manufacturing and another 20 years in enterprise software. Most recently he has served as VP of Supply Chain Management for SAP and VP of Supply Chain Market Development for

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Frontstep, Inc. He served as President of Pritsker Corporation, an early innovator in discrete event simulation and advanced planning and scheduling fields. He negotiated the Pritsker acquisition by Frontstep. He was a founder and CEO of Automated Technology Associates, Inc., a leader in the development of real-time quality control systems and factory management applications.

Layden has authored over 40 articles and papers on both the theory and practice of manufacturing and supply chain operations. He was described by one editor as one of the “founding fathers” of the advanced planning and scheduling (APS) industry. He also authored the supply chain chapter in Maynard’s Industrial Engineers Handbook. He speaks worldwide on the subject of world class operating strategies. He has been the keynote speaker at numerous conferences including the Automation Hall of Fame Awards.

As a software company CEO, Layden delivered to market the first real-time advanced planning and scheduling system; the first real-time SPC system; and the first real-time, fourth-normal-form database system. He is the originator of the Return on Capacity modeling process for analysis and improvement of supply chain profitability and delivery performance.

As a key partner to Motorola, Layden developed the quality control concepts that became the Six Sigma Initiative. He introduced the same concepts to GE and the Cadillac Division of General Motors. These initiatives contributed to the Malcom Baldrige awards won by Motorola and Cadillac, and to the highly publicized Six Sigma program at GE. He introduced the Six Sigma concepts to software development and delivered the only application software release to meet these exacting quality standards. Layden holds three patents and is the only American to hold a Japanese patent in quality control.

Prior to his tenure in manufacturing software, Layden spent 20 years as an engineer, operating executive and board member with three Fortune 200 manufacturing companies. The TCS advisory services retain the practical, no-nonsense approach familiar to world class operating executives. His operating roles in manufacturing included plant manager, director of business planning, and VP of Supply Chain Management.

Layden currently serves on 3 boards, and advises several high-tech startup companies.

Mr. Layden holds a BS degree from Purdue University in Electrical Engineering and an MBA from the University of Wisconsin-Milwaukee (Executive Program). He is active with the Purdue University President’s Council, and has served as a guest lecturer in the MBA programs of Villanova University, Columbia University, New York University, Indiana University, Ball State University, and others.

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