The Durable Goods Report

March 2014

Executive Summary of US Economic Activity

Manufacturing Data Release 3/6/2014 (January Preliminary)

Employment Data Release 3/7/2014 (February Preliminary)

Retail Data Release 2/13/2013 (January Advanced)

Industrial Production Data Release 2/14/2013 (January Advanced)

Housing Data Release of 2/19 & 26/2013 (January Advanced)

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

John E. Layden

By the Numbers

Durable Goods Key Measures			
	Current Mo	Prior Mo	Prior Yr
New Orders-Durable	224,989	229,987	215,068
12 month moving average	229,830		218,141
% Change from Prior Year	5.4%		
Growth Index - Durable New Orders	1.004	1.023	1.012
Unshipped Orders - Durable	1,059,856	1,061,701	989,589
% Change from Prior Year	7.1%		
Value of Shipments - Durable	232,612	233,518	224,682
Book to Bill Ratio	0.97	0.98	0.96
Inventory - Durables	389,131	387,904	375,292
% Change from Prior Year	3.7%		
Inv to shipments ratio - Durable	1.67	1.66	1.67
US Economy Key Measures			
	This period	Last period	Change
GDP 2012 Q4 (current $)	17,080.7	16,912.9	1.0%
Industrial Production	2,770.0	2,791.1	-0.8%
Capacity Utilization %	78.5	78.9	-0.4
Manufacturing %	76.7	77.4	-0.7
Durable Goods %	76.0	76.8	-0.8
Primary Metals %	76.2	76.4	-0.2
Autos and Parts %	74.3	78.4	-4.1
Machinery %	80.2	80.5	-0.3
Durable Goods ($Mil SA)			
New orders	224,989	229,987	-2.2%
Shipments	232,612	233,518	-0.4%
Inventory	389,131	387,904	0.3%
Unshipped Orders	1,059,856	1,061,701	-0.2%
Retail ex Food Service ($Mil SA)	381,142	382,807	-0.4%
Autos and Parts	72,940	74,667	-2.3%
Gasoline	45,777	45,258	1.1%
Core retail (ex auto, gas)	254,953	255,242	-0.1%
Employment (000's SA)			
Civilian employed (Household Survey)	145,266	145,224	42
% of potential workforce (HS)	58.8%	58.8%	0.0%
Civilian not employed (HS)	101,819	101,691	128
Non-Farm (Establishment Survey)	137,699	137,524	175
Private (ES)	115,848	115,686	162
Government (fed, state, local) (ES)	21,851	21,838	13
Goods Producing (ES)	18,894	18,872	22
Manufacturing (ES)	12,065	12,059	6
Construction (ES)	5,941	5,926	15
Durable Goods Mfg (ES)	7,584	7,578	6
Housing (000s of Units SA)			
Total housing starts	880	1048	-16.0%
Single family starts	573	681	-15.9%
Single family sales (new)	468	427	9.6%
Single family for sale (new)	184	171	7.6%

US Economy – Quick Look:

US GDP

Full year 2013 GDP growth was reported at 1.9% CAGR. The inventory build that boosted some quarterly results ultimately washed out. Q4 estimates were also revised downward: 1.0% Q/Q; 4.0% Y/Y.

Industrial Production

Industrial production excluding industrial supplies decreased 0.8% to $2.77 trillion. Now stands 2.8% above prior year. Capacity utilization decreased 0.4 points to 78.5%, led by autos drop of 4.1 points.

Durable Goods

New orders for durable goods decreased 2.2% to $224 billion, the second month of sharp decline. The 12 month moving average still shows a positive 5.4% above last year. But the growth index faded to 1.004 compared to 1.012 last year.

Retail:

Retail sales (ex food service) decreased 0.4% to $381.1 billion in January. Core retail (ex food service, autos, gasoline) decreased 0.1% to $255.3 billion. Gasoline sales increased 1.1% to 45.8 billion. Auto sales decreased 2.3% to 72.9 billion (down from $75B 4 months ago).

Employment:

Working-age population increased 170,000.

Household survey results: Employed: up 42,000. Not employed: up 128,000. Employed: 58.8% of working age population (unchanged from last month). This measure has been essentially unchanged for 4+ years.

Establishment survey results: 175,000 jobs added. Durable goods employment increased 6,000.

Housing:

Total starts: down 16% to 880,000. Single family starts: down 15.9% to 573,000. Single family sales: up 9.6% to 468,000. Median value: increased to $267,100 (3mma).

Random Thoughts, Stray Data and Rants:

Economy

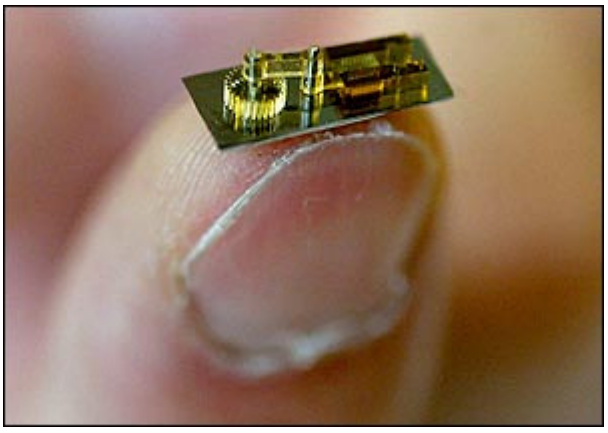
- Global government debt now exceeds $100 trillion, well above the $75 trillion global domestic product. The technical analysis is less important than the obvious fact that this can't end well. Someone is going to lose big.
- Bitcoin has suffered a major setback with the collapse of a major trader (Mt. Gox). Never really understood the process so I can't comment on the details. But the idea of getting away from government-backed (and thus politically decided) currency seems to be gaining strength.
- China shares hit a 5 year low on weak economic data. Clobbers markets across the globe.
- Weekly work hours (US) dropped to 34.2.

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

- The US foreign policy is a mess. The cries of appeasement from Republicans are labeled as political attacks. The few Democrats left who believe the lessons of history are intimidated into silence by today's all-powerful political party structure. We need to have an open and serious debate on this subject. Don't hold your breath.
- The real issue is missed by everyone so far. They are asking the question: "Is the world better off than it was at some point in the past?" The real test is "…are we better off than we would be today with a different policy?" That's a test of reality vs. a hypothetical. Never possible to test. Easy to propose an alternative after the fact with confidence that it can't be tested.
- But history should be at least marginally useful.
- President V. Putin's move into the Crimea is a direct parallel to the moves of Chancellor A. Hitler in 1936. It's a well-known political strategy. Push forward, pause for reaction. If none, push again. This map is instructive. *http://www.ldjackson.net/78-years-ago-this-week-history-taught-us-a-lesson-but-does-anyone-care/*
- Too bad our history education is so weak today. The only government approved narrative is that the White Man is bad. But in every culture that we can analyze, one thing holds true: the culture that makes the most productive use of resources ultimately dominates. It may or may not involve violence. But there are no exceptions in history or archeology.

Energy: *There are only two decisions at the heart of energy policy. The first is simple. Live by manual labor and trade with those within walking distance, or use energy as a labor multiplier. The second decision is equally simple. Use energy sources that deliver more energy than it takes to get the energy. The second decision eliminates all forms of green energy.*

- The most potent weapon to blunt the ambitions of President Putin is energy. We have the power to drive down global energy prices. The following would result:
  - Energy-extraction-based economies would be seriously damaged. That would include Russia, Iran, Venezuela, and Saudi Arabia.
  - Industrial economies would thrive. That would include the US, Japan, and most of Western Europe.
- The steps would include:
  - Reverse the ban on offshore drilling
  - Approve US oil exports
  - Speed approval of LNG export terminal permits
  - Approve the XL Pipeline
- Tried to set up an over/under in Las Vegas on the above. No takers. Not happening.
- The following is a possible future of portable energy. While the US attempts to convert cars to battery power, engineers in the UK are converting your laptop to gasoline. Any engineer that ever compared the energy density values would immediately conclude that America is populated with dolts. A Lithium battery stores energy at 2 MJ/L. Gasoline stores 48 MJ/L.



SMALLEST PETROL ENGINE
SCIENTISTS have built the smallest petrol engine, tiny enough to power a WATCH.

The mini-motor, which runs for two years on a single squirt of lighter fuel, is set to revolutionize world technology. It produces 700 times more energy than a conventional battery despite being less than a centimeter long (not even half an inch!). It could be used to operate laptops and mobile phones for months doing away with the need for recharging. Experts believe it could be phasing out batteries in such items within just six years. The engine, minute enough to be balanced on a fingertip, has been produced by engineers at the University of Birmingham. Dr Kyle Jiang, lead investigator from the Department of Mechanical Engineering, said: "We are looking at an industrial revolution happening in peoples' pockets. The breakthrough is an enormous step forward. Devices which need re-charging or new batteries are a problem but in six years will be a thing of the past."

Other applications for the engine could include medical and military uses, such as running heart pacemakers or mini reconnaissance robots. At present, charging an ordinary battery to deliver one unit of energy involves putting 2,000 units into it. The little engine, because energy is produced locally, is far more effective. One of the main problems faced by engineers who have tried to produce micro motors in the past has been the levels of heat produced. The engines got so hot they burned themselves out and could not be re-used. The Birmingham team overcame this by using heat-resistant materials such as ceramic and silicon carbide. Professor Graham Davies, head of the university's engineering school, said: "We've brought together all the engineering disciplines, materials, chemical engineering, civil engineering, and mechanical engineering.

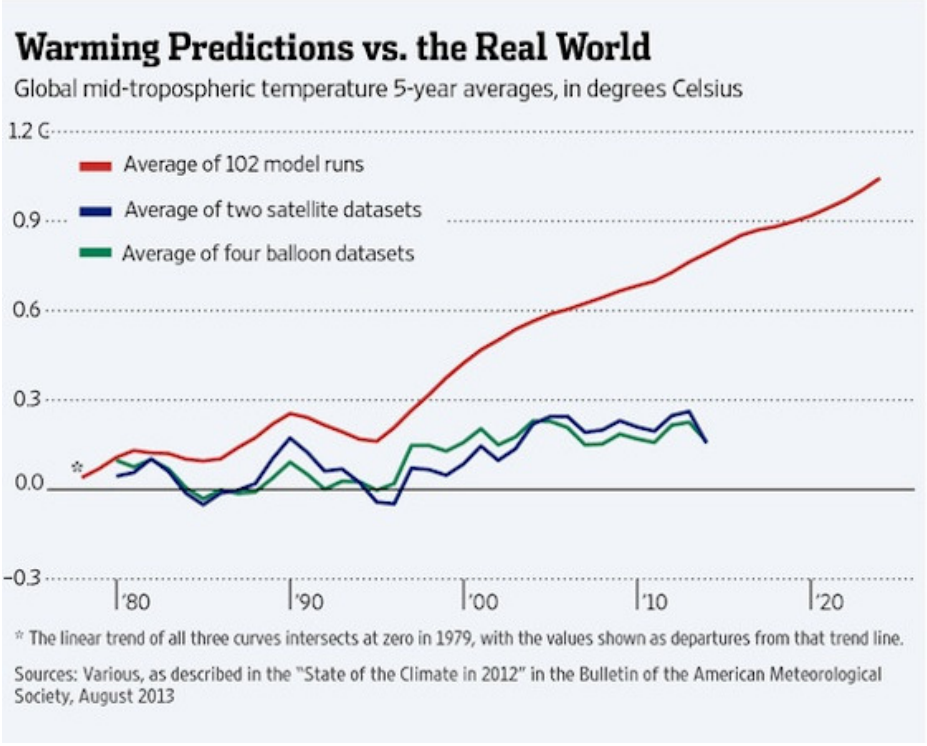
What better place to have the second industrial revolution in nano-technology than where the first took place, in the heart of the West Midlands. "

- The idea of using batteries to store large amounts of electrical energy is so technically absurd it's hard to know where to begin. Maybe better not to begin at all. Maybe we should simply celebrate the UK team that knows how to do the math.
- Here's one that stores its energy as a "liquid electrolyte." It will be interesting to get the details. But it could work. Electro-chemical bonds (like the hydrocarbon bond) store energy with great efficiency. If they have learned to manipulate a chemical bond this could be a winner. http://www.auto-types.com/autonews/unknown-company-from-liechtenstein-draws-attention-with-most-interesting-concept-in-geneva-quant-e-sportlimousine-11342.html

- Of course the 925 horsepower, 0-100 km/hr. in 2.8 seconds, and 4 electric traction motors (massive torque at a standstill) are also things that routinely catch my attention.

- LENR is starting to take off. Low energy nuclear reactions have now gone mainstream. Technology acquisitions or patent filings by major manufacturing firms suggest it's about to deliver practical systems.
- Layden's rule 42: The stone age didn't end due to a shortage of stones. We are awash in hydrocarbon energy. (But pretty much out of $10 oil). The age of oil will not end due to a shortage of oil.
- Layden's rule 56: Nothing is sustainable forever. Nothing is ever exhausted.
- Keep an eye on LENR advances. But put your money on LFTRs. Liquid Fluoride Thorium Reactors. Proven technology. No downside.

Climate & Environment: *"The whole aim of practical politics is to keep the populace alarmed and hence clamorous to be led to safety by menacing it with an endless series of hobgoblins, all of them imaginary."* - H.L.Mencken



- The more science that stacks up against the climate alarmists, the louder they shout that "the science is settled. The consensus is 97%." Both are ludicrously false as we pointed out last month. But the tone seems to parallel a 1938 political party push against Einstein with publication of "100 Authors Against Einstein." To which Einstein replied: "Were I wrong, a single professor would have been quite sufficient."

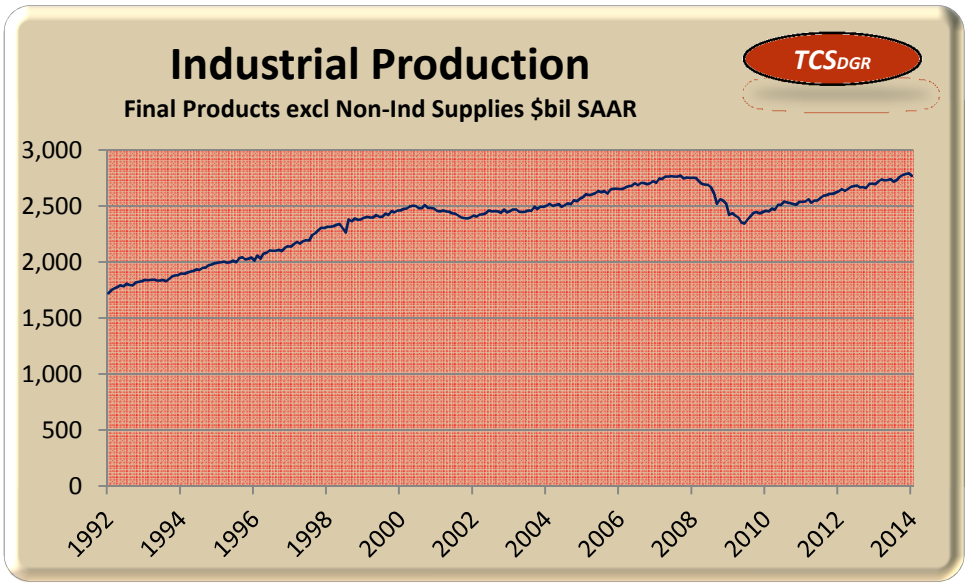
- Apple CEO has said that climate change deniers need not invest in Apple stock. OK by me. UPDATE: Now backing off. Maybe not immune to science after all. More likely heard from some sensible investors.

US GDP

Gross Domestic Product				
Year	Qtr	GDP $b (SAAR)	Chg from Prior Pd	Chg from Prior Year
2008	1	14,672.9	-0.1%	3.1%
2008	2	14,817.1	1.0%	2.7%
2008	3	14,844.3	0.2%	1.9%
2008	4	14,546.7	-2.0%	-1.0%
2009	1	14,381.2	-1.1%	-2.0%
2009	2	14,342.1	-0.3%	-3.2%
2009	3	14,384.4	0.3%	-3.1%
2009	4	14,564.1	1.2%	0.1%
2010	1	14,672.5	0.7%	2.0%
2010	2	14,879.2	1.4%	3.7%
2010	3	15,049.8	1.1%	4.6%
2010	4	15,231.7	1.2%	4.6%
2011	1	15,242.9	0.1%	3.9%
2011	2	15,461.9	1.4%	3.9%
2011	3	15,611.8	1.0%	3.7%
2011	4	15,818.7	1.3%	3.9%
2012	1	16,041.6	1.4%	5.2%
2012	2	16,160.4	0.7%	4.5%
2012	3	16,356.0	1.2%	4.8%
2012	4	16,420.3	0.4%	3.8%
2013	1	16,535.3	0.7%	3.1%
2013	2	16,661.0	0.8%	3.1%
2013	3	16,912.9	1.5%	3.4%
2013	4	17,080.7	1.0%	4.0%

Industrial Production (excluding industrial supplies)

Industrial production dropped 0.8% in January. The year to year comparison stands at 2.8% above the same month prior year. These numbers are warning shots of slower growth, but not yet a signal of recession.

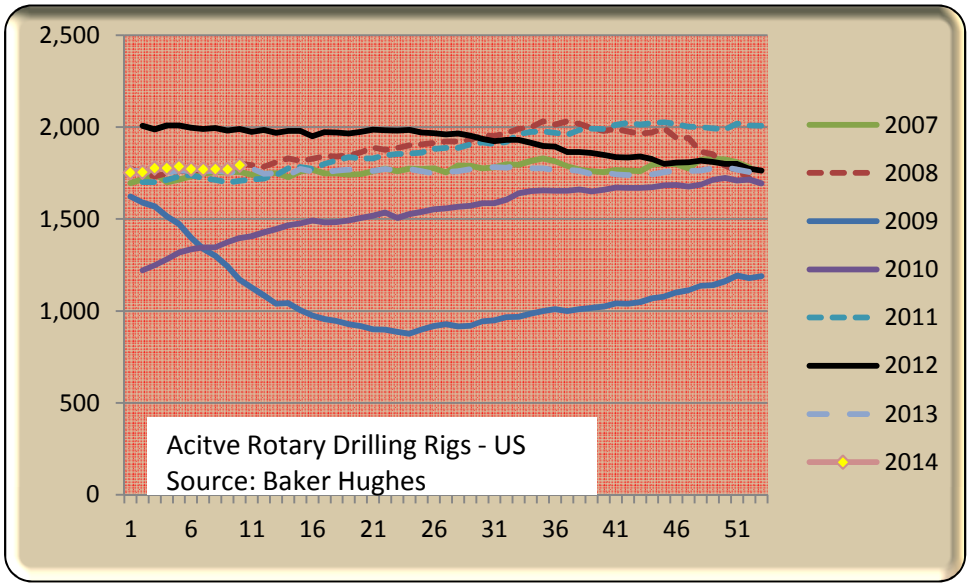


Capacity Utilization:

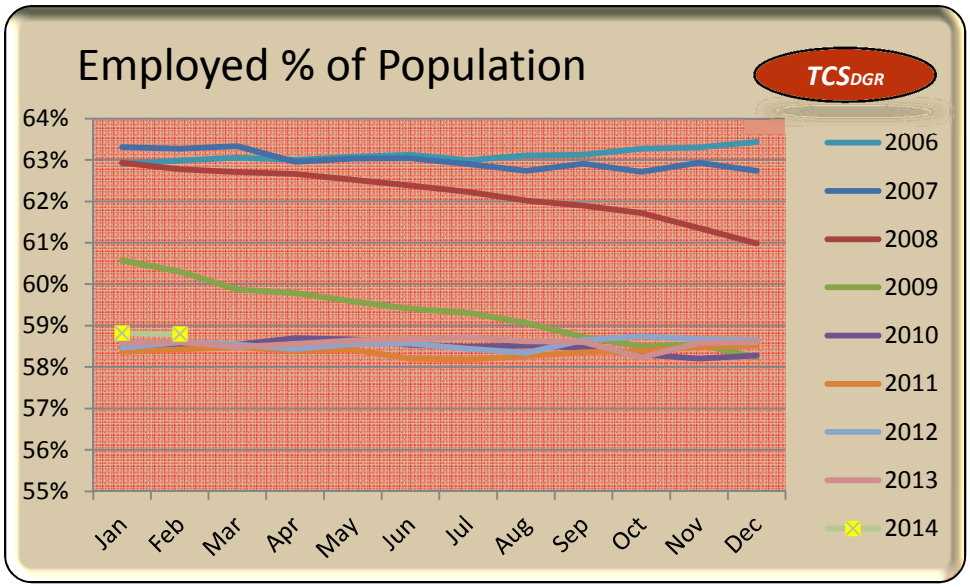
Down across the board. Only question is the portion due to weather vs. fundamental weakness. Industrial capacity utilization decreased 0.4 points to 78.5% in January. Manufacturing was down 0.7 to 76.7; Durable goods manufacturing decreased 0.8% to 76.0%; Primary metals decreased 0.2 to 76.2%; Autos decreased 4.1 to 74.3%; Machinery decreased 0.3 to 80.2%.

Energy:

Active rotary rig count (US) climbed to 1792 rigs. When coupled with the doubling of the productivity of the rigs, the current production records are easily explained.



Employment:



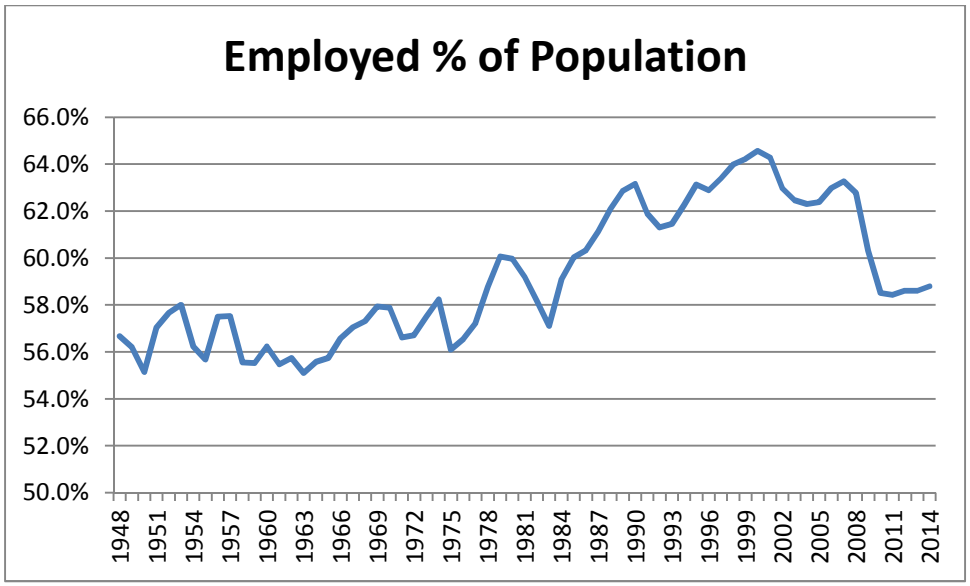
The employed portion of the working age population remained constant at 58.8%. Essentially unchanged since the bottom of the recession in mid-2009.

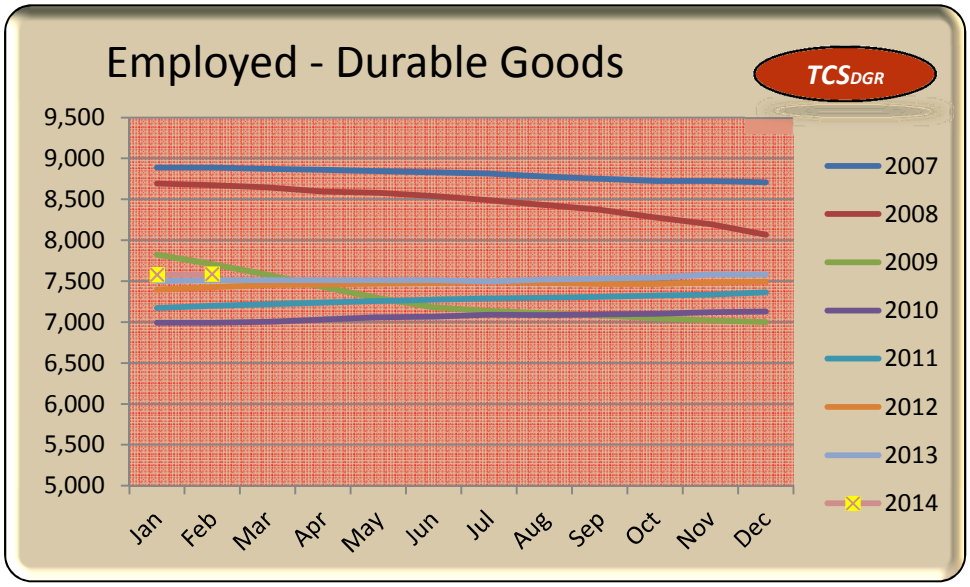
The household survey reported 42,000 more people working in February, far fewer than the 175,000 added jobs reported by the establishment survey. With an increase in the workforce of 170,000 the current performance will not contribute to the correction needed in the US economy. Regardless of which survey you prefer, these numbers are dismal.

		Feb-14		MTM chg	chg-07		Jan-14			Jan-07	
Employed		145,266	58.8%	42	(762)		145,224	58.8%		146,028	63.3%
Unemployed	10,459		6.7%	223	3,343	10,236		6.6%	7,116		4.6%
Not in the Labor Force	91,360		37.0%	(95)	13,854	91,455		37.0%	77,506		33.6%
Total Not Employed		101,819	41.2%	128	17,197		101,691	41.2%		84,622	36.7%
Working age population		247,085	100%	170	16,435		246,915	100%		230,650	100%
Employed per Not Working		1.43					1.43			1.73	
Source: Bureau of Labor Statistics											

The above table shows that compared to 2007 we have 17.2 million more people not working, supported by a workforce that has shrunk by almost a million.

February % Employed since 1948



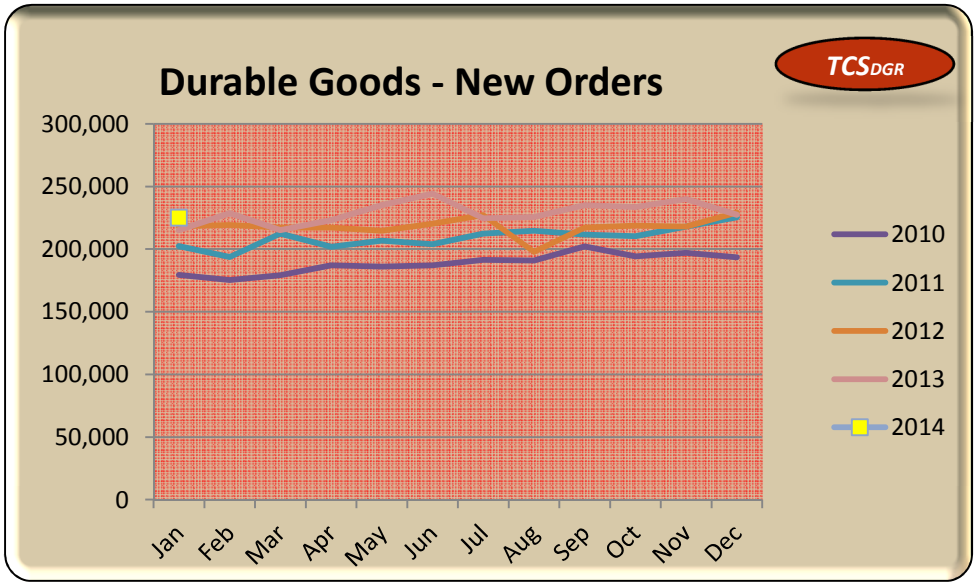


Durable goods employment increased 6,000 in February. Total employment of 7.6 million stands 73,000 above 2013. Durable employment dropped by 1.9 million in the slide into recession, and has recovered less than 1/3 of that employment. Given the continued high investment level in machinery and equipment it is unlikely that these jobs will ever return. They haven't gone offshore. They've gone away.

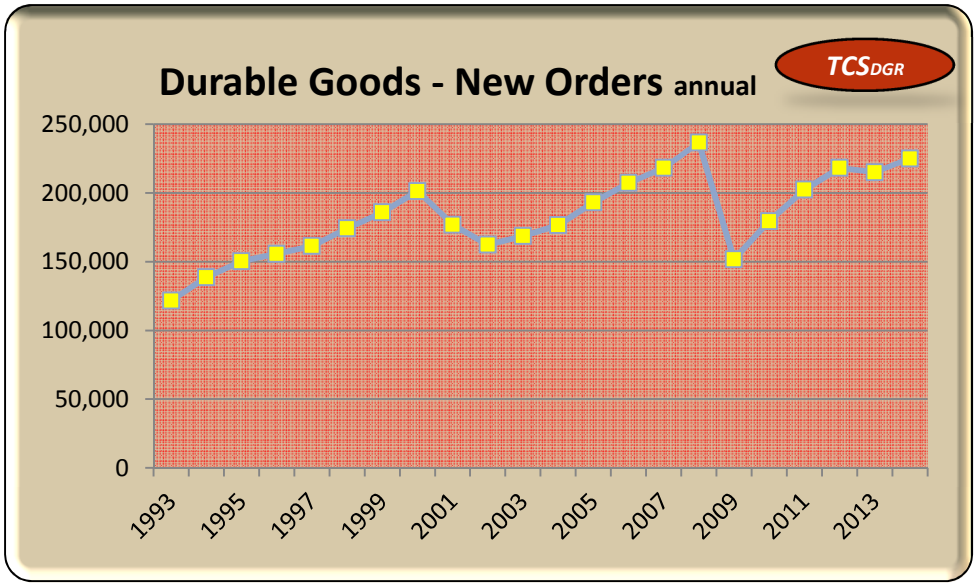
Sector Detail

The Durable Goods Sector:

New Orders: Durable new orders decreased 2.2% to $225 billion in January. Despite the major two month setback, the 12 month moving average remains 5.4% above last year.

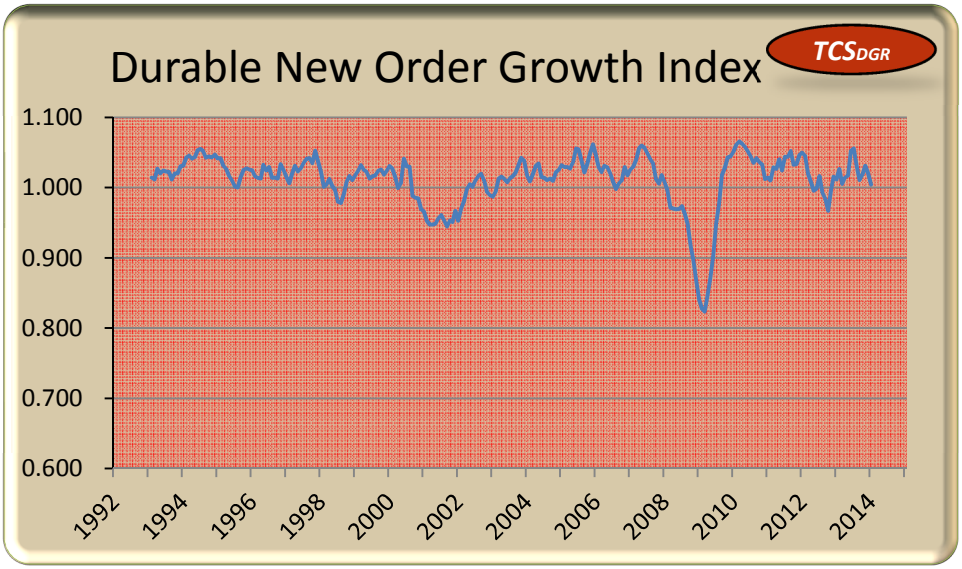


January New Orders – 1993-2014

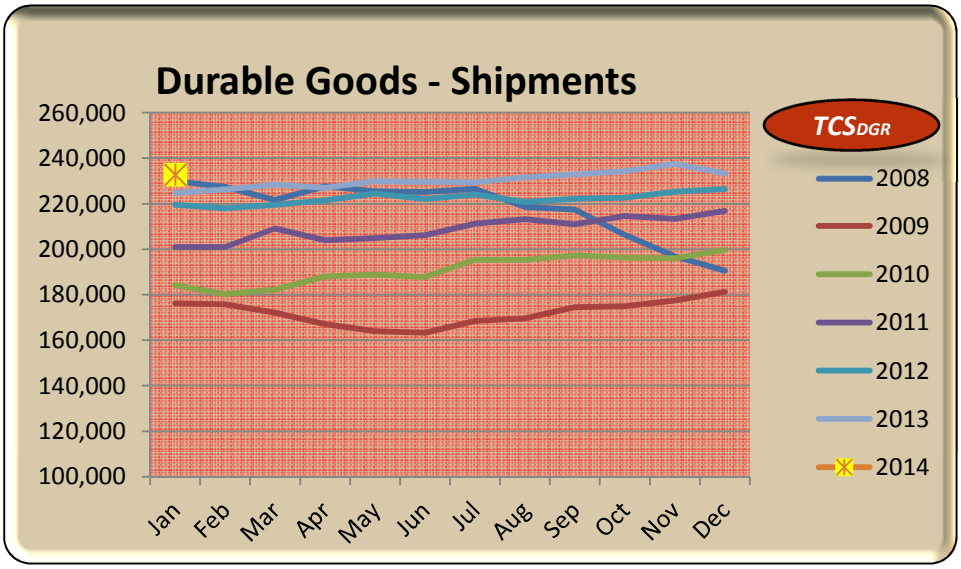


Inventory to shipments ratio increased to 1.67. The Book to Bill ratio dropped to .97 (Long-term average is 1.00).

Growth Index for new orders (3mma/12mma = slope of the smoothed order curve) dropped to 1.004. This suggests the slowdown is more than a one or two month problem.

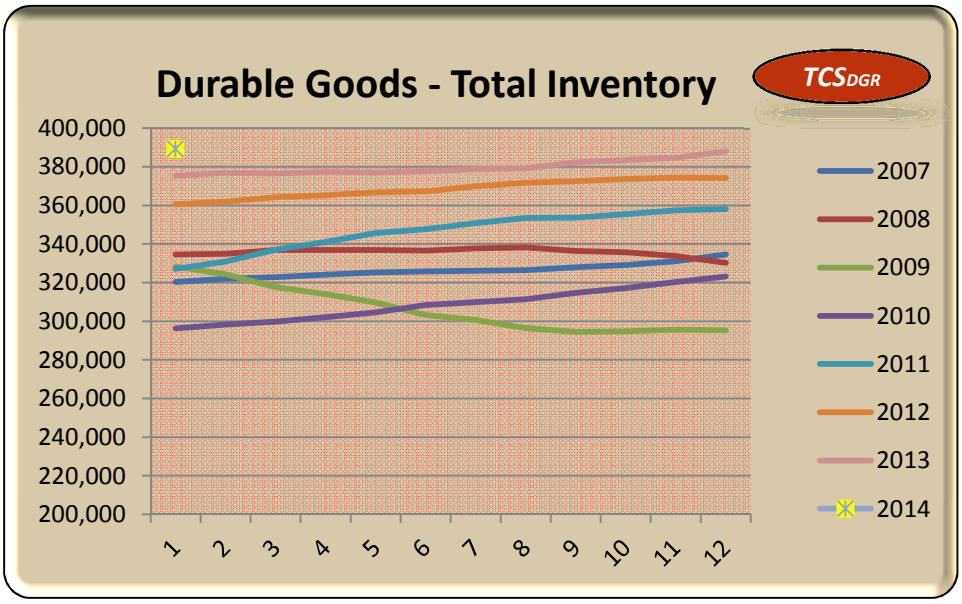


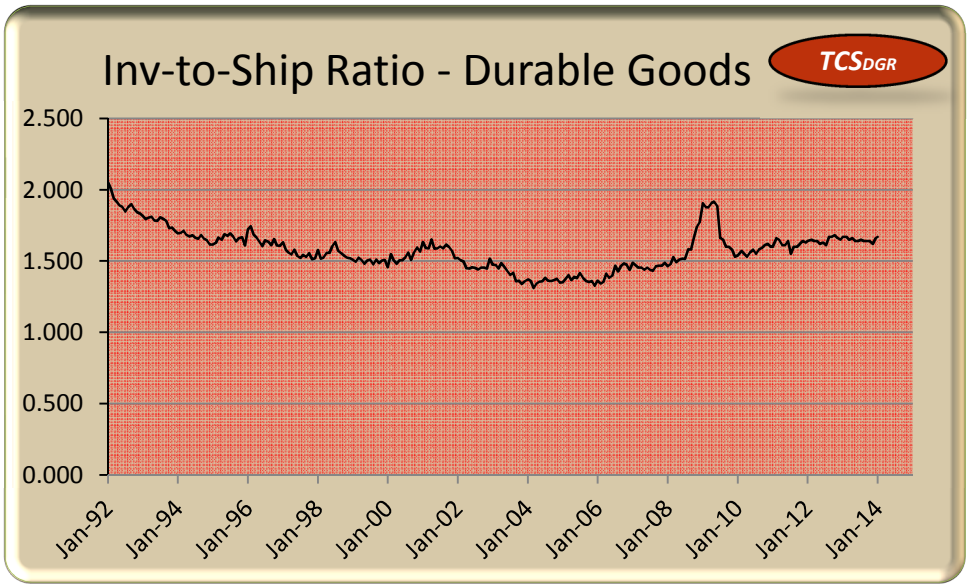
Shipments decreased 0.3% to $232.6 billion. With the book to bill ratio below 1 next month's numbers will need to be stronger to prevent further production cuts.

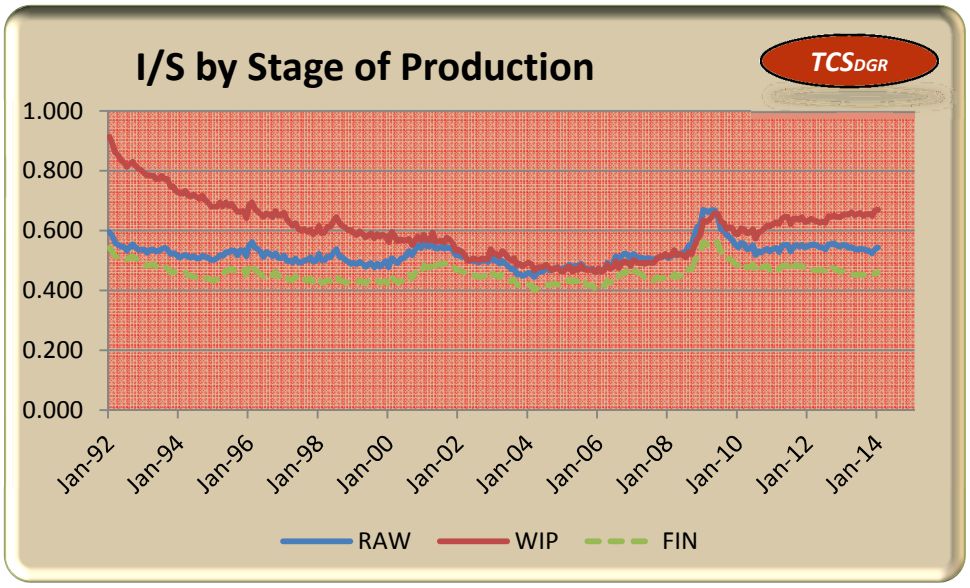


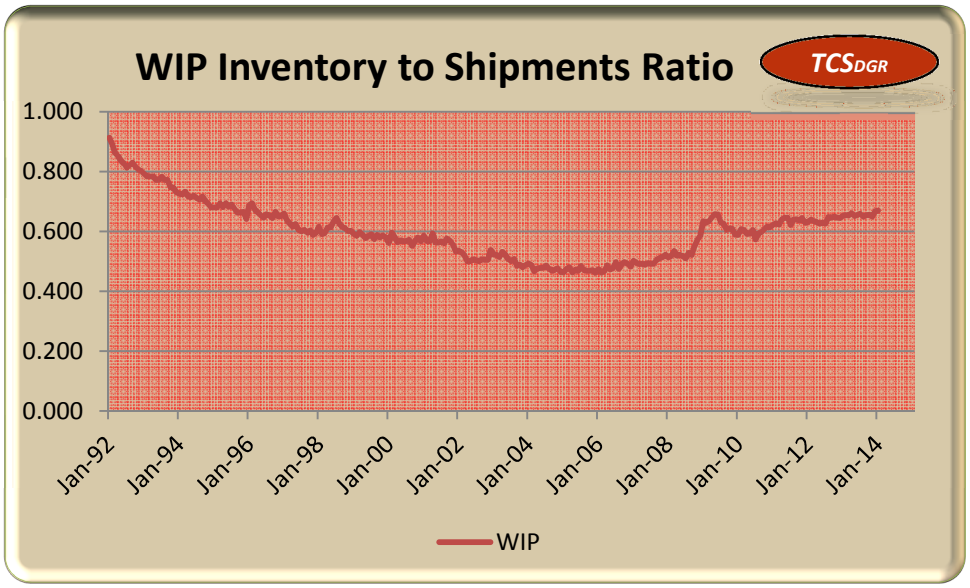
Unfilled Orders remained flat at $1.06 trillion. The ratio to shipments also remained unchanged at 6.5 months.

Inventory: Total inventory increased 0.3% to $389.1 billion. Inventory to shipment ratio increased to 1.67. The inventory problem continues to creep into warning territory.

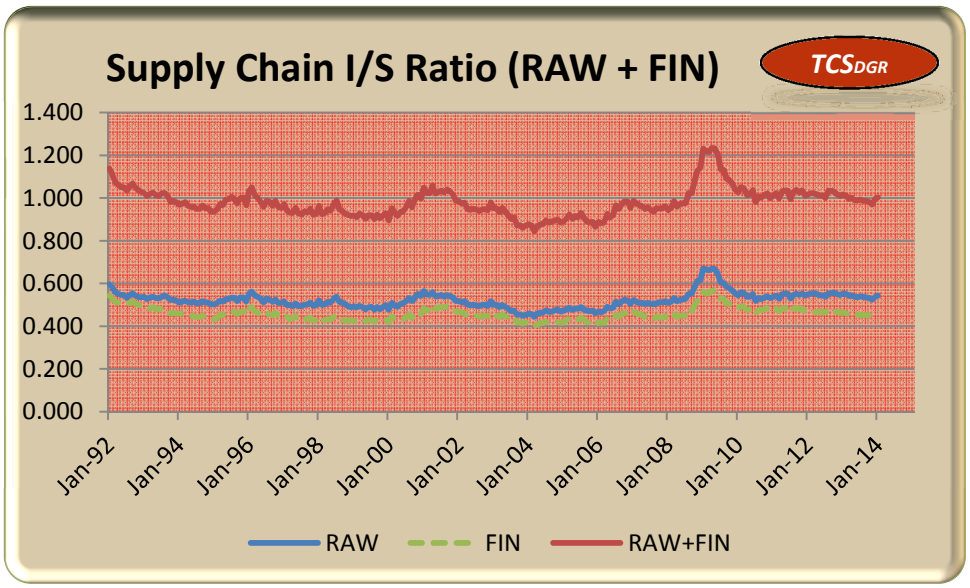








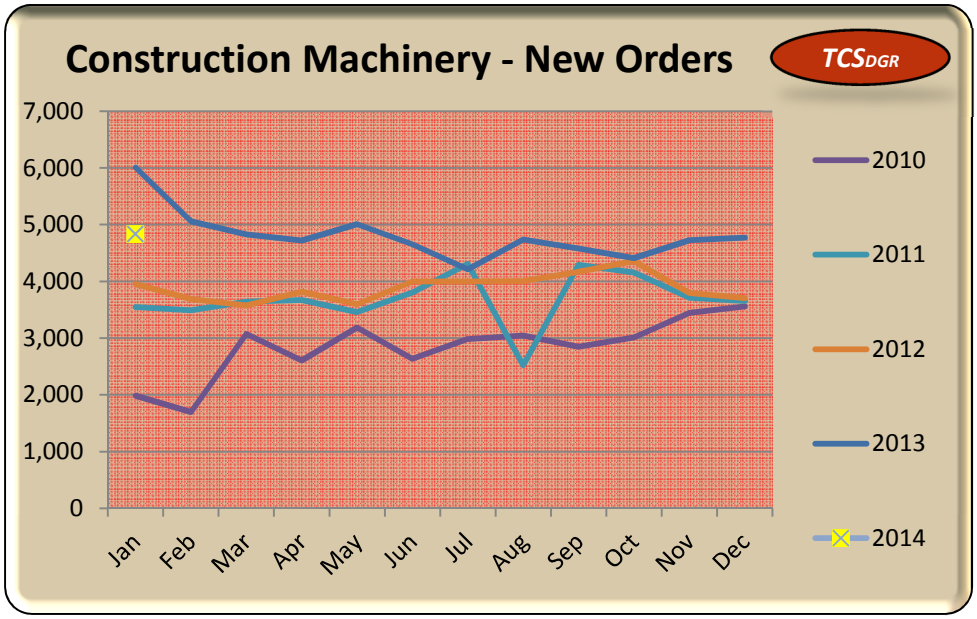
Since 2007 the factory inventory performance has eroded. The best indicator of factory velocity is the WIP inventory to shipments ratio. Higher WIP/Ship suggests lower velocity. This usually means higher costs.



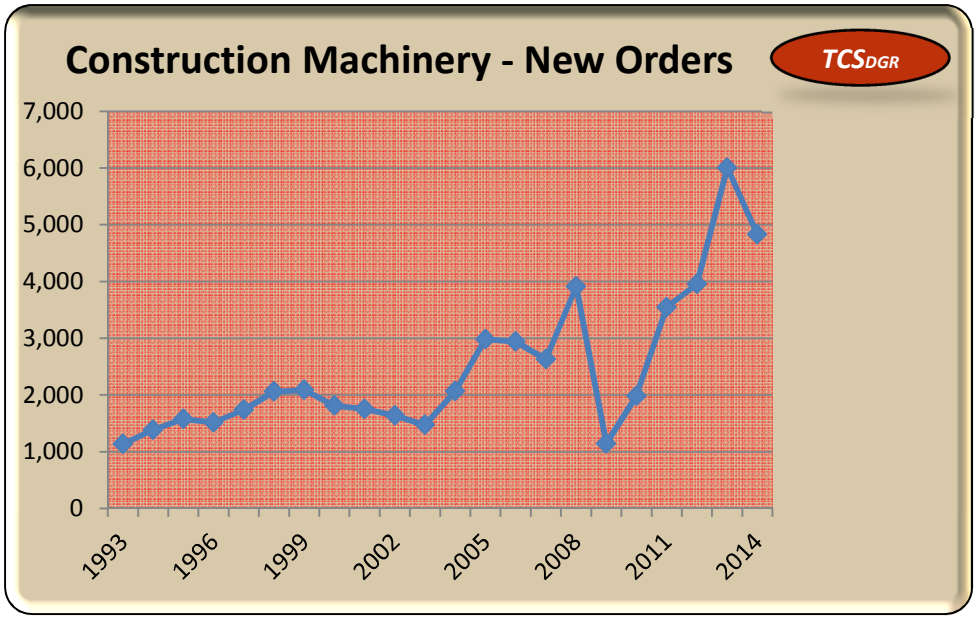
Supply chain velocity can be inferred by the sum of RAW plus Finished Goods inventory divided by shipments. In 1993 it took $1 of supply chain inventory to get $1 of goods to market. It still does. Despite all the talk about better supply chain management systems, there has been no progress in 20 years. Once again we prove that moving your inventory to a supplier's plant has no effect on total supply chain efficiency.

Durable goods sub sectors:

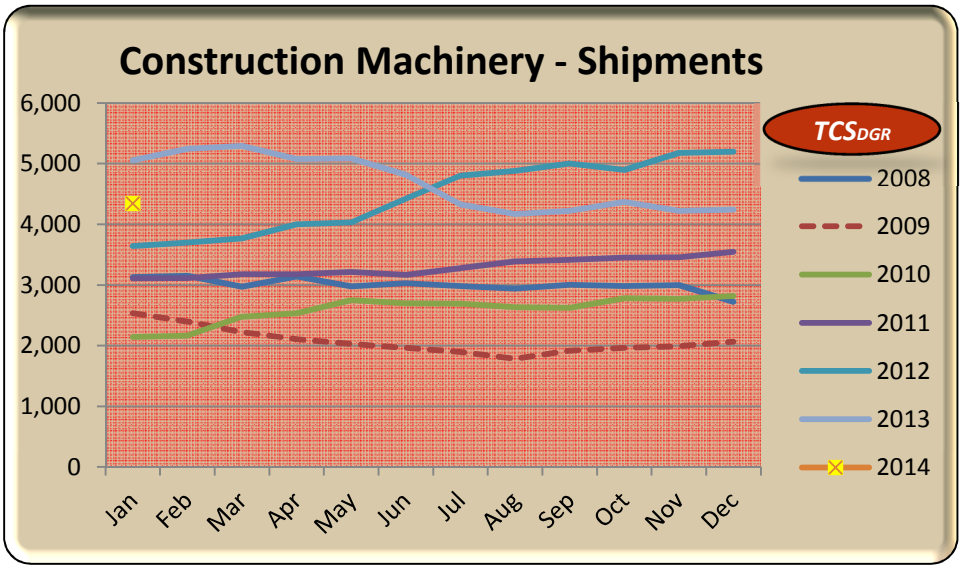
Construction machinery (NAICS 33C) new orders increased 1.2% to $4.8 billion, about 20% below last year. Unfilled orders increased to $12.3 billion, up from 11.2 billion last year and down from $17.1 billion 2 years ago.



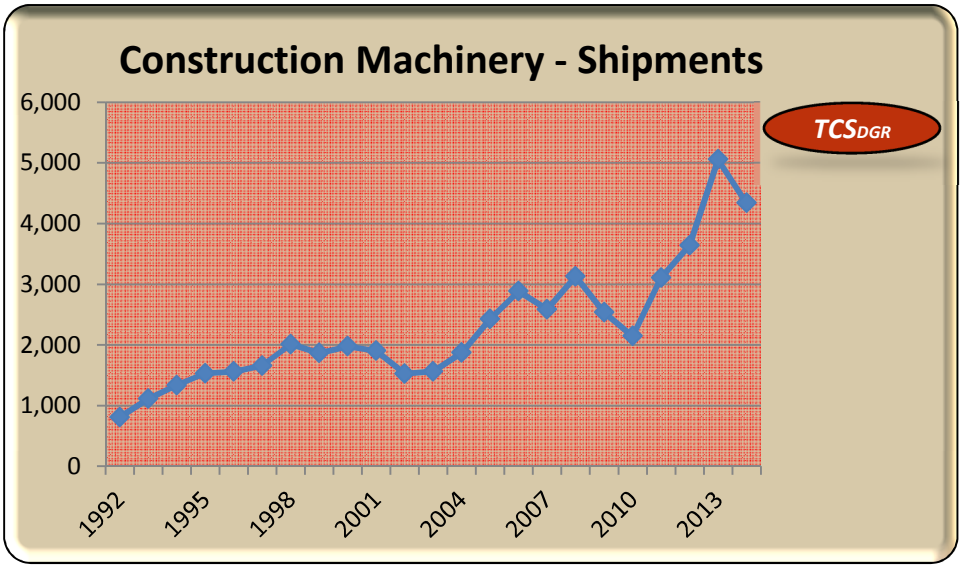
January New Orders – 1993-2014



Shipments increased 2.2% to $4.3 billion, well below last year's $5.1 billion, but below this month's order rate. The current book to bill ratio continues to suggest an increase in production rates soon.

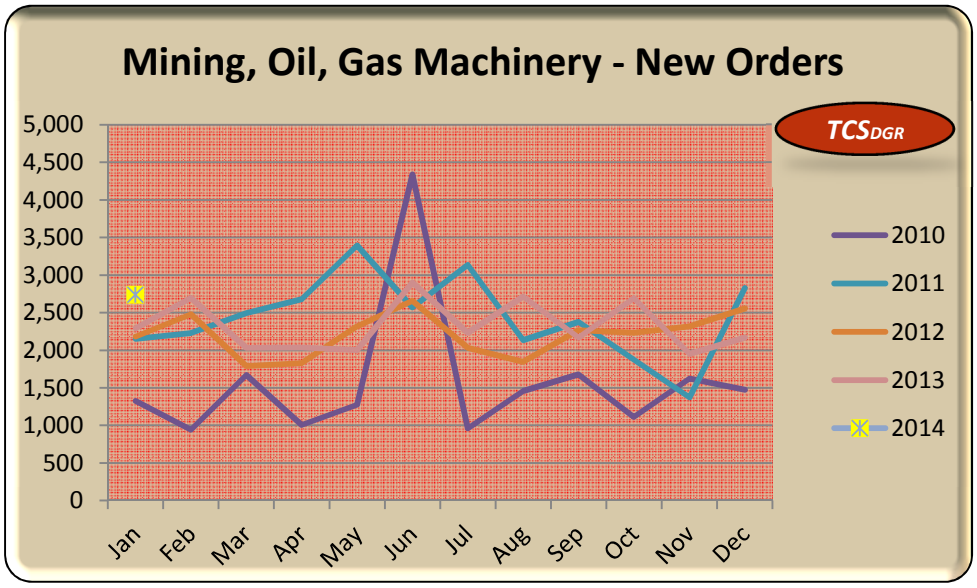


January Shipments – 1992-2014



The industry has had quite a ride since the bottom in 2010

Mining, oil and gas machinery (NAICS 33D) new orders continued the oscillating pattern, increasing 26% to $2.7 billion, a solid increase over last year and the continuation of the multi-year growth pattern.



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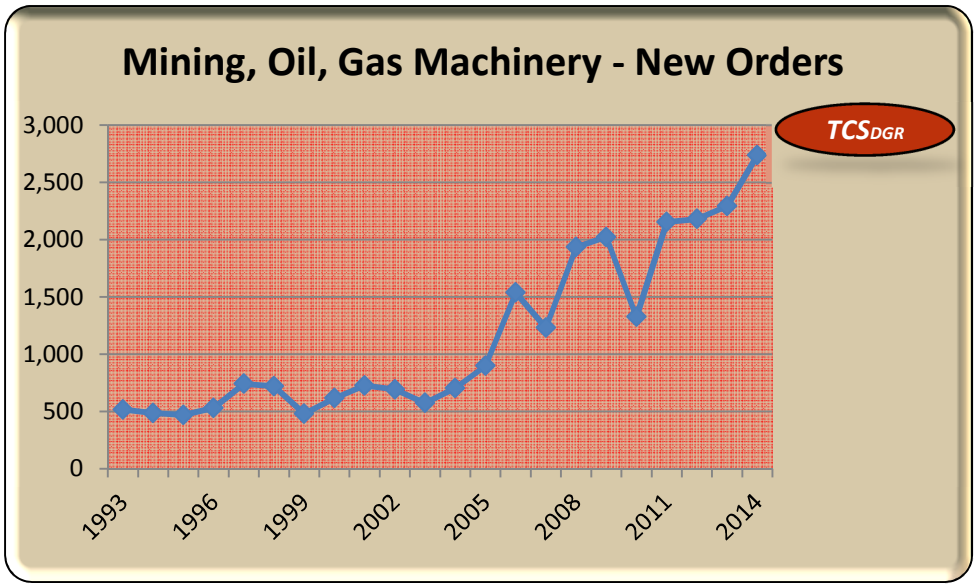
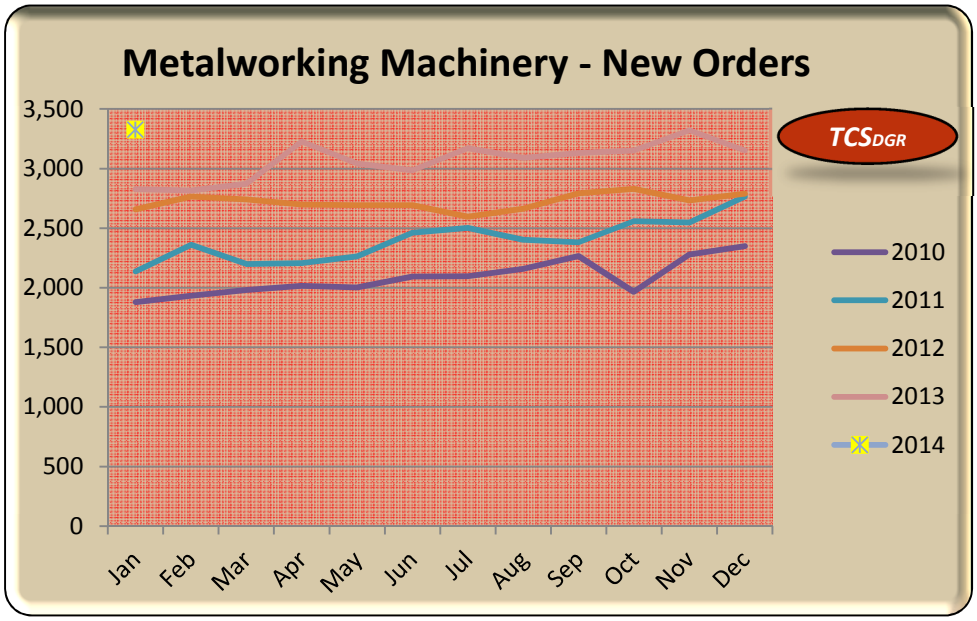
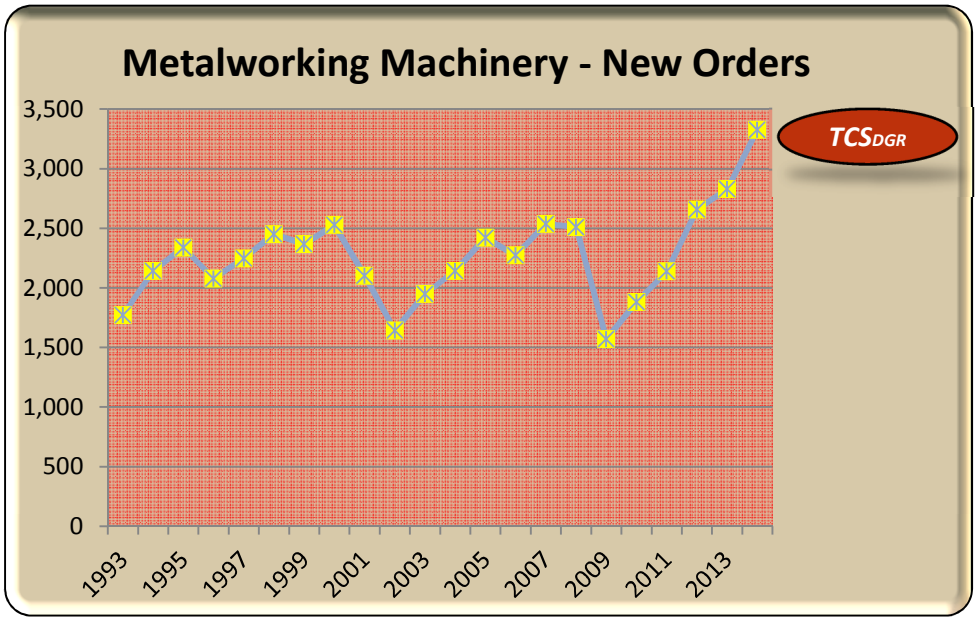


Metalworking machinery (NAICS 33I) new orders jumped 5.5% to $3.3 billion, and 6.4% above last year.

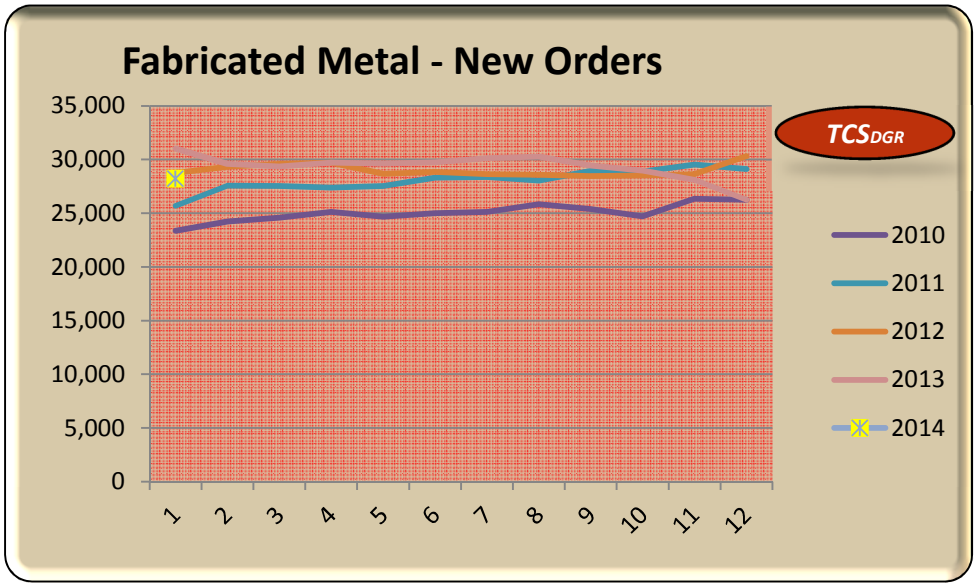


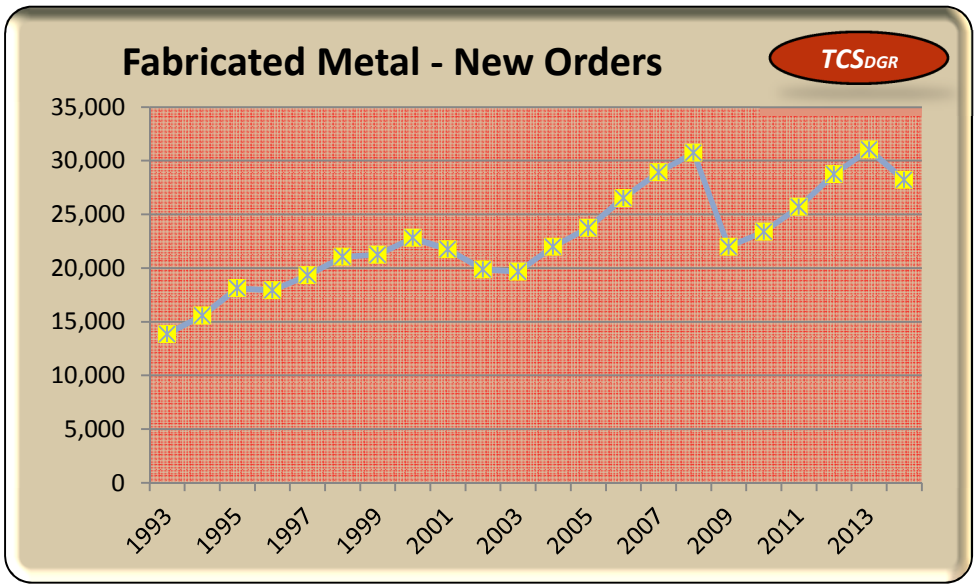
January New Orders – 1993-2014



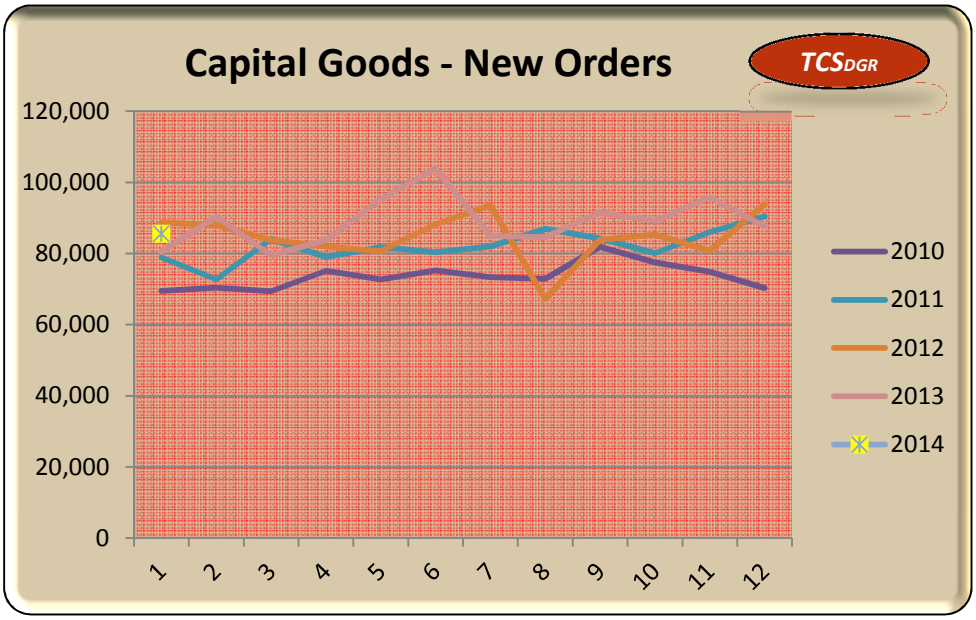
Best January performance in 20 years.

Fabricated metal (NAICS 32S) new orders increased 7.4% to $28.2 billion, but 9% behind last year.

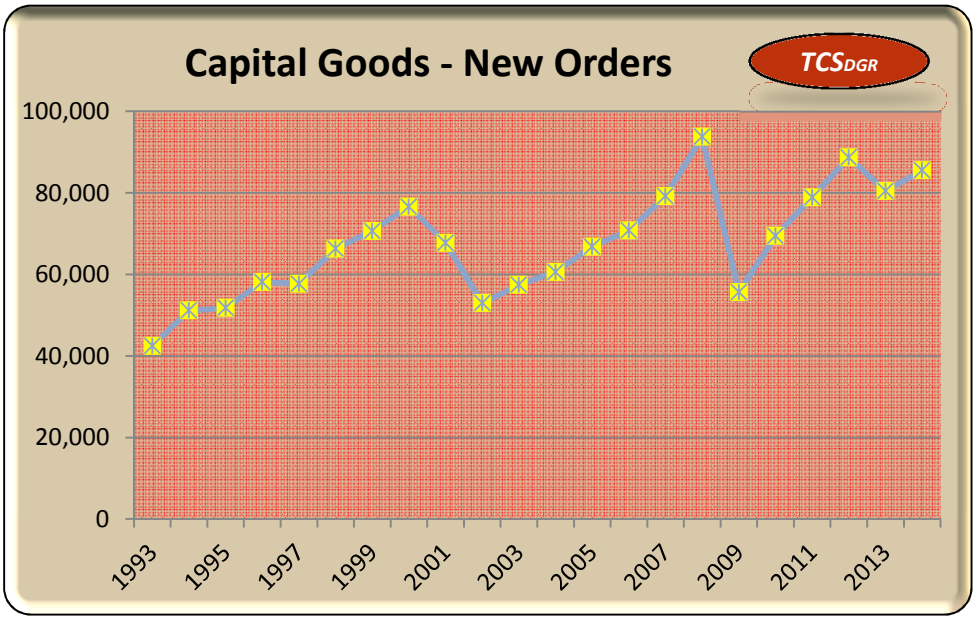




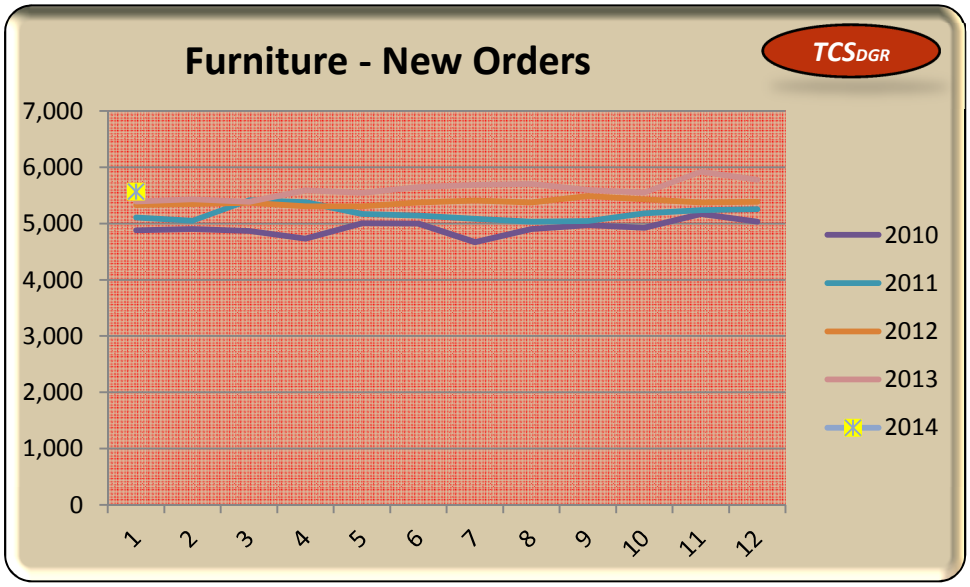
Capital goods (NAICS TCG) decreased 2.4% to $85.5 billion. This is 6.4% above last year.



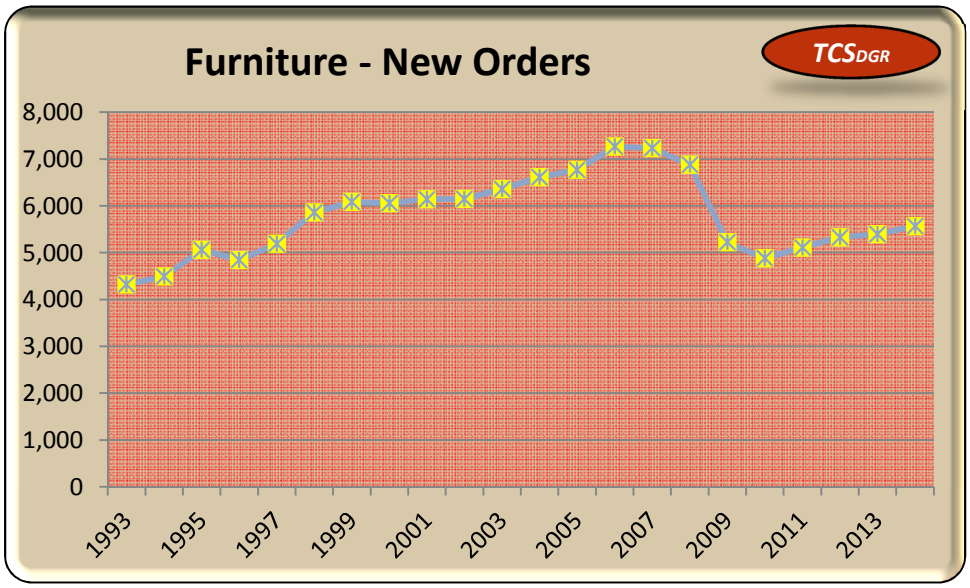
January New Orders – 1993-2014



Furniture: (NAICS 37S) New orders decreased 3.6% to $5.6 billion, 3.2% above last year.

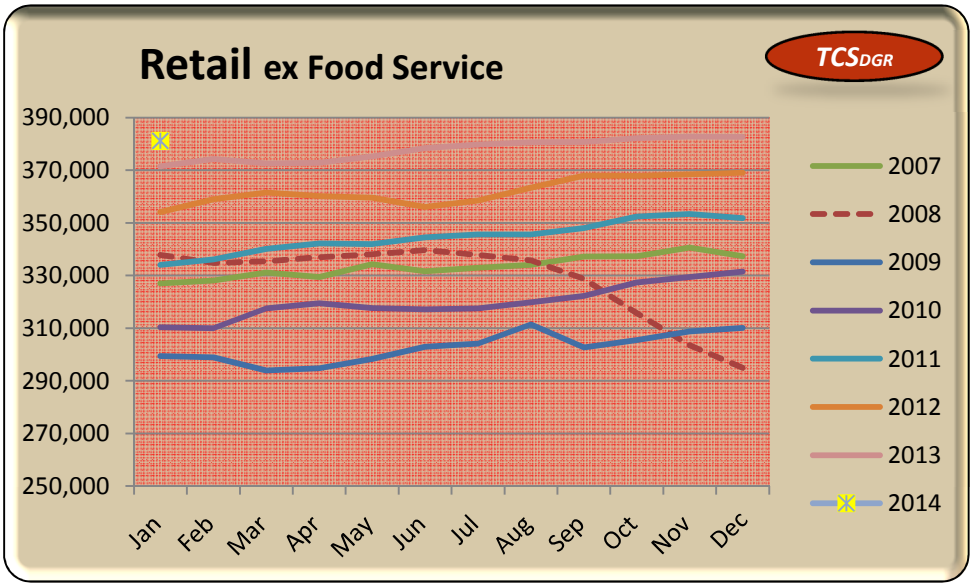


January New Orders – 1993-2014

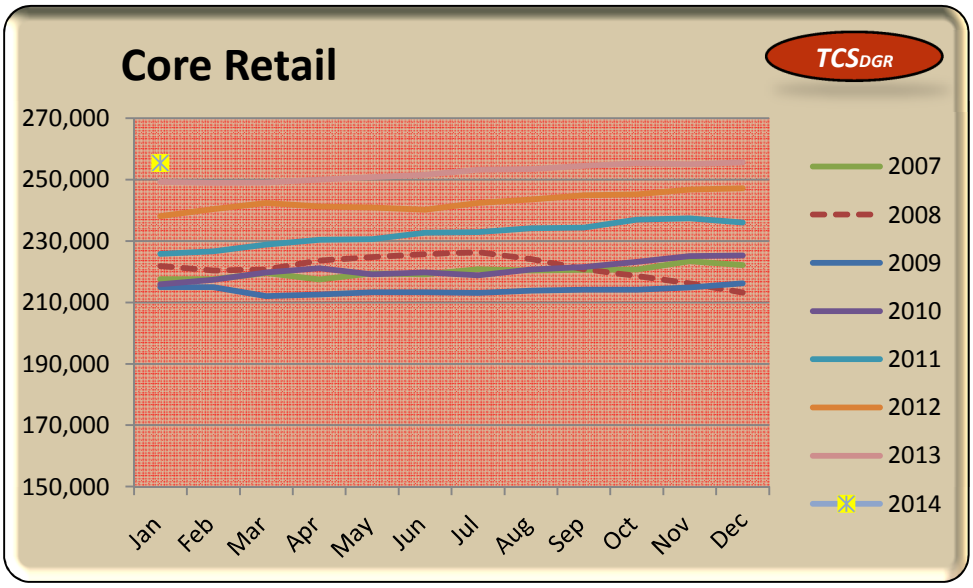


Retail Data (Advanced Release)

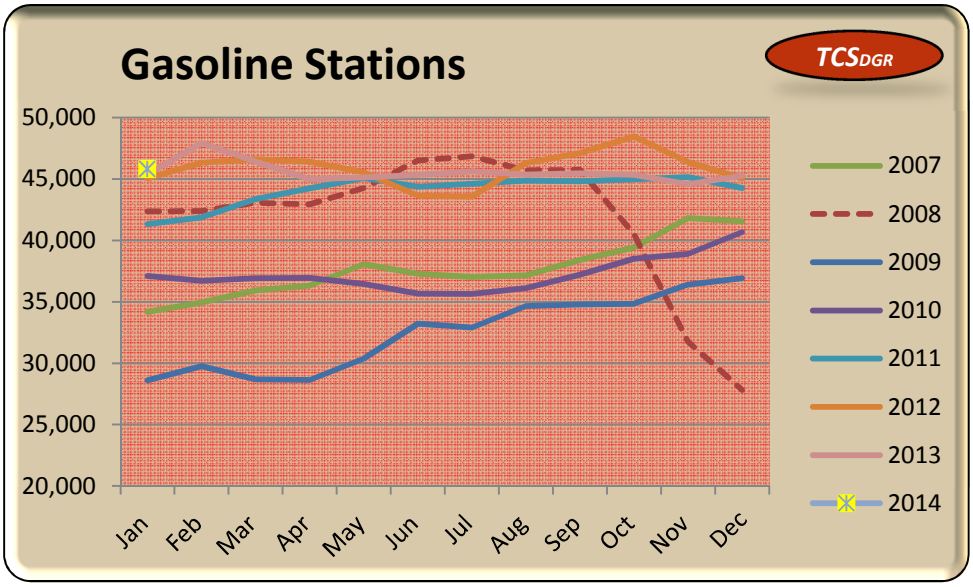
Retail Sales (excluding food service) decreased 0.4% to $381 billion. Current sales are 2.6% above prior year.



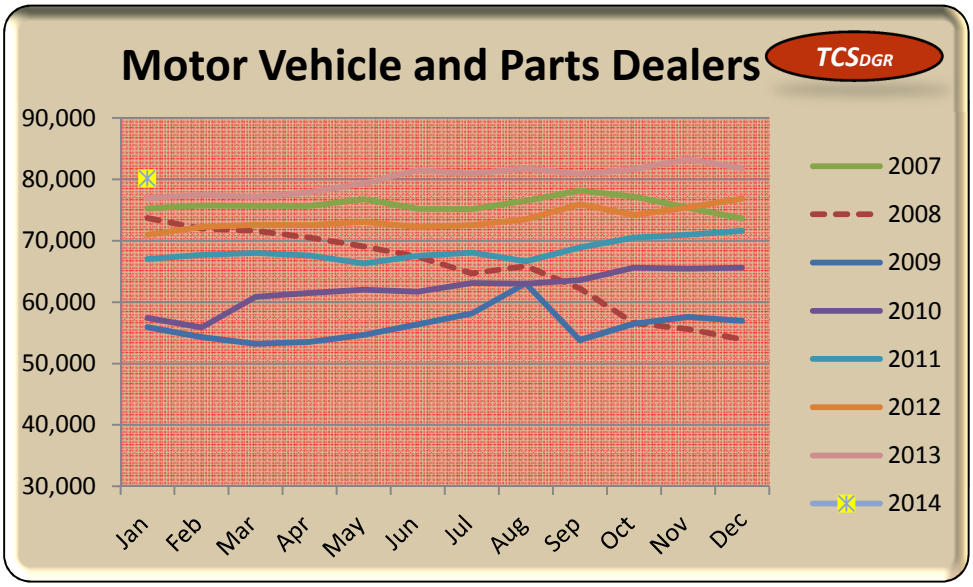
Core retail (excludes food service, gasoline, autos and parts) decreased 0.1% to $255 billion. Current sales are 2.4% above prior year.



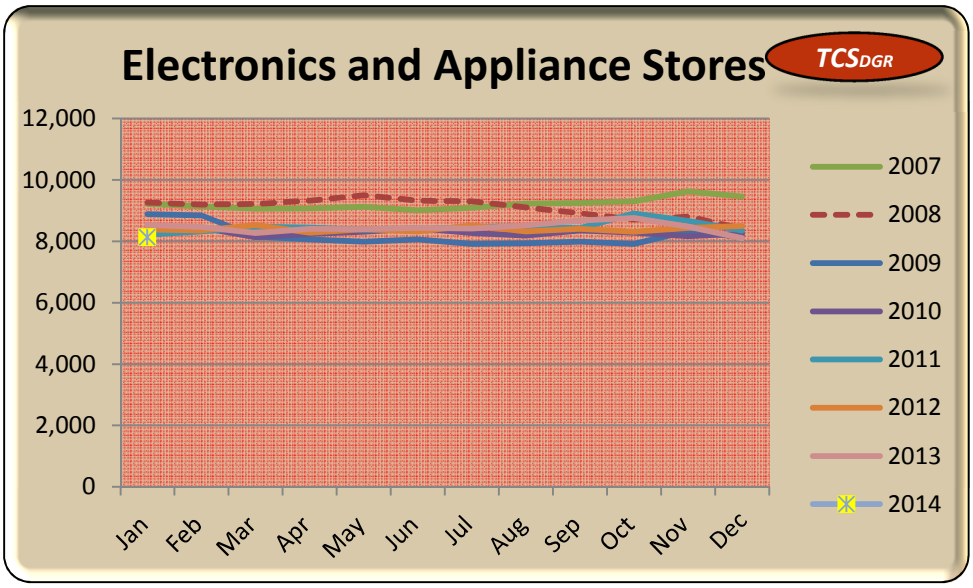
Gasoline sales increased 1.1% to $45.8 billion. Current sales are 1% above prior year.



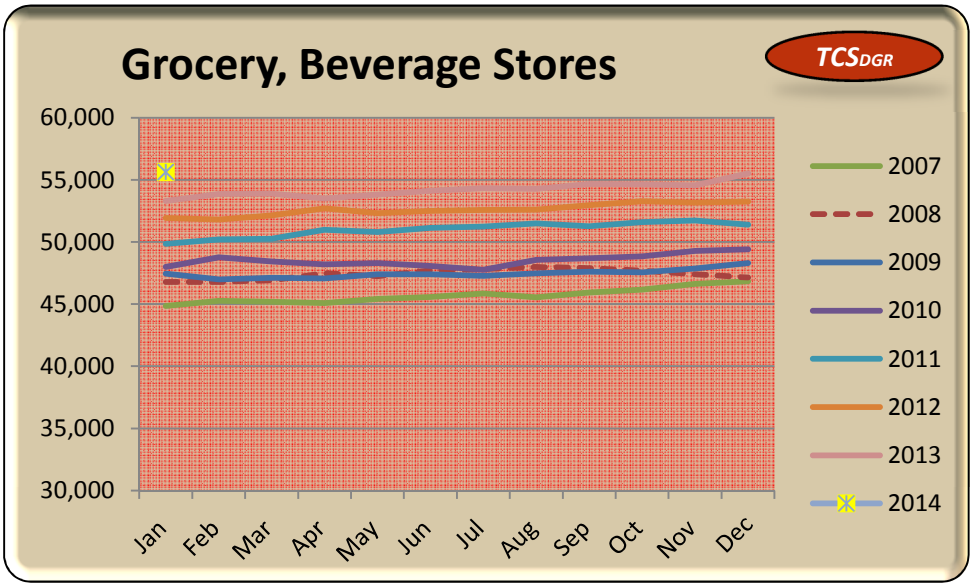
Auto and Parts sales dropped 2.1% to $80.1 billion. Current sales are 4.1% above prior year.



Electronics and Appliance Stores sales decreased 0.4% to $8.1 billion. Current sales are 4.7% below prior year.



Grocery and Beverage stores sales increased 0.2% to $55.6 billion. Grocery sales are 4.3% above prior year.



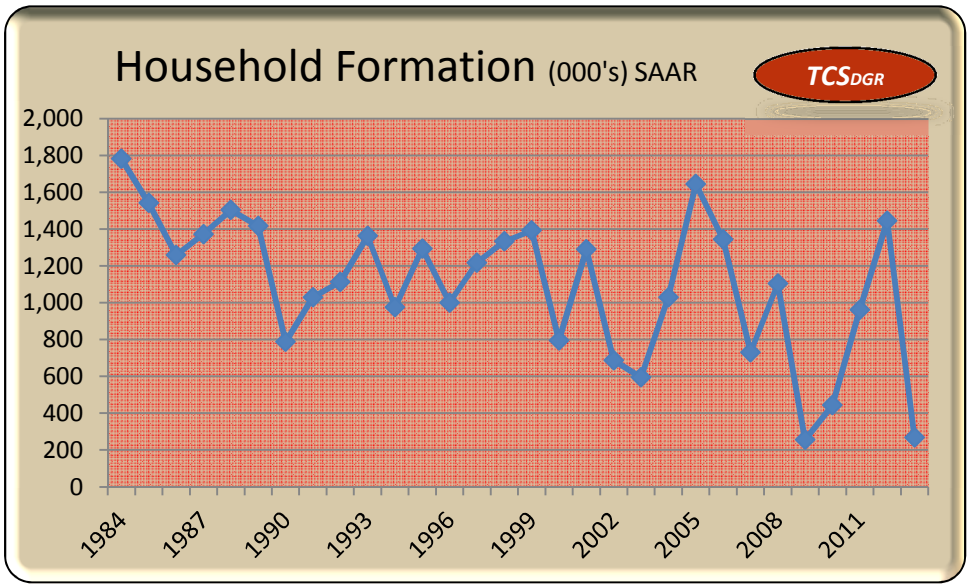
Housing:

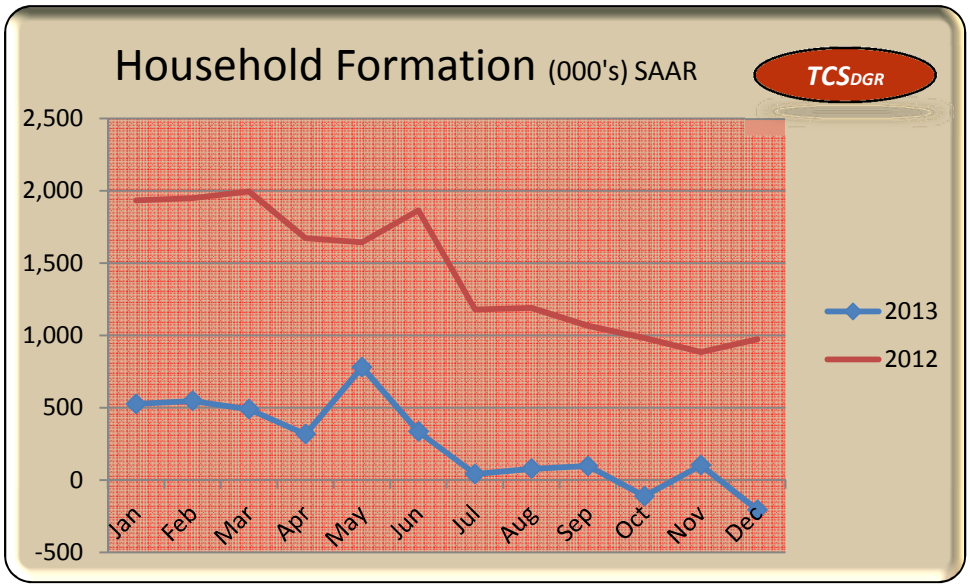
Total starts dropped 16% to 880,000, 2% below prior year. Single family starts dropped 15.9% to 573,000, 6.7% below last year.

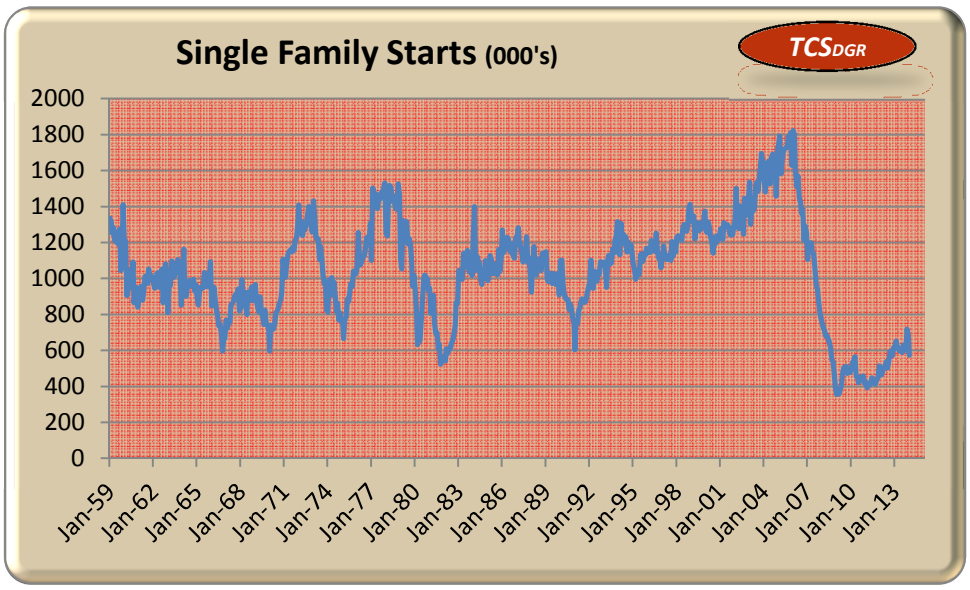
Single family sales increased 9.6% to 468,000. Inventory of unsold single family homes increased 7.6% to 184,000.

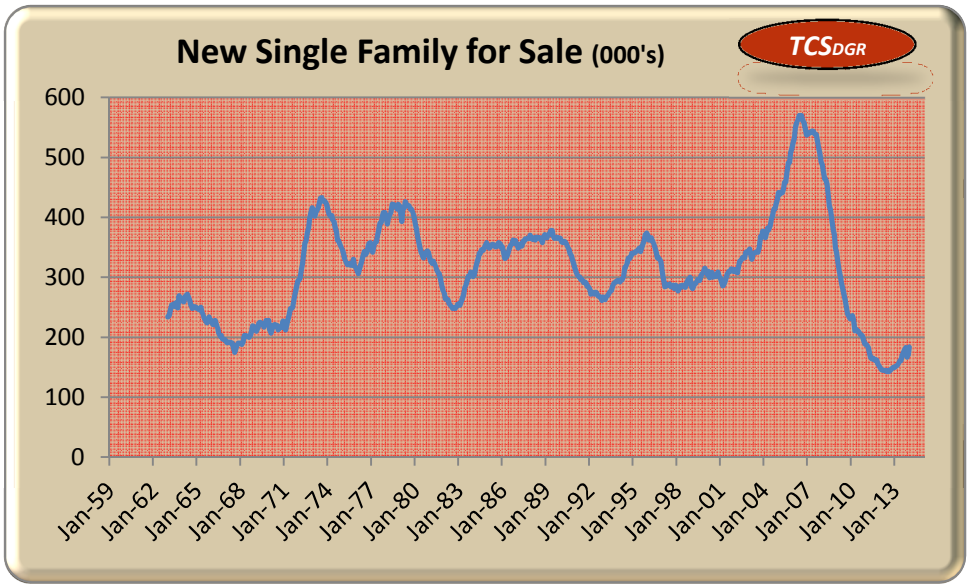
Median sales price (3MMA) increased 1.8% to $267,100 - 8% above last year.

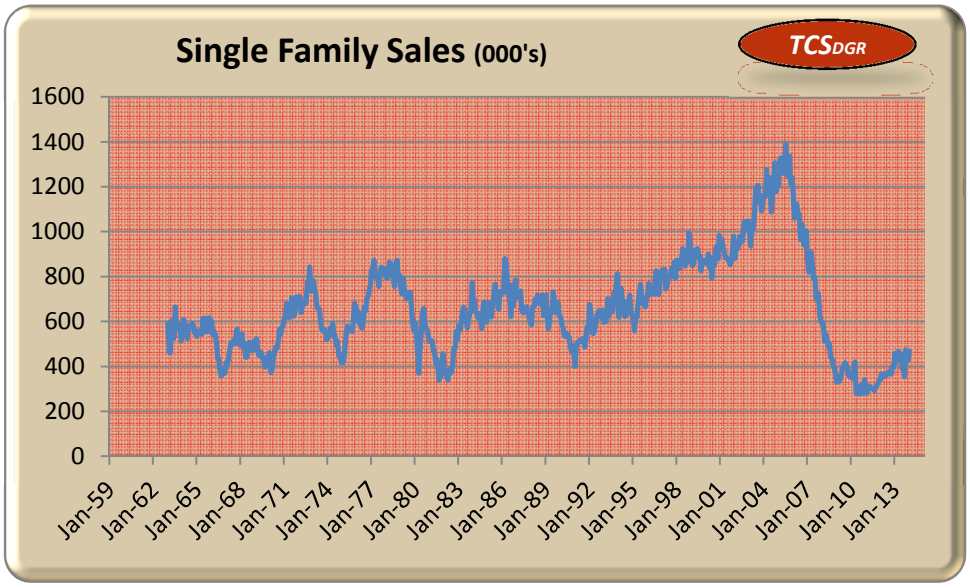
We have no new data on the troubling new household formation numbers. They are released quarterly and will next publish in late April. However the weakness in housing starts is consistent with the collapse of the past 6 months.

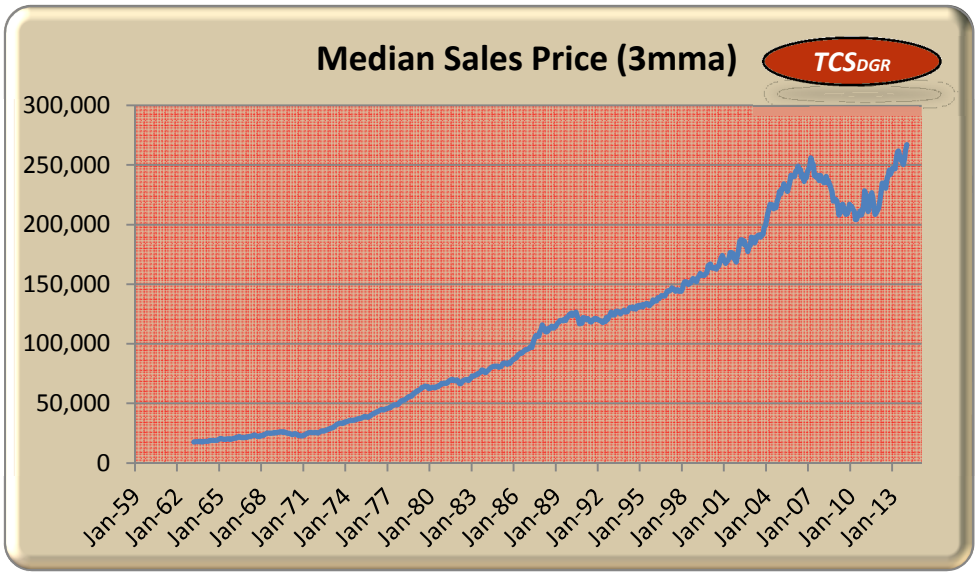












About Time Compression Strategies and the Durable Goods Report

TCS provides information technology and business process support to high performance organizations. Our focus is on manufacturing and telecom. Through our business partners we support health care, energy, retail 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 detailed or 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), an information technology and process improvement company serving manufacturing, distribution, and related infrastructure companies.

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 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 a "founding father" 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 analysis method for supply chain pricing, 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.

Time Compression Strategies Corp

www.tcsdb.com

jlayden@tcsdb.com