

The Durable Goods Report

March 2012

Executive Summary of the US Economy



Manufacturing Data Release of 3/4/2012 (January Preliminary)

Employment Data Release of 3/9/2012 (February Preliminary)

Retail Data Release of 3/13/2012 (February Advanced)

Industrial Production Data Release of 3/16/2012 (February Advanced)

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

John E. Layden

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By the Numbers

Durable Goods Key Measures			
	Current Mo	Prior Mo	Prior Yr
New Orders-Durable	206,925	214,960	200,974
12 month moving average	200,151		194,530
% Change from Prior Year	2.9%		
Growth Index - Durable New Ord	1.049	1.039	1.014
Unshipped Orders - Durable	917,943	912,507	829,569
% Change from Prior Year	10.7%		
Value of Shipments - Durable	207,997	207,200	190,912
12 month moving average	199,980		184,792
% Change from Prior Year	8.2%		
Growth Index - Durable Shipmts	1.031	1.031	1.023
Inventory - Durables	372,483	370,100	324,708
% Change from Prior Year	14.7%		
Inv to shipments ratio - Durable	1.79	1.79	1.60
US Economy Key Measures			
	This period	Last period	Change
GDP 2011 Q4	15,294.3	15,176.1	0.8%
Industrial Production Feb Data	2,501.2	2,499.7	0.1%
Capacity Utilization % Feb Data	78.7	78.8	(0.0)
Manufacturing %	77.9	77.7	0.1
Durable Goods %	77.6	77.4	0.2
Primary Metals %	79.1	79.9	(0.8)
Autos and Parts %	72.3	73.1	(0.9)
Machinery %	84.6	84.9	(0.4)
Durable Goods (\$Mil SA) Jan Data			
New orders	206,925	214,960	-3.7%
Shipments	207,997	207,200	0.4%
Inventory	372,483	370,100	0.6%
Unshipped Orders	917,943	912,507	0.6%
Retail ex Food Srv (\$Mil SA) Feb Data	364,382	360,448	1.1%
Autos and Parts	72,535	71,392	1.6%
Gasoline	46,875	45,383	3.3%
Core retail (ex auto, gas)	244,972	243,673	0.5%
Groceries	99,059	98,787	0.3%
Employment (000's SA) Feb Data			
Civilian employed (Household Survey)	142,065	141,637	428
% of potential workforce	58.6%	58.5%	0.1%
Civilian not employed (HS)	100,370	100,632	(262)
% of potential workforce	41.4%	41.5%	-0.1%
Non-Farm (Establishment Survey)	132,697	132,470	227
Private (ES)	110,711	110,478	233
Government (fed, state, local) (ES)	21,986	21,992	-6
Goods Producing (ES)	18,283	18,259	24
Manufacturing (ES)	11,891	11,860	31
Construction (ES)	5,554	5,567	-13
Durable Goods Mfg (ES)	7,434	7,403	31
Housing (000s of Units SA) Feb Data			
Total housing starts	698	706	-1.1%
Single family starts	457	507	-9.9%
Single family sales (new)	313	318	-1.6%
Single family for sale (new)	150	151	-0.7%

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US Economy:

Industrial Production

Industrial production was flat at \$2.50 trillion (excluding industrial supplies). February performance is now 5.9% above the same period last year.

Retail:

Retail sales increased 1.1% in February to a record \$364.4 billion (includes inflation effects).

Employment:

The employer survey showed an increase of 227,000 jobs in February. The household survey showed an increase 428,000. The % of the population working was 58.6%, up 0.1% from the prior month and up 0.2% from the prior year.

Durable Goods:

Durable goods new orders decreased by 3.7% to 206.9 billion in January. Inventory positions have stabilized, but at high levels relative to sales.

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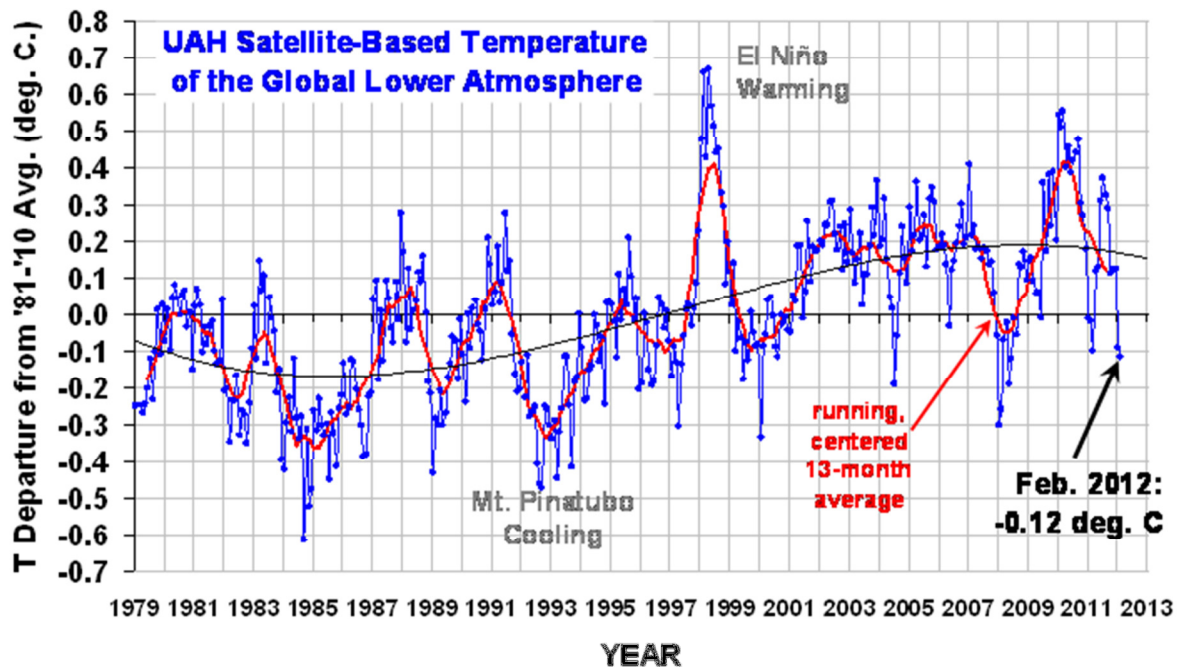
Random Thoughts:

- ENOUGH IS ENOUGH: Our intrepid reporters have discovered that half of all Americans fall below the median income. This must end! Congress must immediately call for a federal commission and send a stern letter to someone.
- And, as a matter of personal taste, how nice would it be if our politicians said a whole lot less? As Calvin Coolidge put it, “I don’t recall any candidate for president that ever injured himself very much by not talking.” Or again: “The things I never say never get me into trouble.” All our candidates could stand to learn that lesson.
- There are two theories on the administration’s motives on energy: 1) deep seated antipathy for America’s economic success, or 2) stupidity. Two observations on this debate:
 - o Since the outcome is the same, it’s almost impossible to prove either side of the debate.
 - o Since the outcome is the same, why do you care?
- Basic truths about energy:
 - o Wind, solar and ethanol are not sources of energy. It’s not about economic break even. It’s about thermodynamics. Their lifetime energy footprint is massively negative. You can’t subsidize away thermodynamics.
 - o Electric cars were abandoned 100 years ago because they only had a 40 mile range. After a century of technology they still have a 40 mile range.
 - o Hydrocarbon energy (coal, oil, gas) is unlimited for all practical purposes. It may be unlimited in a literal sense (replenished continuously in the mantle of the Earth).
 - o Nuclear is the only alternative to hydrocarbon energy. Thorium reactors are the best of the nuke systems.
 - o The only other alternate, hydroelectric dams, are mostly exploited and under attack for various side effects. This is the only energy source known to be renewable.
 - o Oil from algae is now technologically feasible, but still requires serious engineering work to be ready to scale. It isn’t as simple as skimming a pond. Check out www.algeaon-inc.com.
- Watching the global warming alarmist movement melt down is like trying to measure the denial in a room of losing politicians. They are losing the argument at every turn, but they continue to argue the losing points.
- Revolt over carbon tax in Australia. Queensland parliamentary elections: Labor party rout. From a majority of the 89 seat body to 7 seats. They no longer qualify as a major party and will need to rely on the good graces of

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another party for offices and staff. As Joannenova.com put it – a minivan has more seats than the labor party.

- Global average temperature is plummeting. All the warming of the 20th century was reversed in just two years. We are now below the average of 1979-2011 (period when satellite measurement first provided accurate direct measurement of a global average).



- Serious and unbiased scientists (not funded by government or the UN) are now talking openly about a mini-ice age as the probable future. The speculative discussions go further and talk about a possible end of the 11,000 year Holocene period. This unusually warm period saw the rise of all civilization.
- The latest documents exposed from Climategate (East Anglia University Climate Research Unit) clearly indicate 1) a conspiracy among scientists to avoid exposing factual information detrimental to their funding arguments, and 2) alleged criminal actions on the part of some of the participants.
- Willis Eschenbach has an interesting post up at [www.wattsupwiththat.com](http://wattsupwiththat.com). "Nothing is Sustainable" is a detailed dissection of the lunacy and arrogance of the "Sustainability Movement." He quotes an old sailors quip: The wind is free. Everything else is costs money.

<http://wattsupwiththat.com/2011/12/22/nothing-is-sustainable/#more-53518>

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- “Like the Aztecs, many climate scientists believe that sacrificial offerings are necessary to stabilize the climate.” But there are some key differences.
 - o Aztecs correctly believed that the climate was controlled by the moods of the Sun. Modern climate alarmists have yet to progress that far.
 - o Aztec priests believed that only a small percentage of the population needed to be sacrificed, whereas the modern climate priests believe that everyone (except for themselves) must be sacrificed.”
 - o <http://www.real-science.com/climate-scientists-learn-aztecs>
- Many books have been written on why big companies can't change. Most have preached about how big companies should go about change. Robert X. Cringely offers a different perspective that's worth your time.

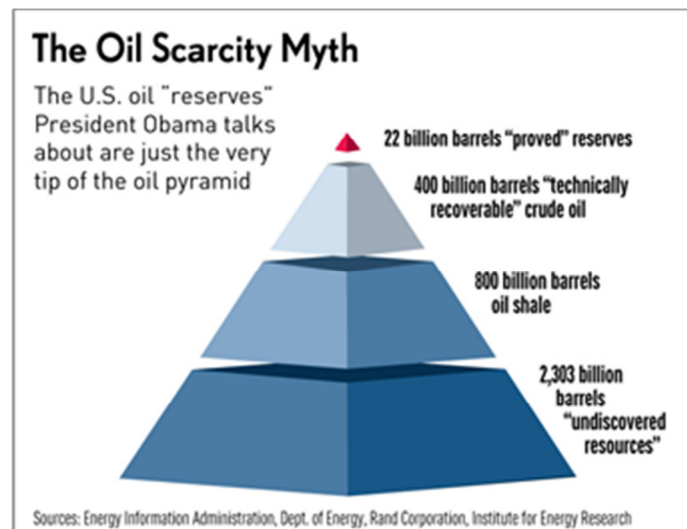
http://www.cringely.com/2011/12/why-big-companies-cant-change/?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+ICringely+%28I%2C+Cringely%29

- I would offer a different view. The role of startups is to inject creativity into business. Most of them fail. Usually because the idea was irresistible to the founders, but easily resisted by customers. The primary role of big companies is to take the ideas of successful startups and make them efficient (that means maximize profits). Asking startups to be efficient and big companies to be creative confuses their natural role. Like teaching a pig to sing. You'll get covered with mud and badly irritate the pig.
- Very few companies make the transition from startup to big company. Very few large companies are able to isolate and encourage the two incompatible mindsets required. The better solution is for the big companies to acquire the successful start-ups when they get to the transition points. That's how it usually works. And that's what maximizes growth in the economy.
- Some point to GE as an example of a big company that managed to be creative. I disagree. GE is a shell through which pass numerous other companies that had previously managed to grow to useful proportions. When they fail to grow or start to decline, GE simply sells them off.
- 5.1 vs. 3.5% savings rate vs. last year. Savings has grown and investment has lagged. Puts upward pressure on financial assets, stocks, etc.
- As the climate fraud has become a losing debate, the politicians have changed the subject. Now it's all about energy. “We only have 2% of proven reserves and use 25% of the world's energy.” This argument is completely false. The two numbers are offered as comparatives when in fact they have

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different denominators. This is an egregious math error that should have been taught in 7th grade.

- The proven reserves are only those in production. Until a field goes into production it can't be proven, i.e. its production rates can't be known. We've had the same amount of proven reserves since I first checked in 1970.
- If you add proven, technically recoverable, and estimated reserves together the US has more oil and natural gas than any other nation on Earth. Hundreds of years of supply. See the chart below.



- Sometimes congress gets it right. After exhausting all other possibilities. Now if they would only get rid of the requirement of using ethanol as a gasoline blending agent.

<http://pjmedia.com/lifestyle/2011/12/26/subsidies-on-domestic-ethanol-tariffs-on-imported-ethanol-end/>

- China's economy is heading for a hard landing. The idea that you can pump up your GDP by building infrastructure that has no productive purpose should be classed with perpetual motion, fairy dust and unicorn poop energy.
- German banks are closing US customers' investment accounts because they say financial reporting requirements by American authorities are just too onerous. According to the Financial Times Deutschland (FTD) newspaper, HypoVereinsbank is the latest financial institution to tell US citizens and all its clients residing in the United States that it is closing their brokerage accounts. Deutsche Bank already made the move earlier this year and Commerzbank has said it is studying whether to do the same, FTD reported. Elsewhere in

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Europe, both the British HSBC and Credit Suisse have said they won't take Americans' investment business anymore. ...

<http://www.thelocal.de/money/20111215-39519.html>

- Environmentalists Michael Shellenberger and Ted Nordhaus famously proclaimed “The Death of Environmentalism” in 2004. Now they're back with an ambitious new collection of essays titled Love Your Monsters: Postenvironmentalism and the Anthropocene. Their goal is to dismantle the neo-Malthusian environmentalism of sacrifice and collapse and replace it with a new environmentalism that celebrates human creativity and technological abundance.
- Peter Diamandis has an interesting presentation on the TED website talking about abundance. I highly recommend it. He points out that the industrial society and energy prosperity of the past 100 years has produced the following miracles:
 - o Life span increased 2X
 - o Per capita income increased 3X
 - o Childhood mortality reduced 10X
 - o Food availability increased 10X
 - o Electricity availability increased 20X
 - o Transportation time reduced 100X
 - o Communication time reduced 1000X
 - o The longest period of relative peace in the history of the world.
- People who resist industrial progress tend to fall into several camps:
 - o Neo-Malthusian: We're running out of everything – it's a crisis. (Chicken Little was a member).
 - o Panderers: Easier to get elected on the back of a crisis.
 - o Environmentalists: Humans despoil the pristine Earth. Return to a time of 10,000 humans.
 - o Control: Want to centrally control how you make decisions. Some want to centrally process all the money in the economy since they can get rich just handling it.
- The president says he wants millionaires to pay a minimum tax of 30%. But the current rate on ordinary income of \$1 million is 35%. Does that mean he wants to reduce their tax rate? Not a chance. Millionaires usually reduce their overall tax rate by taking advantage of the 15% capital gains rate or by municipal tax exempt bonds. To get their average up to 30% will require higher taxes on investment income. Guess who that hurts most? Middle class 401k savings will take the biggest hit.
- Current business taxes in the US are the highest in the world.

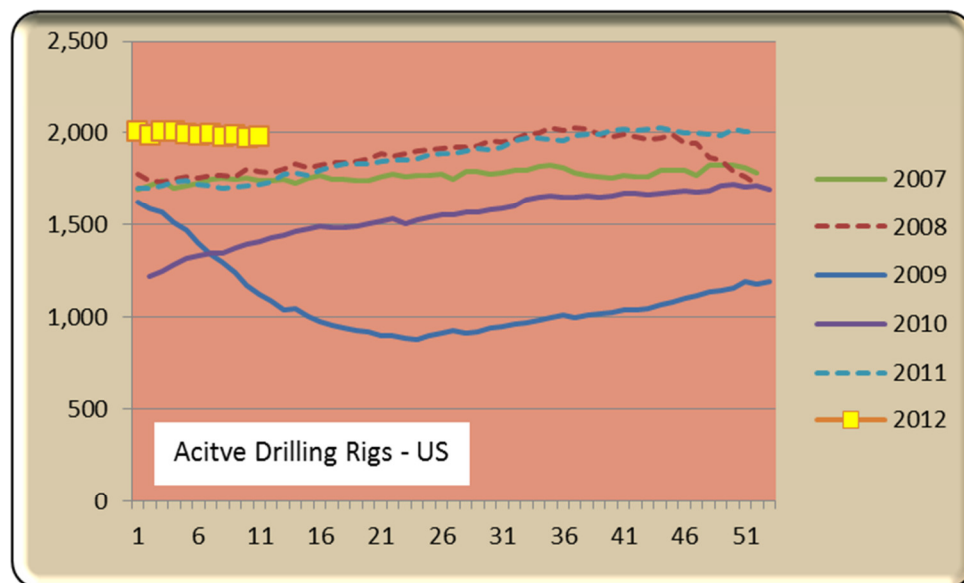
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- Apple has more than 60 billion in cash offshore. They indicate that they will never bring it back to the US because the tax rates are too high. That means more investment (read jobs) outside the US.
- Ruger Firearms company has received orders of over 1 million units since the first of the year. They have stopped accepting orders until the end of May.
-

Energy:

Drilling activity in the US remains steady at just under 2,000 active rotary rigs. Offshore activity has plummeted, but land based drillers have than taken up the slack.

Drilling on federal land has plummeted by 35 to 50%. In Alaska where almost all drilling is on federal land, the drill rig fabricator shops are almost empty. One of our most productive energy resources is being throttled by the failure of the government to issue the necessary permits.

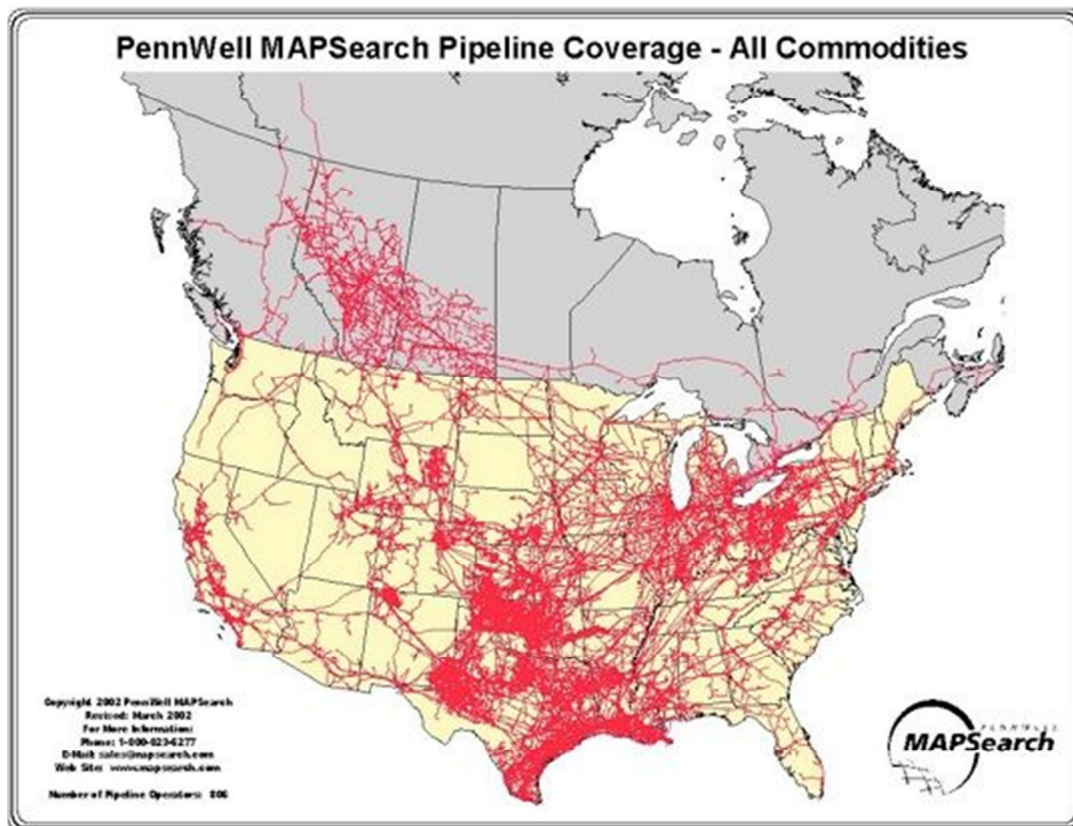


The negative effect of the Keystone Pipeline decision by the administration will be telling in future years. The Canadians have now signed contracts with the Chinese. Our best, cheapest and most secure energy import partner is being slowly throttled by the neo-Malthusian lunacy of the "Sustainability Movement." The current administration is held hostage to this movement.

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The argument is that there is a need to study the safety of pipeline transport of petroleum products. They claim that there is too much undefined risk of environmental damage. The following is a map of petroleum pipelines in the US and Canada. In the 70 year history of this industry, how much environmental damage has been done? What is it that we don't yet know? What portion of that will one more study discover?

This is just one more delay attempt by the Green Movement (the remnants of the Communist Party in Europe, Radical Environmentalists in the US). All of life contains some element of risk. That's why the law has operated on the basis of torts since the Anglo Saxon migration to Britain in the fifth century. If you cause damage you are held liable. But you are not punished in advance for something you haven't done yet. This technology has been proven safe over nearly a century.



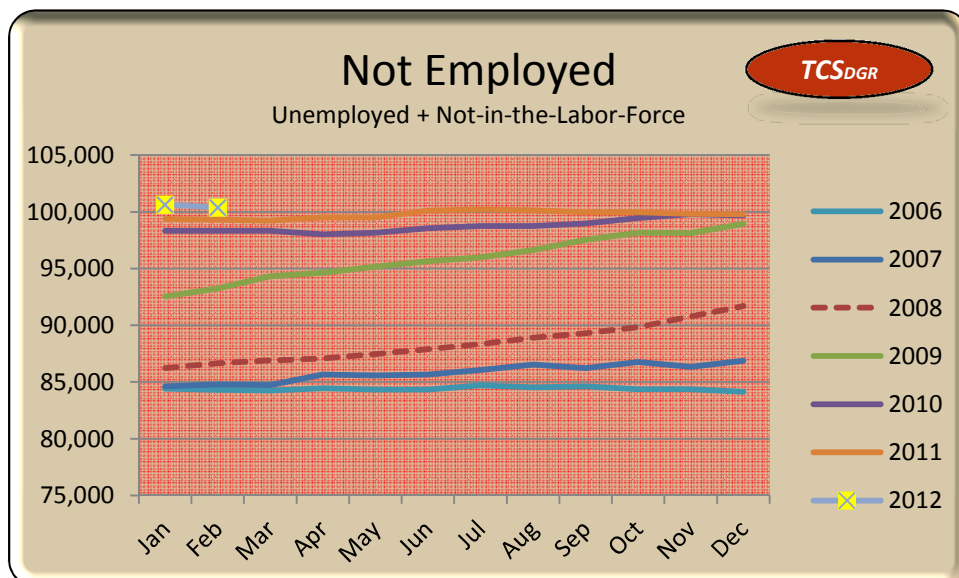
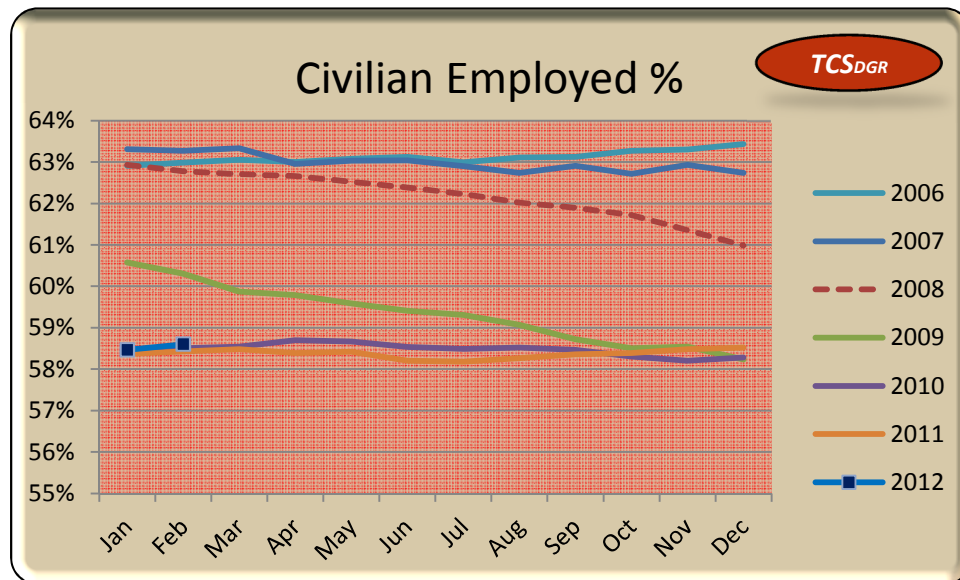
Employment:

Note: The Bureau of Labor Statistics conducts two surveys on employment. The Establishment Survey of Payroll Employment tracks large institutions. The Household Survey or Population Survey tracks a broad cross section of the US population. The Durable Goods Report places primary emphasis on the

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Household Survey as the most accurate overall picture. Industry employment breakdowns come from the Establishment Survey. Further DGR does not track the unemployment rate. It is a nearly irrelevant number. The total employment and % of population employed are the relevant indicators of economic health.

The headlines talked about the number of jobs created. But the number isn't important. It's the % of the US population employed that matters. That number moved up by 0.1% to 58.6% and remains near the lowest point since the great depression. The reciprocal says that 41.4% of the population did not work at least one hour in the survey period. The high water mark was about 64% employed at the beginning of 2007.



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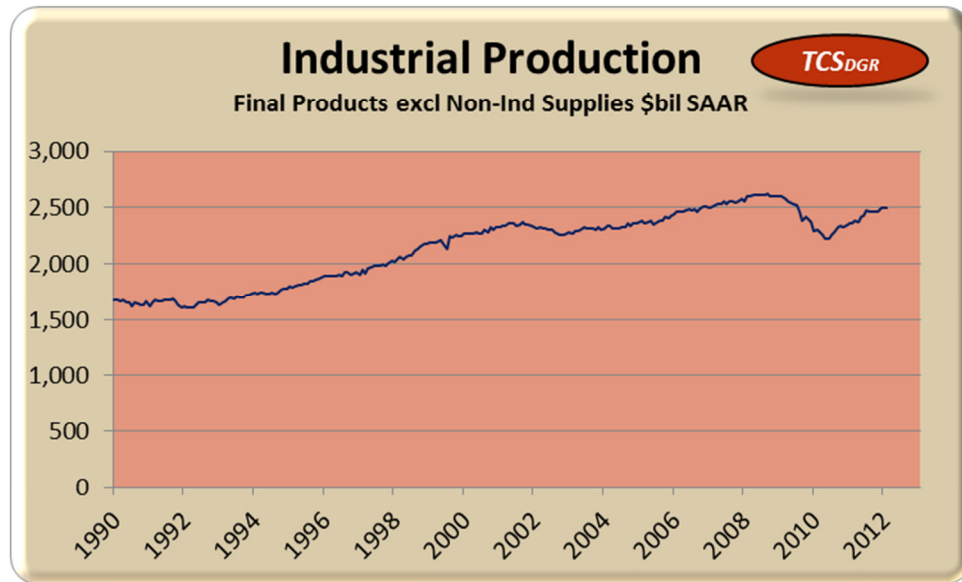
The number of people not employed (unemployed + not looking) declined slightly from the record high in January. In the past few months we have seen more than 100 million not employed. This has never happened before in US history.

The table below shows the complete picture. Total working age population has grown by 1.99 million (includes year-end adjustments) over the past three months. Of that population, 1,451,000 people entered the employed workforce and 543,000 entered the ranks of the not employed. The % of the population employed is 58.6%. A year ago it was 58.4%. In January of 2007 it was 63.3%. At this rate of improvement we will return to 2007 in 23 years.

February, 2012				
(000's)	This Month	3 Months Ago	12 Months ago	Jan-07
Employed	142,065	140,614	139,551	146,028
Not Employed	100,370	99,827	99,300	84,622
Total Pop	242,435	240,441	238,851	230,650
Total non-institutional population over 16				
Change in Number (000's)	vs. Prior month	From 3 Months Ago	From 12 Months Ago	From 1/1/2007
Employed	428	1,451	2,514	(3,963)
Not Employed	(262)	543	1,070	15,748
Total Pop	166	1,994	3,584	11,785
% of Population	This Month	3 Months Ago	12 Months ago	Jan-07
Employed	58.6%	58.5%	58.4%	63.3%
Not Employed	41.4%	41.5%	41.6%	36.7%

Sector Detail

Industrial Production (excluding industrial supplies like energy) increased by 0.1% in February. We are now 5.9% above the same period last year. This recession has been the worst on record. The recovery is not going well.



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Industrial Production - final products \$b SAAR				
Year	Mo	Ind Prod - Value of Prod	Chg from Prior Pd	Chg from Prior Year
2010	1	2286.3	-3.8%	-12.2%
2010	2	2304.5	0.8%	-11.6%
2010	3	2281.4	-1.0%	-11.4%
2010	4	2262.7	-0.8%	-11.2%
2010	5	2225.8	-1.6%	-12.4%
2010	6	2219.2	-0.3%	-12.5%
2010	7	2258.7	1.8%	-10.3%
2010	8	2286.1	1.2%	-7.2%
2010	9	2324.6	1.7%	-2.2%
2010	10	2338.3	0.6%	-3.3%
2010	11	2324.4	-0.6%	-3.1%
2010	12	2339.5	0.6%	-1.6%
2011	1	2359.3	0.8%	3.2%
2011	2	2361.5	0.1%	2.5%
2011	3	2383.6	0.9%	4.5%
2011	4	2374.4	-0.4%	4.9%
2011	5	2422.8	2.0%	8.8%
2011	6	2428.2	0.2%	9.4%
2011	7	2470.9	1.8%	9.4%
2011	8	2464.9	-0.2%	7.8%
2011	9	2465.2	0.0%	6.0%
2011	10	2463.7	-0.1%	5.4%
2011	11	2459.5	-0.2%	5.8%
2011	12	2493.1	1.4%	6.6%
2012	1	2499.7	0.3%	5.9%
2012	2	2501.2	0.1%	5.9%

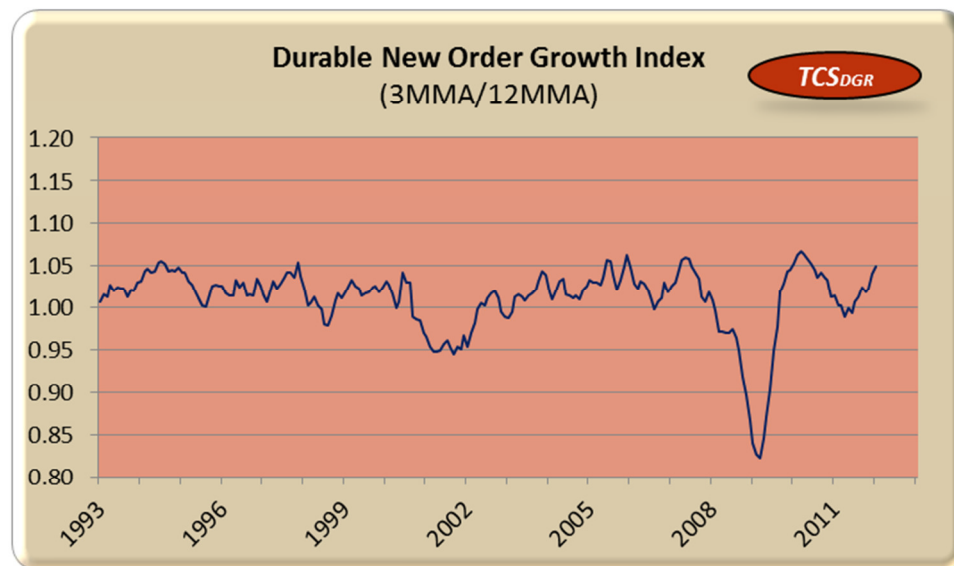
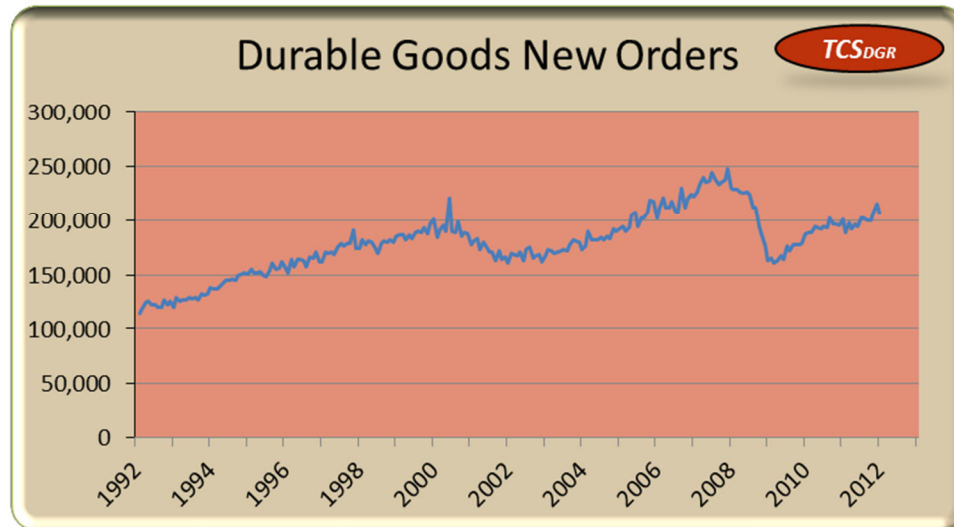
Capacity Utilization (February): Capacity utilization for industrial production remained constant at 78.7%. The primary metals sector declined markedly by 0.8% to 79.1%.

Other sector performance: Manufacturing up 0.2% to 77.9%; Durable goods up 0.2% to 77.6%; Autos down 0.8% to 72.3%; Machinery down 0.3% to 84.3%.

There is no sector of the economy that is currently performing at a normal level. What had started to look like an auto recovery now seems to be fading. It hasn't been helped by the GM decision to stuff the channel with inventory prior to year end.

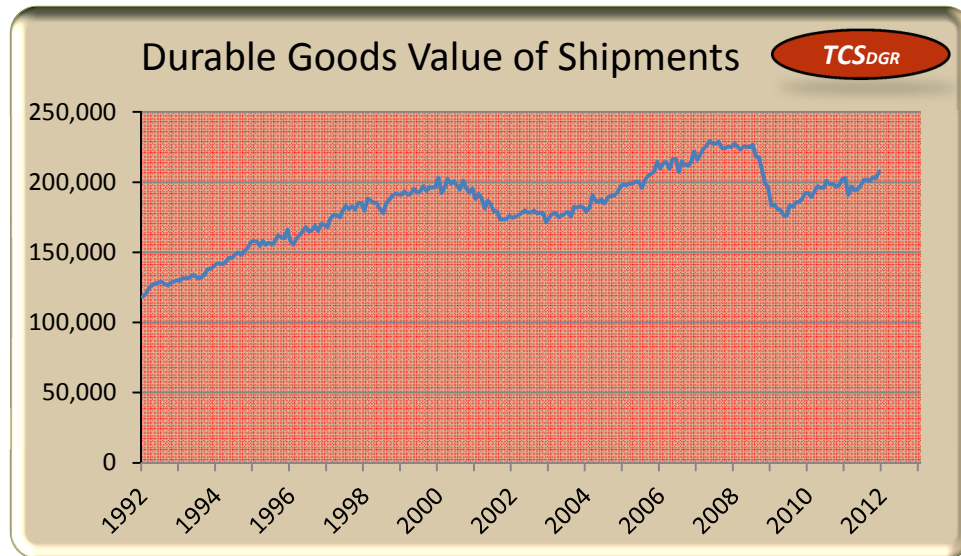
The Durable Goods Sector (Dec Data):

New Orders: Durable new orders decreased by 3.7% to \$206.9 billion. The new order growth index improved to 1.049. The slow recovery shows no signs of picking up steam.



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Shipments increased 0.4% to \$208.0 billion. Book to bill ratio increased to 1.04.

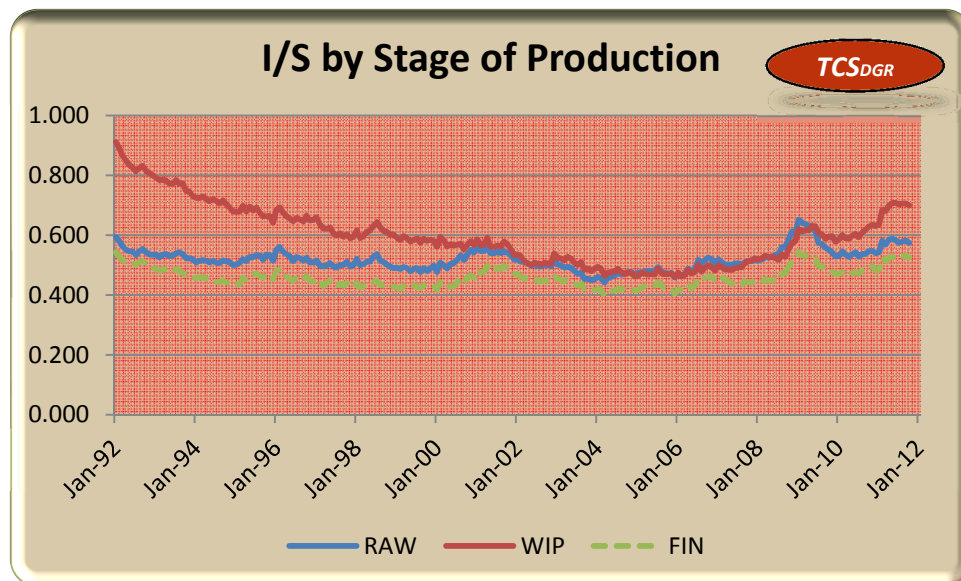


Unfilled Orders increased by 0.6% to \$917.9 billion. This is an unusually high level by traditional norms, and represents 6 months of orders at current shipping levels. As previously reported we believe this to be caused by a shift in the mode of supply chain management.

Inventory Total inventory increased by 0.6% to \$372.5 billion. Inventory to shipments ratio remained constant at 1.79 (a relatively poor performance).

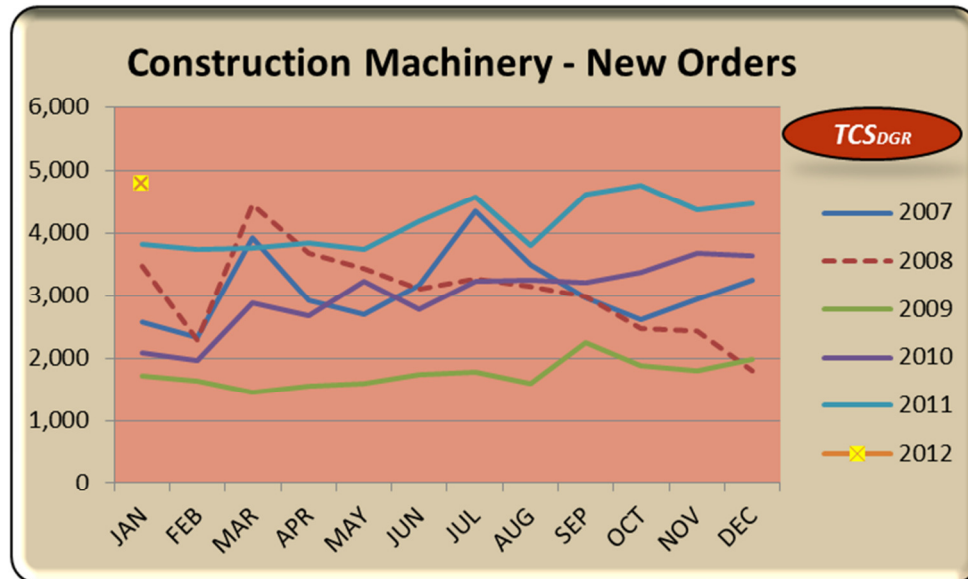


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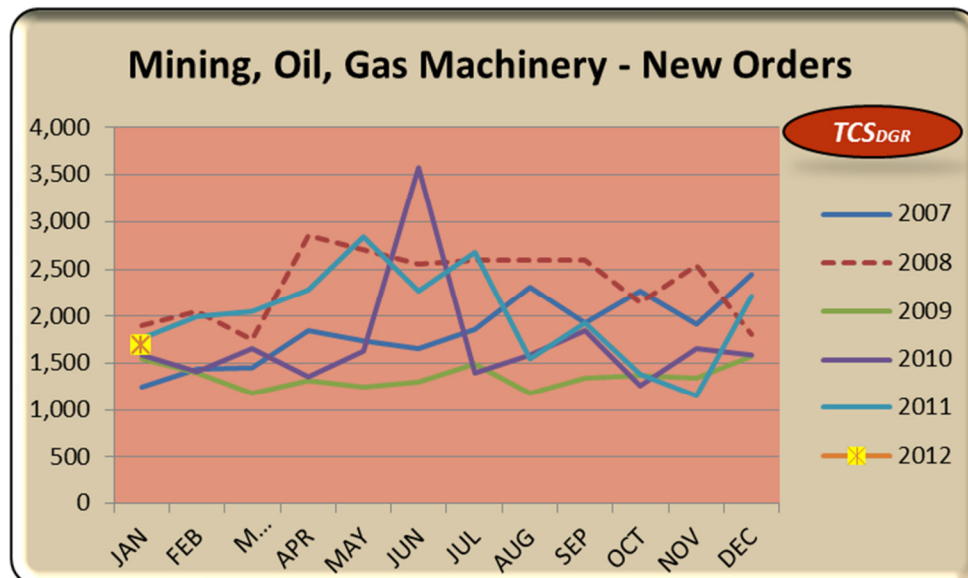


Key durable goods sub sectors (Nov data):

Construction machinery new orders increased 6.6% to a solid \$4.8 billion. Book to Bill surged to 1.06 (long term average 1.02). One of few positive performances in the industry.



Mining, oil and gas machinery new orders declined 24% to \$1.7 billion. Book to bill ratio remained positive at 1.9 (long term average = 1.03).



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Metalworking machinery new orders decreased by 4.6% to \$2.3 billion. Book to bill ratio remained at 1.03 (long term average = 1.00).

Fabricated metal new orders decreased 0.9% to \$26.4 billion. Book to bill ratio is reported at 1.00 (long term average = 1.00).

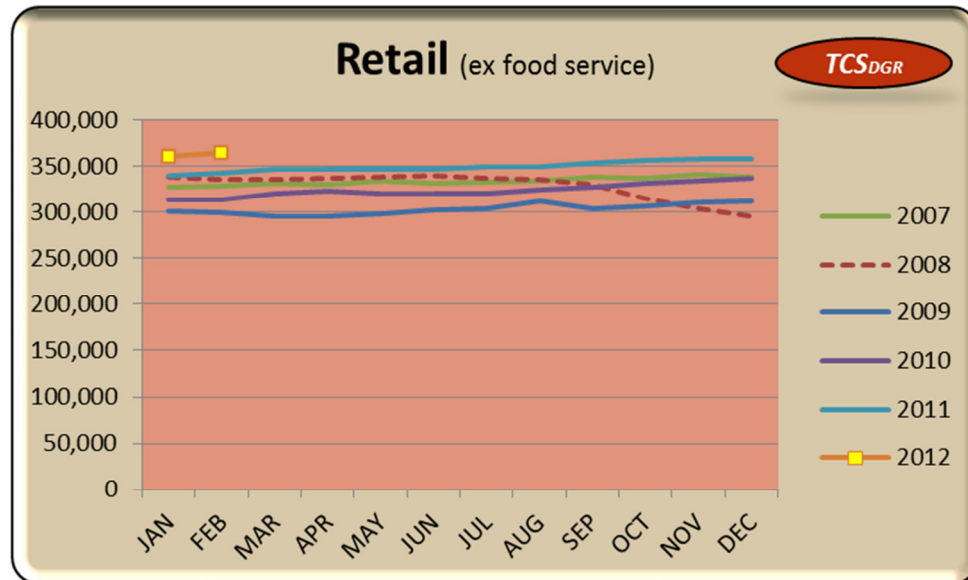
Capital goods decreased by 4.1% to \$86.3 billion. Book to bill ratio remained strongly positive at 1.10 (long term average = 1.01).

Furniture: New orders decreased 0.4% to \$5.6 billion. The Growth index remained at 1.02. This remains well below the 2007 performance.

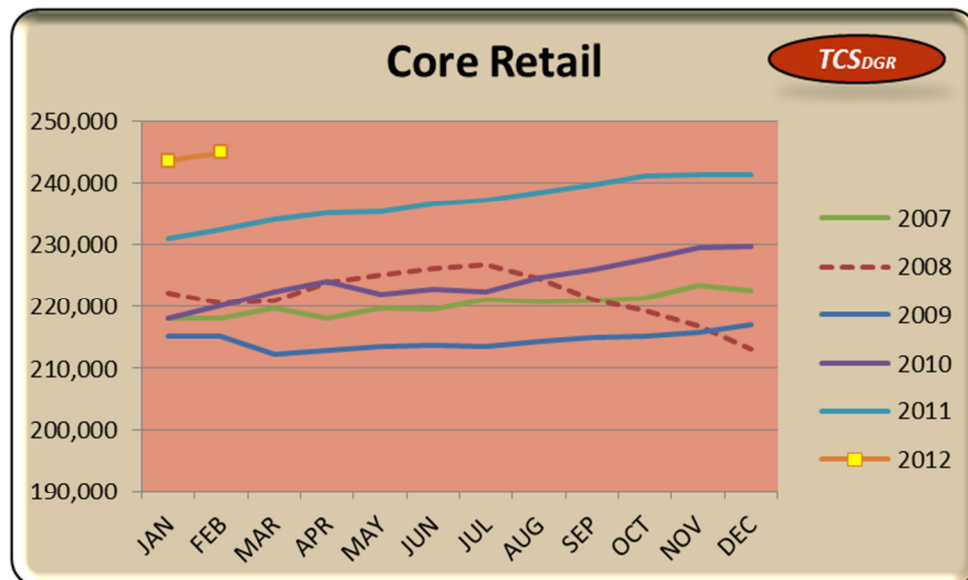
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Retail Data (Advanced Release)

Retail Sales (excluding food service) increased 1.1% was to a record \$364.4 billion in February.



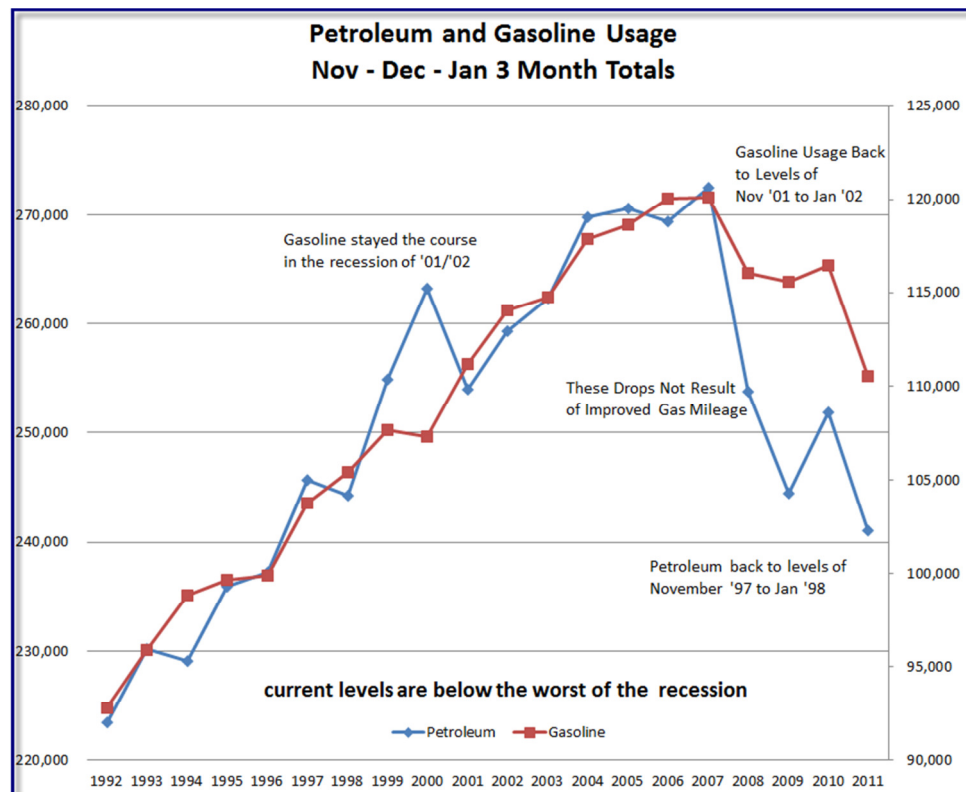
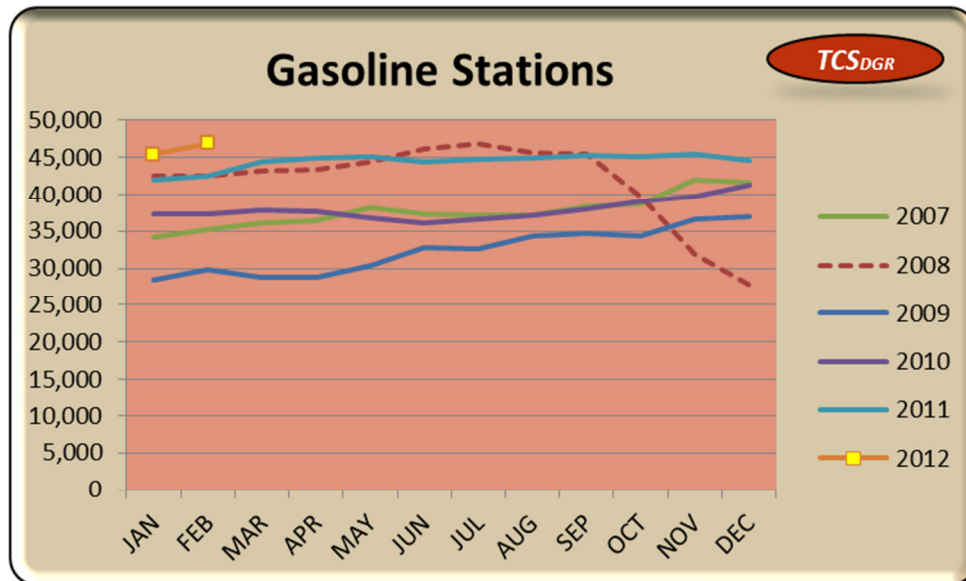
Core retail (excludes food service, gasoline, autos and parts) increased 0.5% to \$244.9 billion, another all-time record. See the Groceries chart for a better reading on the inflation component.



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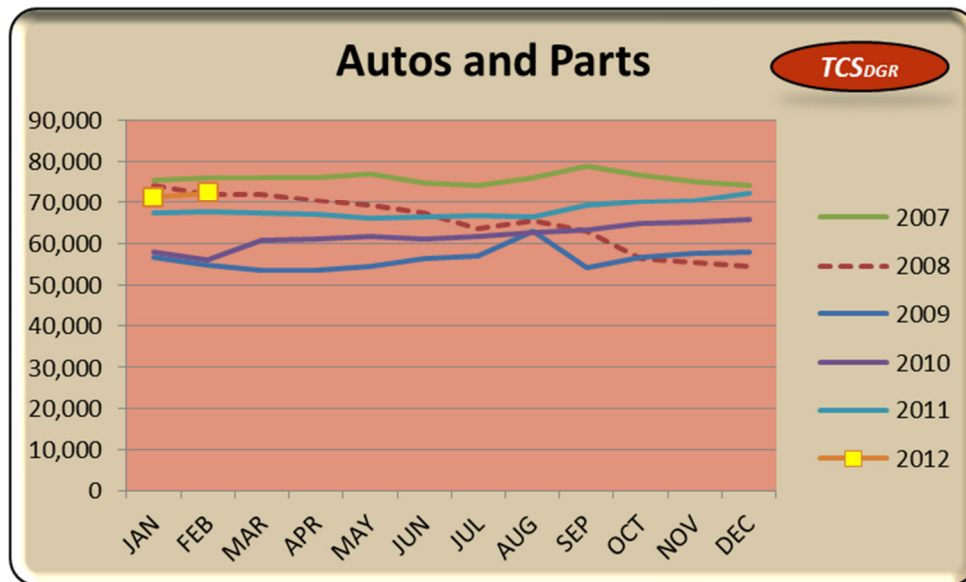
Gasoline sales increased 3.3% in February to \$46.9 billion. Gas sales now stand over 10% above the same month in the prior year. Rising prices masked the continued decline in unit sales. See the two charts below for the full picture.

Retail (and the entire economy) would clearly benefit from less diversion of money to gas.

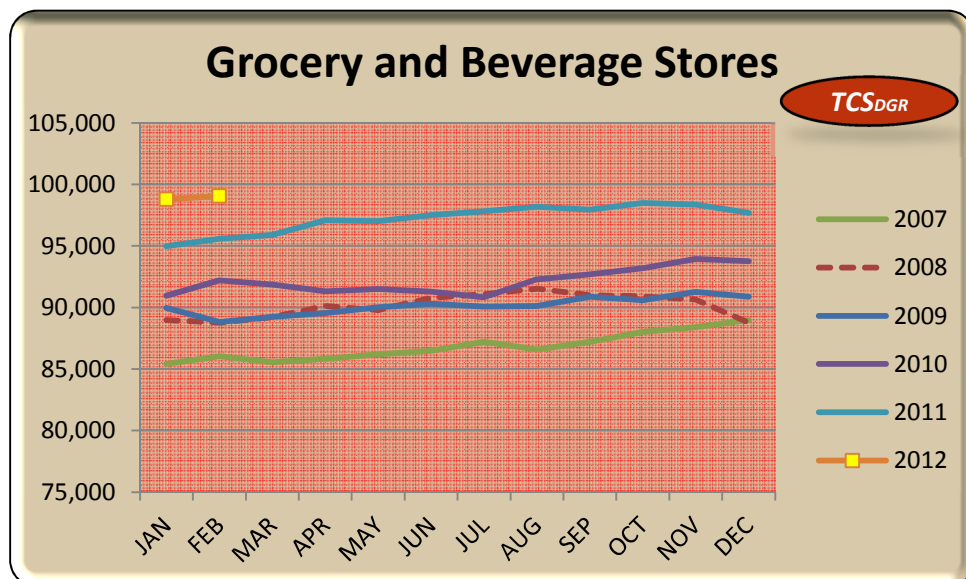


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Auto sales increased of 1.5% to \$72.5 billion in February and now stand 6.9% above last year, despite the drop in capacity utilization at the factories. Inventory is still too high so there will be more adjustments to come.



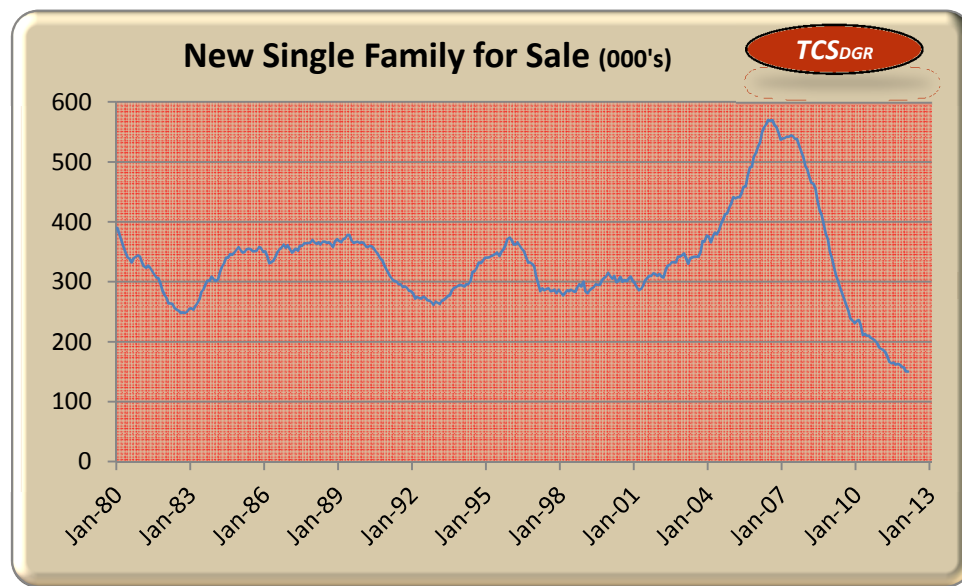
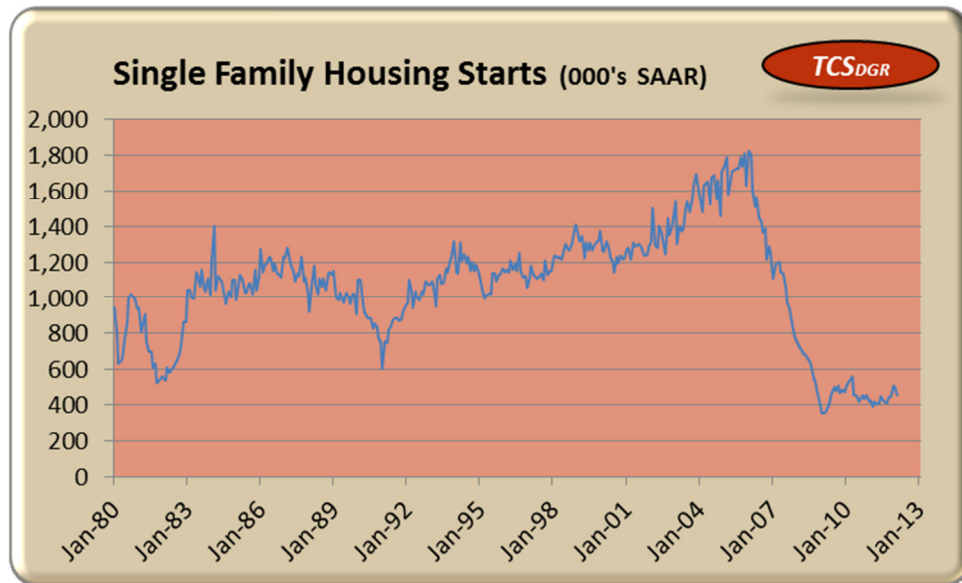
Grocery and Beverage stores sales increased 0.3% in February \$99.1 billion (3.6% above last year).



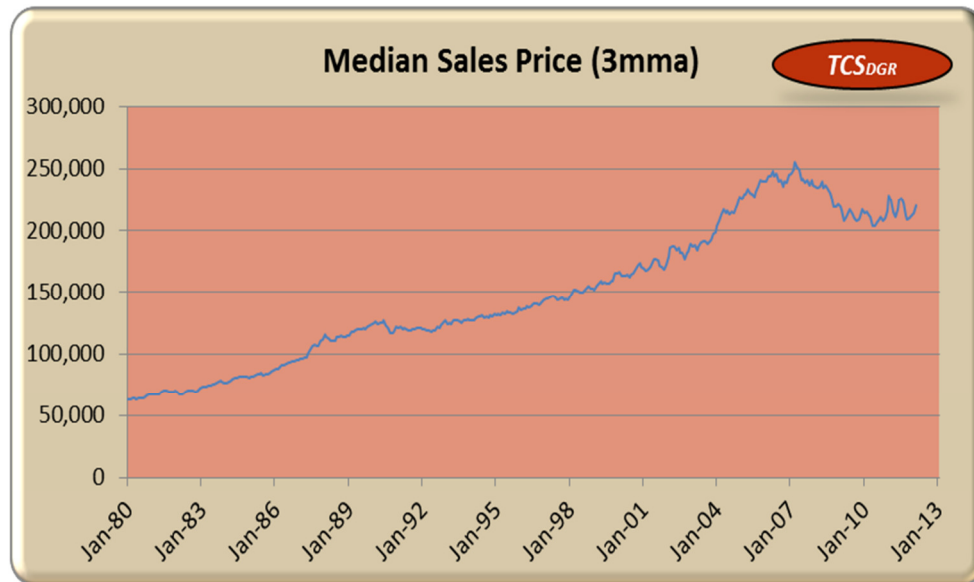
Housing (February Data):

Housing sector remained weak. Single family starts decreased 9.9% to 457,000. New single family sales decreased by 1.6% to 313,000 units. Inventory of unsold new single family homes set a new record low of 150,000.

The median sale price (3mma) increased to \$220,400. A strong showing. The Case Shiller Index of the top 20 metro areas showed a decline in value. The top-20 markets no longer dominate the picture.



The Durable Goods Report – A Service of Time Compression Strategies



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 historical 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, 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. 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 Frontstep, Inc. He served as President of Pritsker Corporation, an early innovator in

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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 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, Ball State University, and others. He can be reached at 317-842-6417

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