

Economic Update & The Metals Industry

April 5, 2017

Tatiana Bailey, Ph.D.

Keep a Sense of Humor!



PEAK ANALYTICS CONSULTING

Keep a Sense of Humor!



Anton Rubaclini @AntonRubaclini

I live in constant fear that Trump will deport my latina mother-in-law who lives at 1837 3rd st, LA 90023 blue house. she gets off work at 6

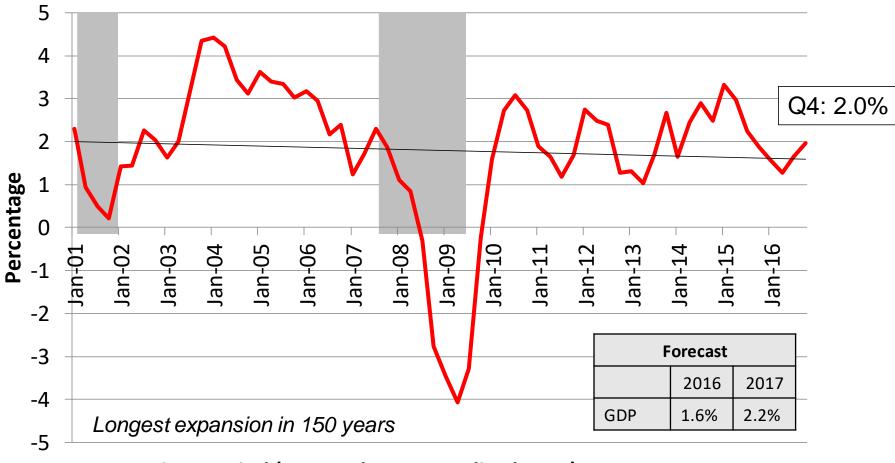


Overview

- National Indicators The Big Picture
- Labor Force, Employment & Unemployment
- Demographics
- The Metals Market



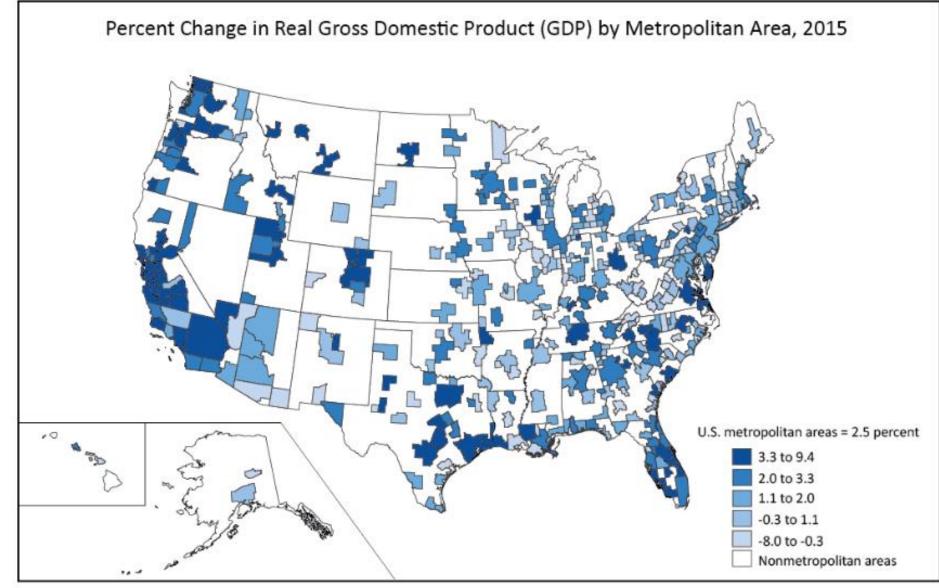
Real Growth in GDP vs. Year Ago



Time Period (Quarterly at Annualized Rate)

Source: U.S. Bureau of Economic Analysis; Forecasts by CO Office of State Planning & Budgeting in "real" terms. Seasonally adjusted information.





U.S. Bureau of Economic Analysis



(Nominal) GMP Highlights

≥292 of 382 (or 76%) metro areas saw increase in GMP in 2015*

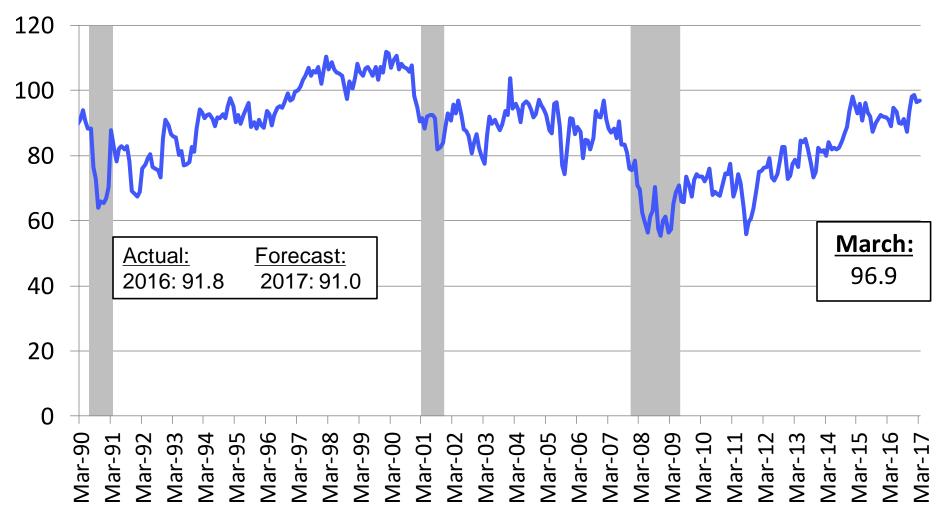
Growing industries for all MSAs: professional & business services, wholesale & retail trade, finance, insurance, real estate, rental & leasing

➢GMP for U.S. metro areas increased 3.8% from 2014 to 2015 (and 2.5% inflation-adjusted).*

*NOTE: 2015 data is from advanced statistics. Source: U.S. Bureau of Economic Analysis & U.S. Department of Commerce



University of Michigan Consumer Sentiment

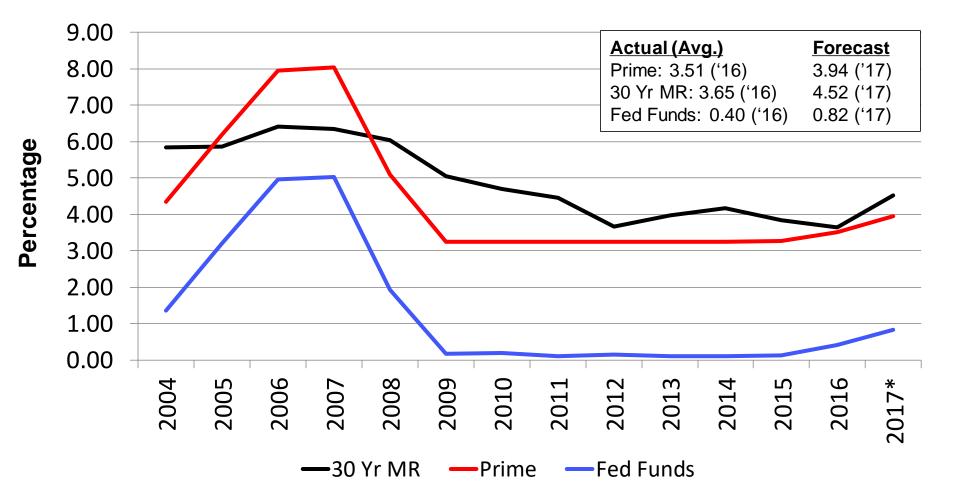


2.7% projected increase in real, personal consumption expenditures through mid-2017 (UM). PCE over past 58 yrs. has NOT fluctuated with presidential elections.

Source: University of Michigan; Forecasts by UCCS Economic Forum



Interest Rates



Source: Board of Governors of the Federal Reserve System (US) *Forecasts by Wells Fargo



Increases in the Interest Rate

- March 15 increase from a range* of 0.5%-0.75% to a range of 0.75% to 1.0%.
- Projecting a rate of ~1.4% by end of 2017; 3.0% by end of 2019
- Likely a total of 3 rate hikes in 2017 and 3 more in 2018.

Pros:

- Helps ward off inflation; job numbers point to more consumer demand
- 2) Attract investment to U.S.
- 3) Government/Fed has a tool to stimulate the economy for future downturns

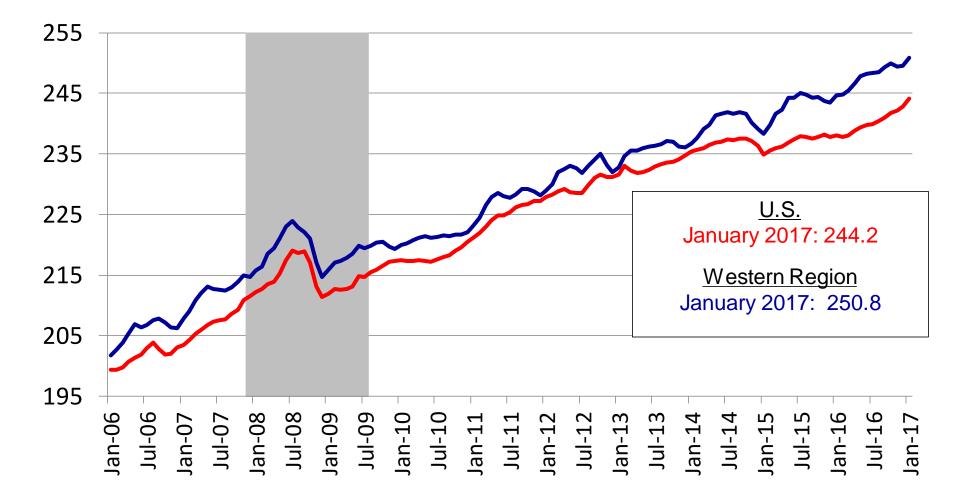
Cons:

- Raises HH and business costs of borrowing, slowing the economy; less disposable income
- 2) Raises the dollar (fewer exports)
- 3) Some Americans just getting back on track
- 4) Servicing large U.S. debt (\$19t)
- After the last recession, the Fed went from \$900b in Treasuries, mortgage-backed securities and other assets to \$4.5t.

The effective federal funds rate (EFFR) is calculated as a volume-weighted median of overnight fed funds. transactions, published each morning.



Consumer Price Index (1982-1984 = 100)



Over the last 12 months, CPI increased 2.7% (all items), which is at the Fed target.

Sources U.S. Bureau of Labor Statistics



Manufacturing Sector Improving

MANUFACTURING AT A GLANCE March 2017								
Index	Series Index Mar	Series Index Feb	Percentage Point Change	Direction	Rate of Change	Trend* (Months)		
PMI®	57.2	57.7	-0.5	Growing	Slower	7		
New Orders	64.5	65.1	-0.6	Growing	Slower	7		
Production	57.6	62.9	-5.3	Growing	Slower	7		
Employment	58.9	54.2	+4.7	Growing Faste		6		
Supplier Deliveries	55.9	54.8	+1.1	Slowing Faster		11		
Inventories	49.0	51.5	-2.5	Contracting From Growing		1		
Customers' Inventories	47.0	47.5	-0.5	Too Low Faster		6		
Prices	70.5	68.0	+2.5	Increasing Faster		13		
Backlog of Orders	57.5	57.0	+0.5	Growing Faster		2		
New Export Orders	59.0	55.0	+4.0	Growing	Faster	13		
Imports	53.5	54.0	-0.5	Growing	Slower	2		
OVERALL	Growing	Slower	94					
Manufactu	Growing	Slower	7					

Manufacturing ISM® *Report On Business*® data is seasonally adjusted for the New Orders, Production, Employment and Supplier Deliveries Indexes.

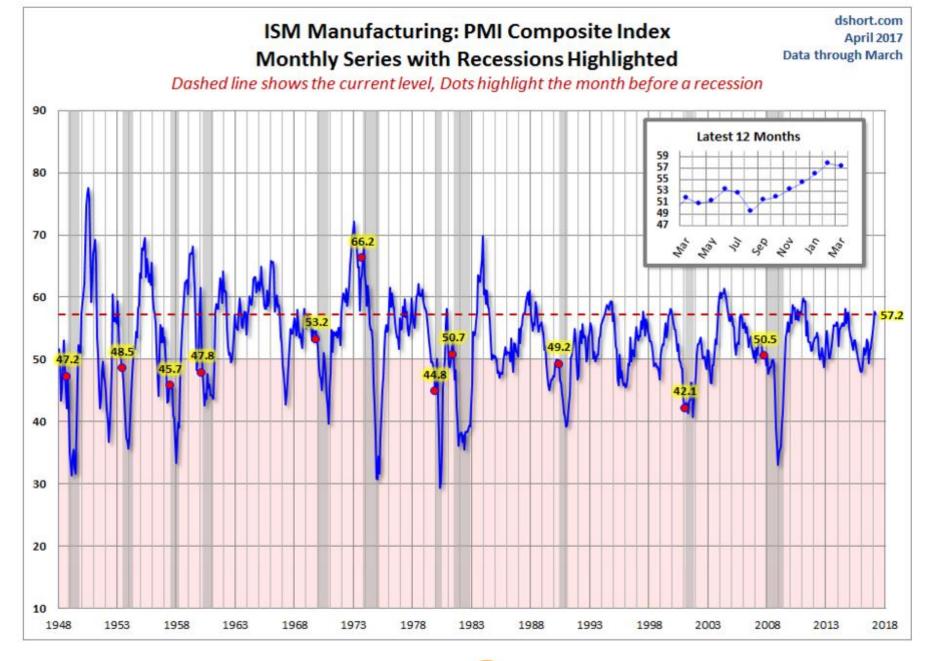


Manufacturing Sector Improving

THE LAST 12 MONTHS

Month	PMI®	Month		PMI®			
Mar 2017	57.2		Sep 2016	51.7			
Feb 2017	57.7		Aug 2016	49.4			
Jan 2017	56.0		Jul 2016	52.3			
Dec 2016	54.5		Jun 2016	52.8			
Nov 2016	53.5		May 2016	51.0			
Oct 2016	52.0		Apr 2016	50.7			
Average for 12 months – 53.2 High – 57.7 Low – 49.4							







Manufacturing Sector Improving – New Orders

> New orders have been increasing for 7 months.

New Orders	% Better	% Same	% Worse	Net	Index
Mar 2017	45	45	10	+35	64.5
Feb 2017	42	48	10	+32	65.1
Jan 2017	32	52	16	+16	60.4
Dec 2016	32	48	20	+12	60.3

Includes wood products, printing & related, electrical equipment, appliances & components, apparel, leather & allied products, paper, plastics & rubber, primary metals, furniture & related, machinery, nonmetallic mineral, transportation, misc. manufacturing, textile mills, chemical products, computer and electronic, fabricated metal, petroleum & coal, food, beverage & tobacco.

Source: Institute of Supply Management (ISM)

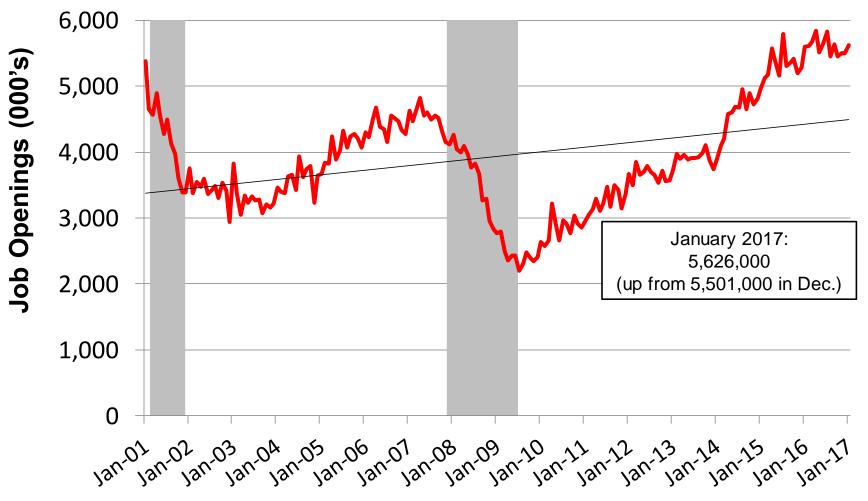


Overview

- National Indicators The Big Picture
- Labor Force, Employment & Unemployment
- Demographics
- The Metals Market



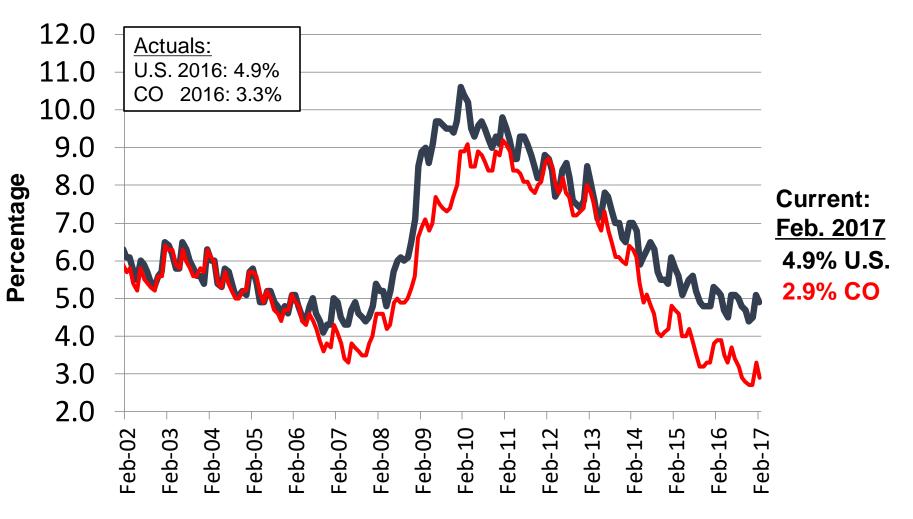
Survey Employer Data through January 2017 Total <u>U.S.</u> Monthly Non-Farm Job Openings SA (000's)



Source: Federal Reserve Bank of St. Louis, U.S. Bureau of Labor Statistics



Monthly Unemployment Rate – NSA



Sources: U.S. Bureau of Labor Statistics; Colorado Department of Labor & Employment



February 2017 BLS Data – U.S.

Total nonfarm payroll employment rose by 235,000 (avg. 209,000/mo for last 3 months).

≻ Forecast for 2017: slow to 160,000 new jobs/mo.

>75th consecutive month of private sector job growth.

- Gains in construction (+58,000), private educational services (+29,000), manufacturing (+28,000), health care (+27,000), mining (+8,000) and professional & business services (+37,000); declines in retail trade
- Job growth totaled 2.2 million in 2016, less than the increase of 2.7 million in 2015.

Source: U.S. Bureau of Labor Statistics



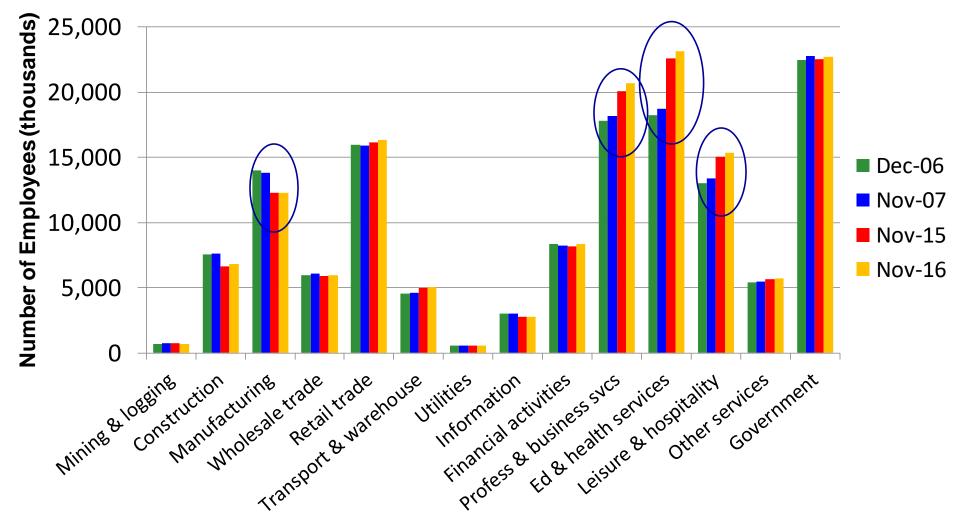
Trend Data by Industry, 2016 Highlights include:

- HC & Social Assistance: +2,092,000
- Professional & Business Svc: +552,000
- Food Svc & Drinking Places: +247,000
- Financial Activities: +156,000
- Transportation & Warehousing: +110,000
- Manufacturing: -63,000

Source: U.S. Bureau of Labor Statistics



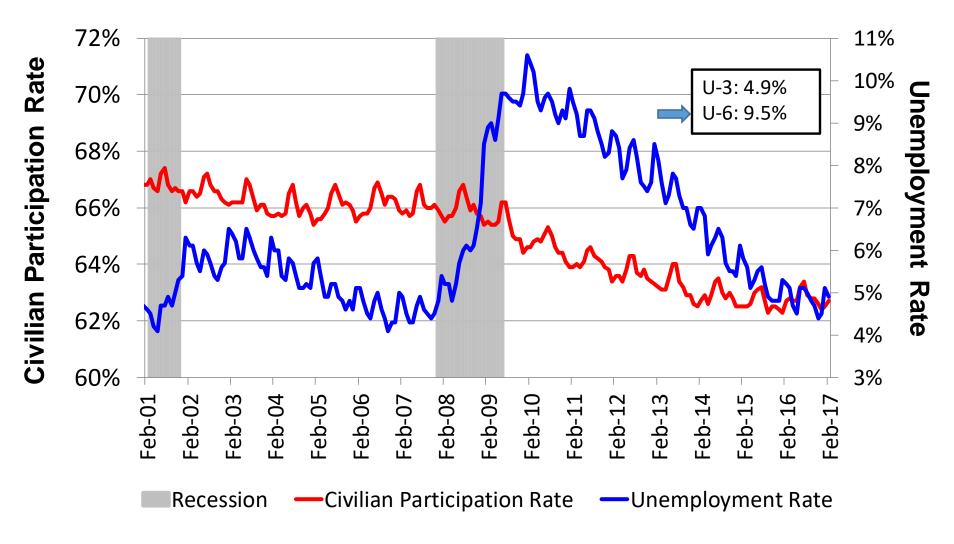
U.S. Employment by Industry, NSA



Source: U.S. Bureau of Labor Statistics, Current Employment Survey



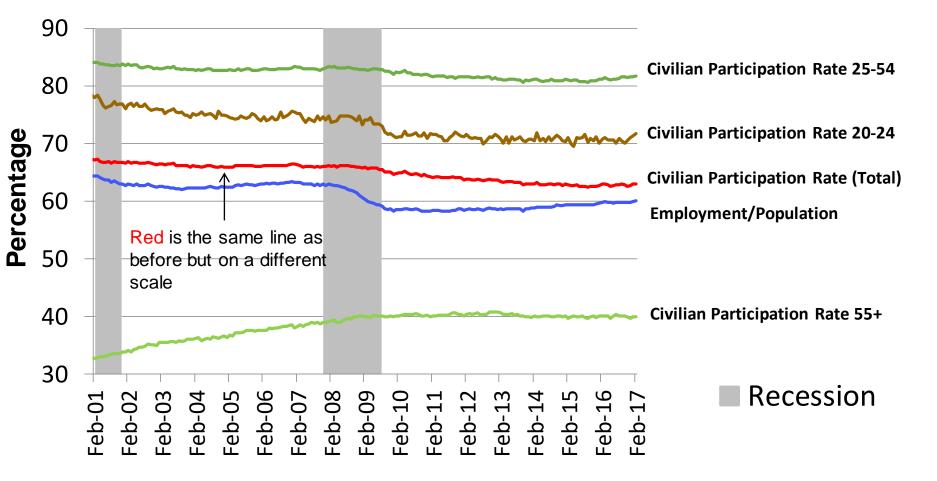
U.S. Civilian Participation and Unemployment Rates, NSA



U-6 includes unemployed, those marginally attached to LF, plus those employed PT for economic reasons. Source: Bureau of Labor Statistics data through February 2017.



Household Data: <u>U.S.</u> Civilian Participation Rates SA Employment/Population SA

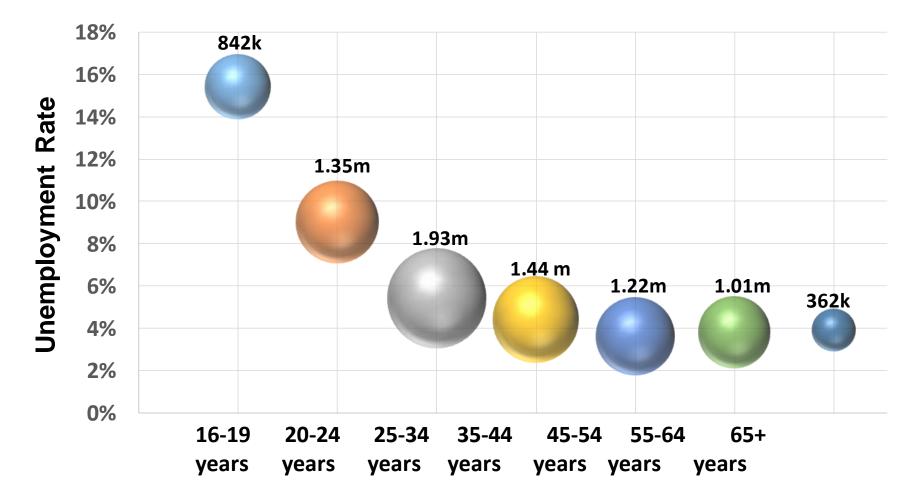


Data through February 2017

Source: Federal Reserve Bank of St. Louis, U.S. Bureau of Labor Statistics



Unemployment Rate & Number Unemployed by Age, January 2017*



*Bubble size represents number of unemployed. Data not seasonally adjusted. Source: U.S. Bureau of Labor Statistics



February BLS Data – Untapped Labor

- Number of long-term unemployed (27 wks+) was essentially unchanged in February: 1.8 million
- ≻ LTE account for 23.8% of unemployed.
- 1.7 million people marginally attached to labor force (~30% are discouraged workers not counted in unemployment rate because although they want to work, they have not searched in the last 4 weeks)
- Civilian participation rate was little changed at 63.0% in February (62.9% in January).
- > Last 12 months, average hourly earnings up 2.8%.

Source: U.S. Bureau of Labor Statistics



Movement in Worker Participation?

≻In all of 2016, the LTE declined by 263,000 people.

► Involuntary PT workers down 459,000 in 2016.

Discouraged workers down by 237,000 from a year earlier.

Source: U.S. Bureau of Labor Statistics

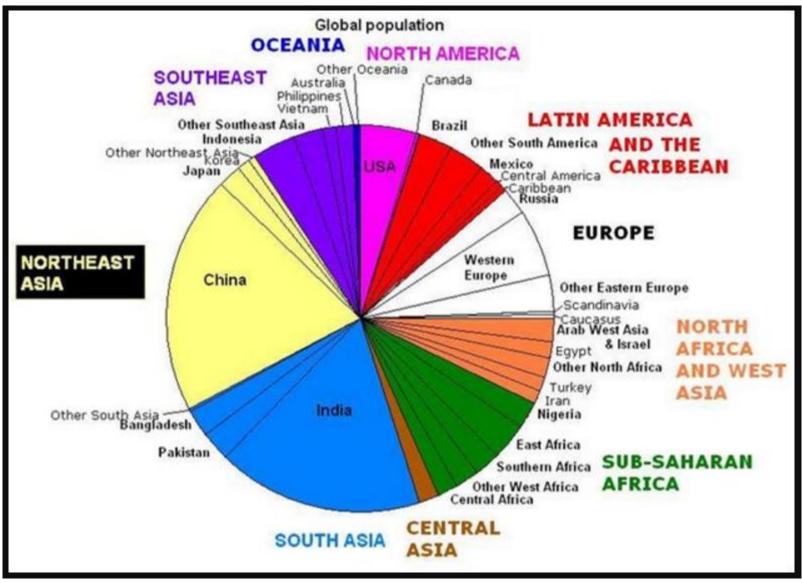


Overview

- National Indicators The Big Picture
- Labor Force, Employment & Unemployment
- Demographics
- The Metals Market

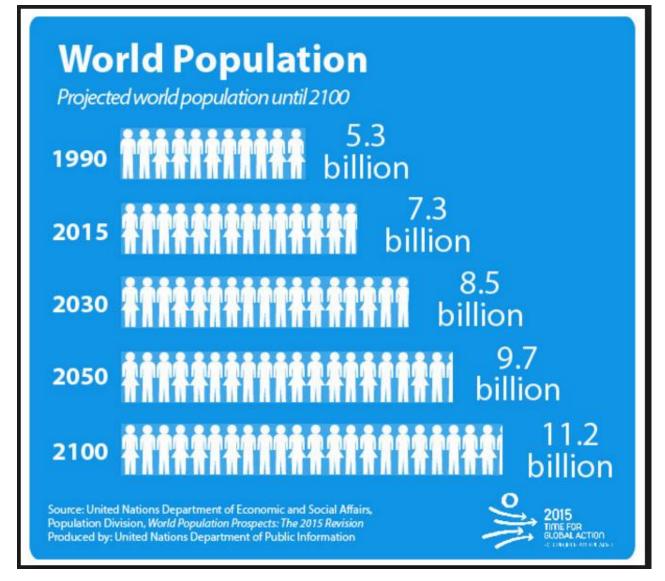


World Population

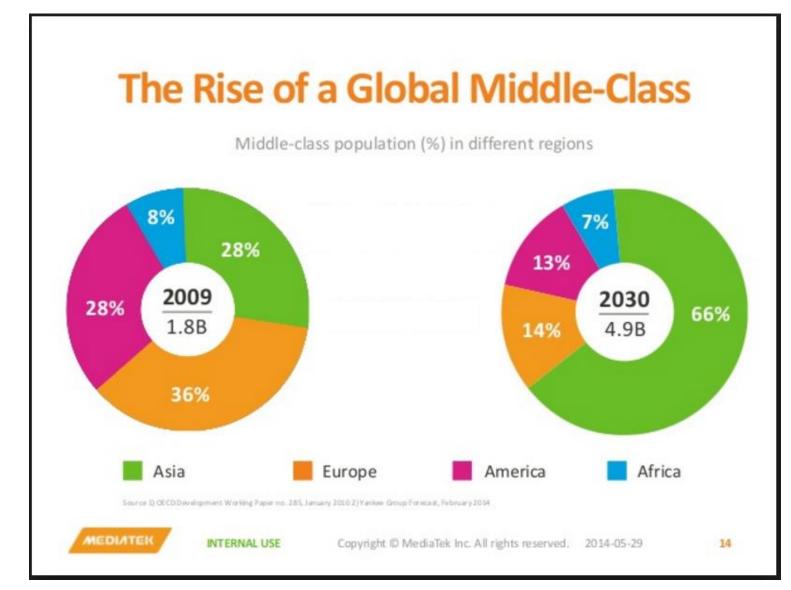




Population Projections







Source: Mediatek, 2014



Overview

- National Indicators The Big Picture
- Labor Force, Employment & Unemployment
- Demographics
- The Metals Market



The (Scrap) Metal Industry

- > Metal recycling in the United States is estimated to be a \$20b industry.
- ➤ 120-130 million tons of recyclables handled each year in the U.S. alone.
- Scrap metal industry employs about 140,000 people.
- Steel is the most recycled metal (74 million tons in U.S. or 55% of all processed material) from cars, steel structures, household appliances, railroad tracks, ships, farm equipment, etc..
- Nonferrous metals, including aluminum, copper, lead, nickel, tin, zinc and others, are among the few materials that do not degrade or lose their chemical or physical properties in the recycling process.
- ➢ 8 million metric tons recycled in the U.S. from copper and precious metal circuitry in electronic devices, soft-drink containers, automobile batteries and radiators, aluminum siding, airplane parts, etc..

Source: Institute of Scrap Recycling Industries; Schupan



The (Scrap) Metal Industry - Benefits

> The scrap-metal-recycling industry provides resources to the basic manufacturing sector.

Recycles valuable resources at a lower cost than extracting new metals.

Conserves natural resources and therefore helps protect the environment.

 \succ By definition, it's a renewable resource.

Such industries are increasingly of interest and preferred investments. Long-term sustainability is the emphasis now.



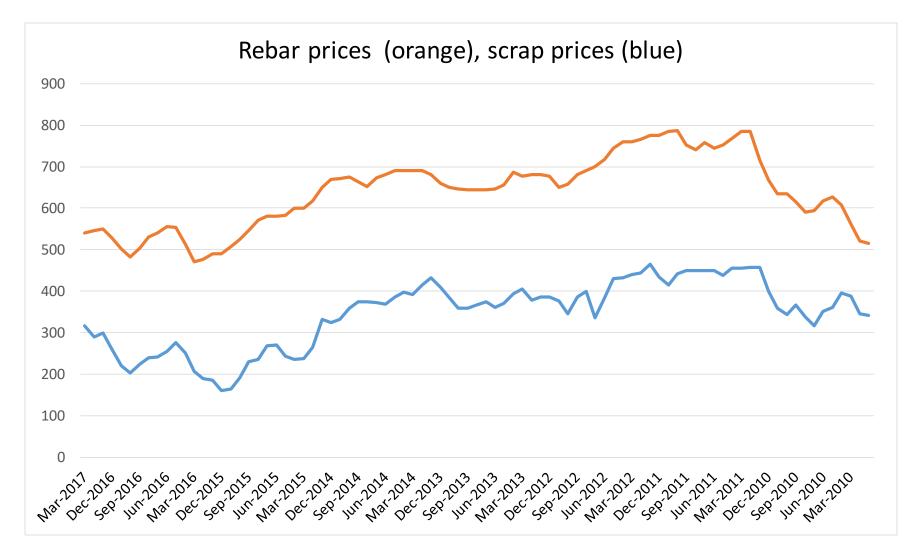
Ferrous Market – Scrap Drives Ferrous Pricing

- The majority of steel made in US today is produced in an electric arc furnace which melts scrap.
- Scrap is the largest cost for these steelmakers more than labor, electricity, etc combined- and has the biggest impact on finished steel prices. So scrap and finished steel prices are directly related. Everyone follows scrap to get an idea where finished steel prices are headed.
- This includes items like beams (for bldgs), rebar and hot-rolled coil which is used to make cars and appliances and welded pipe.
- Ferrous scrap moves monthly and if it goes up \$25 a ton, finished steel goes up \$25 a ton. If it goes down \$25 a ton, mills will try to hold high price but usually concede and lower \$25 a ton.
- Demand and imports can influence the price but scrap is the tail that wags the dog.

Source: Lisa Gordon, American Metal Market



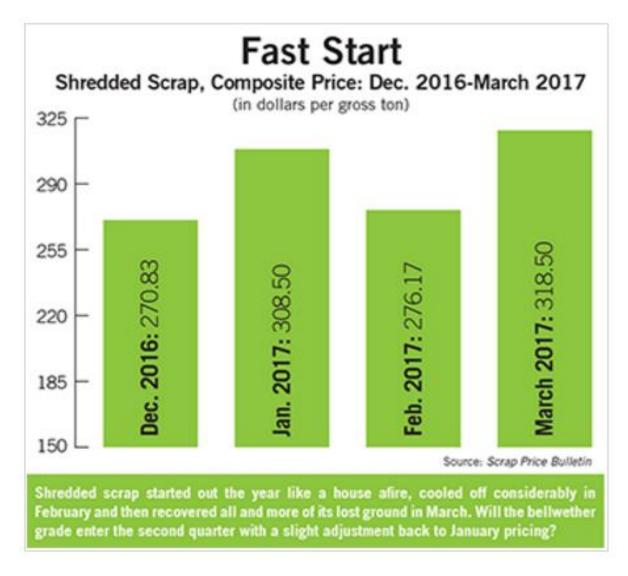
Tight Correlation: Scrap & Rebar



Source: American Metal Market



Scrap Metal Pricing - Erratic





The Metals Market & Some Forecasting

≻Aluminum dipped 10% and copper 15% in late 2015.

➢ Iron ore pellets (taconite) dropped below \$40/ton hitting MI and MN hard in 2016.

Copper is a particularly good barometer because of its diverse and wide use across sectors* – often an indicator of global health of the economy.

➢ Where we are headed? Recent actions of large metal recyclers gives us some clues.

➢ Alter Trading and Sims Metal both cut jobs in 2016 mostly due to (~30%) drop in ferrous prices.

Cuts mostly in U.S.; closed or reduced 35 of 270 global operations.

*Including housing, infrastructure and consumer electronics. Source: Rick LeBlanc, *The Balance.*



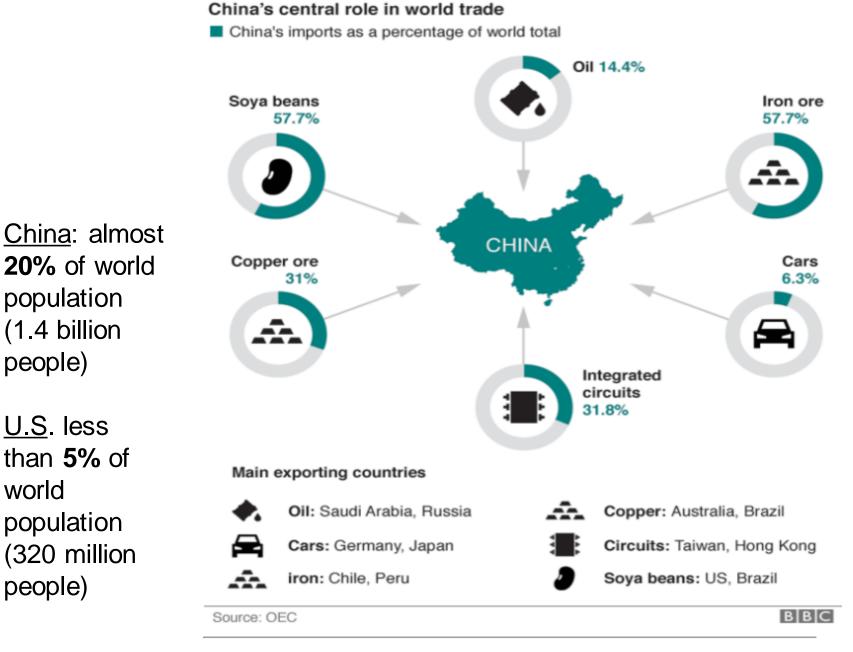
Steel Forecast

Global steel prices have been low for so long mostly because the robust Chinese demand for steel has caused an overproduction of this commodity.

- > Simple economics: too much supply depresses prices.
- \succ Chinese have been a very large producer of steel.
- ➢ At its peak, China produced 822 million tons of steel in 2014 compared to 803 million tons in 2015 (3% reduction).
- ➤ Due to a slowdown in the rate of GDP growth, Chinese officials have stated they will reduce steel production by 20% by 2020 (~165 million fewer tons).
- ➢ If Chinese continue on the path of reduction, U.S. (and other) steel producers will benefit.

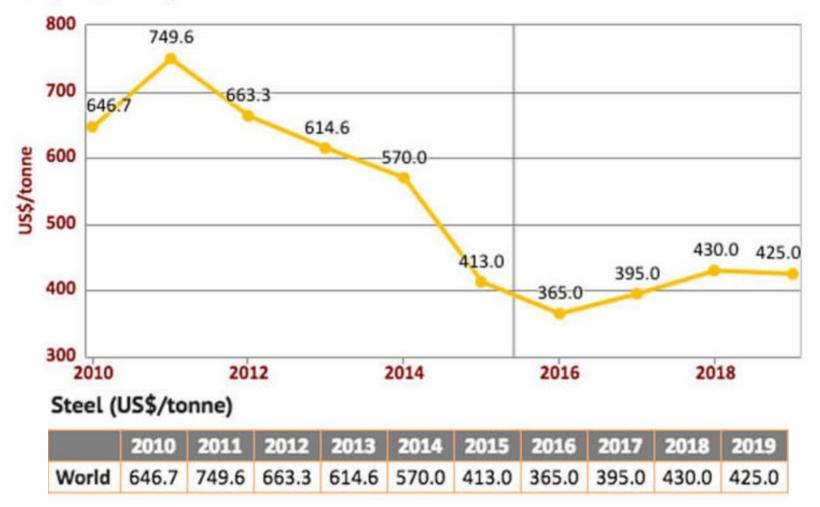
*Including housing, infrastructure and consumer electronics. Source: Rick LeBlanc, *The Balance*.







Steel Forecast



Note: Steel Insight predicted at the end of 2016 \$500/ton pricing for 2017.

Sources: tradingeconomics.com/commodity/steel; knoema.com; recyclingtoday.com/article/worldsteel-2016-2017-steel-outlook



Steel & Other Metals Forecast

➢ World Steel Association is predicting a 0.4% increase (to 1,494 tons) in global steel demand and a 5.9% increase in U.S. demand.*

Forecasters are saying that despite the continued slowdown in Chinese steel demand, rest-of-world demand will compensate.

China will demand 15% less steel in 2017 than in 2013.

➤ This translates to 42% of global steel demand from 48% in 2009.

> U.S. consumes 120 million tons of finished steel each year and ~20-30% of it is imported.

➤ U.S. demand is about 8% of global demand for steel; similar for copper and many other metals.

•In line with American Institute of Architect's forecast.

Sources: tradingeconomics.com/commodity/steel; knoema.com; recyclingtoday.com/article/worldsteel-2016-2017-steel-outlook



Steel Forecast

- Country-specific information for 2017:
 - Brazil's demand has declined (-17% in 2015; -9% in 2016; +3% in 2017)
 - India's demand will increase (+5.5%)
 - E.U. will increase (+1.7%)
 - ASEAN 5 will hold their +6% increase
 - China up but a slower rate of growth overall (+4.8%)
 - Developed economies +1.1%
 - U.S. demand expected to increase (+2.7%); grew 3.2% in 2016.

Note: Steel demand: Construction (40%), manufacturing/other (30%), auto (20%), energy (10%) ASEAN 5 includes Thailand, Vietnam, Malaysia, Indonesia, Philippines Sources: World Steel Association; Economics Committee



Steel & Other Metals Forecast

>Many variables to consider:

• Higher U.S. GDP in 2017 than 2016 (job growth continues)

• Strength of U.S. dollar increases imports, decreases exports hurting domestic scrap metal; effect of rising interest rates (strengthens the dollar)

- ISM manufacturing index has been >50 for many months.
- We DO have a "D" grade in infrastructure from the ASCE (\$500b to \$1t)

•In line with American Institute of Architect's forecast; ASEAN 5 includes Thailand, Vietnam, Malaysia, Indonesia, Philippines Sources: tradingeconomics.com/commodity/steel; knoema.com; recyclingtoday.com/article/worldsteel-2016-2017-steel-outlook



Steel & Other Metals Forecast

≻Many variables to consider:

- Higher probability of U.S. slowdown after new admin
- Stability of European Union
- Trade wars? Supply chain of virtually all goods would be negatively impacted.
- Trump has talked of 45% import tax with China; could hurt us more than it helps (e.g. only 1% of Chinese steel is imported to U.S. in 2016). Obama tried in 2008.

•In line with American Institute of Architect's forecast; ASEAN 5 includes Thailand, Vietnam, Malaysia, Indonesia, Philippines Sources: tradingeconomics.com/commodity/steel; knoema.com; recyclingtoday.com/article/worldsteel-2016-2017-steel-outlook



Trump Administration & Metals Industry

- > New administrations mean a lot of change/pivots:
 - Corporate taxes reduced -> raise profit margins -> more (capital) investment (+)
 - Public infrastructure spending (likely to pass) (+)
 - Level the (global) playing field (+)
 - Supply chain hurt; higher prices and lower demand could offset any windfalls (-) Reason for cold shoulder from auto
 - If banking regulations ease, could be more private investment (+)
 - Decreased energy regulations → more exploration (+/-)
 - Wilbur Ross (Sec. of Commerce) and rest of administration is very friendly to the steel and other metals industries. (+)

•In line with American Institute of Architect's forecast; ASEAN 5 includes Thailand, Vietnam, Malaysia, Indonesia, Philippines Sources: tradingeconomics.com/commodity/steel; knoema.com; recyclingtoday.com/article/worldsteel-2016-2017-steel-outlook



Some Anecdotal Information

- ➢In Colorado, scrap metal returns down 50% since 2013.
- Some scrap yards have folded.
- More focus on "sustainability" and reporting on that (e.g. wood branch, energy efficiency programs, refrigeration recycling, etc..) pivot
- Maximize loading of recycling bins to reduce transport costs; restructuring contracts (less favorable terms)
- >Holding product with the hope of higher prices
- Sometimes have to pay in order to remove scrap (small loads, bulky loads, remote locations..)



Some Anecdotal Questions & Answers

- 1) What are global indicators for the metals industry and its pricing?
 - Relative supply and demand by country. I would study this as a scrap metal seller.
 - Once you know trade flows and volume, study the key economic indicators of those countries (U.S. included).
 - Not really "risks" now to selling overseas.
 - Look at new markets and new technologies.
- 2) Is there a case for stockpiling metals?
 - Probably varies by seller look at marginal costs and if you are still making a modest profit, sell.
 - If you are at a break even point, the marginal costs of storage are negligible, and if your homework shows prices may increase, hold the product until costs > benefit.



Some Anecdotal Questions & Answers

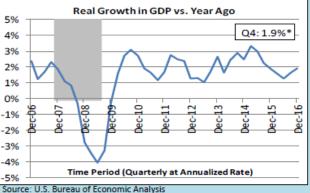
- 3) How does strength of U.S. dollar impact the value of scrap metal?
 - If U.S. dollar is strong, our exported product is less attractive.
 - Global (non-U.S.) metal producers/recyclers' products are more attractive.
 - Double whammy because our new and recycled metal products are demanded less, which reduces prices.
 - Other (global) producers benefit and sell more of their product. Even U.S. domestic buyers of metal products import rather than use U.S. product because it's cheaper.

Know your universe to the fullest extent possible.



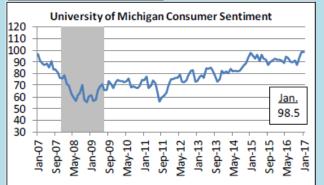
The Big Picture

U.S. Quarterly GDP



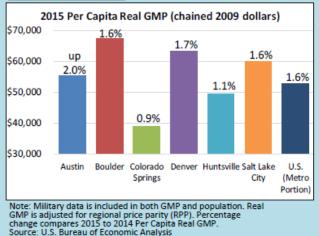
*Dec. release of Real GDP Percent Change from Q4 Year Ago, SA

U.S. Consumer Sentiment



Source: University of Michigan

MSA GMP Per Capita



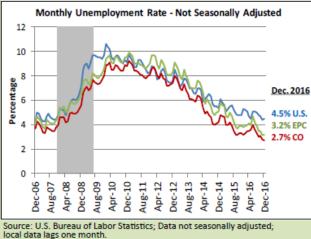
Labor Force/Employment

U.S. Non-Farm Job Openings



Source: U.S. Bureau of Labor Statistics; Jobs data is through December 2016.

Unemployment Rate





UNIVERSITY OF COLORADO COLORADO SPRINGS

updated (02/22/2017)

Colorado Springs MSA Job Openings

January 2017

Total Job openings: 10,383 Average posting duration: 44 days Median salary of posted jobs: \$68,800 Colorado median salary: \$60,925

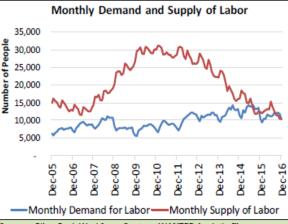
Top Job Titles

Registered Nurse (1,026 jobs) Customer Service Rep (752 jobs) Software Engineer (747 jobs) Teller (605 jobs) Administrative Assistant (553 jobs) Systems Engineer (517 jobs) Sales Rep (483 jobs) Project Manager (471 jobs) Systems Administrator (441 jobs) Network Engineer (433 jobs)

December 2016		
Demand for Labor	Supply of Labor	
10,276	10,346	

Sources: Pikes Peak Workforce Center—WANTED Analytics™; U.S. Bureau of Labor Statistics; UCCS Economic Forum

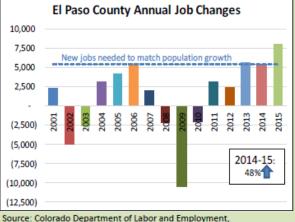
Colorado Springs MSA Labor Force



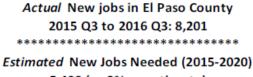
Sources: Pikes Peak Workforce Center—WANTED Analytics™; U.S. Bureau of Labor Statistics; UCCS Economic Forum

Local Employment/Wages

El Paso County New Jobs



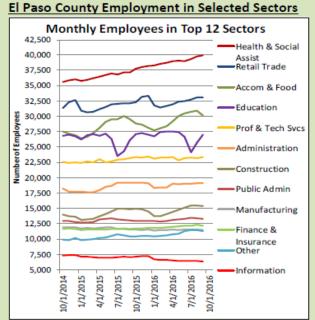
Quarterly Census of Employment and Wages (QCEW)



5,400 (or 2% growth rate)

Colorado Springs MSA GMP by Sector

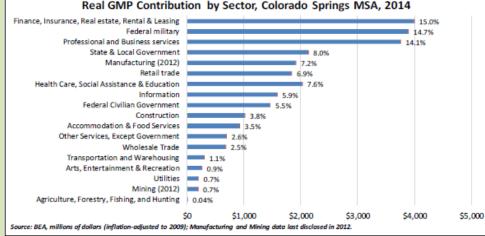
Estimated jobs needed based upon population growth and age composition; calculated by the UCCS Economic Forum.



2016 Q3 for All Private Industries			
Colorado Average Weekly Wage	El Paso County Average Weekly Wage	El Paso County Total Employment	
\$1,062	\$934	267,180	
*Estimated military % of total EPC emplo	55,300 (17.1%)		
Note: OCEW data lags by up to two guarters and does not include			

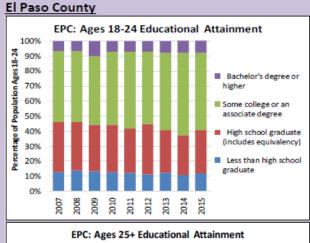
Note: QCEW data lags by up to two guarters and does not include military-related employees. Sources: Colorado Department of Labor and Employment, QCEW.

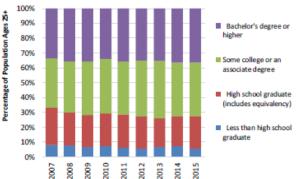
See military section for military employment sources.



Source: U.S. Bureau of Economic Analysis; government data lags.

Education





Population with Bachelor's Degree or Higher

2015				
	Colorado Springs (city)	Colorado	United States	
Ages 18-24	10.7%	11.1%	10.3%	
Ages 25+	38.3%	39.3%	30.6%	
Population with Some College or an Associate Degree				
	Colorado Springs (city)		United States	
Ages 18-24	47.2%	45.6%	45.8%	
Ages 25+	34.5%	30.2%	28.9%	

Source: U.S. Census Bureau, American Community Survey

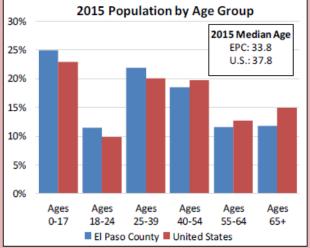
Real GMP Contribution by Sector, Colorado Springs MSA, 2014

Demographics

2015 Population			
Colorado	El Paso	Colorado Springs	
Springs (city)	County	MSA	
456,568	674,471	697,856	

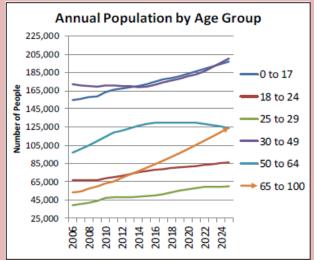
Colorado Springs MSA is made up of El Paso and Teller Counties. Source: U.S. Census Bureau, Population Division

El Paso County & U.S. Age Groups



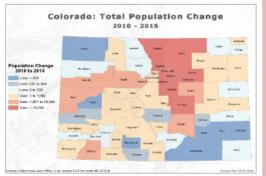
Source: U.S. Census Bureau, American Community Survey

El Paso County & U.S. Age Groups



Source: U.S. Census Bureau, American Community Survey

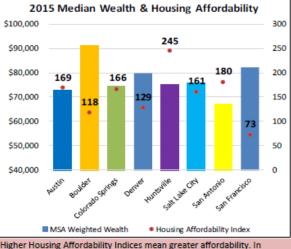
Population Growth





The State Demography Office projects a population increase of 400,621 additional people between 2015-50.

El Paso County & U.S. Age Groups

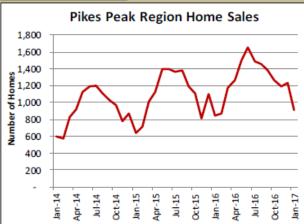


Higher Housing Affordability Indices mean greater affordability. In 2015, U.S. median wealth was \$49,787 and the U.S. average affordability composite index was 164.

Sources: Synergos Technologies and U.S. Census Bureau; Credit Suisse and the National Association of Realtors

Real Estate

Monthly Home Sales

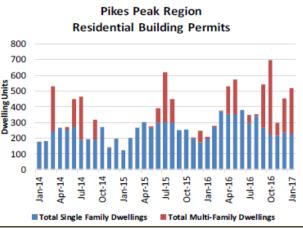


Median Home Price 2016 Q4

Location	Colorado	Denver	Boise	United
Location	Springs	Denver	DOISe	States
Price	\$257,900	\$381,600	\$203,400	\$235,000
1-year %	8.5%	7.9%	7.2%	5.7%
Change	increase	increase	increase	increase
MSA Rank	31	14	71	n/a

Sources: Pikes Peak Association of REALTORS $^{\circ}$; National Association of REALTORS $^{\circ}$

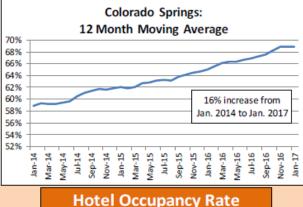
Monthly Building Permits



Source: Pikes Peak Regional Building Department

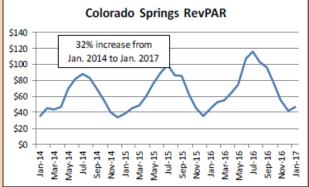
<u>Tourism</u>

Hotel Occupancy Rate



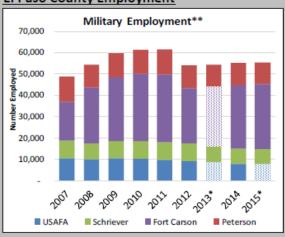


Hotel RevPAR

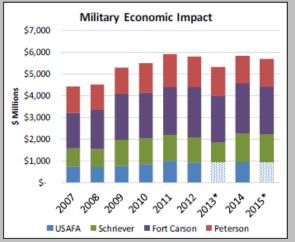


Hotel RevPAR January 2017			
Colorado Springs	Denver	Colorado	
\$46.70	\$77.97	\$97.53	

Military El Paso County Employment

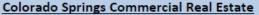


Expenditures in El Paso County



*2013 and 2015 data was not available for all locations. Textured bars are an estimate in 2013 made by the UCCS Economic Forum and duplicated data in 2015 for USAFA (from the previous year). **The employment numbers for Schriever and Peterson include significant numbers of civilian contractors. The employment numbers for USAFA include cadets and several kinds of contract workers. Sources: Department of Military and Veteran Affairs; Colorado Springs Chamber of Commerce & EDC; respective military installations

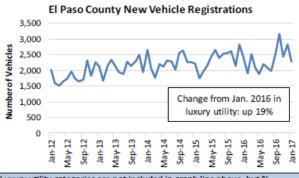
Additional Metrics





Source: Turner Commercial Research, Commercial Availability Report

Monthly New Vehicle Registrations



Luxury utility categories are not included in graph line above, but % change in this category is noted in the text box. Source: El Paso county Clerk and Recorder

Inflationary Measures

U.S. Consumer Price Index - January 2017			
All Items Less food & energy			
Change from Dec. 2016 (SA)	0.6	0.3	
Last 12-months (NSA)	2.5	2.3	
Source: U.S. Bureau of Labor Statistics; data for all urban consumers (CPI-U)			

Source: Colorado Hotel & Lodging Assoc., Rocky Mountain Lodging Report

2017 © UCCS Economic Forum. All Rights Reserved.

For permission to reproduce or forward this document, contact Tatiana Bailey at tbailey6@uccs.edu or Rebecca Wilder at rwilder2@uccs.edu.

All information provided by the UCCS Economic Forum is made possible by the support of local businesses. For current and past quarterly updates and Forum booklets, as

well as information on Forum sponsorship, please go to our website: www.UCCSEconomicForum.com.

Last updated: 02/23/2017