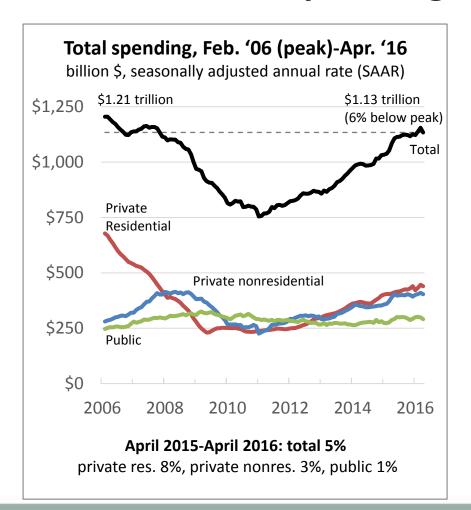
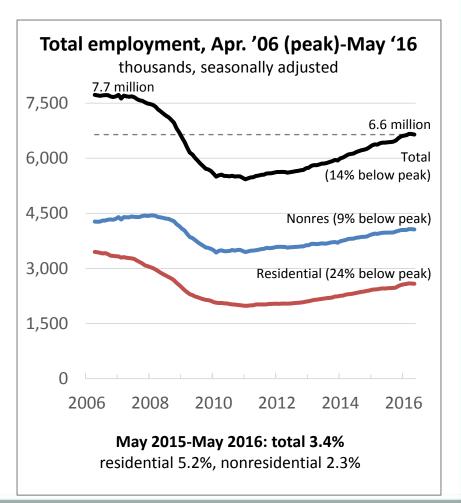


Construction spending & employment, 2006-16







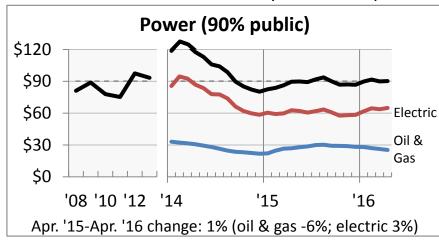
Nonresidential segments: 2015 actual, 2016-17 forecast

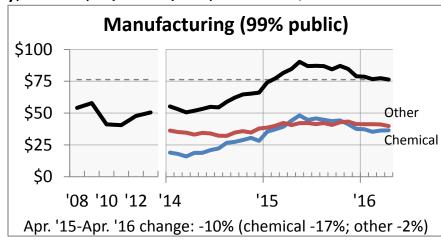
	2015 vs. 2014	<u>JanMay</u> <u>'16 vs. '15</u>	<u>2016</u>	<u>2017</u>
Nonresidential total (public+private)	<u>7</u> %	<u>7%</u>	<u>2-7%</u>	<u>2-6%</u>
Power (incl. oil & gas field structures, pipelines)	-16	7	6-10	5-10
Highway and street	6	7	4-6	2-5
Educational	5	9	3-6	2-5
Manufacturing	33	-1	-10 to 0	<0
Commercial (retail, warehouse, farm)	6	11	0-5	0-5
Office	18	21	10-15	5-10
Transportation	8	0	0-5	0-5
Health care	5	4	3-8	3-8
Sewage and waste disposal	5	2		
Lodging	30	27	5-15	<0
Otheramusement; communication; religious; public safety; conservation; water: 11% of total	9	3		

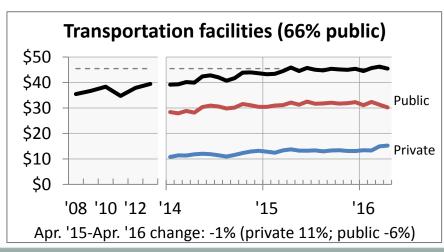


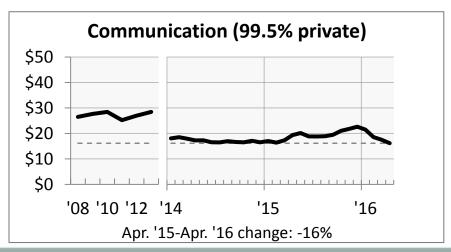
Construction spending: industrial, heavy

annual total, 2008-13; monthly, SAAR, 1/14-4/16; billion \$











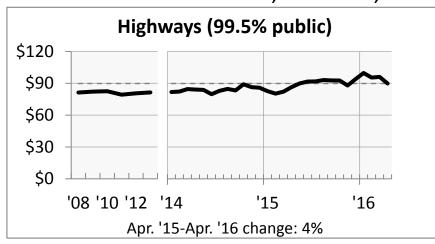
Key points: power, mfg., transportation

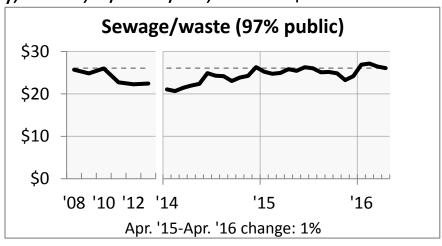
- Solar, wind power are growing again; expect more gas-fired plants, natural gas pipelines into '18
- Mfg growth led by chemicals (petrochemical plants, ethane crackers, LNG) and transportation equipment (cars, trucks, jets, railcars, barges); but few new starts; cuts in plants tied to farming, mining, exports
- Private (mainly rail) investment in transportation will decline; small gains for public airports, ports, transit

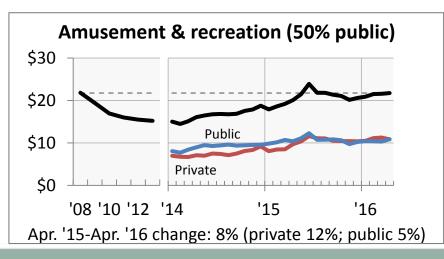


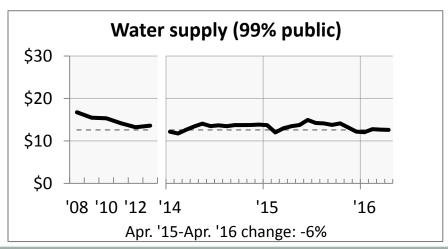
Construction spending: public works

annual total, 2008-13; monthly, SAAR, 1/14-4/16; billion \$











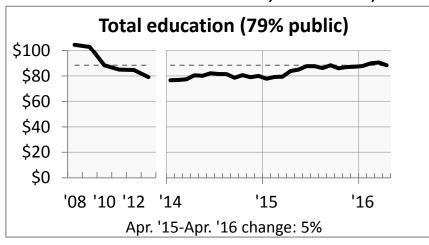
Key points: roads, recreation, sewer/water

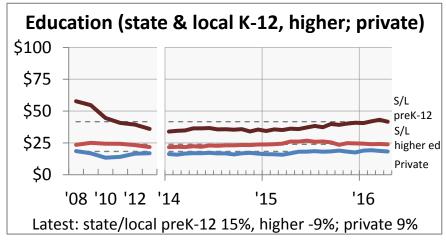
- Highway funds benefit from more travel, hence fuel purchases; gradual pick-up in state funding & P3s
- Amusement & recreation spending is very "lumpy"—
 a few big stadiums at irregular intervals; but funding
 for local, state, federal parks keeps eroding
- Eastern & Midwestern cities under orders to make long-term upgrades to sewer systems that should boost spending; water utilities hurt by drought, conservation but may get money for lead abatement

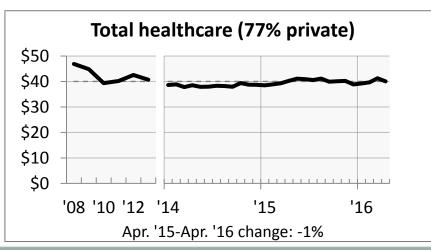


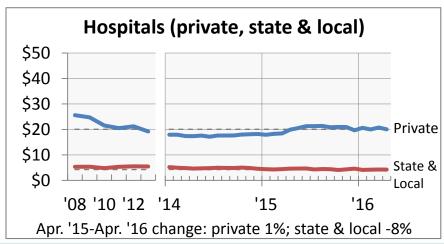
Construction spending: institutional (private + state/local)

annual total, 2008-13; monthly, SAAR, 1/14-4/16; billion \$











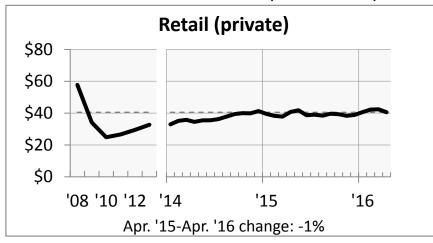
Key points: education & health care

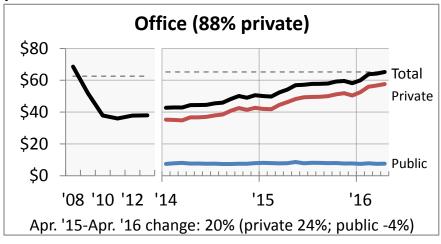
- Higher-ed enrollment is shrinking, so colleges need fewer dorms & classrooms; apts. (MF) replacing dorms (ed.)
- PreK-12 enrollment is flat; more children staying in cities and filling underused or charter schools, so construction no longer matches population growth
- Hospitals face more competition from standalone urgent care, outpatient surgery, clinics in stores; more investment in small facilities, short stays

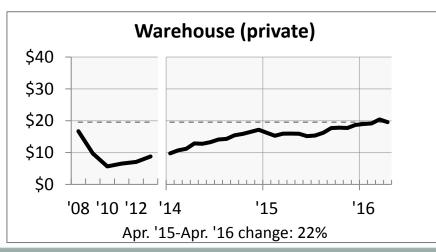


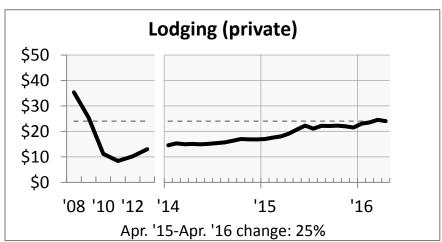
Construction spending: developer-financed

annual total, 2008-13; monthly, SAAR, 1/14-4/16; billion \$











Key points: retail, warehouse, office, hotel

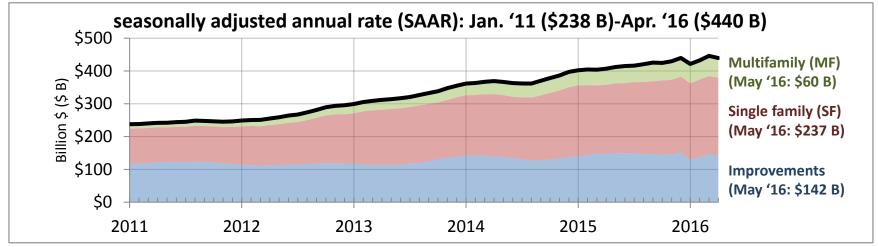
- Retail now tied to mixed-use buildings & renovations, not standalone stores or shopping centers; consumer pivot to online buying will continue
- Warehouse market still benefiting from e-commerce;
 may heat up if Panama Canal leads to distribution shifts
- Employment sets records each month but office space per employee keeps shrinking; growth mainly in cities & renovations, not suburban office parks
- Hotel construction likely to drop as revenue per available room declines

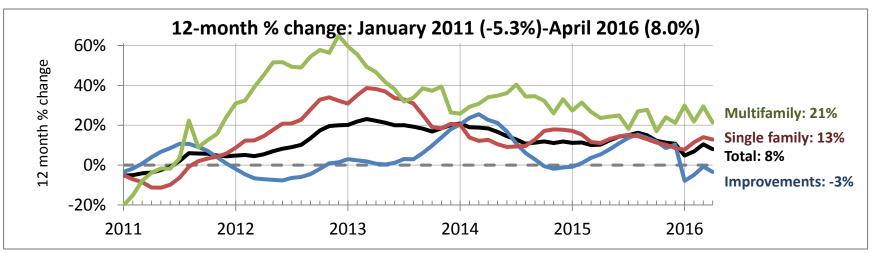


Major locations for data centers



Private residential spending: MF continues to outpace SF





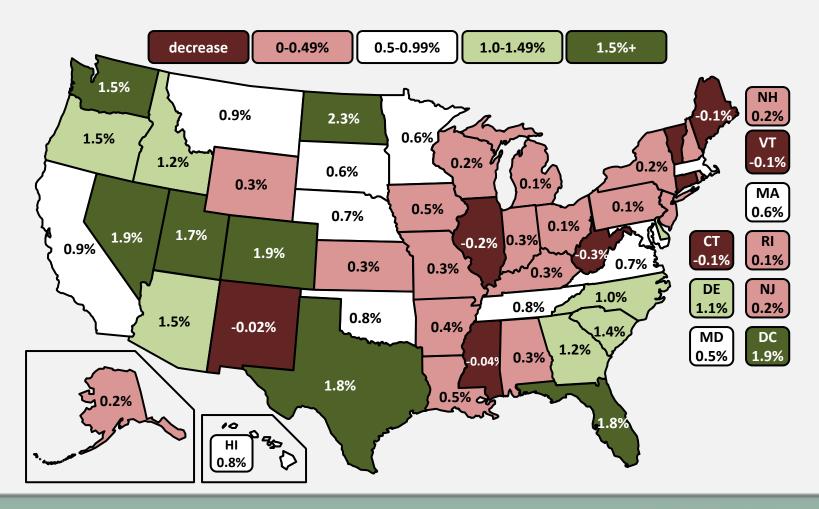


2016 residential spending forecast: 5-9%

- SF: 6-9%; ongoing job gains add to demand; student debt, fears of lock-in, limited supply will cap growth
- MF: 8-12%; growth is slowing but should last through
 2017
 - low vacancies, high rent growth encourage investors
 - millennials show continued preference for cities
 - nearly all MF construction is rental, not condo
- Improvements: 0-10%; Census data is not reliable and shows only a loose relationship to SF spending



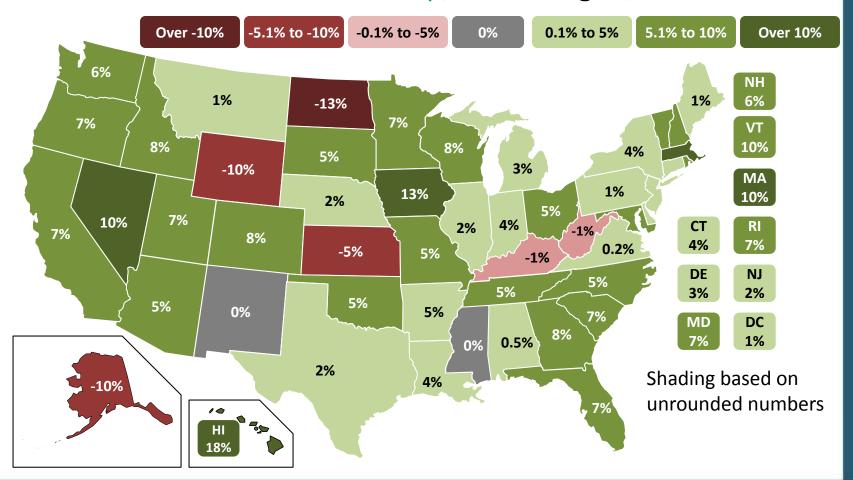
Population change by state, July 2014-July 2015 (U.S.: 0.79%)

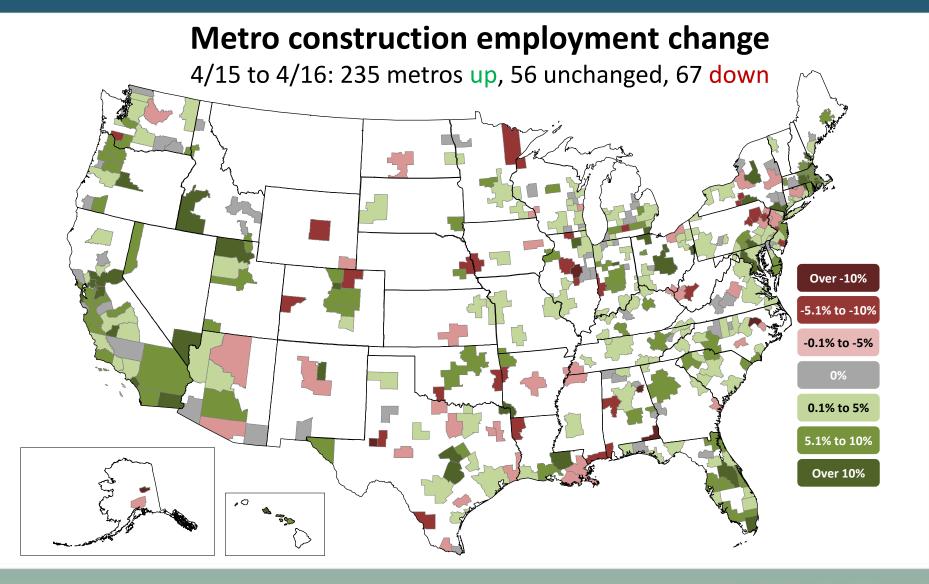




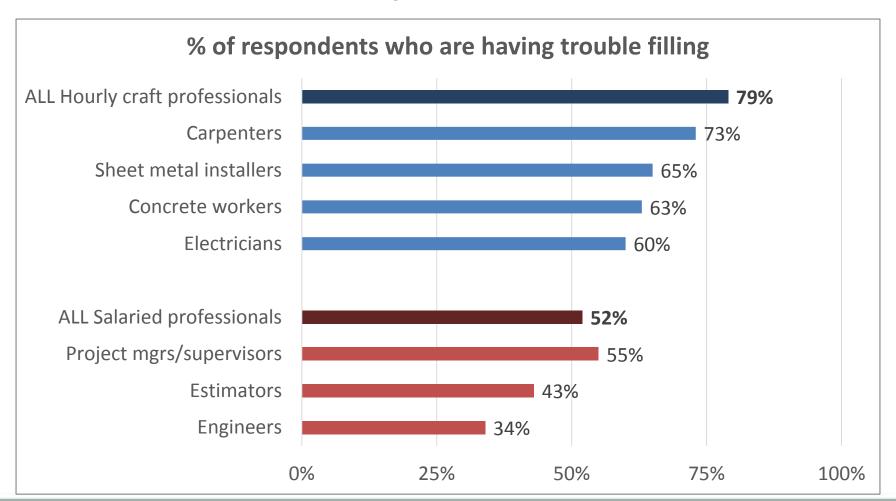
State construction employment change (U.S.: 3.9%)

4/15 to 4/16: **42** states + DC up, **2** unchanged, **6** down



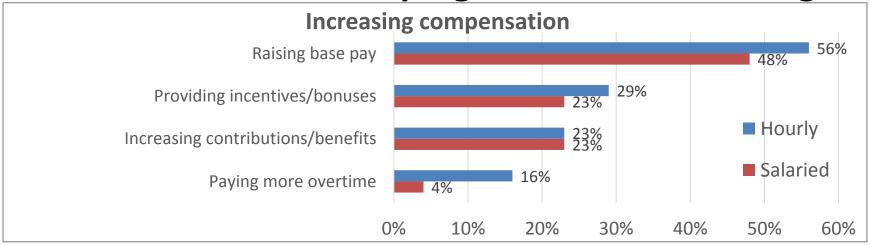


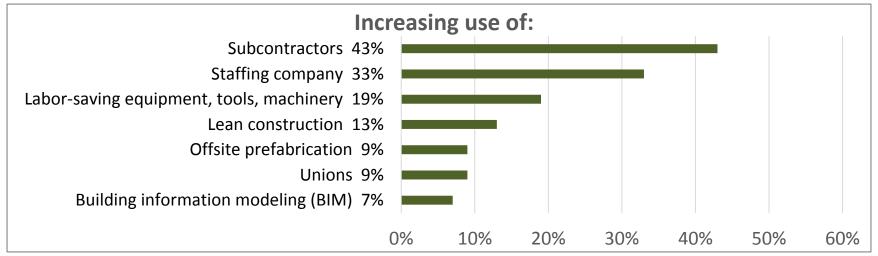
Hardest positions to fill





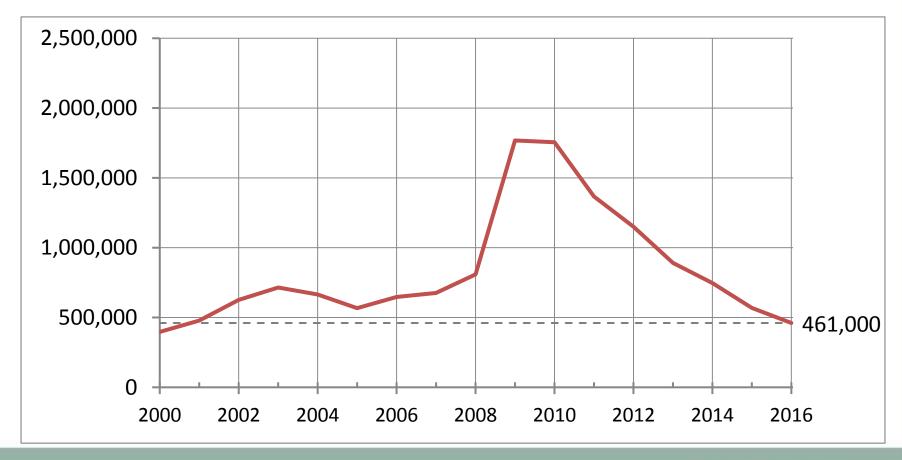
How contractors are coping with worker shortages





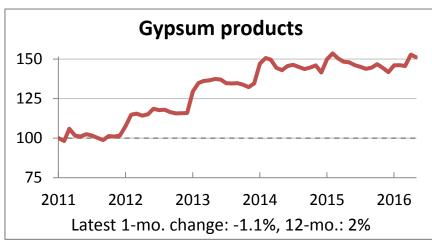


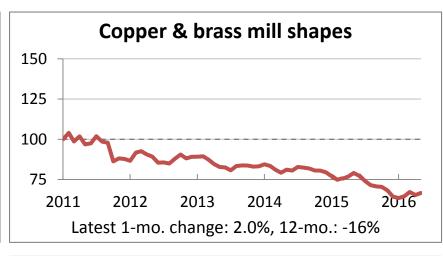
Unemployed construction workers, May 2000-May 2016 (not seasonally adjusted)

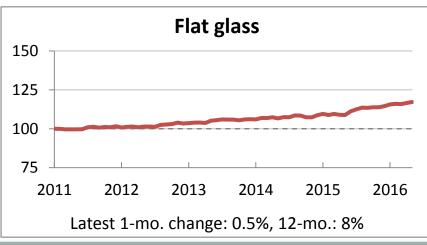


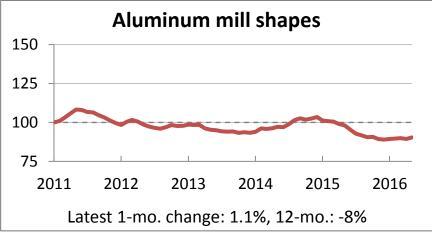


Producer price indexes for key inputs, 1/11-5/16 (Jan. 2011=100)



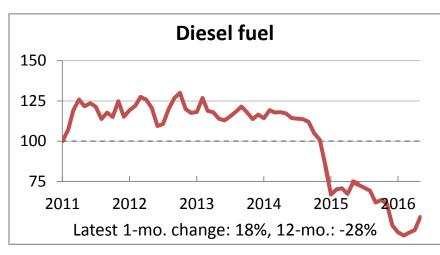


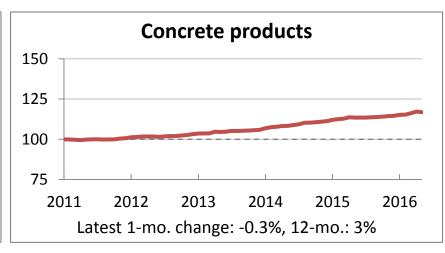


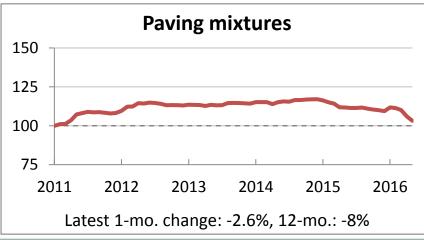


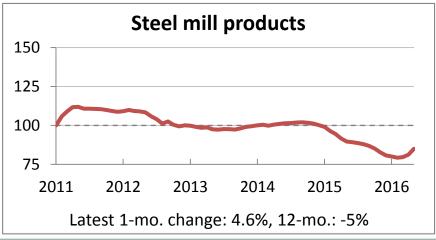


Producer price indexes for key inputs, 1/11-5/16 (Jan. 2011=100)











Summary for 2015, 2016-17 forecast

			2016	
		2015	yr-to-	<u>forecast</u>
		actual	date	2016 2017
To	tal spending	11%	8%	3-8% 2-7%
	Private – residential	17%	10%	4-10% 3-8%
	– nonresidential	8%	9%	3-8% 2-7%
	Public	5%	4%	1-5% 1-5%
Go	oods & serv. inputs PPI	-2%	-2%	0-2% 0-2%
Er	nployment cost index	2.2%	2.3%	3-4% 3-4.5%



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