



CHMURA ECONOMICS & ANALYTICS

House Appropriations Committee Retreat

Virginia's Housing Outlook

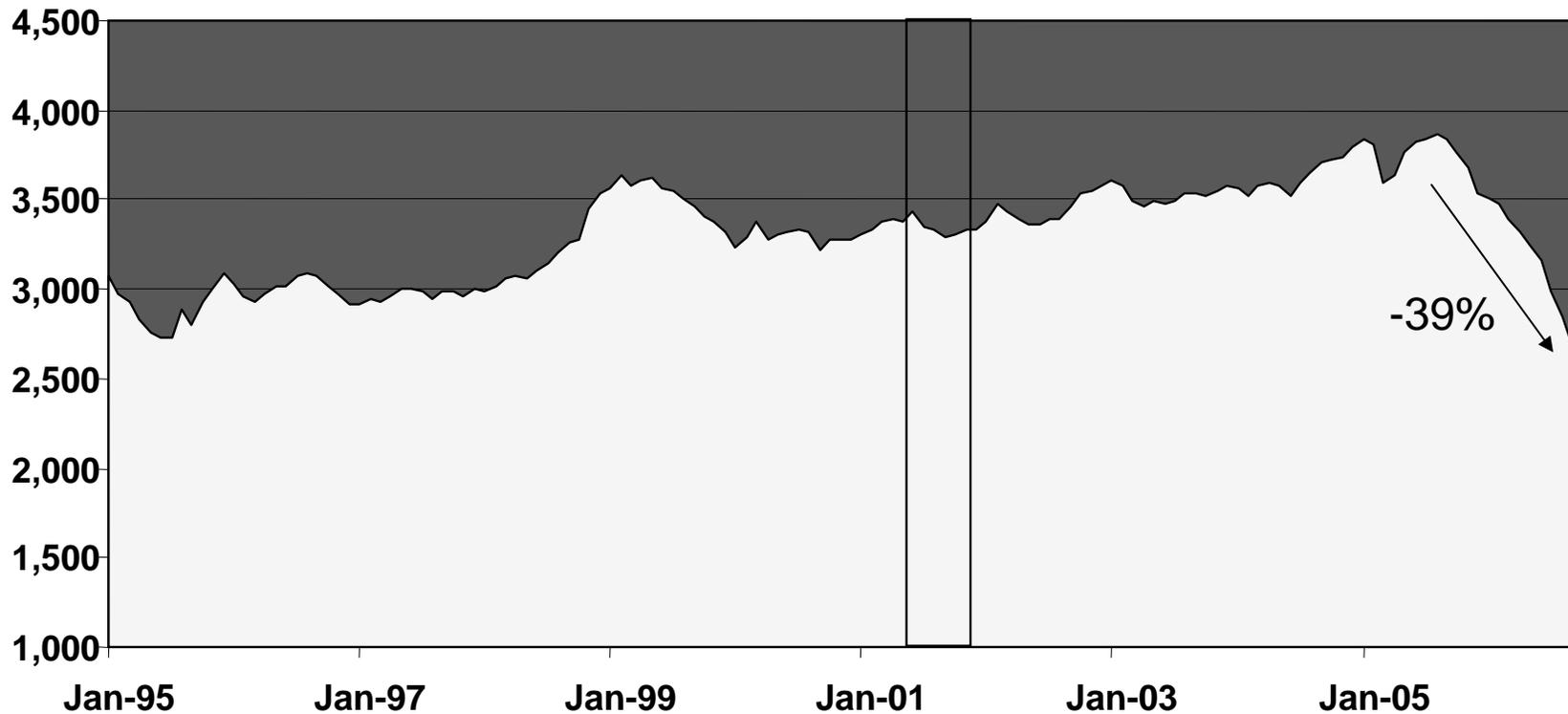
November 13, 2006

Virginia's Housing Outlook

- ↗ Construction drop historically leads recession
- ↗ Residential real estate activity is dropping
 - ↗ Not because of higher interest rates or slower economic growth
 - ↗ Trends driven by home appreciation and affordability
- ↗ Housing drop will not derail economy
 - ↗ A 10% drop in NVA home prices won't stop consumer spending
- ↗ Economy remains strong
- ↗ What else should we worry about?
 - ↗ Defense spending?
 - ↗ Educational competitiveness?

Single-Family Housing Permits Dropped 39% Since Sept. 2005

6-Month Moving Average

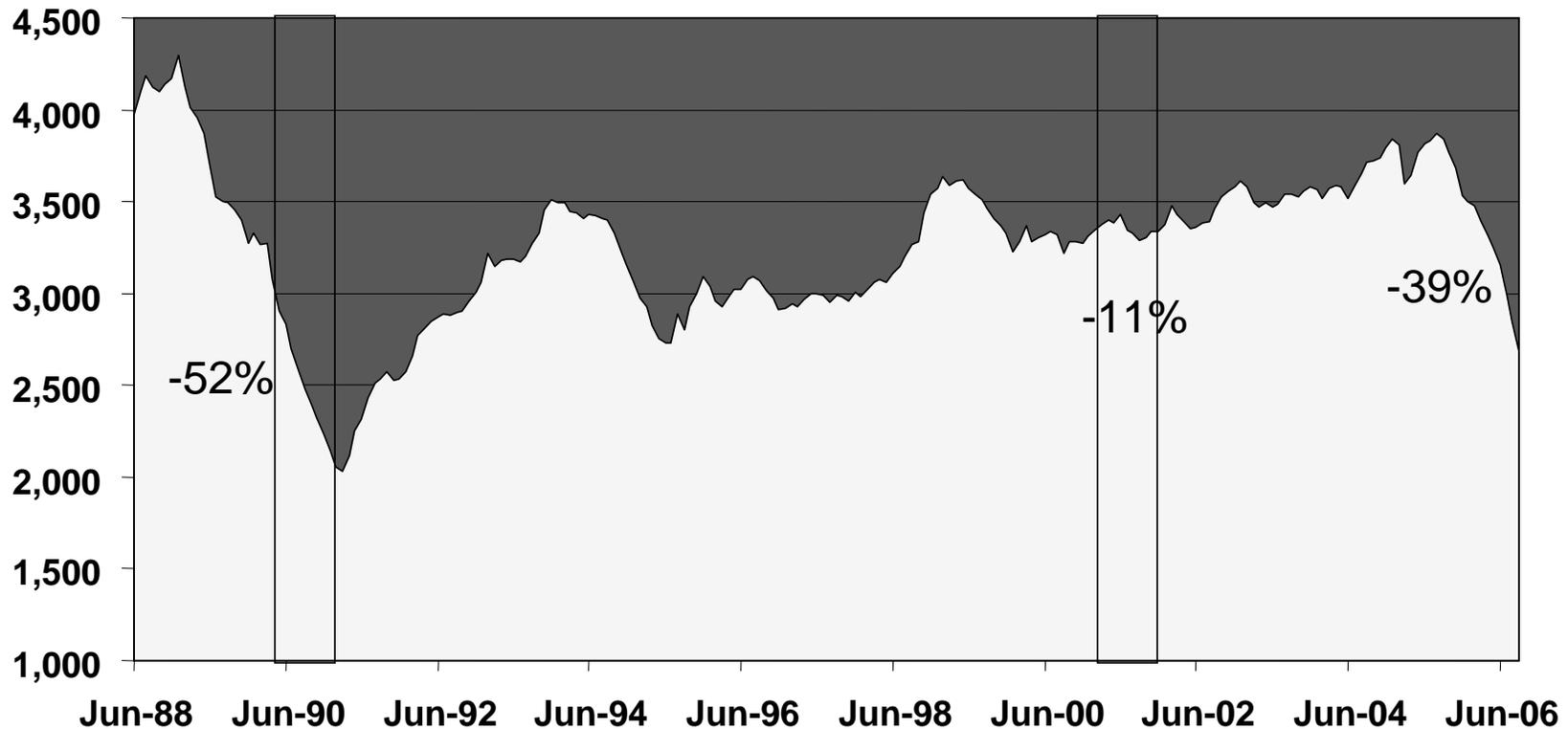


Data through September 2006.

Source: U.S. Department of Commerce.

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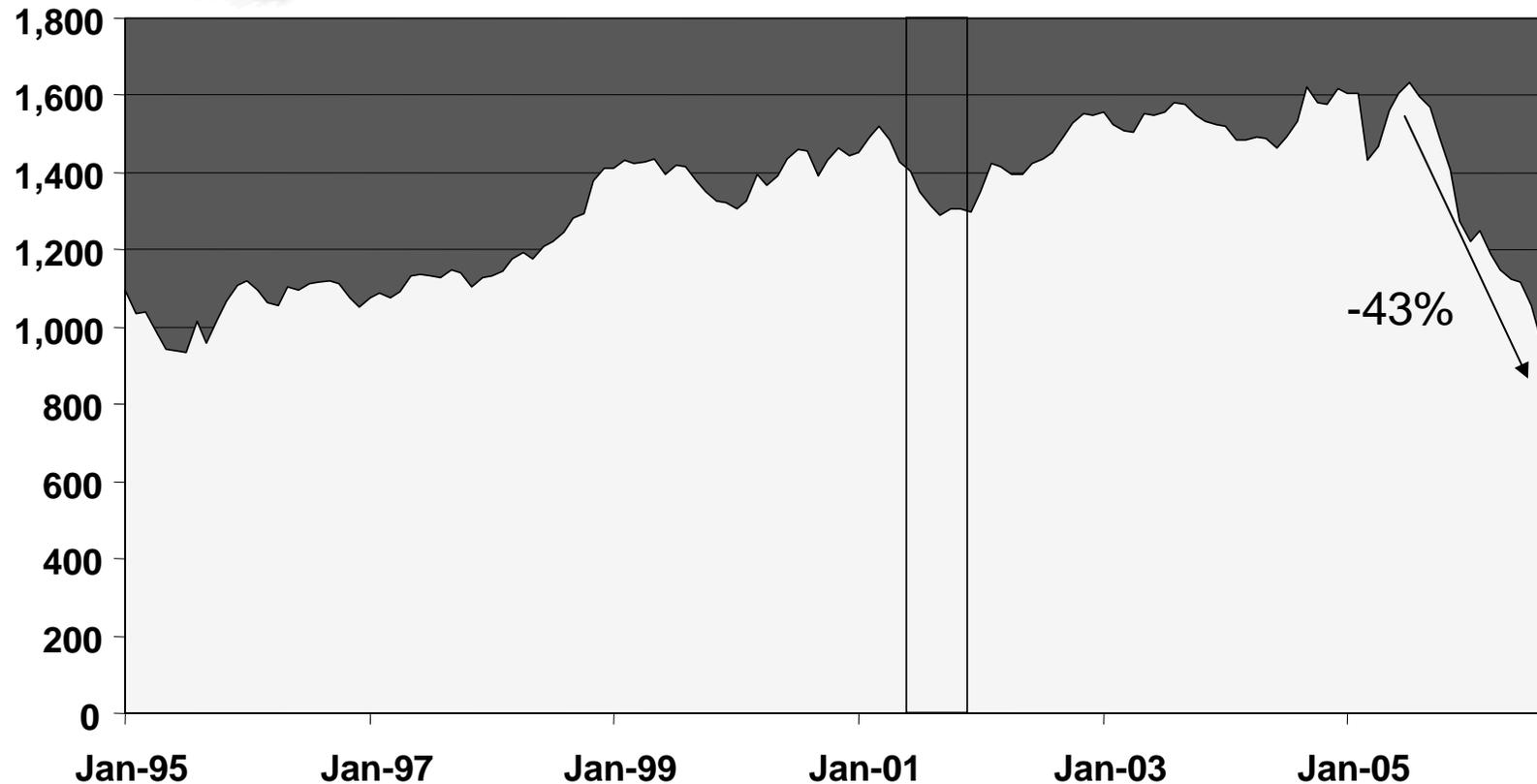


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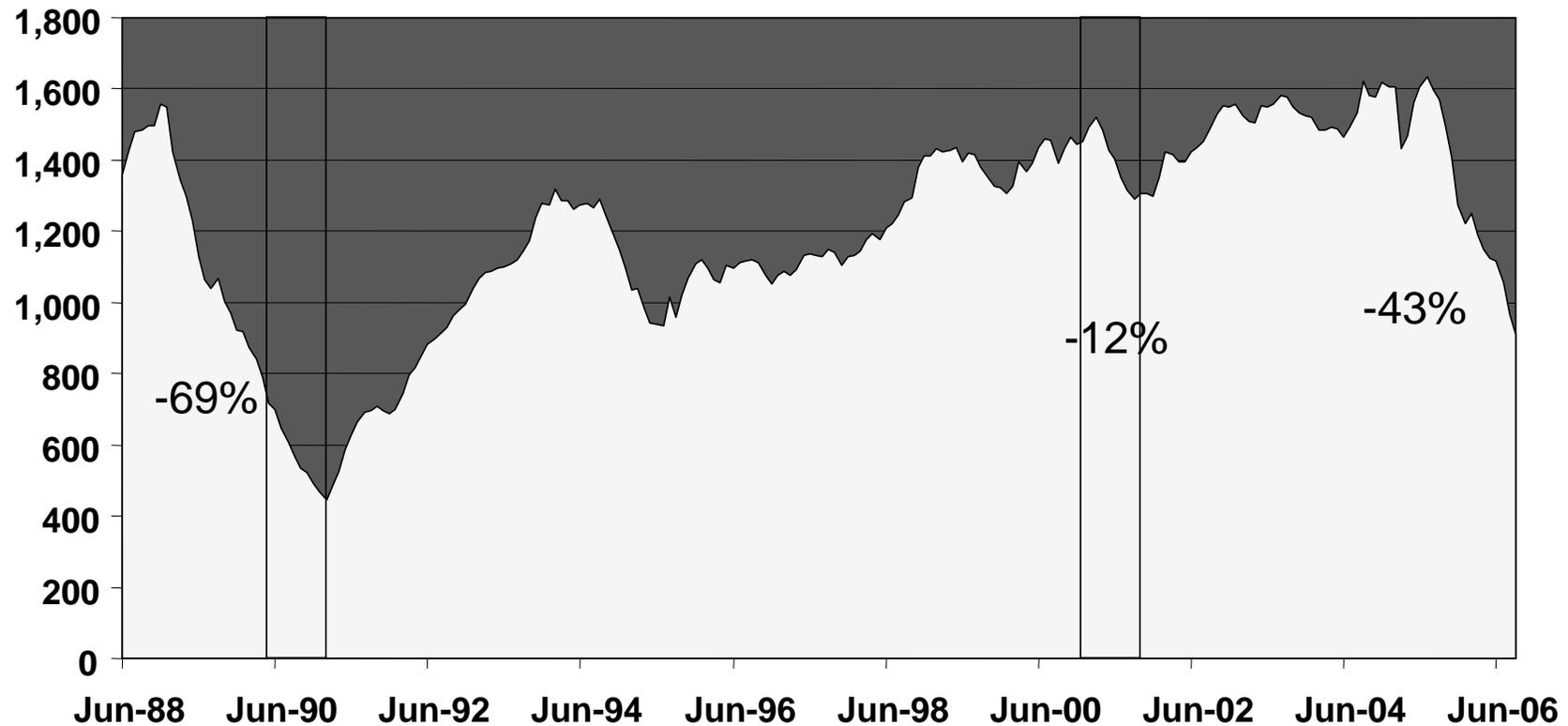


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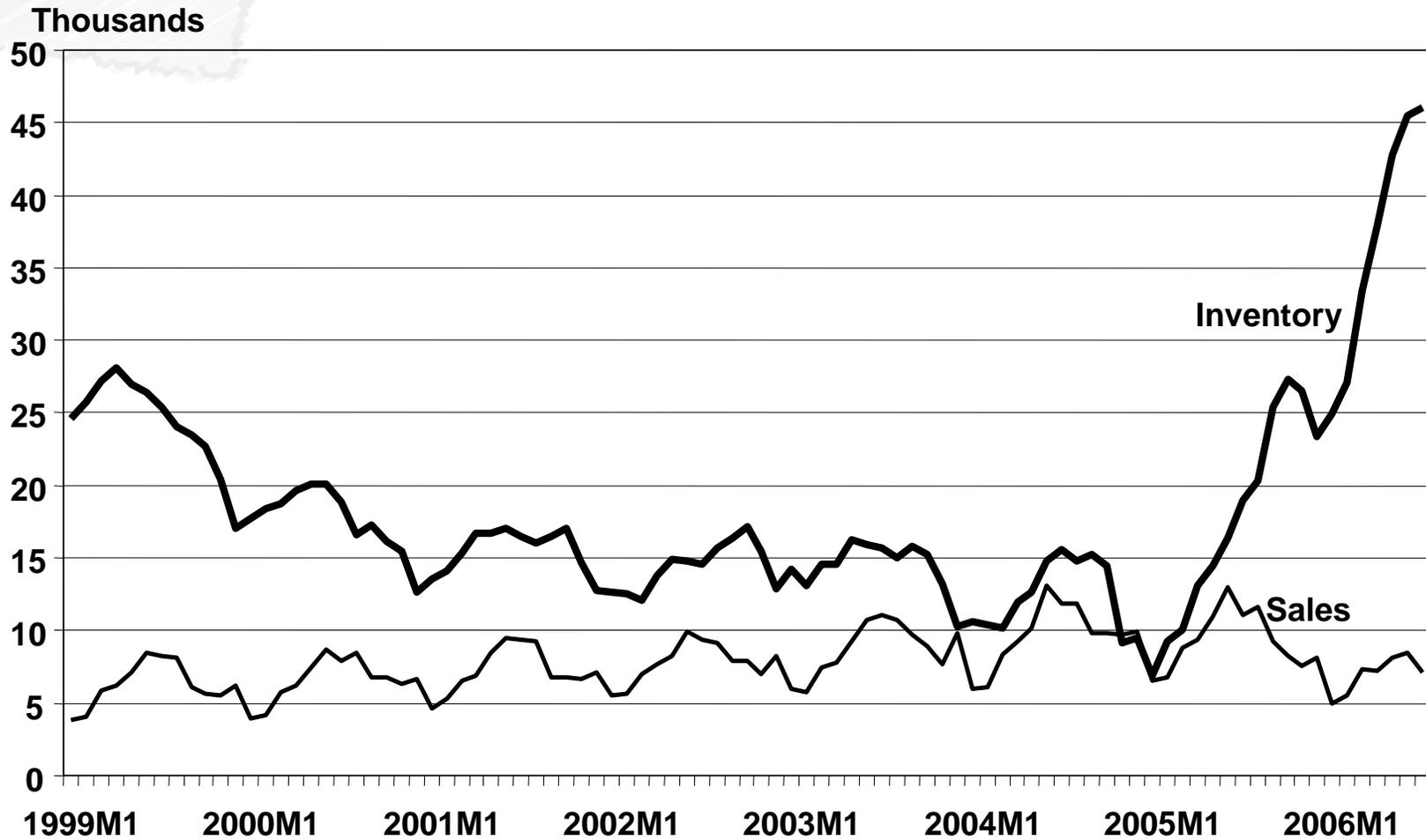
Source: U.S. Department of Commerce.

Why Is the Housing Market Slowing?

- Employment is growing
- Unemployment rate is dropping
- Wages are rising
- Interest rates are relatively low

- Investors
- Affordability

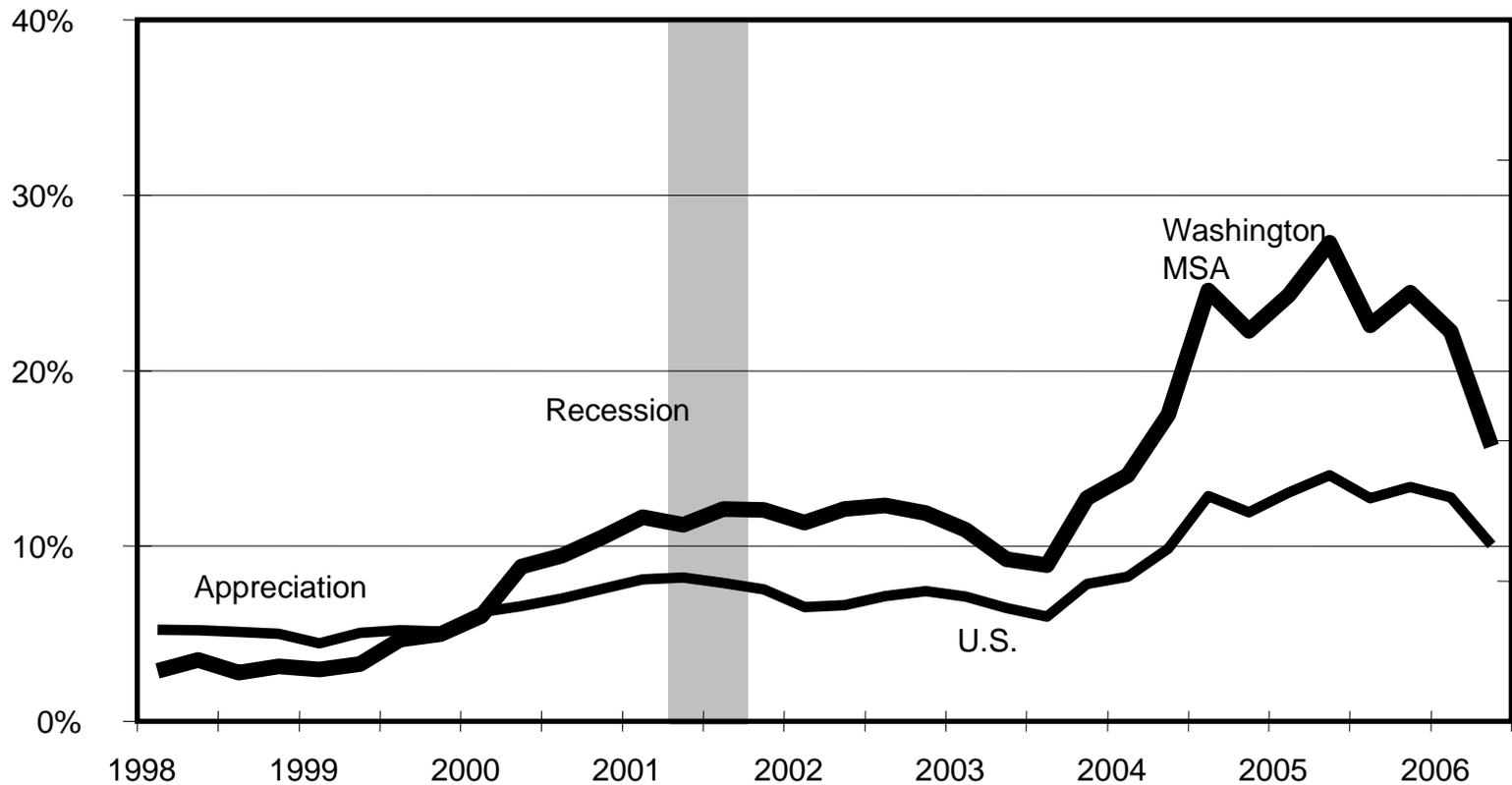
Northern Virginia Home Inventories Have Jumped as Investors Exit



Home Price Appreciation Remains High

Washington MSA Home Price Index and Affordability

Appreciation

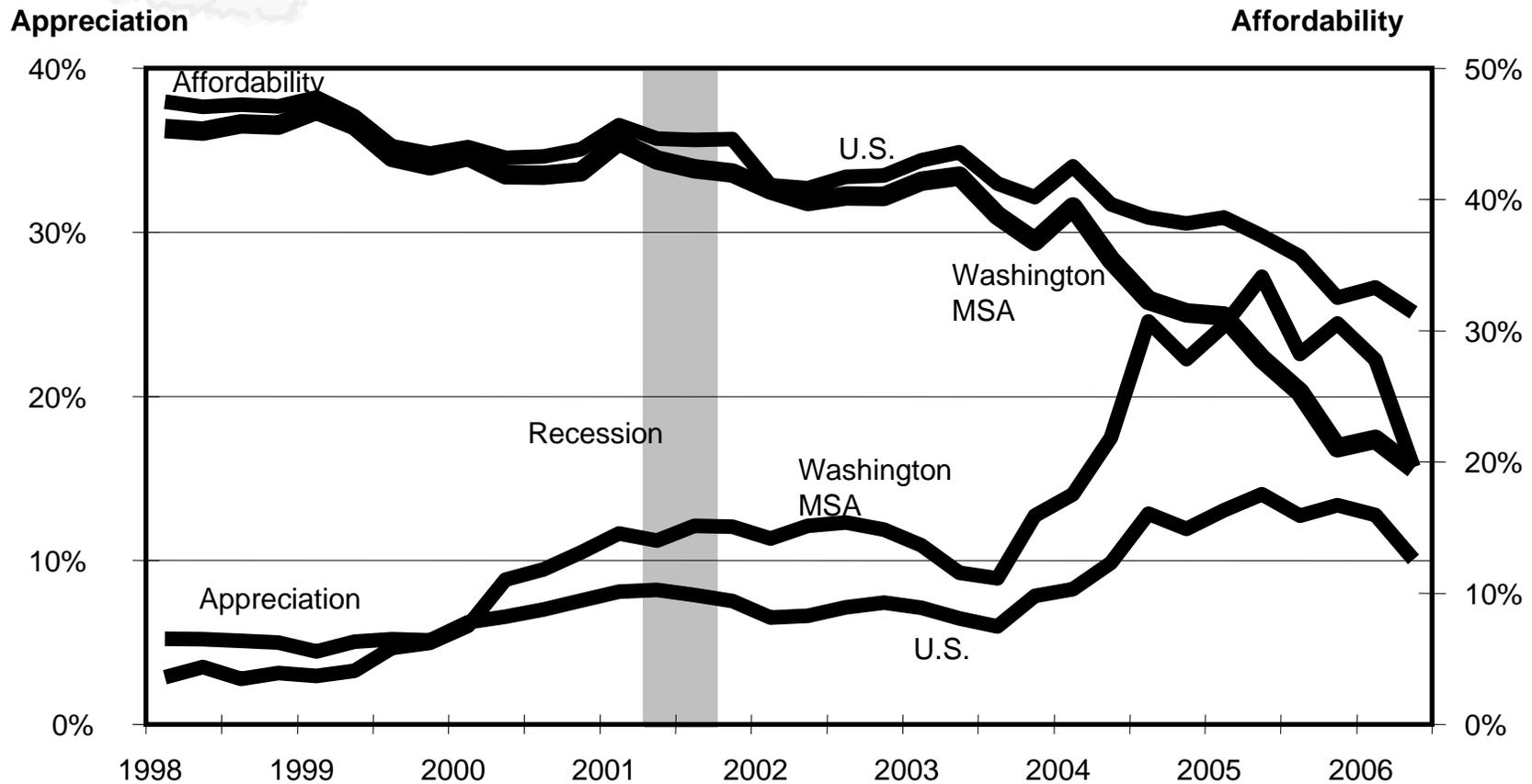


Data through 2006 Quarter 2.

Source: Office of Federal Housing Enterprise Oversight.

...Impacts Affordability

Washington MSA Home Price Index and Affordability

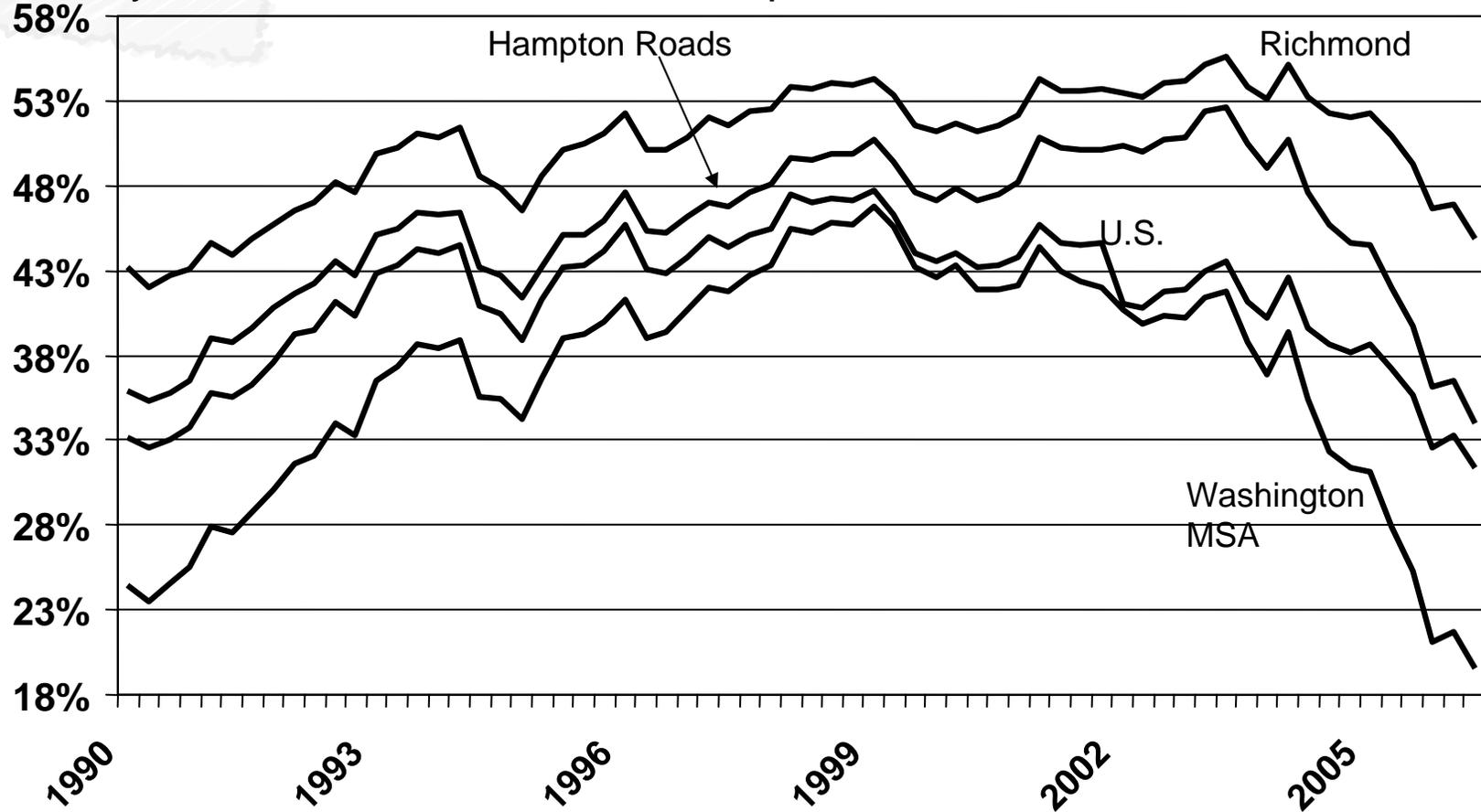


Affordability - % of households that can afford a median-priced home.

Source: Chmura Economics & Analytics.

Housing Affordability Has Dropped in All Regions

Affordability = % of households that can afford a median-priced home.



Data Through 2006 Quarter 2.

Source: Chmura Economics & Analytics

Home Affordability in Virginia's Metropolitan Areas, 2006 Qtr 2

Affordability = % of households that can afford a median-priced home.

MSA	Affordability
Danville	55.6%
Roanoke	47.1%
Lynchburg	46.2%
Richmond	44.8%
Blacksburg	43.1%
Harrisonburg	37.0%
Hampton Roads	34.0%
Winchester	29.8%
Charlottesville	27.4%
United States	31.4%

Source: Chmura Economics & Analytics

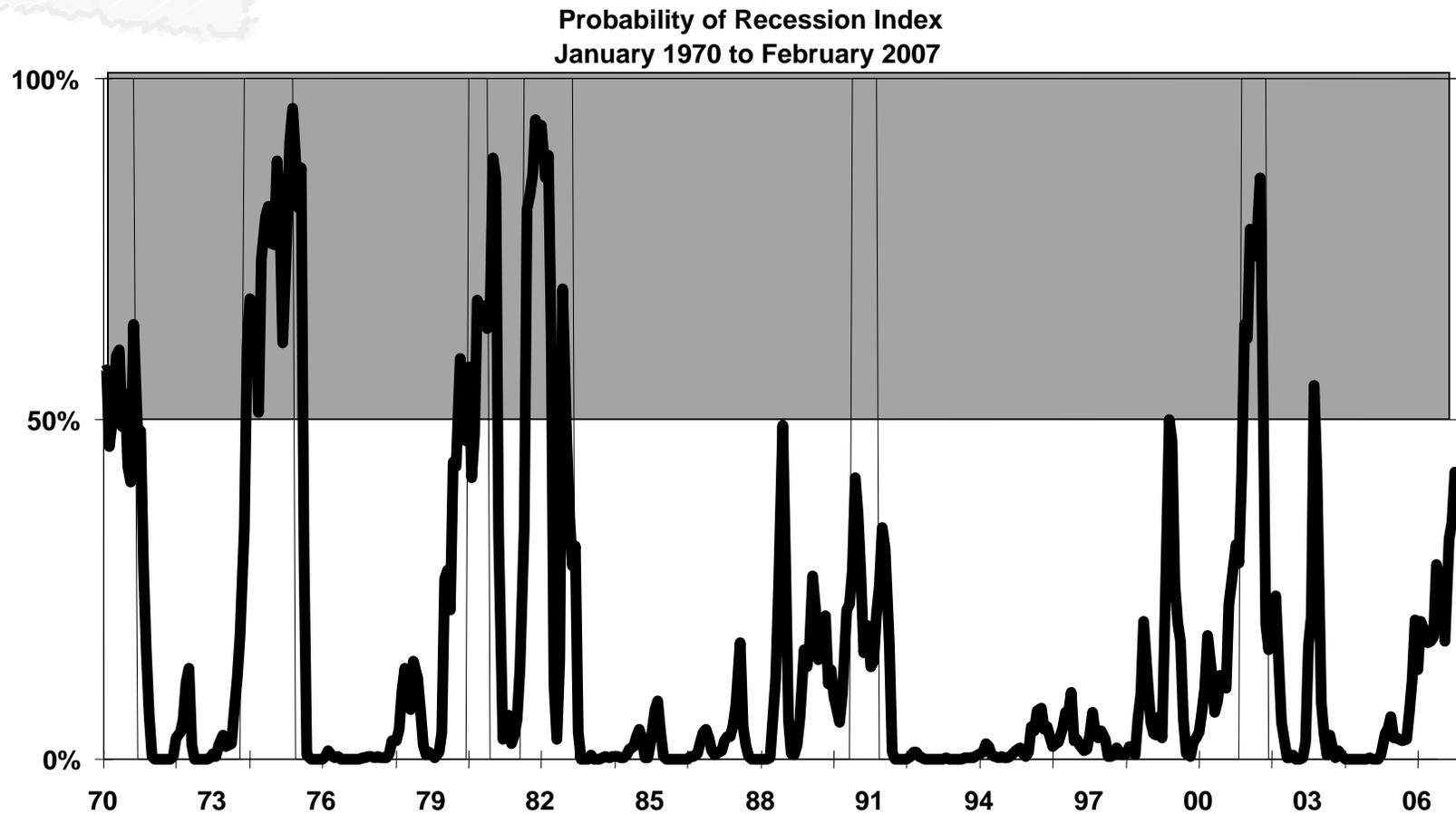
Is There a Bubble, Will it Burst, How Bad will it Be?

- What is needed to burst bubble?
- How far would prices fall?
- How would that impact Virginia economy?

A Recession or Shock to Region Needed to Burst Bubble



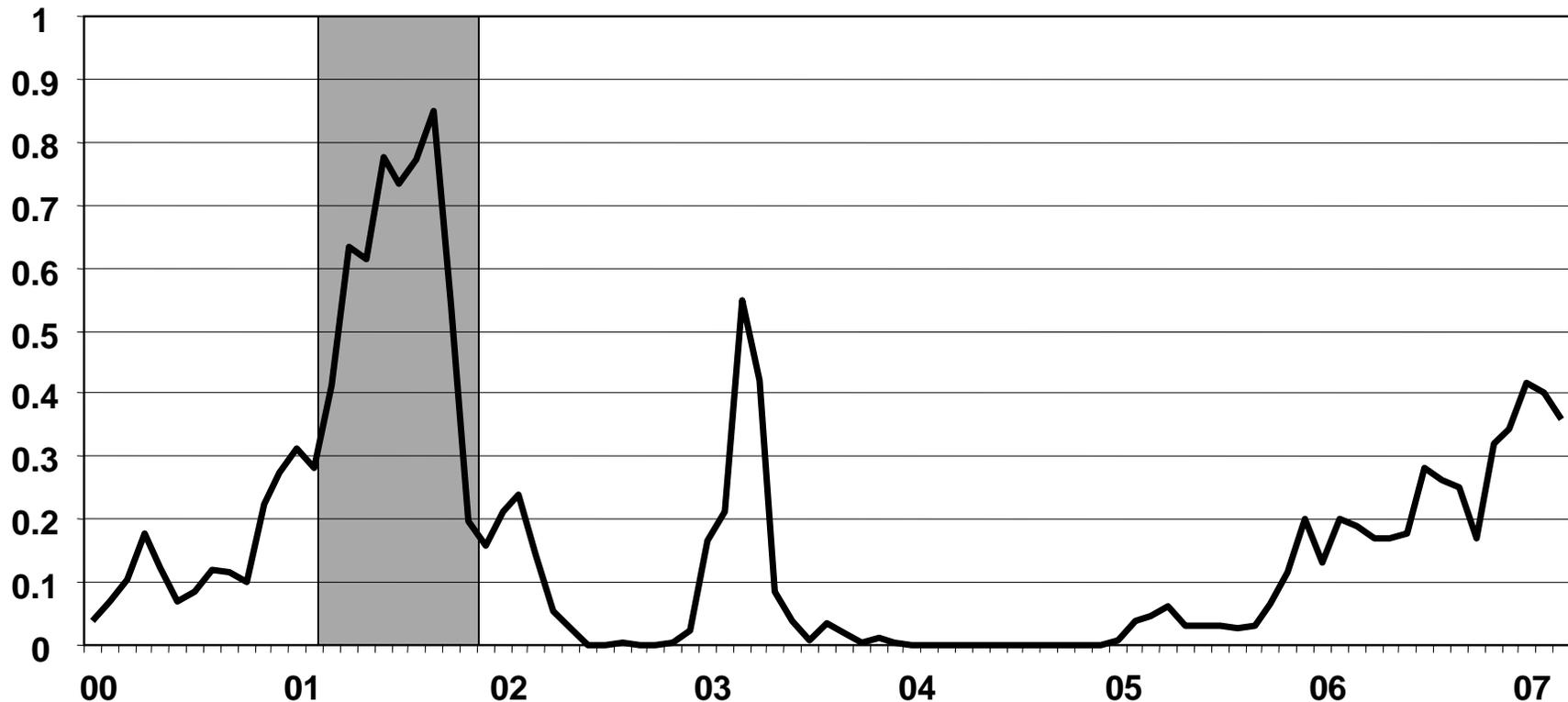
Historically, This Measure Has Been Accurate



Source: Chmura Economics & Analytics.

Probability of Recession 36% in February 2007

Probability of Recession Index

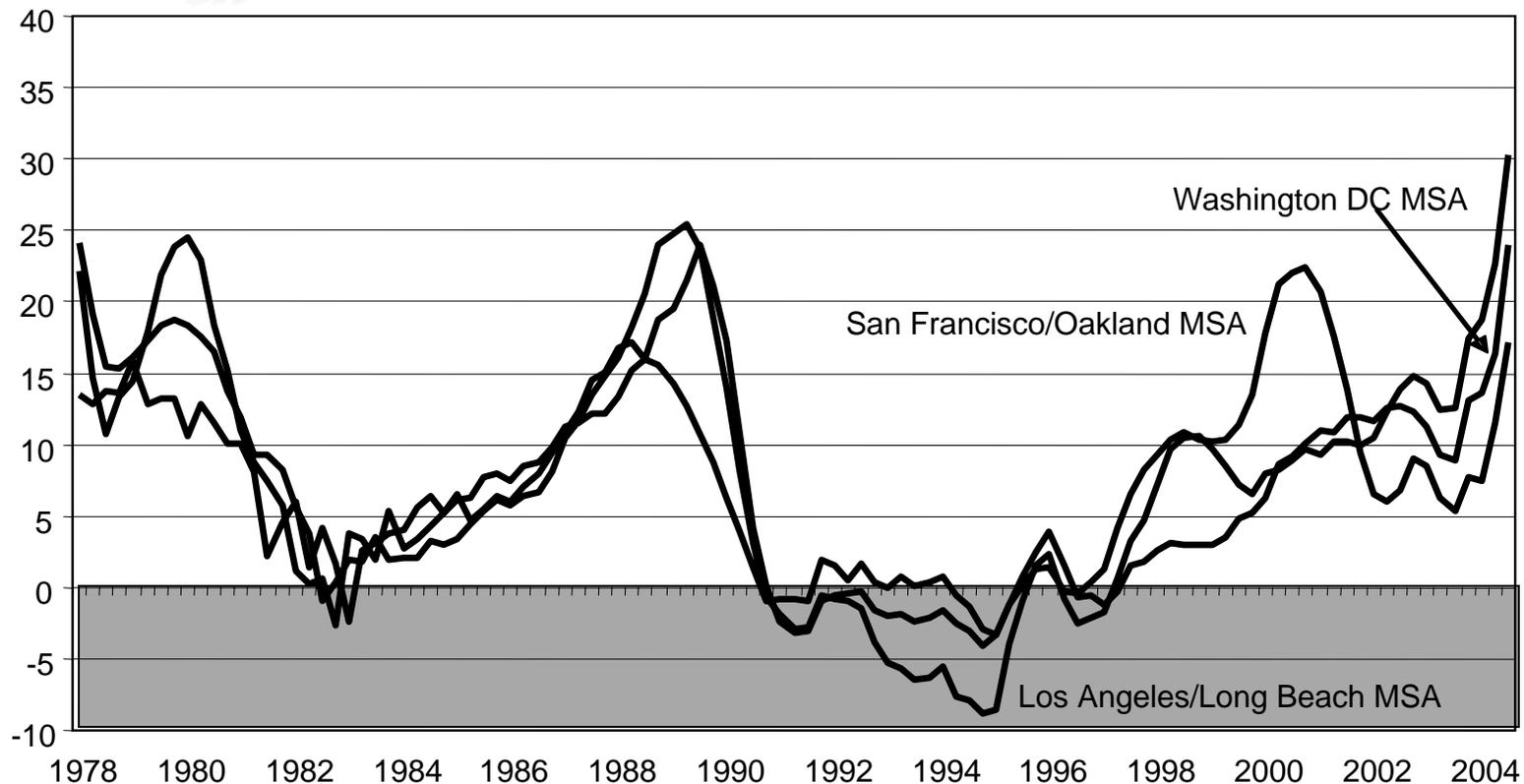


Source: Chmura Economics & Analytics.

Components of Index: Inflation, S&P500, Slope of the Yield Curve, Volatility of the Yield Curve.

Housing Bubbles: Regional Attributes are Important

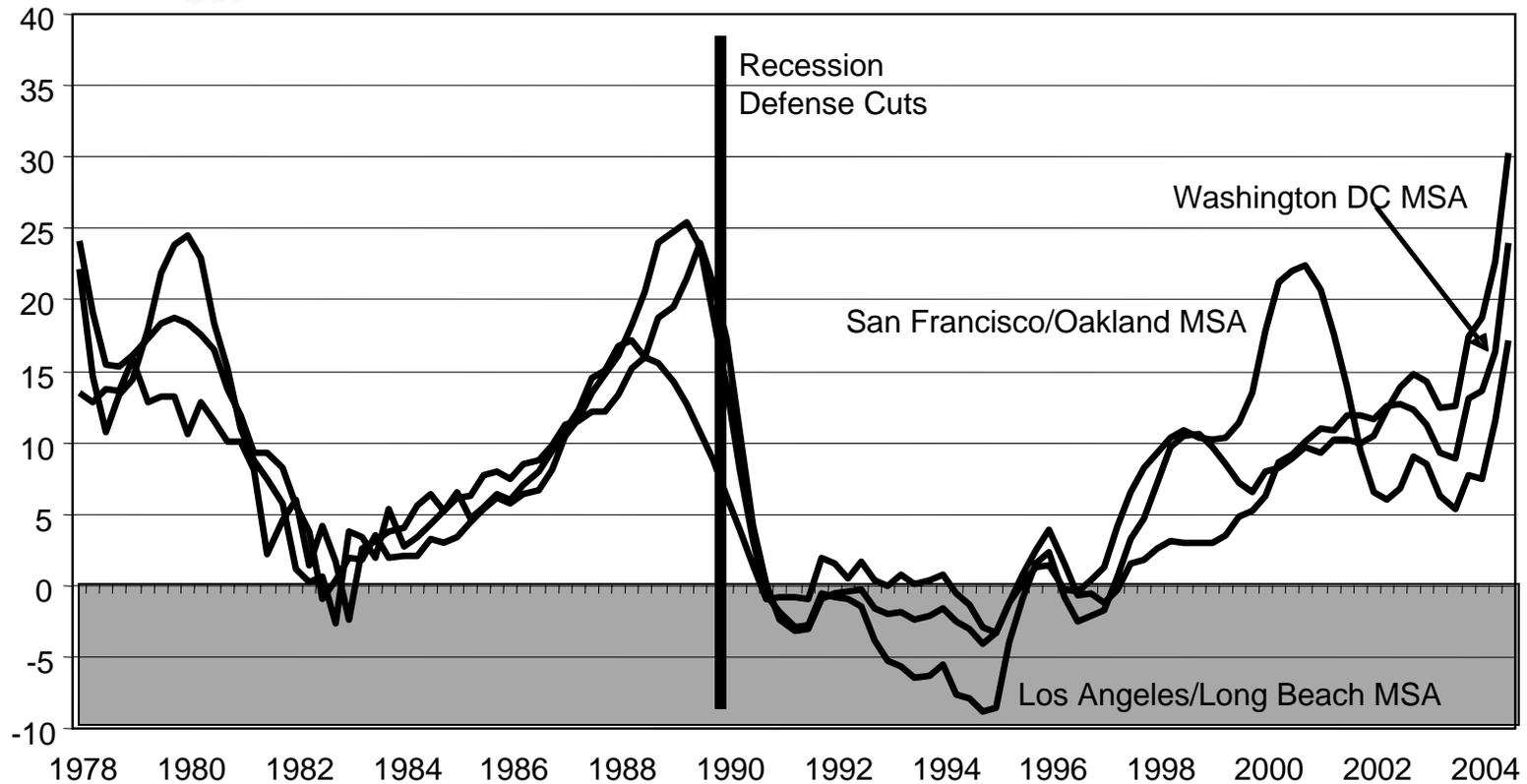
House Price Appreciation
Percent Change From A Year Ago



Source: Office of Federal Housing Enterprise Oversight (OFHEO) Home Price Index

Housing Bubbles: Regional Attributes are Important

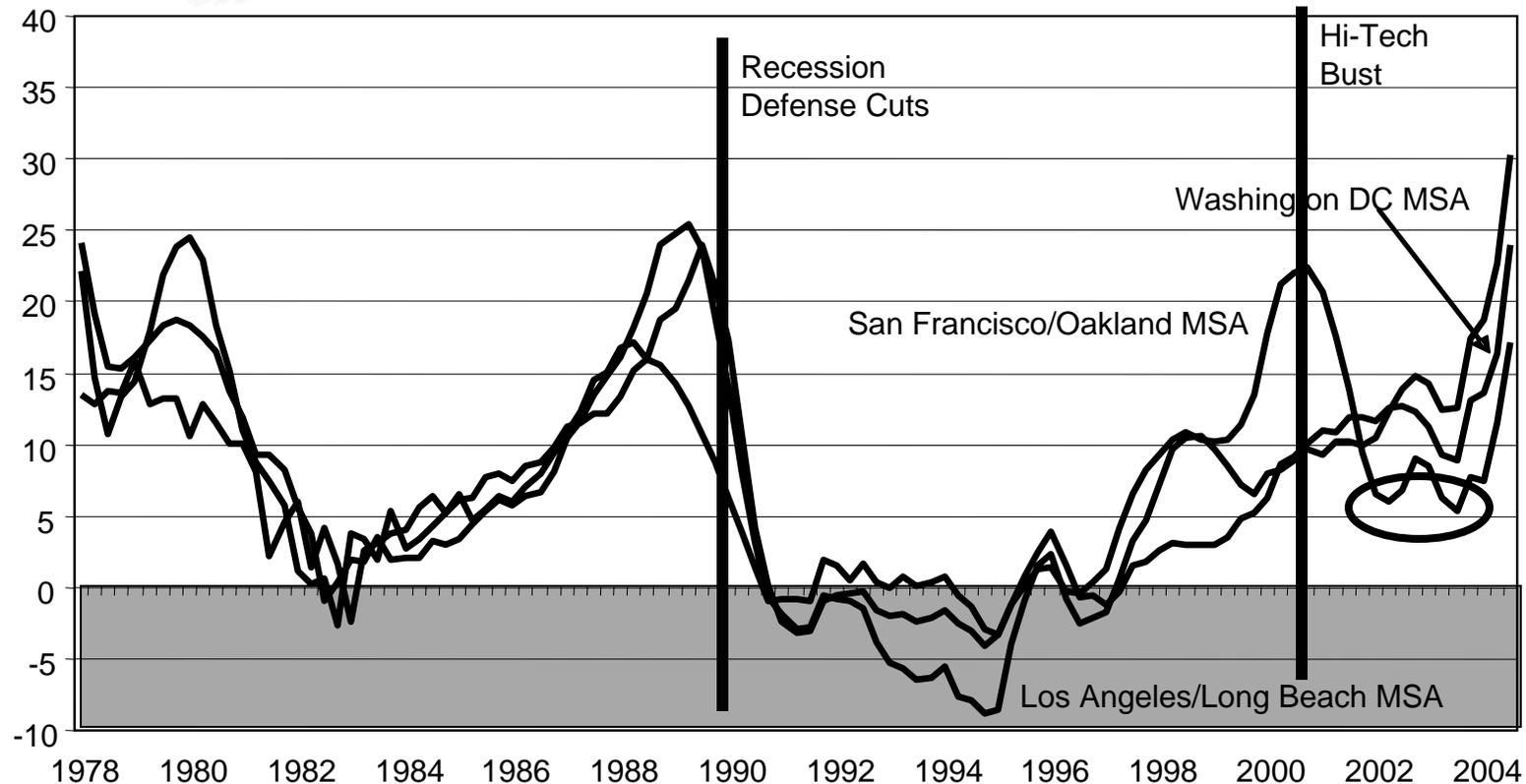
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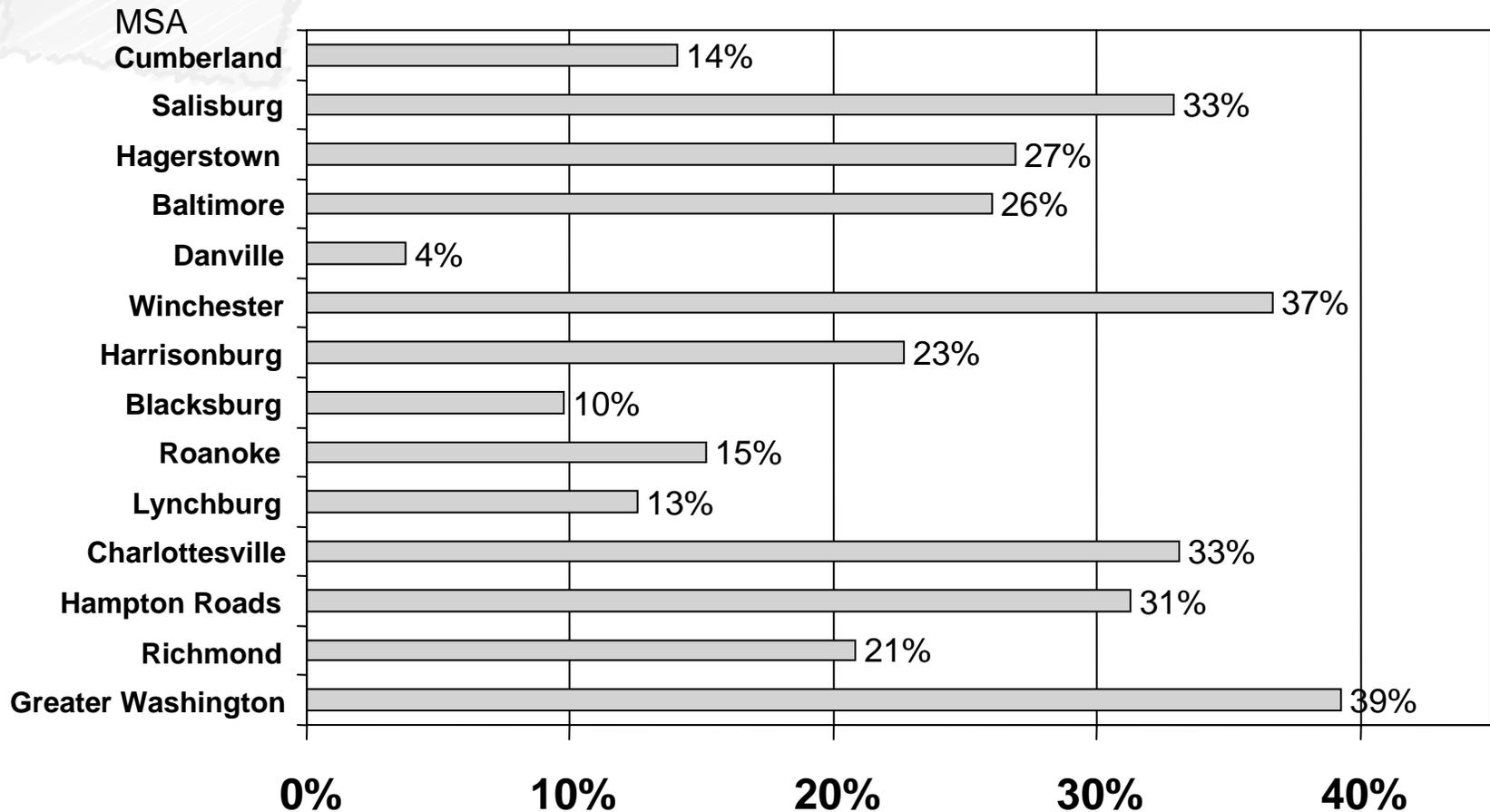
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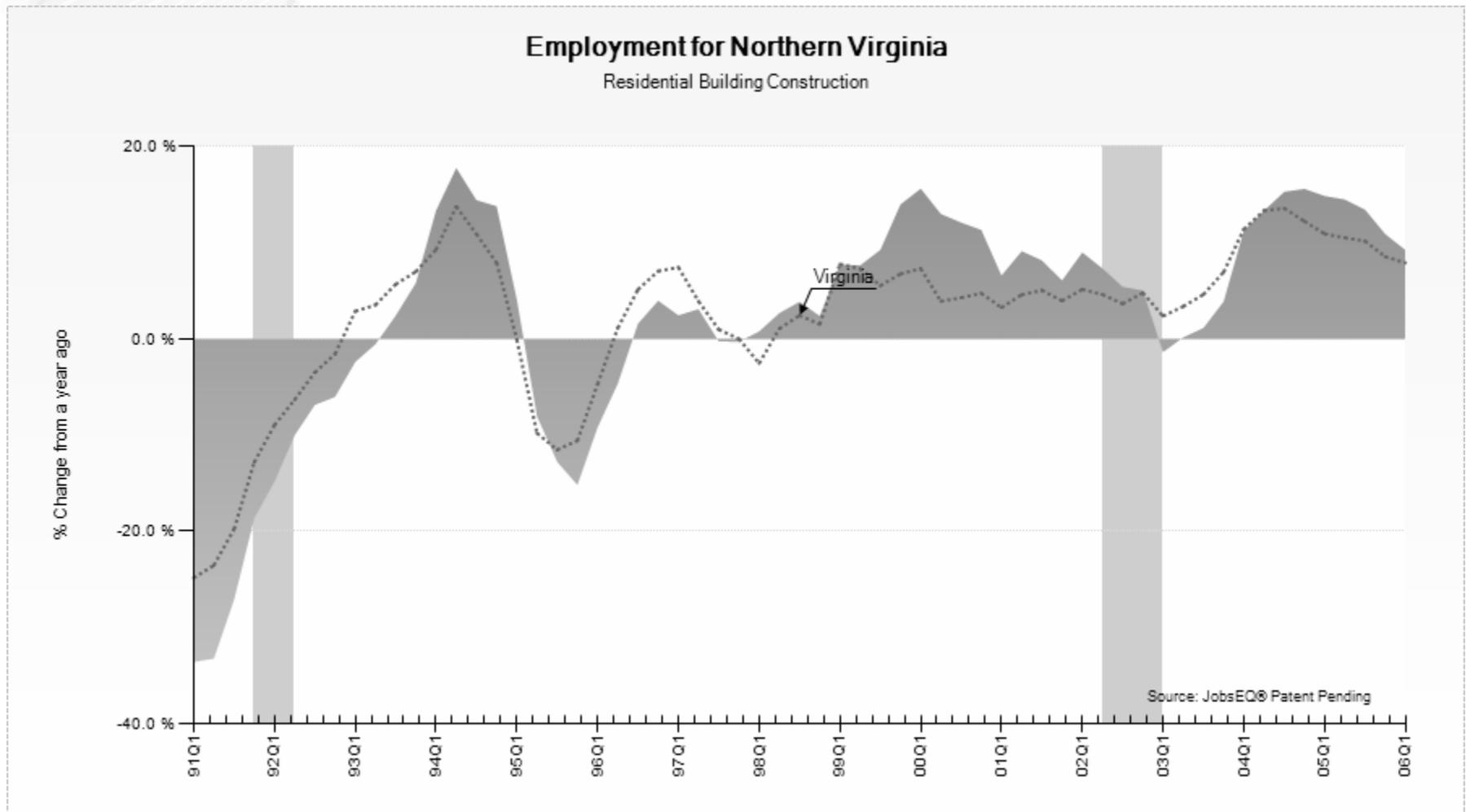
How Far Can Prices Fall? How Far Above 'Market' Are Home Prices?



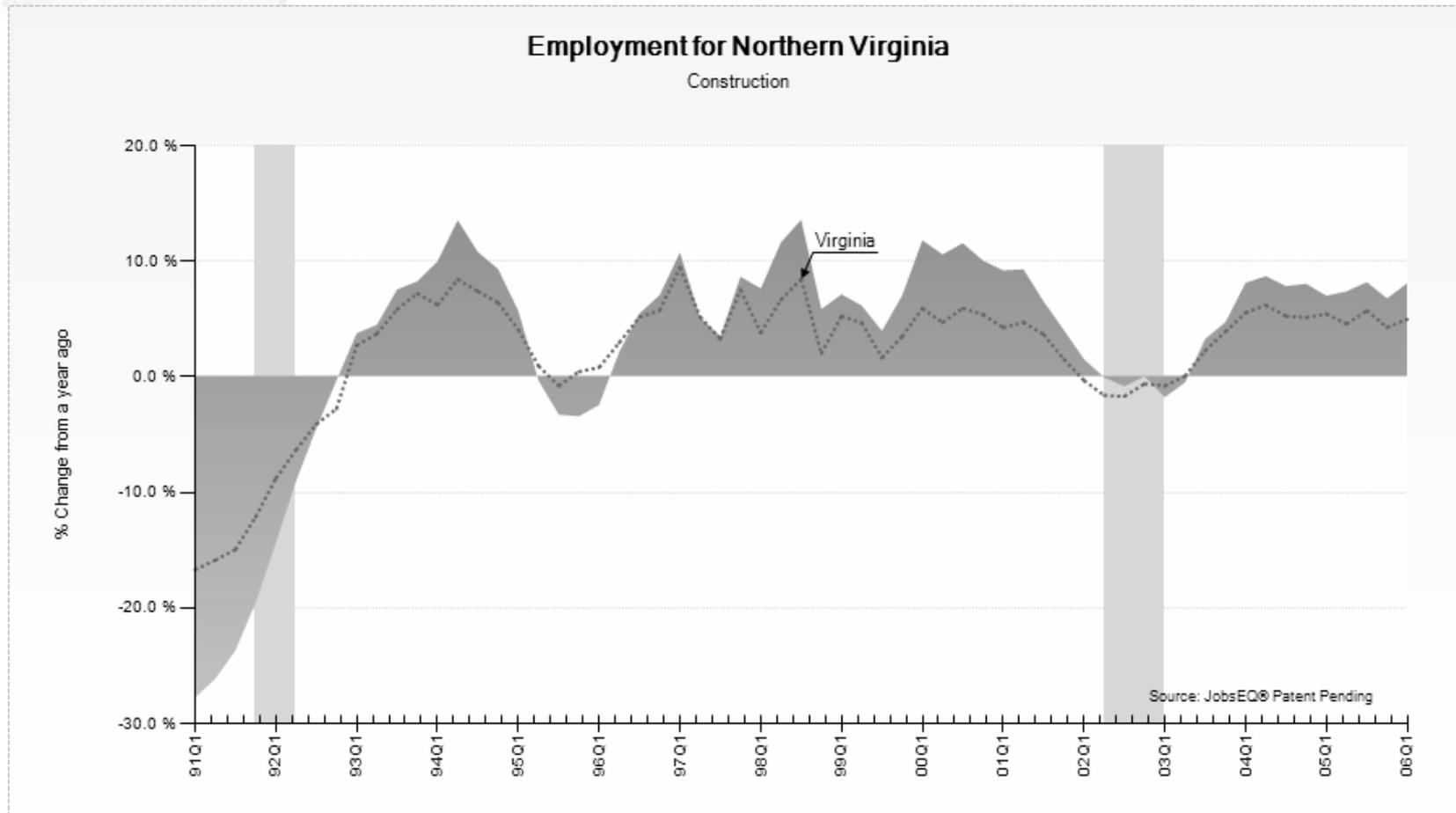
Over Valuation,
2006 Quarter 2

Source: Chmura Economics & Analytics

Job Growth Related to Home Building is Slowing



Construction Employment is Growing in Nonresidential So Little Change in Overall Growth

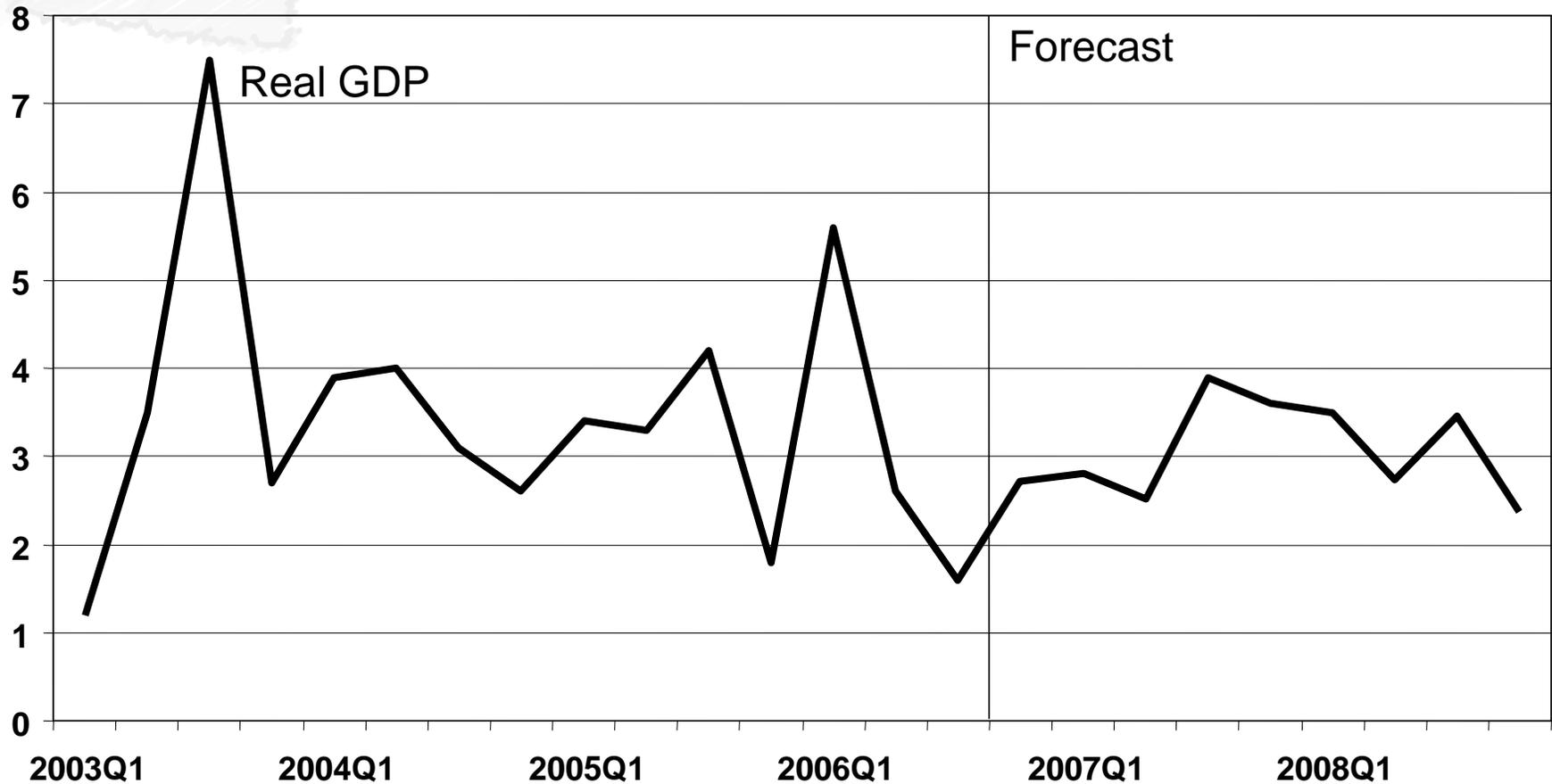


Potential Impact of 10% Drop in NVA Home Prices

- 2004 Joint Center for Housing Studies, Harvard University: housing wealth effect
 - Consumer spend 5.5¢ of every \$1.00 of housing wealth increase
 - Spending occurs over a little more than a year
- Estimated total value of owner-occupied homes in NVA
- Assume 10% loss in NVA home value translates to decline in spending of 5.5¢/\$
- Retail sales could drop 2.2% in state if, NVA homeowners purchase all their products/services in Virginia

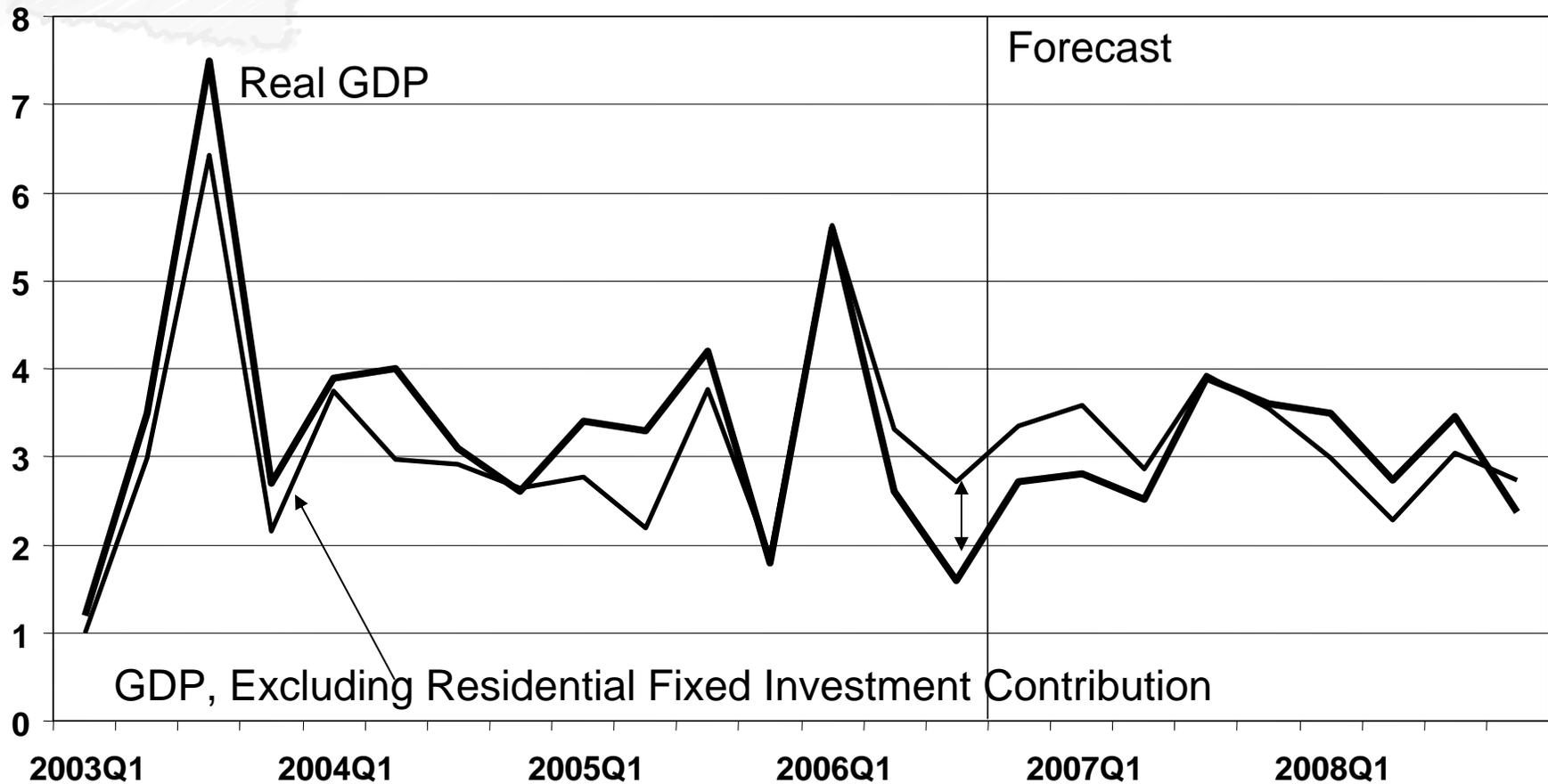
Nationally, Taking about 1 Percentage Point Off GDP Growth

Real GDP, Annualized rate of growth



Nationally, Taking about 1 Percentage Point Off GDP Growth

Real GDP, Annualized rate of growth



Housing Downturn

	Percent Change from A Year Ago
New Home Sales	-14.2%
Existing Home Sales	-14.2%
Housing Starts	-27.7%
Builder Confidence	Down 37 Points
Median Existing Home Prices	-2.2%
OFHEO Index	+10.06%

Data Through 2/06

The Virginia Economy is Fundamentally Strong

- Jobs increased 52,700 or 1.4% from year ago (Sept.) (1.3% in U.S.)
- Retail sales +6% from year ago (Sept.)
- Initial unemployment claims -4% from year ago (Sept.)
- Defense spending growing a slower rate

Anything to Worry About?

- The long run
- Education

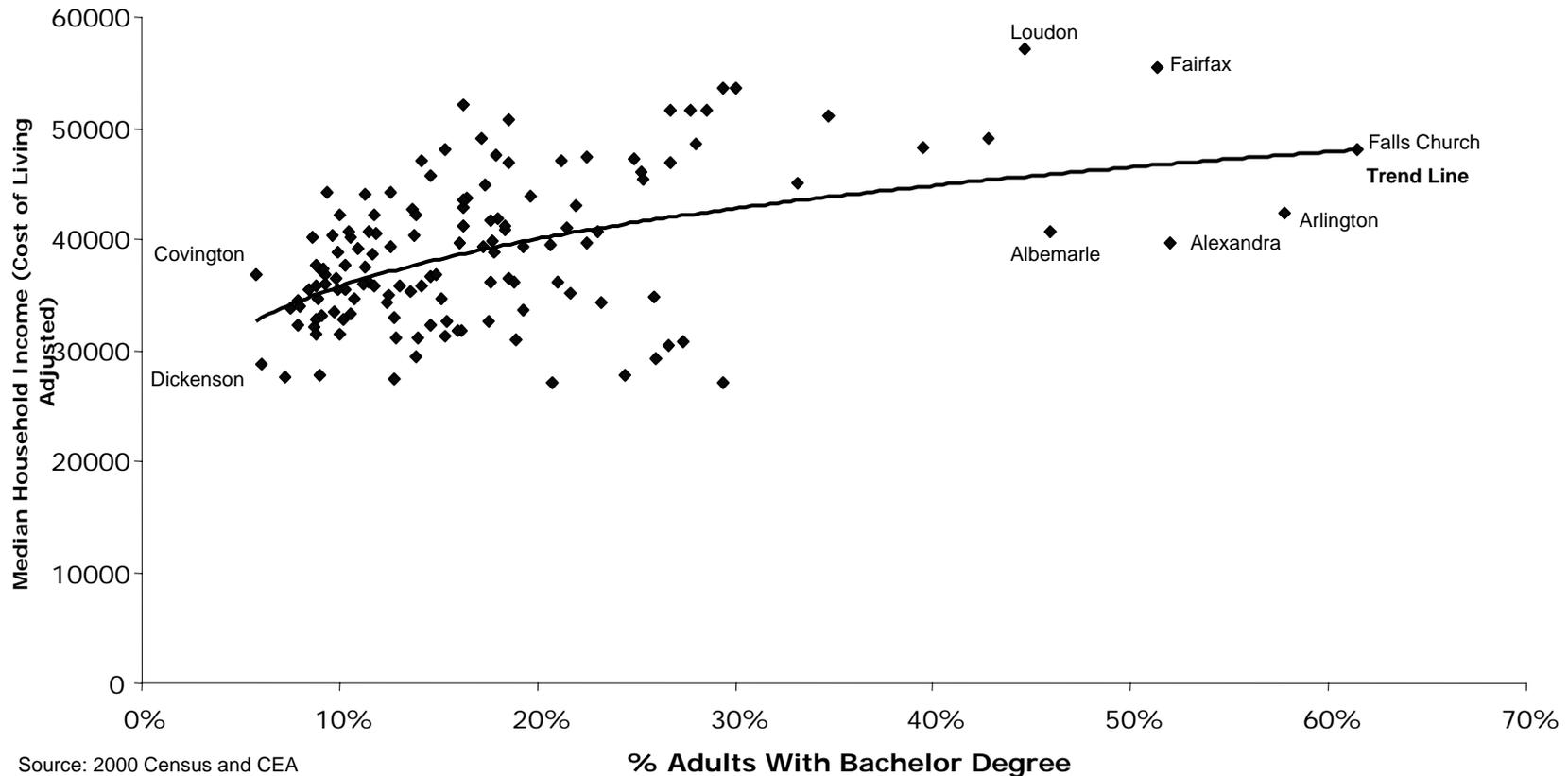
Broad Relationship Between Education and Economic Well-Being is Well Established

- More education is associated with higher wages
- More education is associated with a lower unemployment rate

Unemployment rate in 2003	Education attained	Median weekly earnings in 2003
(Percent)		(Dollars)
2.1	Doctoral degree	\$1,349
1.7	Professional degree	1,307
2.9	Master's degree	1,064
3.3	Bachelor's degree	900
4	Associate degree	672
5.2	Some college, no degree	622
5.5	High-school graduate	554
8.8	Some high-school, no diploma	396

Education Matters: Regions Grow Faster and HH Income is Higher

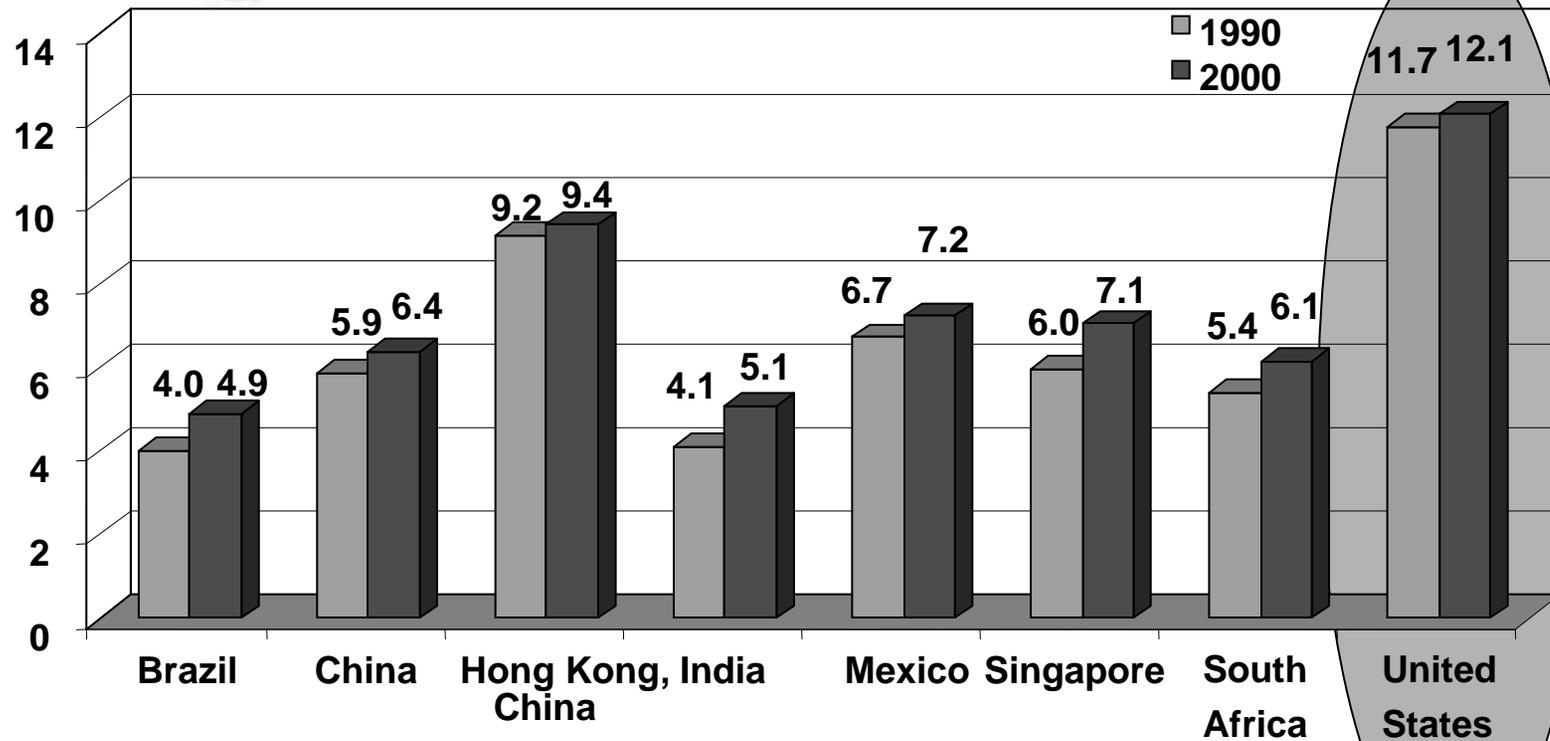
Relationship Between Education Attainment and Cost of Living Adjusted (COLA) Household Income
(Correlation Coefficient 0.47)



Source: 2000 Census and CEA

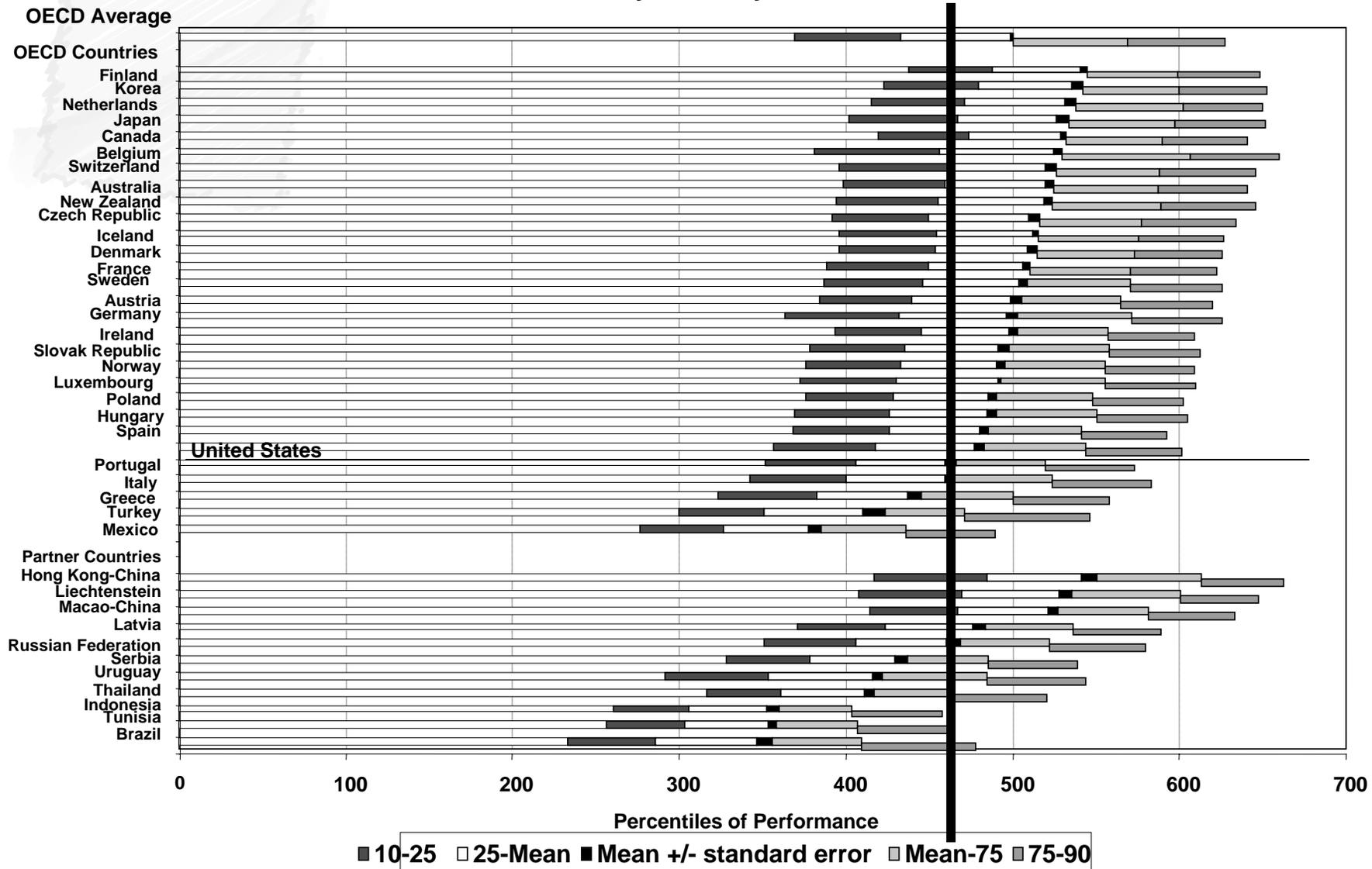
Internationally, Our Competitive Advantage is Education

Average Years of Schooling of Adults, Selected Countries

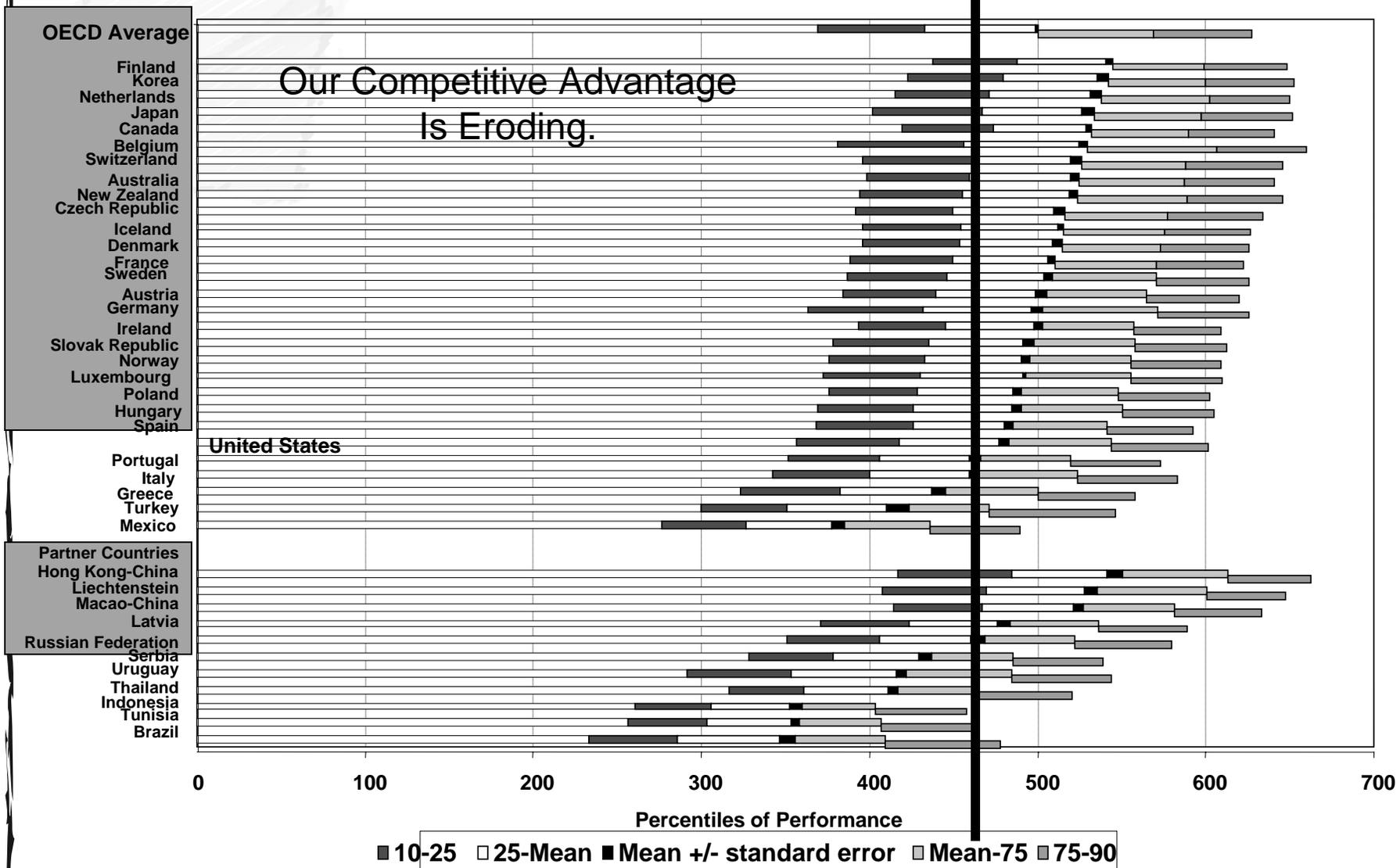


Source: World Bank Database.

Distribution of Combined Mathematics Scores of 15-Year Old Students, by Country 2003



Distribution of Combined Mathematics Scores of 15-Year Old Students, by Country 2003



International Competition

Students Enrolled in Postsecondary (in millions)

	1990	2000	Change
U.S.	13.7	15.7	+15%
China	3.8	13.6	+258%
India	4.9	9.4	+92%

UNESCO, 2003

New Participants in the World Economy (Supply Side)

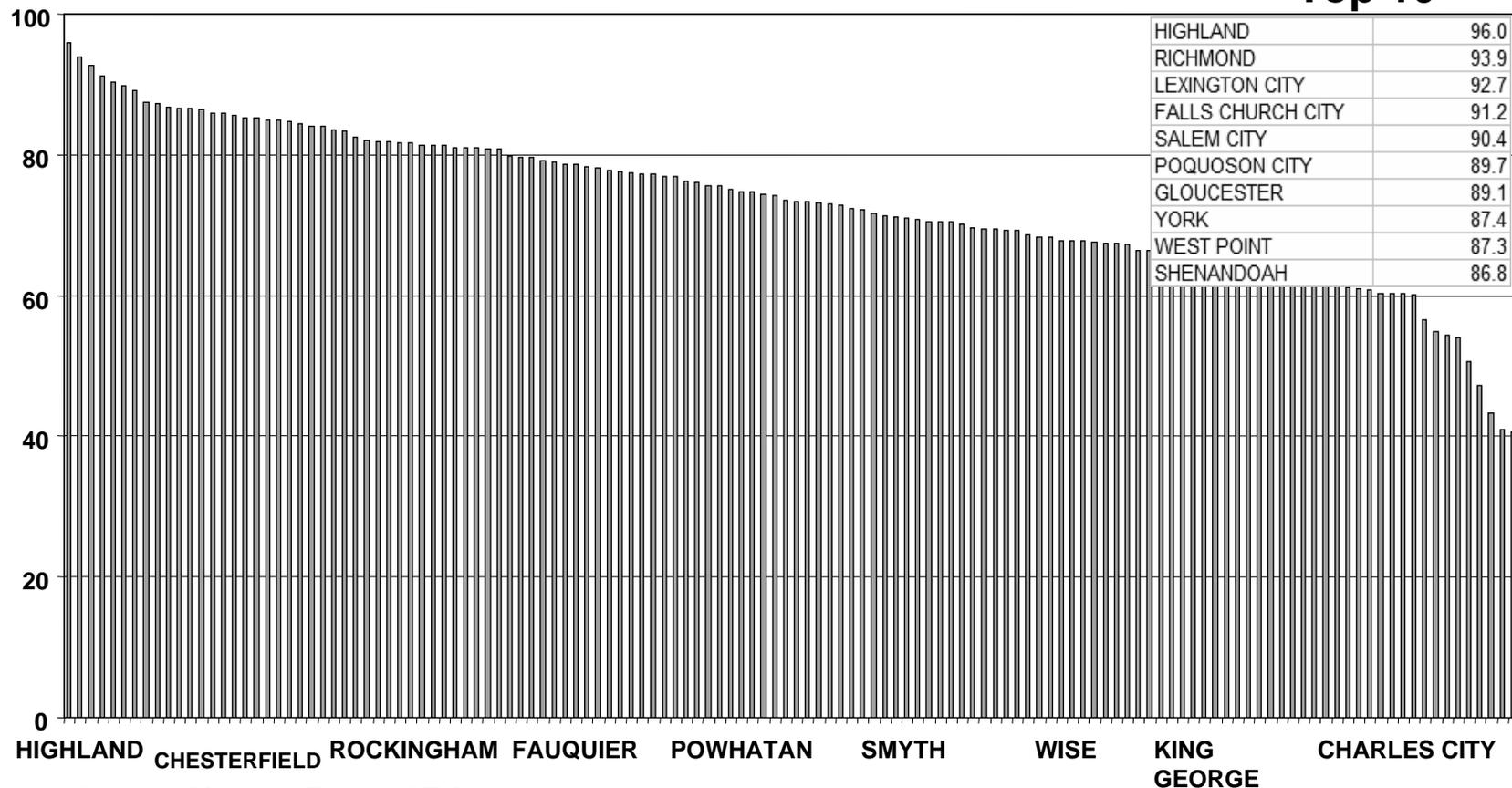
- China, India and Russia = 3 billion people
- 10% highly educated = 300 million people
- USA = 300 million people
- 25% highly educated = 75 million
- Competition for jobs = 375 million people
- USA students/adults will face greater competition in the future than anytime in history

Craig Barrett, INTEL CEO 2004

These Students Will Be Underpinning Growth in 4 to 8 Years . . .

% of Students Passing 8th Grade Mathematics by School Division, 2004

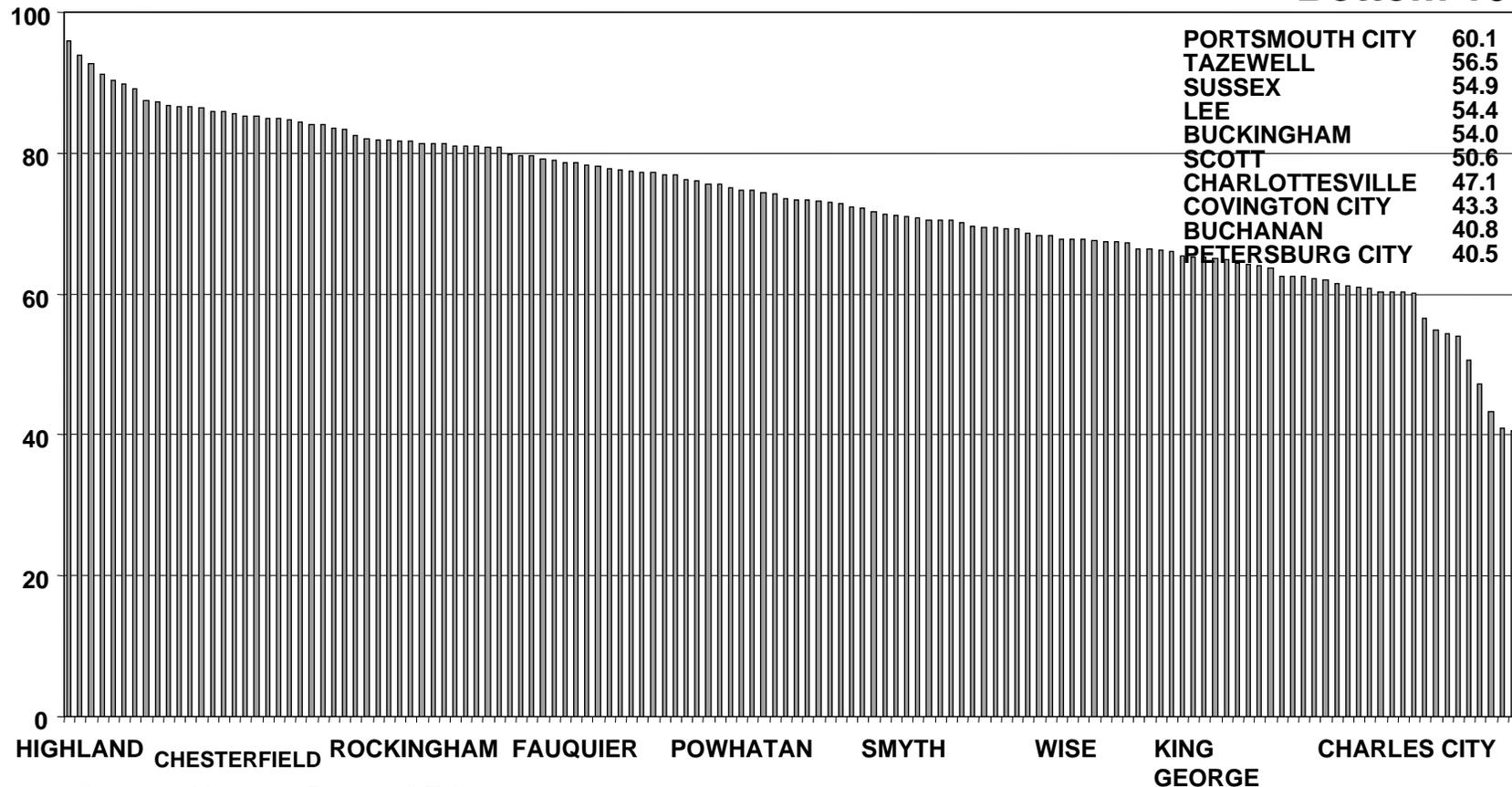
Top 10



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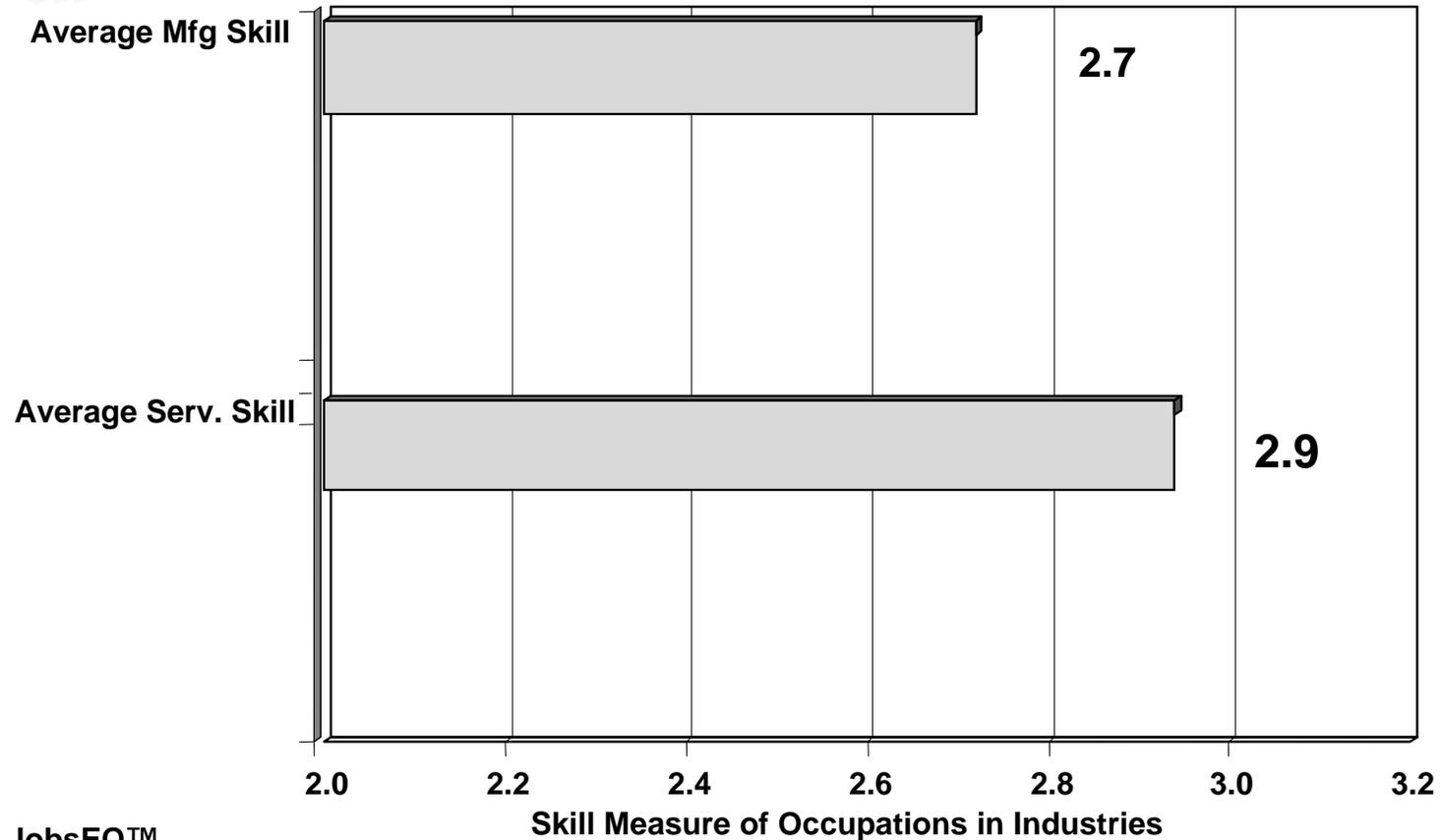
Bottom 10



Source: Virginia Dept. of Education.

Higher Skills Needed for Fast Growing Services than Declining Mfg Industries

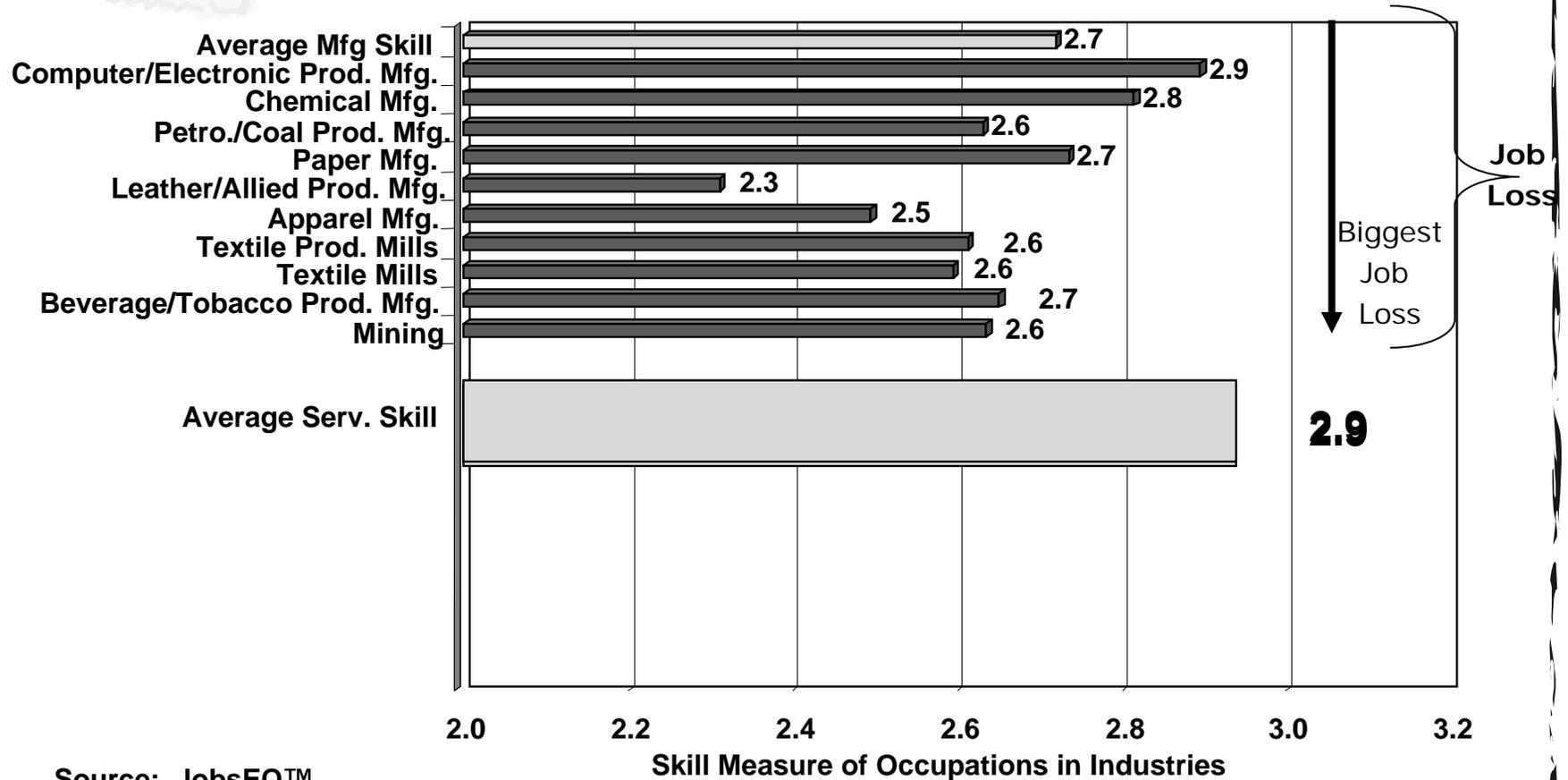
Occupational Skill of Fastest Growing and Declining Industries, Virginia, 2002-2012



Source: JobsEQ™

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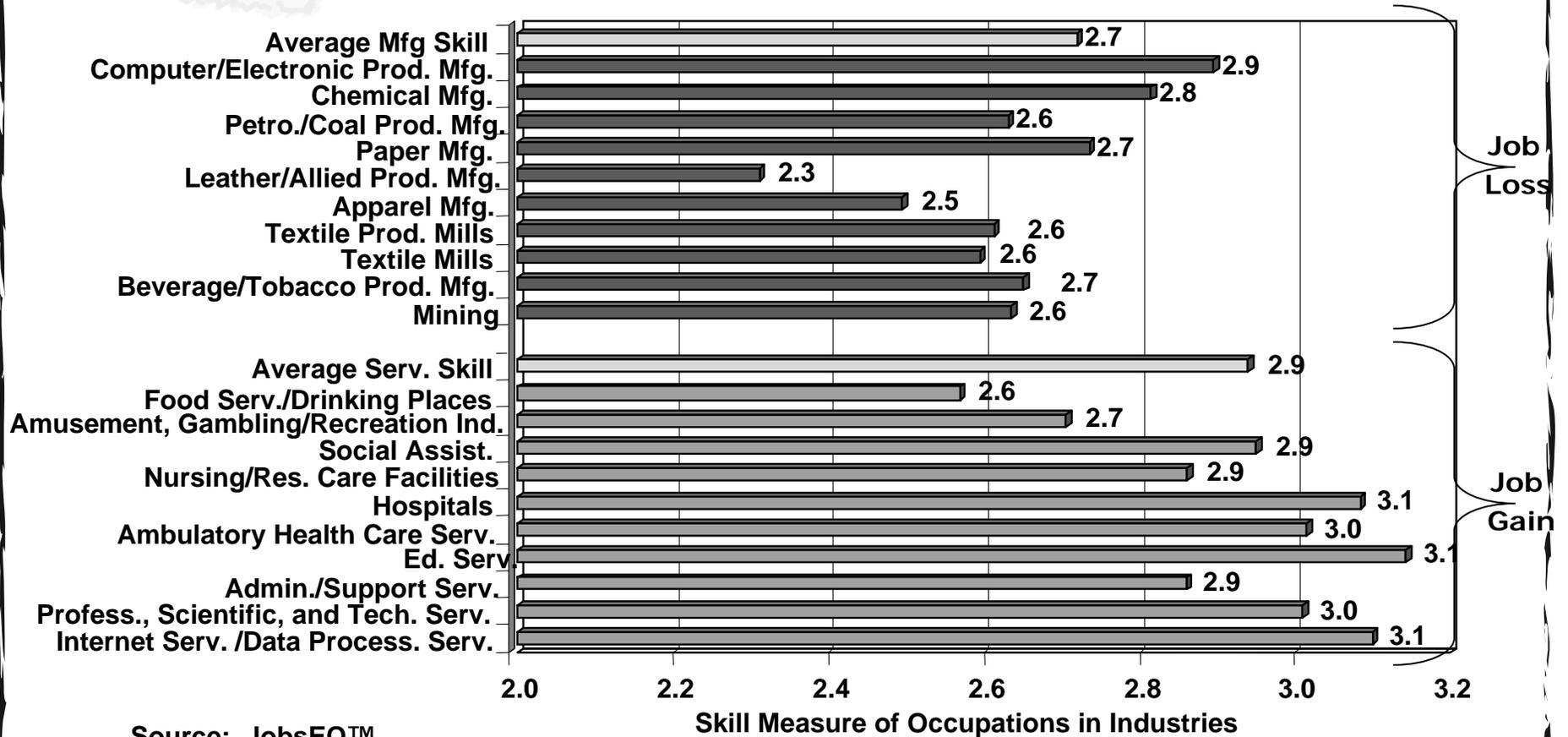
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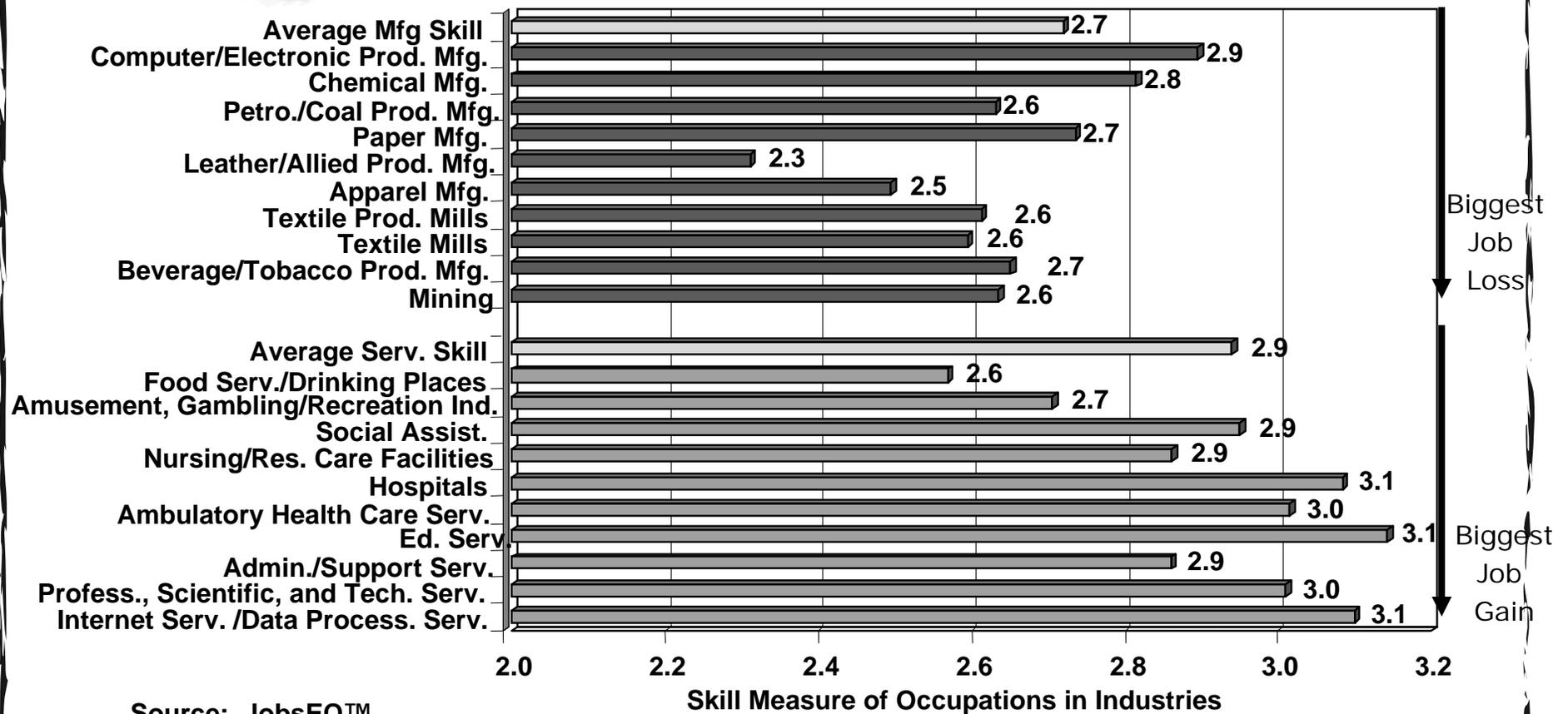
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Higher Skills Needed for Fast Growing Services than Declining Mfg Industries

Occupational Skill of Fastest Growing and Declining Industries, Virginia, 2002-2012



Conclusion

- Drop in housing activity not pointing to recession
- Even a 10% drop in NVA home values only takes about 2% off state retail sales
- Outside housing, the economy remains strong
- People not industries are a region's and firm's most valuable resource . . . education is very important