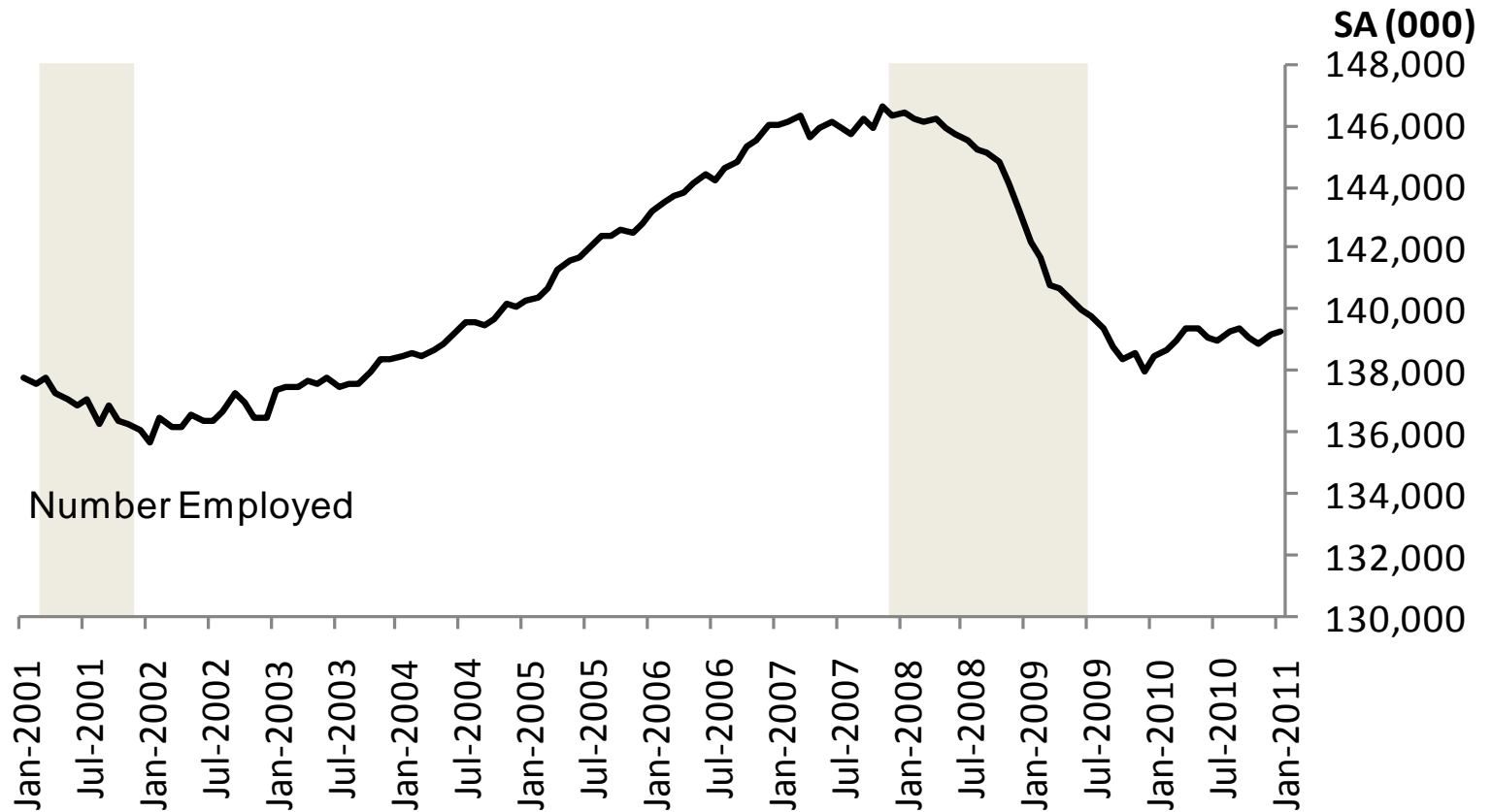


# Presentation Objectives

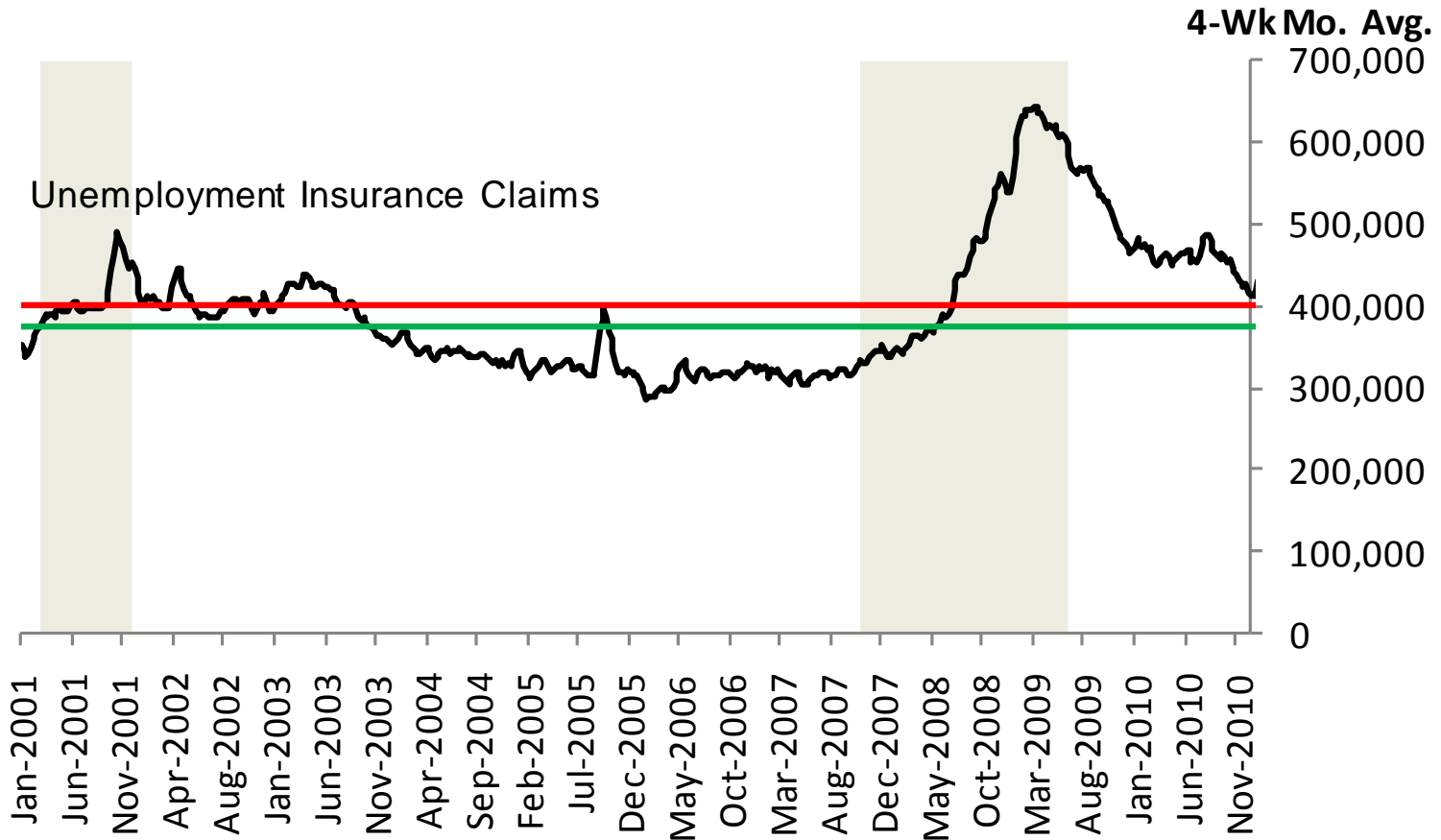
- Examine demand drivers
- Housing and R&R
- Discuss exports and China
- Review biomass

# Employment



Unemployment from: [www.bls.gov/cps](http://www.bls.gov/cps)

# Emerging Employment Trends

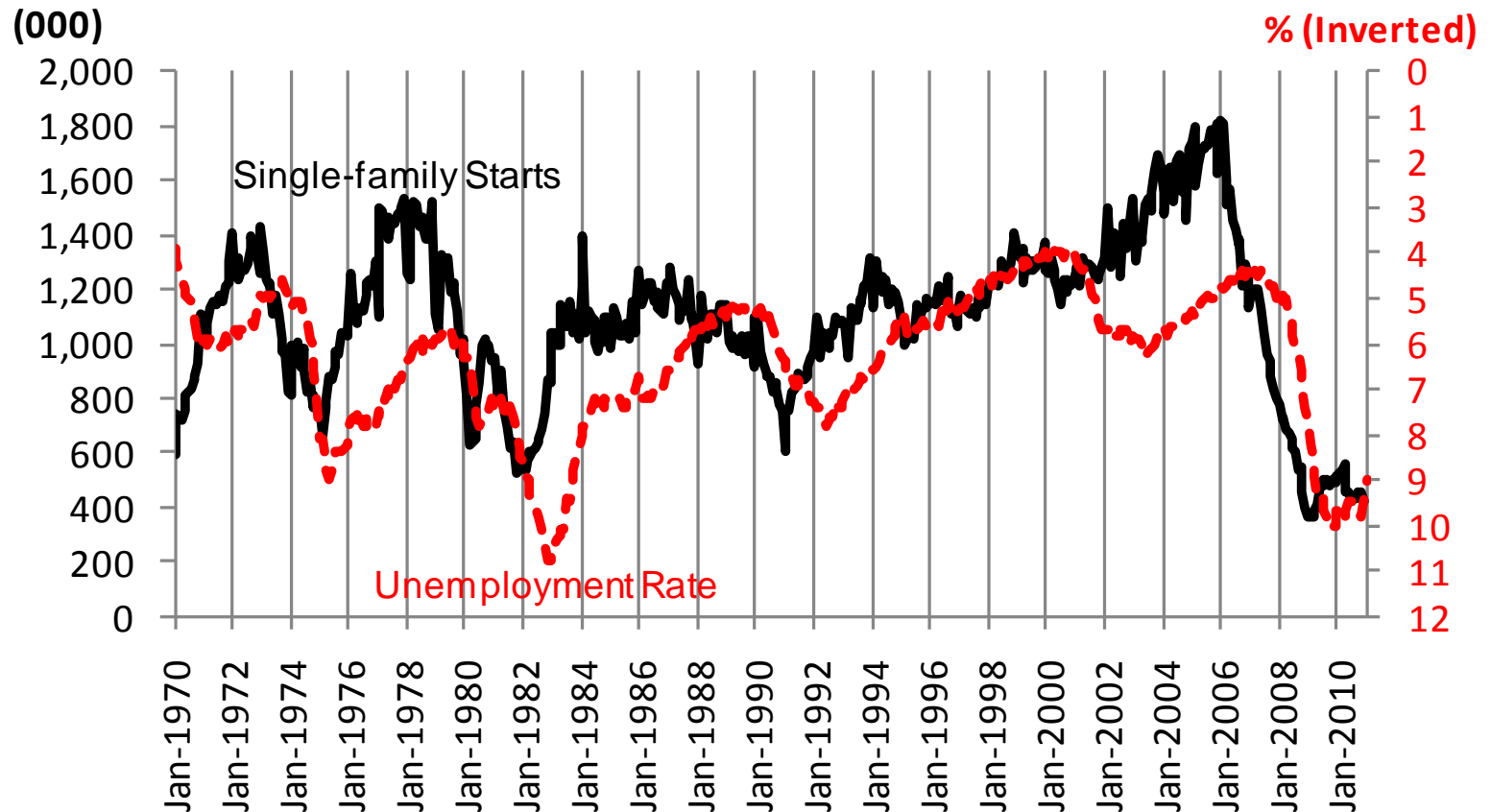


[www.ows.doleta.gov/unemploy/wkclaims/report.asp/report](http://www.ows.doleta.gov/unemploy/wkclaims/report.asp/report) R539cy

# Job Summary

- 7.7 MM fewer jobs than pre-recession
- 14 MM currently unemployed
- 6.2 MM unemployed longer than 6 months
- 8.4 MM working forced part time
- 4 MM existed the labor force

# Unemployment and Starts



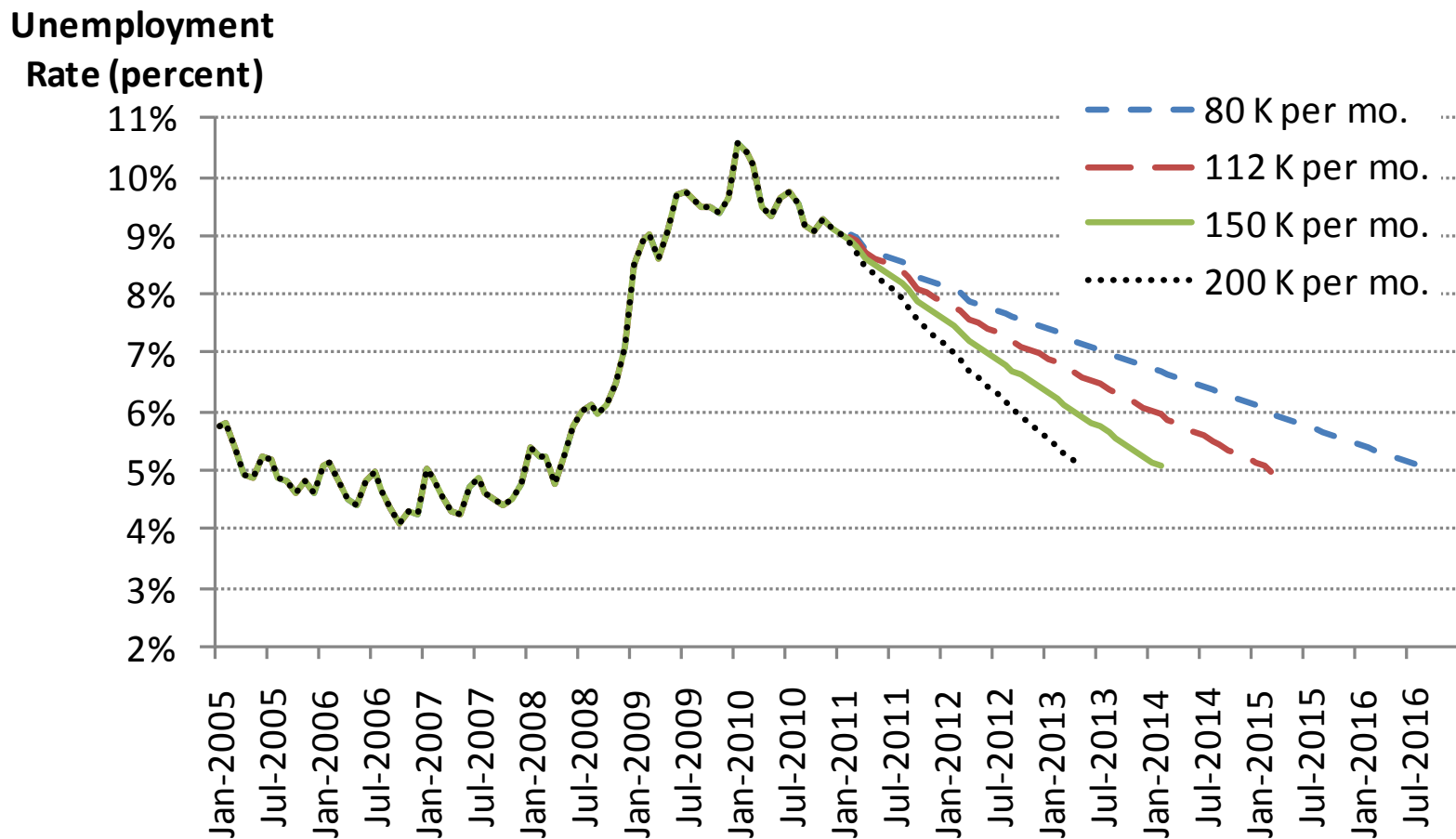
Starts from: [www.census.gov/const/www/newresconstindex.html](http://www.census.gov/const/www/newresconstindex.html)

Unemployment from: [www.bls.gov/cps](http://www.bls.gov/cps)

Unemployment Rate (percent)	Single-family Starts SAAR (000)		Years in which corresponding starts occurred
	lower	upper	
≤ 5%	1,143	1,364	2000, 2001, 2006
6%	979	1,244	2003, 2008
7%	814	1,124	2009
8%	650	1,004	2009, 2010
9%	486	884	2010, 2011
≥ 10%	321	764	2009, 2010

iii Because of the month-to-month volatility in multi-family, this analysis includes only single-family units. 95% lower and upper confidence intervals. Add 150,000 multi-family units to determine total starts.

# Job Growth Scenarios (return to 5% unemployment)

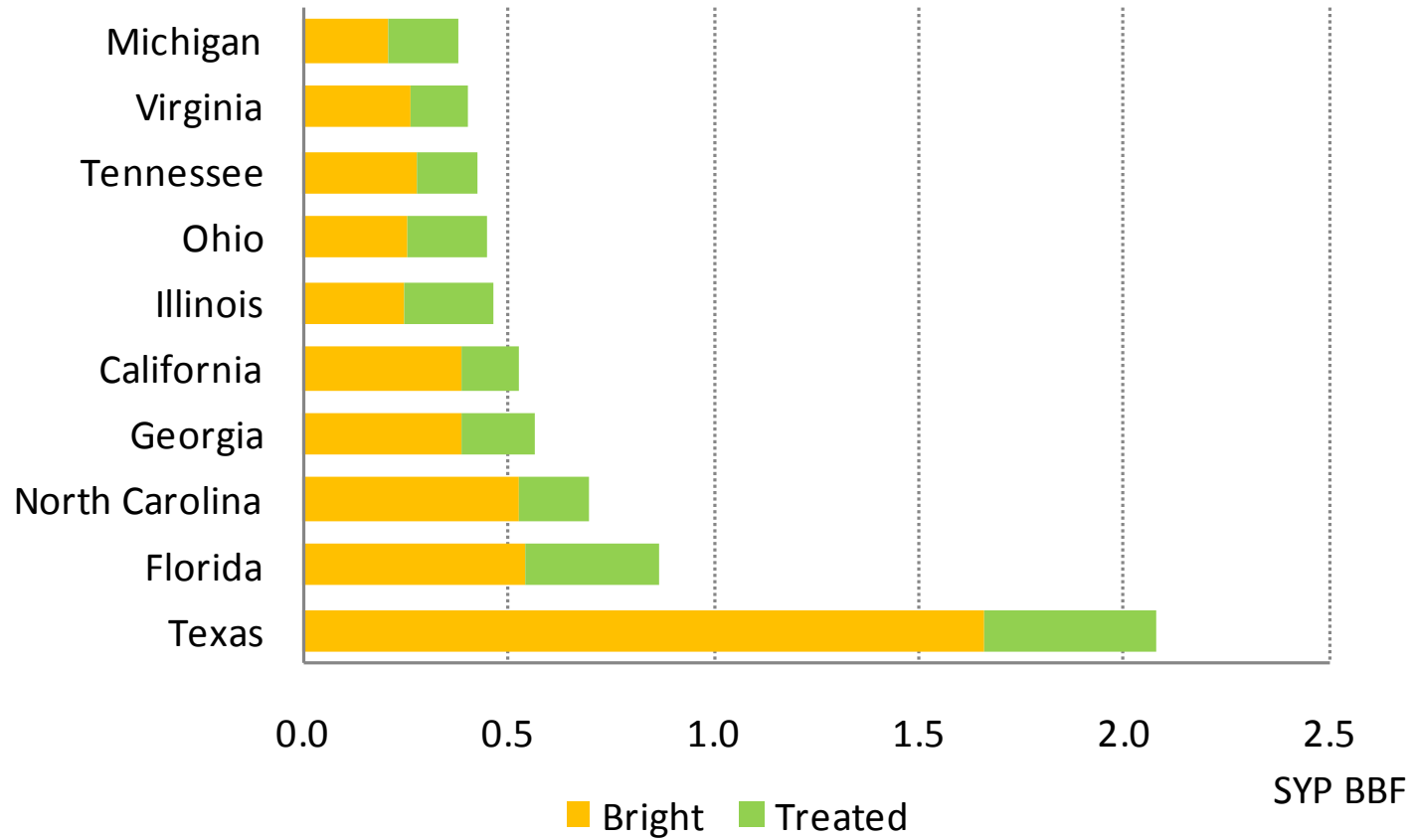


Unemployment history: [www.bls.gov/cps](http://www.bls.gov/cps)

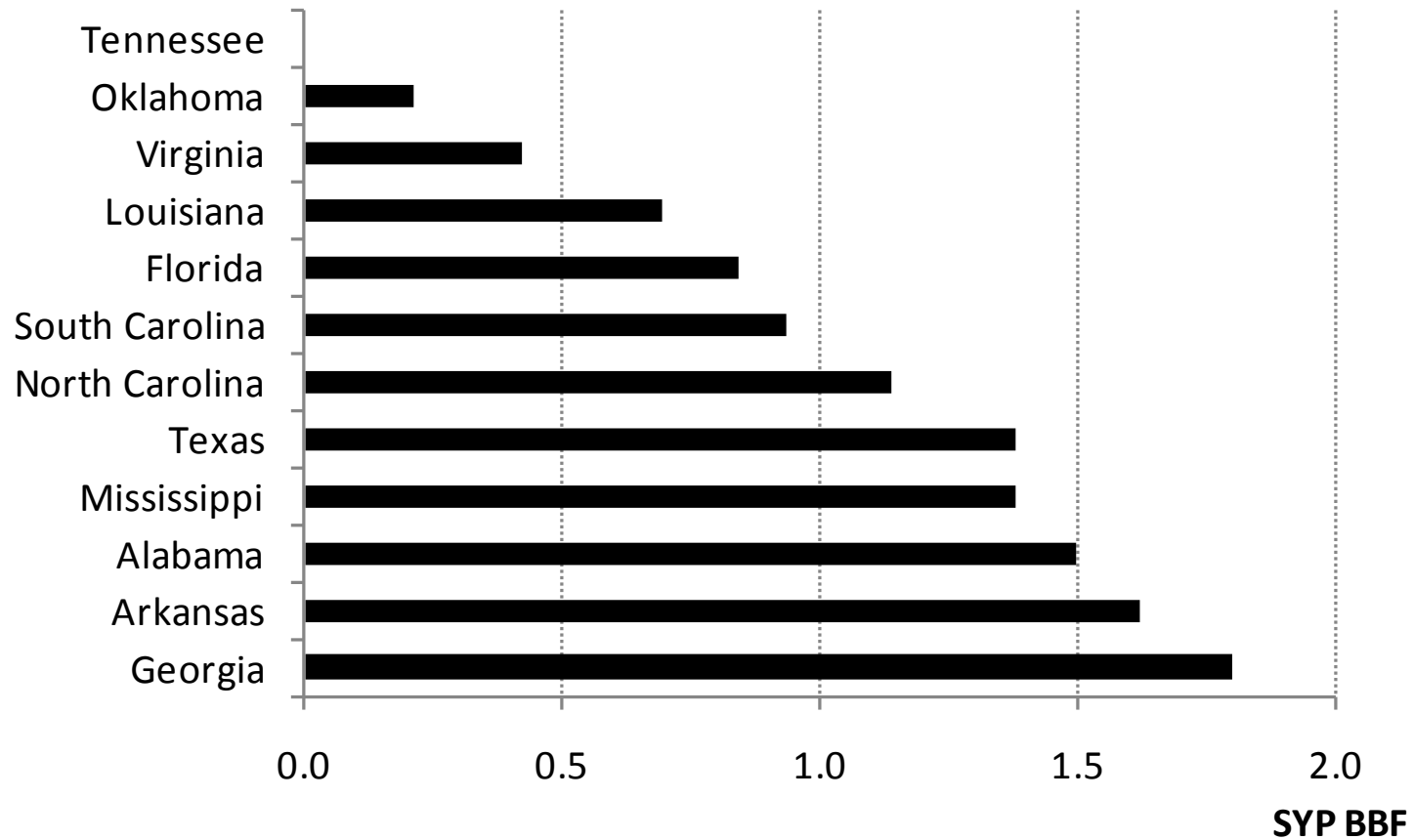
# Softwood Demand Scenarios

Year	Fast Job Growth (BBF)	Slow Job Growth (BBF)	Southern Pine (percent)	Southern Pine (BBF)	
				Low	High
2011	31	31	36%	12	12
2012	42	37	36%	13	15
2013	50	46	37%	17	19
2014	57	50	37%	19	21
2015	62	57	37%	22	24

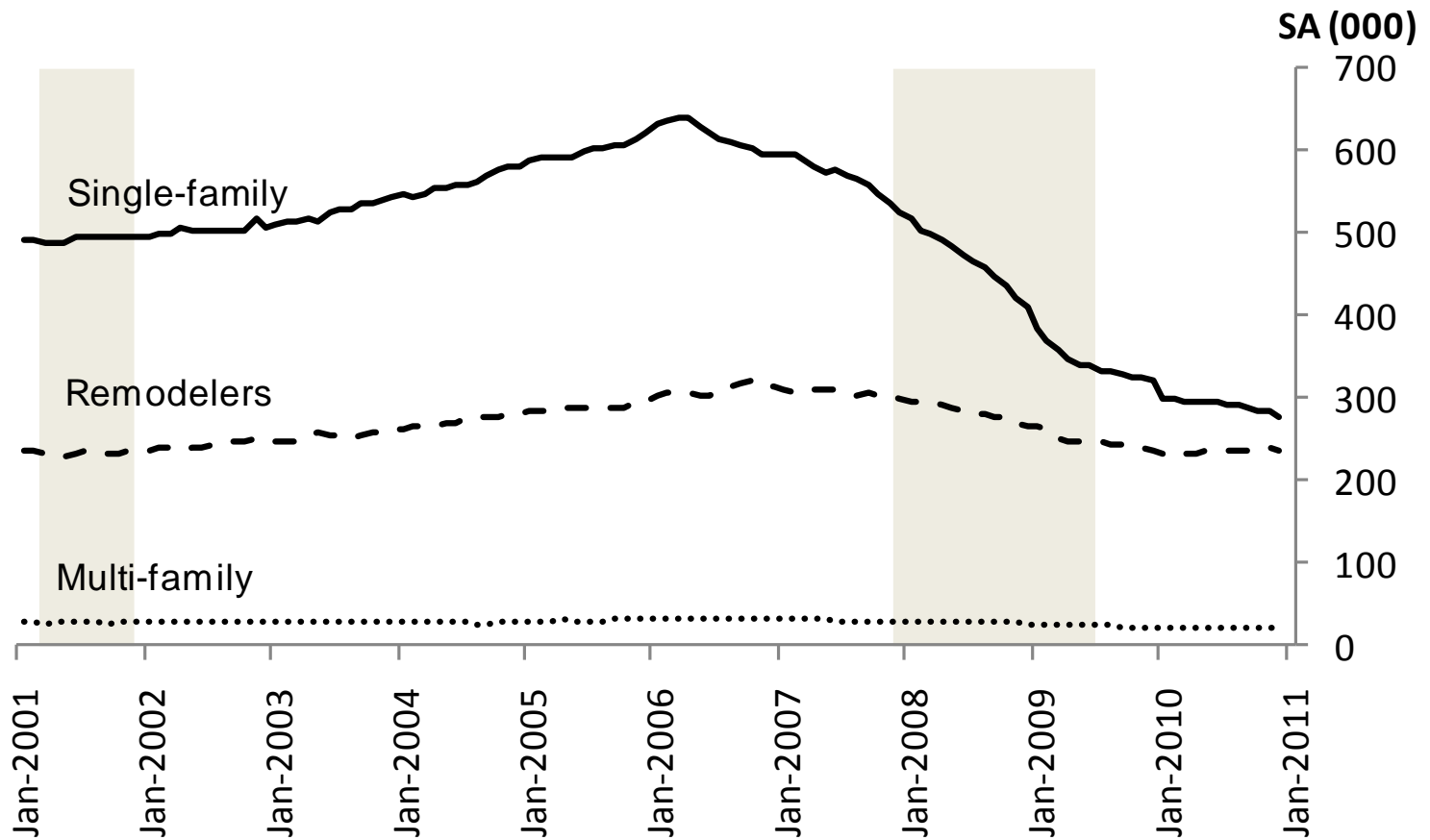
# SYP 2011 Consumption by State top 10



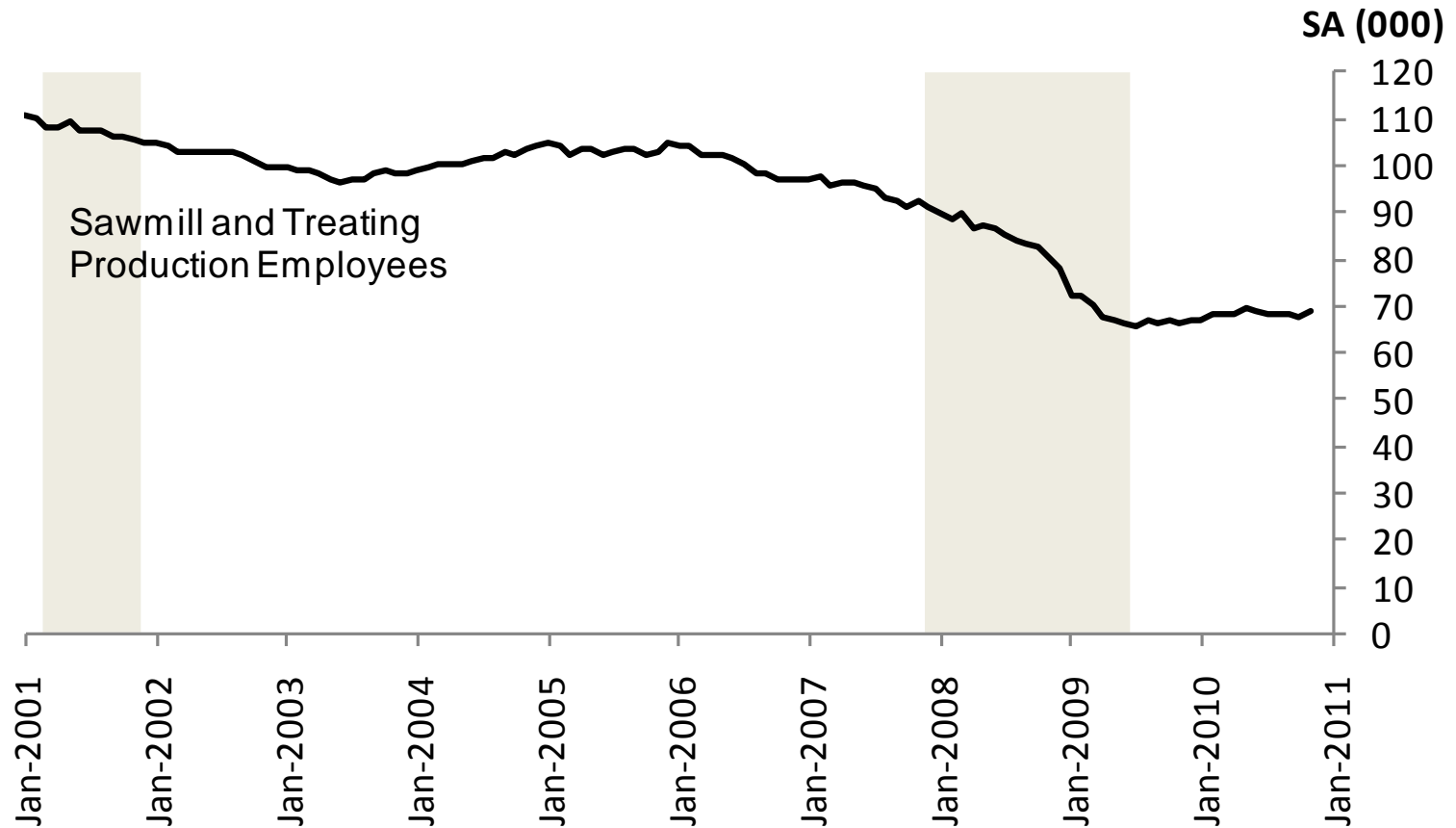
# SYP 2011 Shipments by State



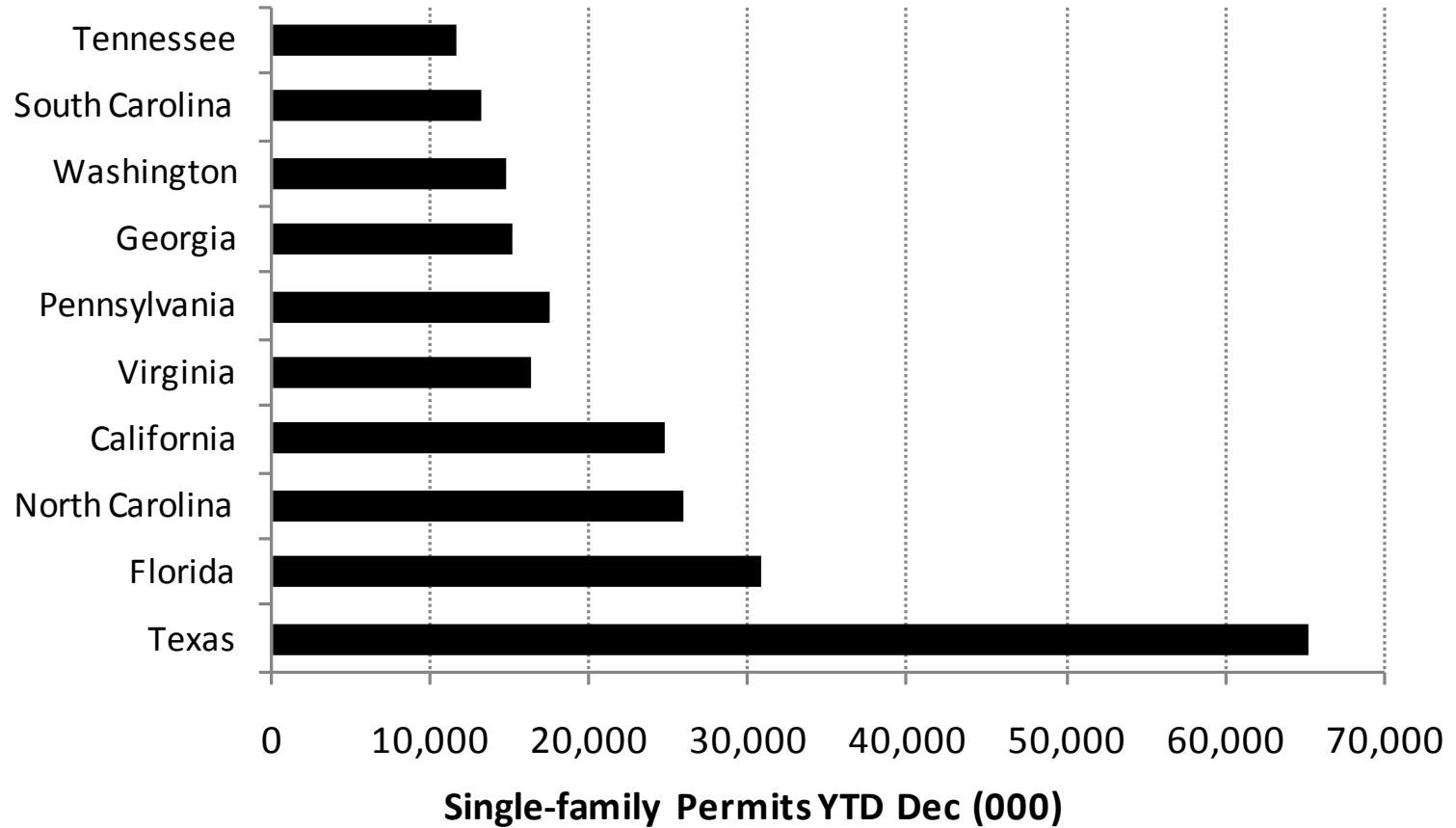
# Residential Construction Employment



# Sawmill and Treating Plant Employment

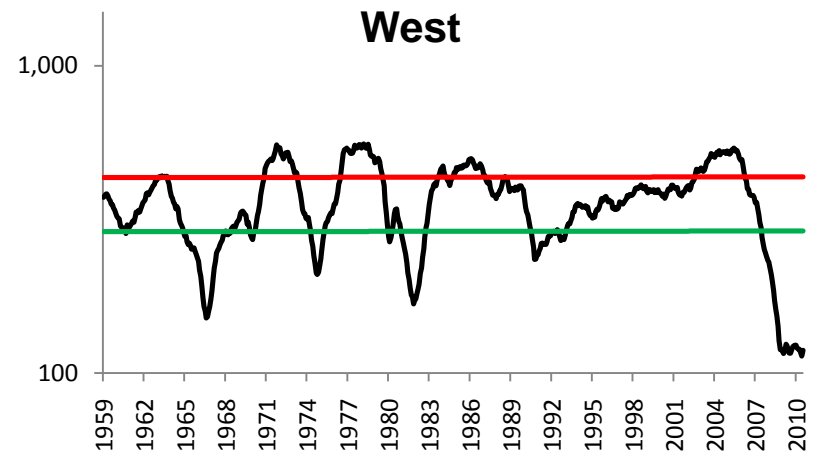
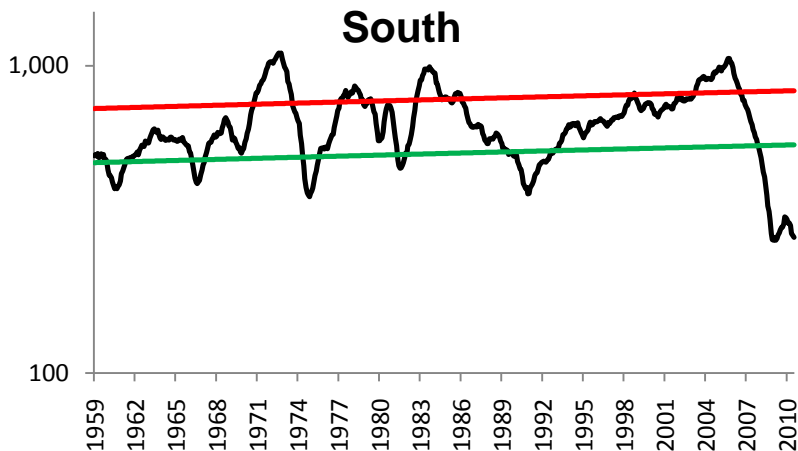
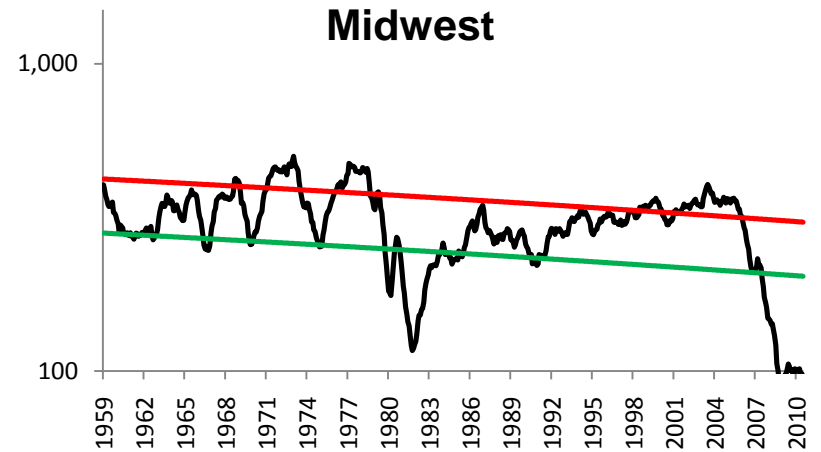
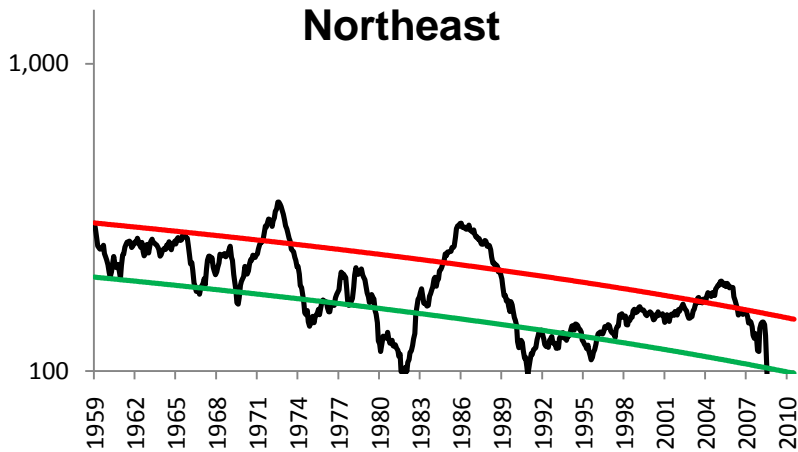


# Building Permits by State



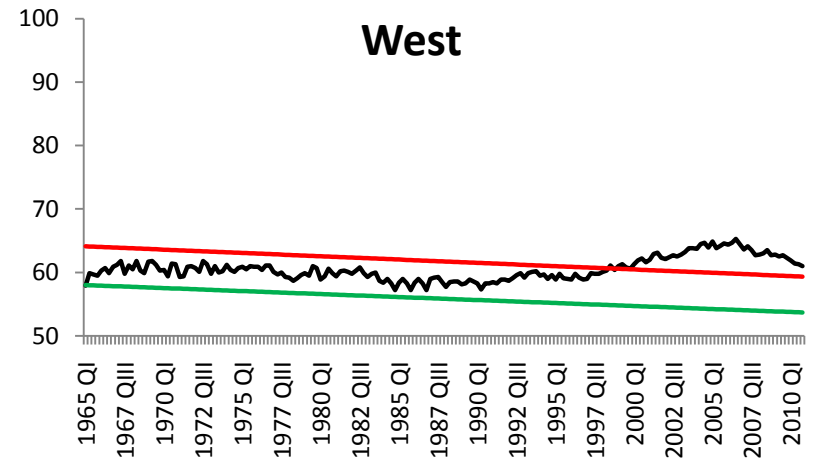
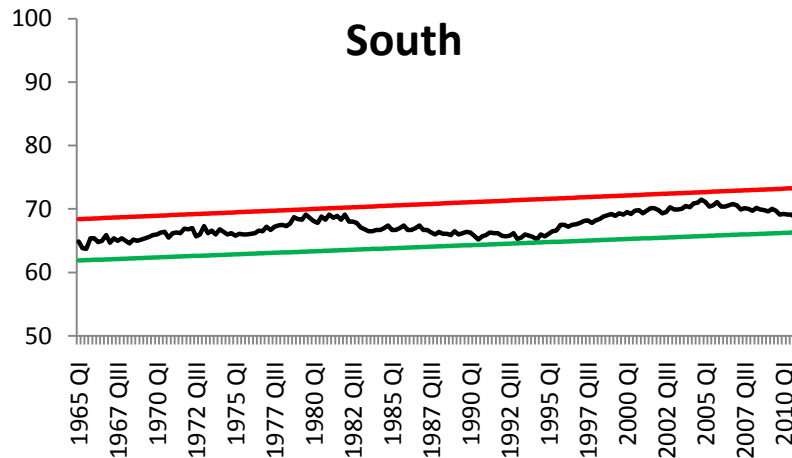
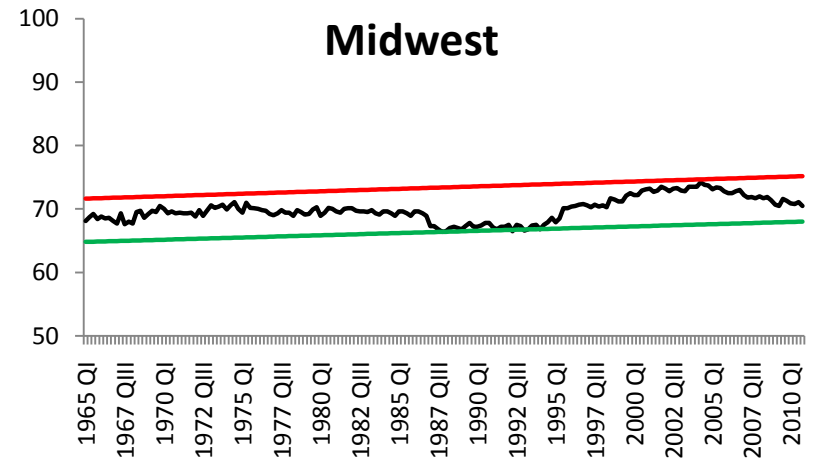
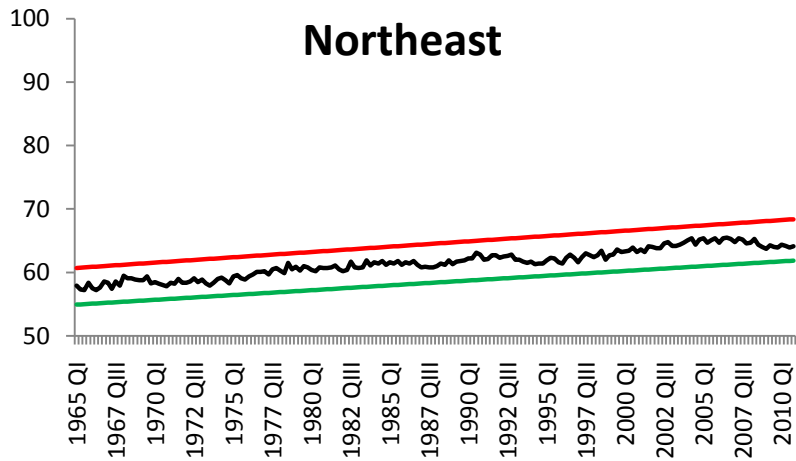
# Starts by Region

+/- 20% around trend

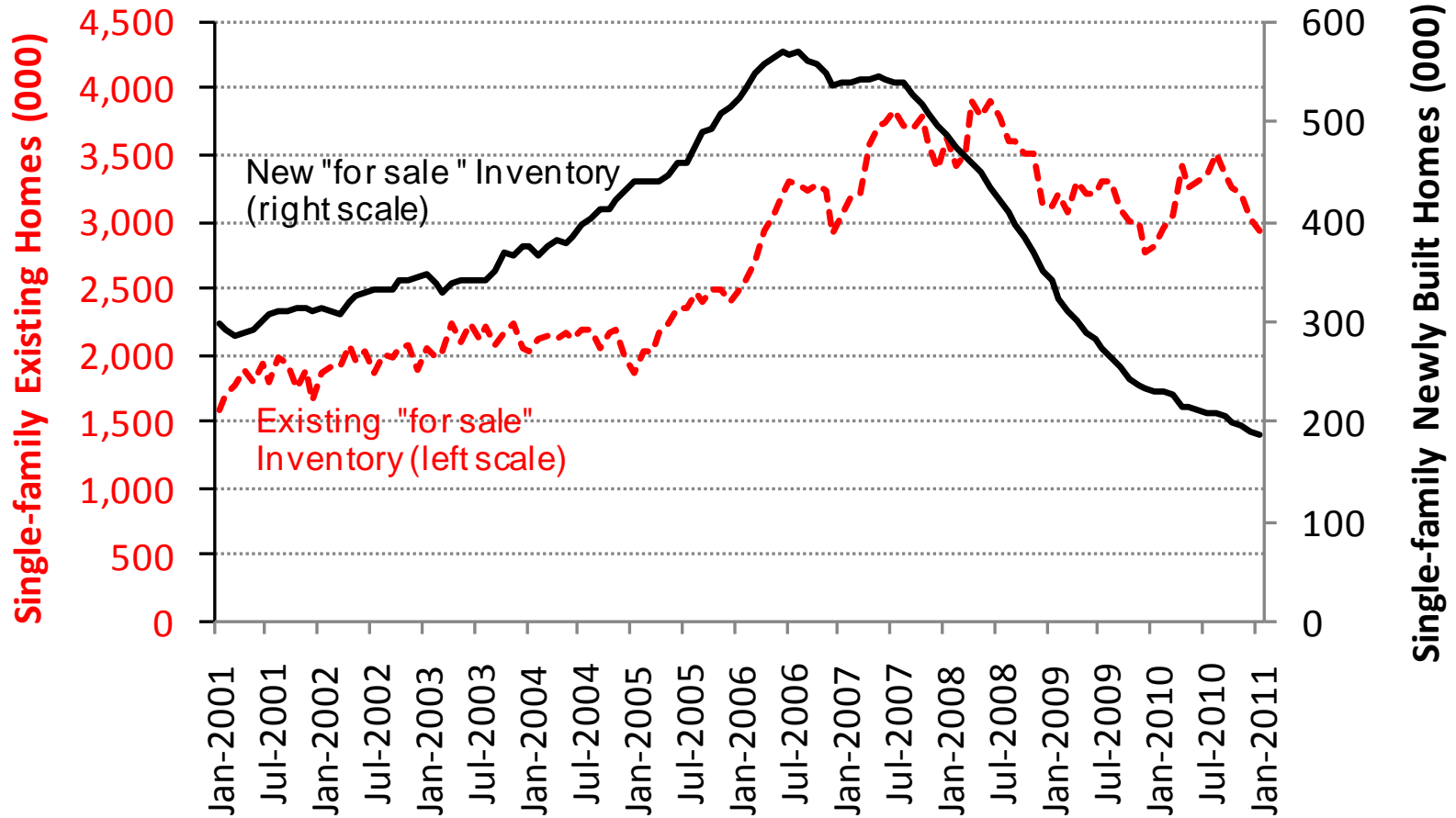


# Homeownership by Region

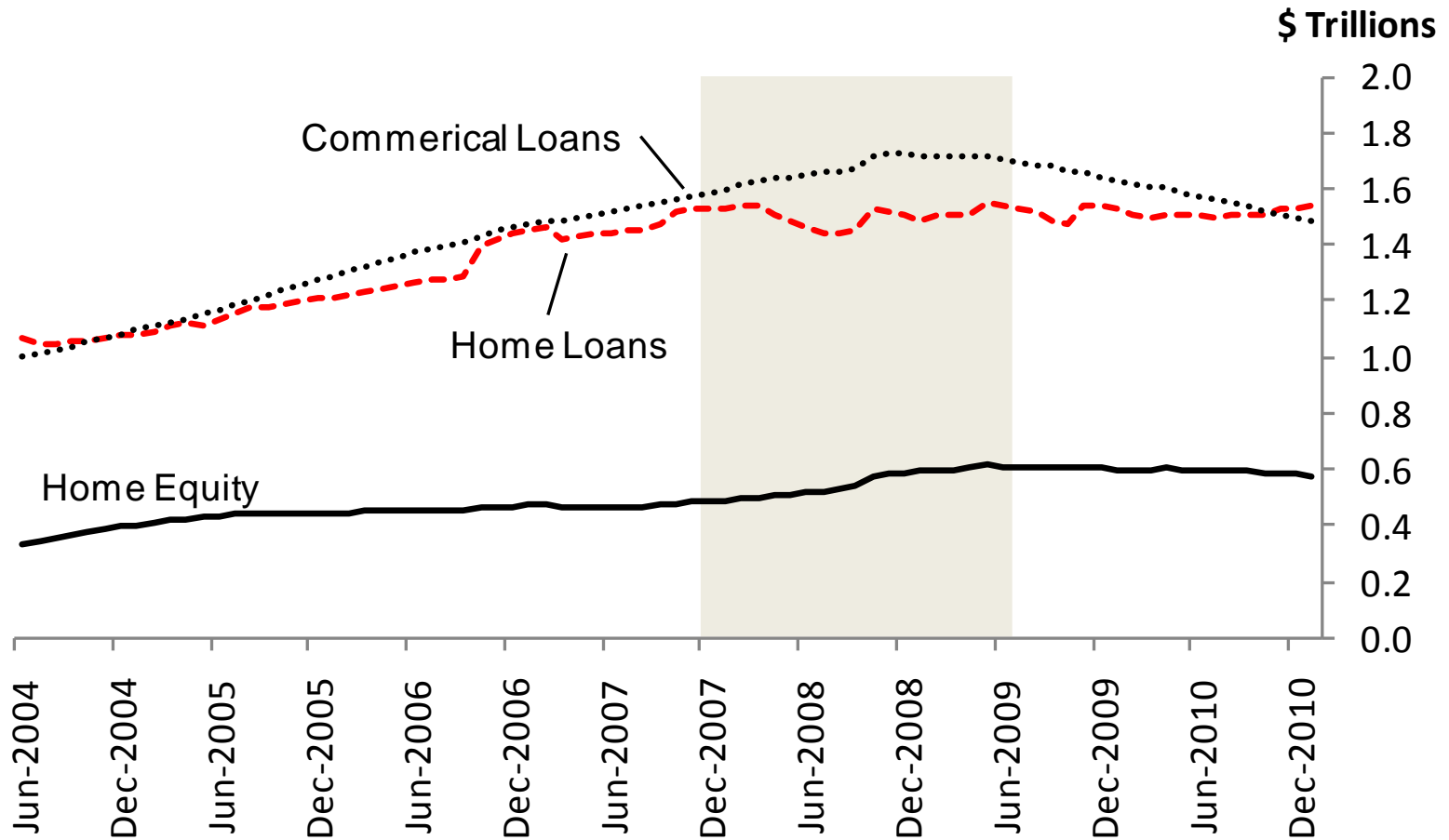
+/- 5% around trend



# New and Existing Homes For Sale



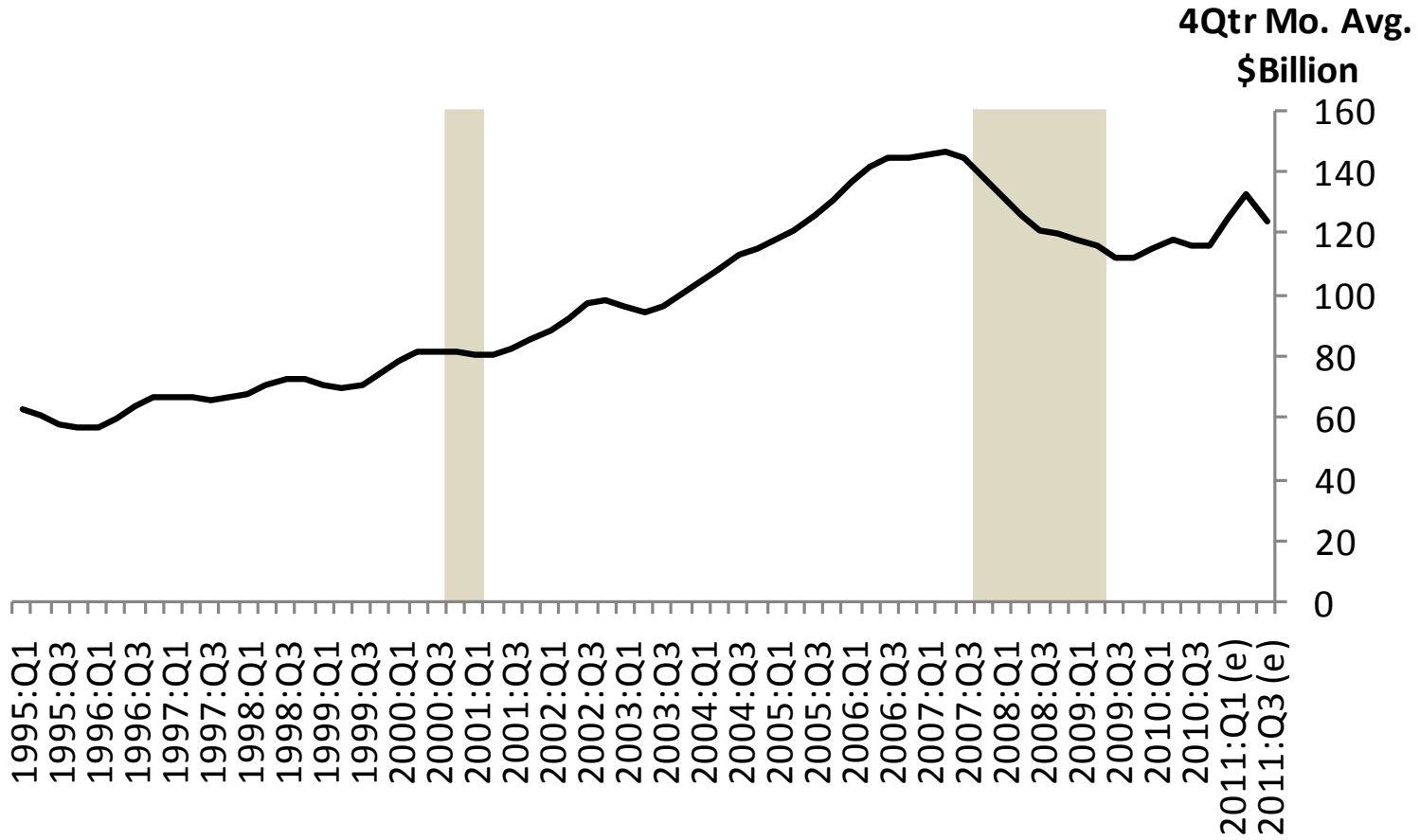
# Real Estate Loan Trends



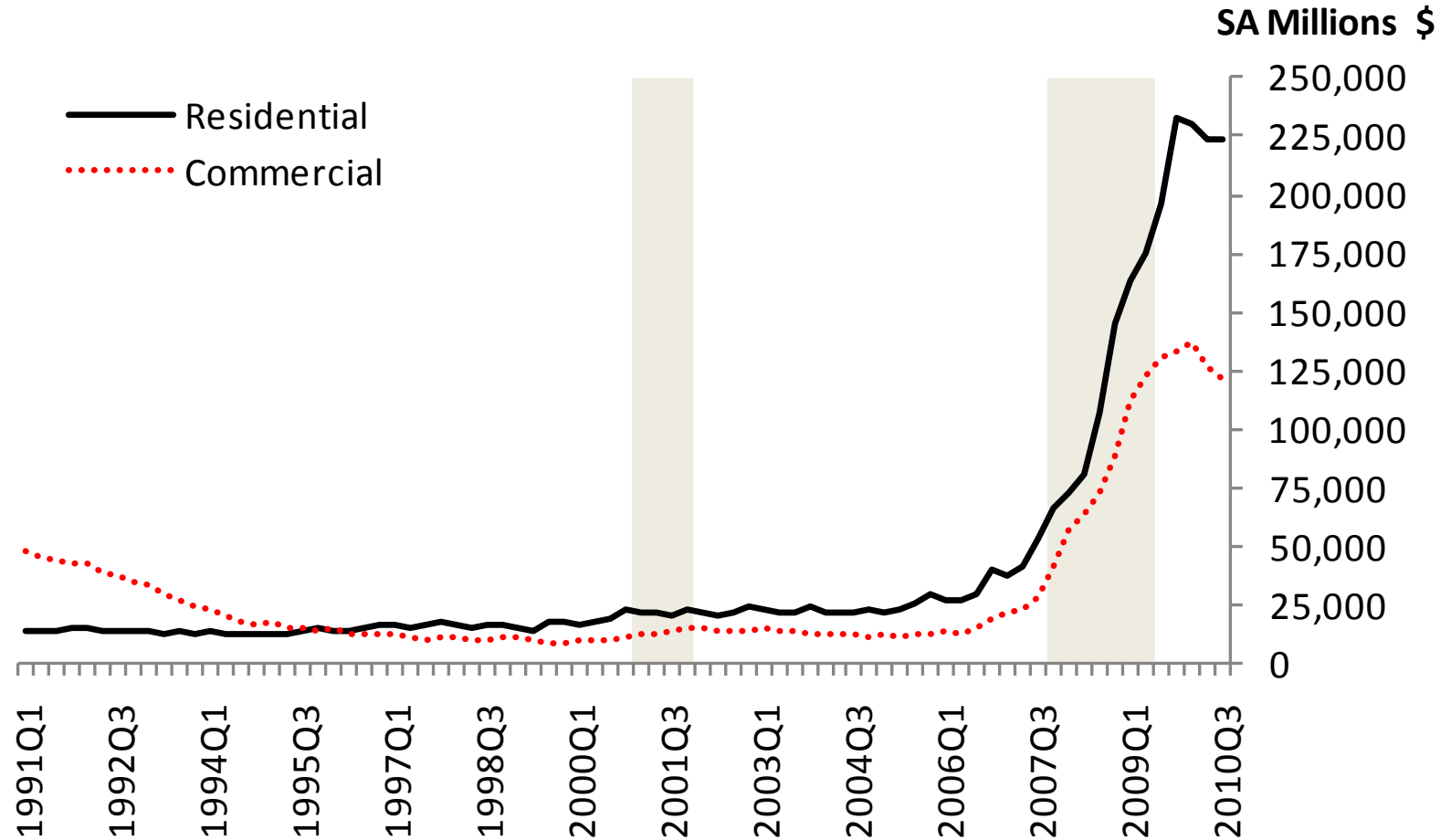
# Remodeling Drivers

Drivers	2000	2007	Most Recent	2007 to most recent Change
House Price Index	104.5	179.7	130.4	↓ 27%
Homeownership %	67.4	68.2	66.5	↓ 2.5%
Home Equity \$	7.0	11.4	6.8	↓ 41%
Remodel Return %	na	70.1	60.0	↓ 10%

# R&R Spending



# Real Estate Loan Delinquencies



# Housing Finance Reform Action...

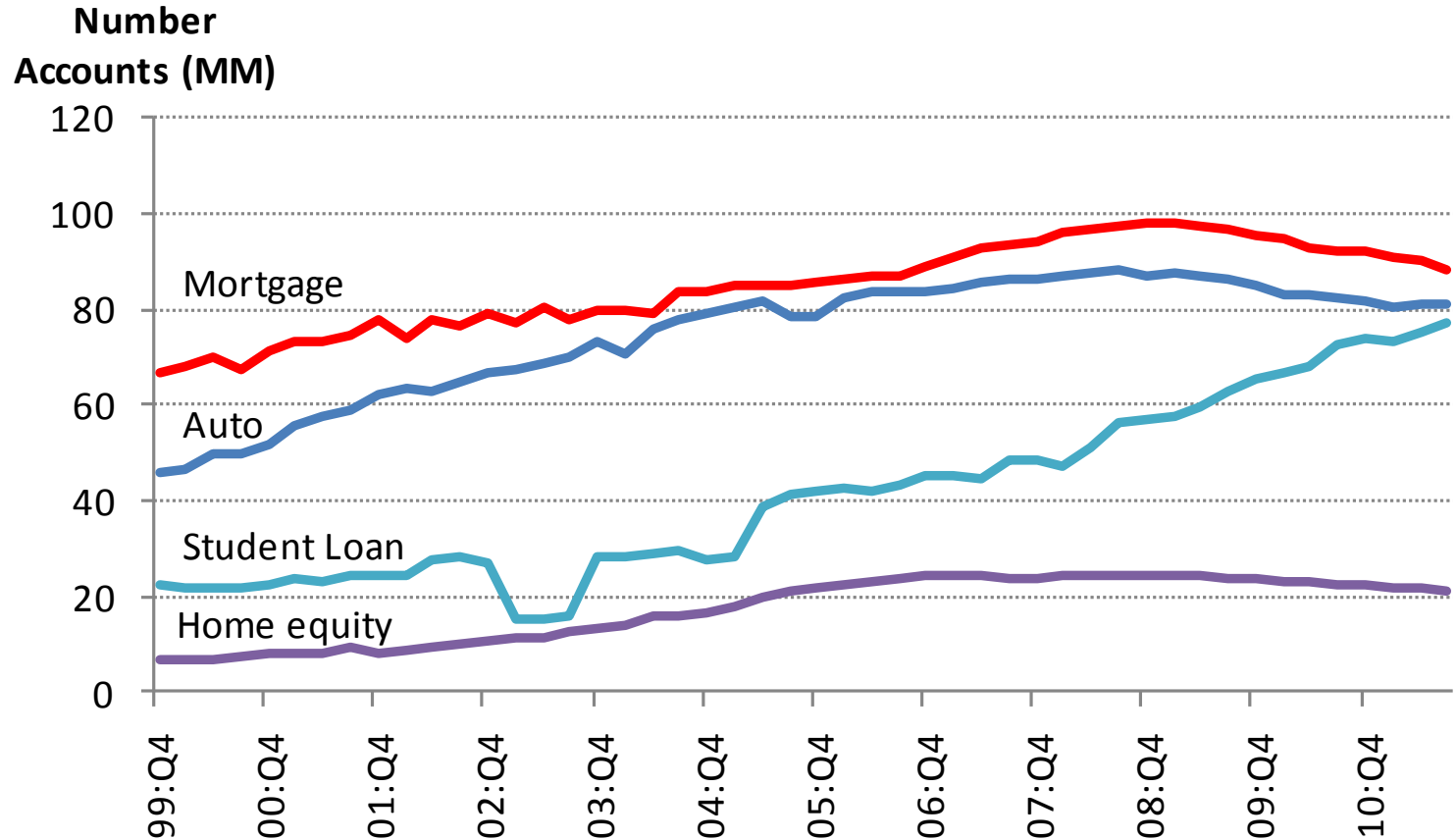
- Government incentives removed
- Smaller FHA, no Freddie or Fannie
- Private capital to assume credit risk
- Taxpayers not at risk
- More oversight
- Remove political influence from markets

# Housing Finance Reform

## Results...

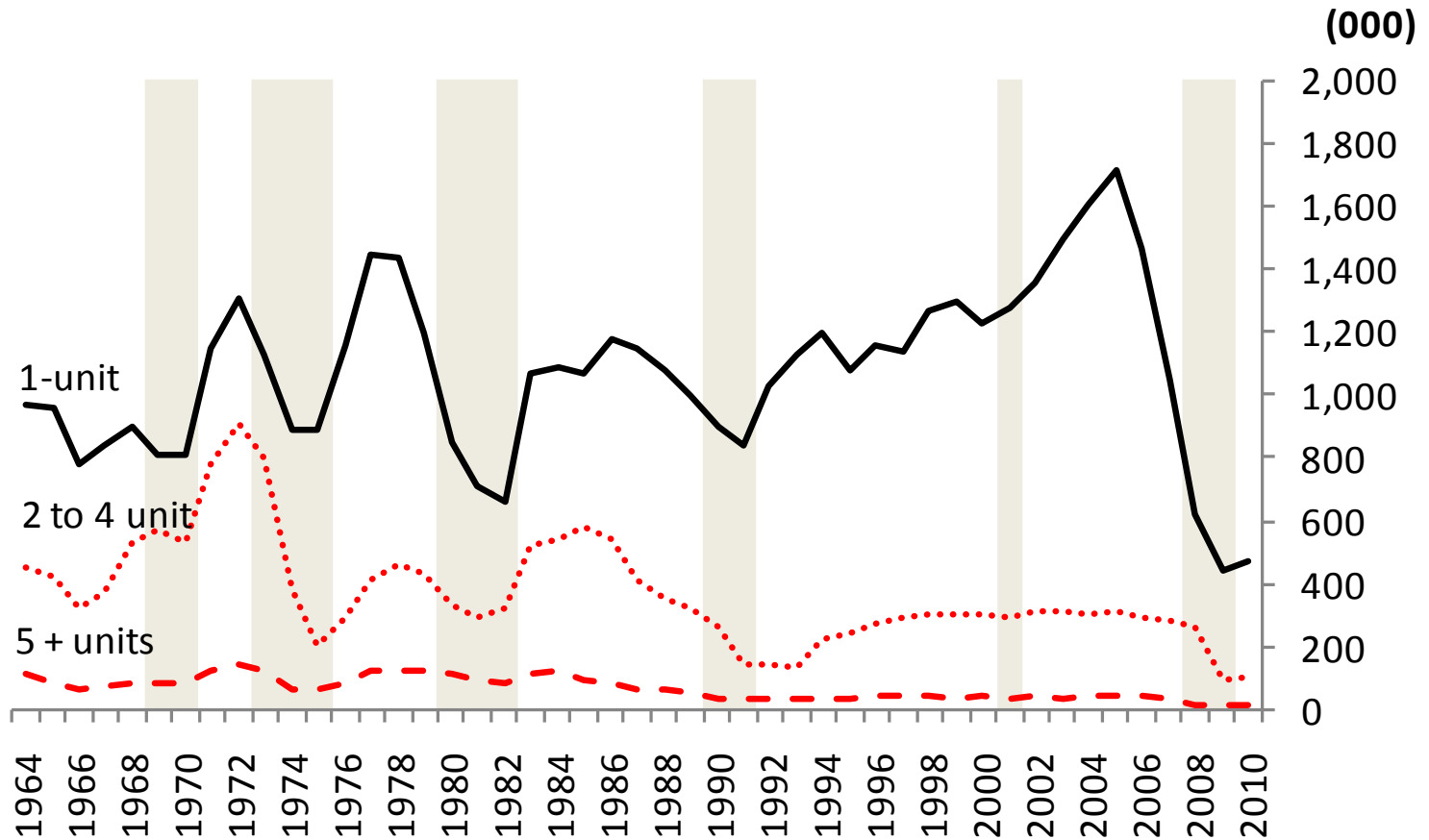
- Higher down payments, higher FICO scores
- Higher mortgage rates and insurance
- Tighter underwriting standards, smaller loans
- Divert investment away from housing
- More renters, lower homeownership

# Household Debt



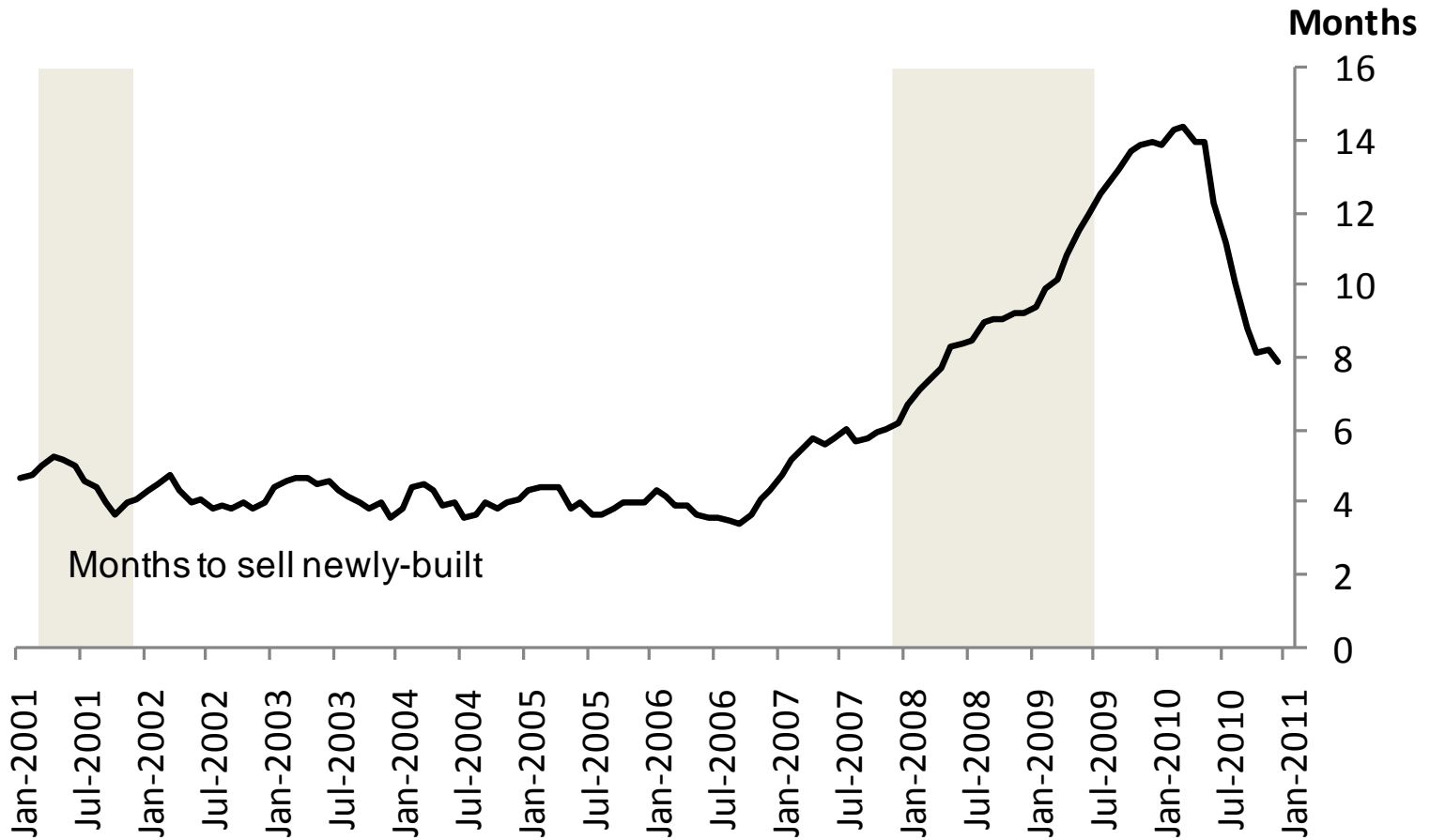
New York Federal Reserve. Household Debt and Credit Report

# Housing Mix



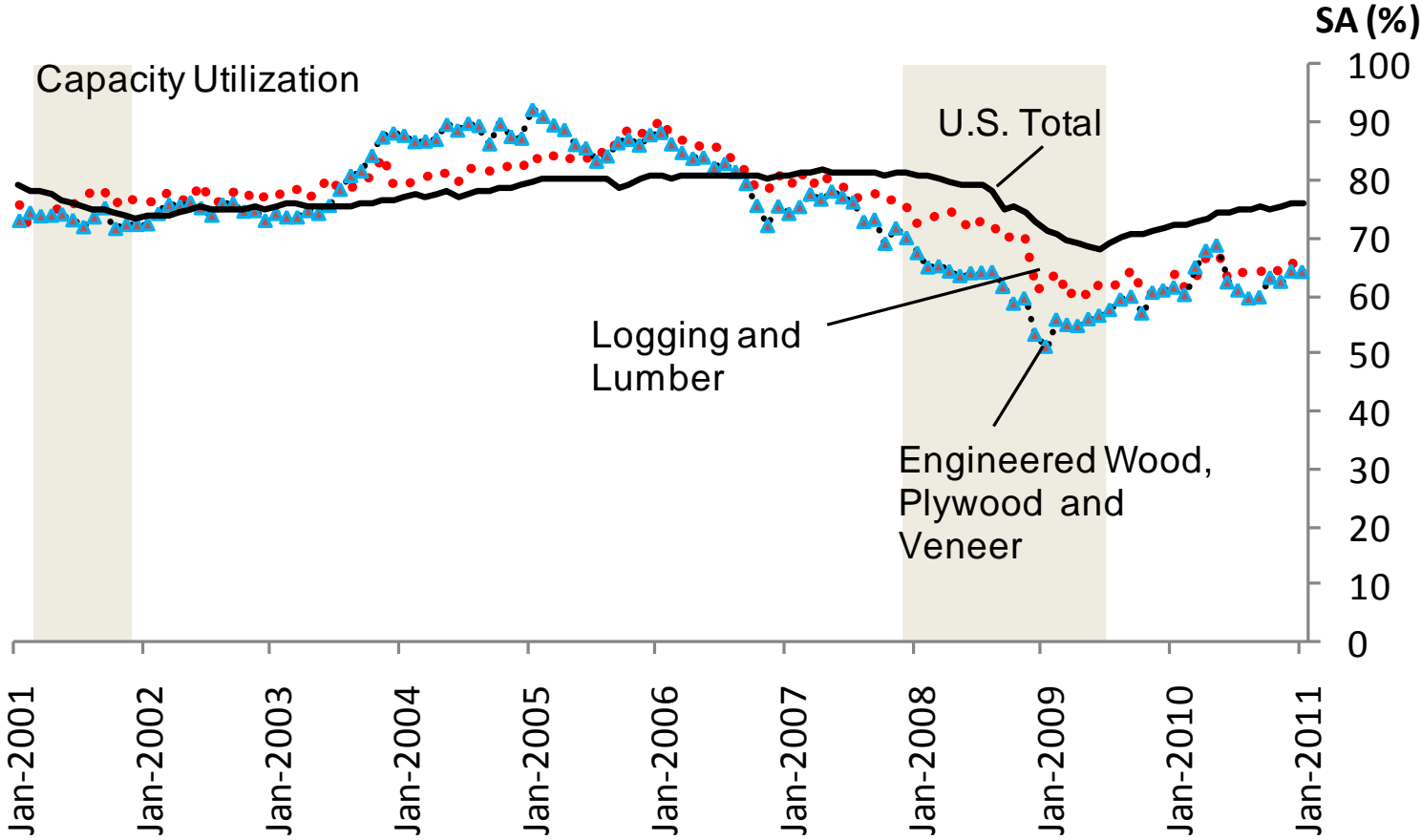
[www.census.gov/const/www/newresconstindex.html](http://www.census.gov/const/www/newresconstindex.html)

# Newly-Built Homes Months Needed to Sell

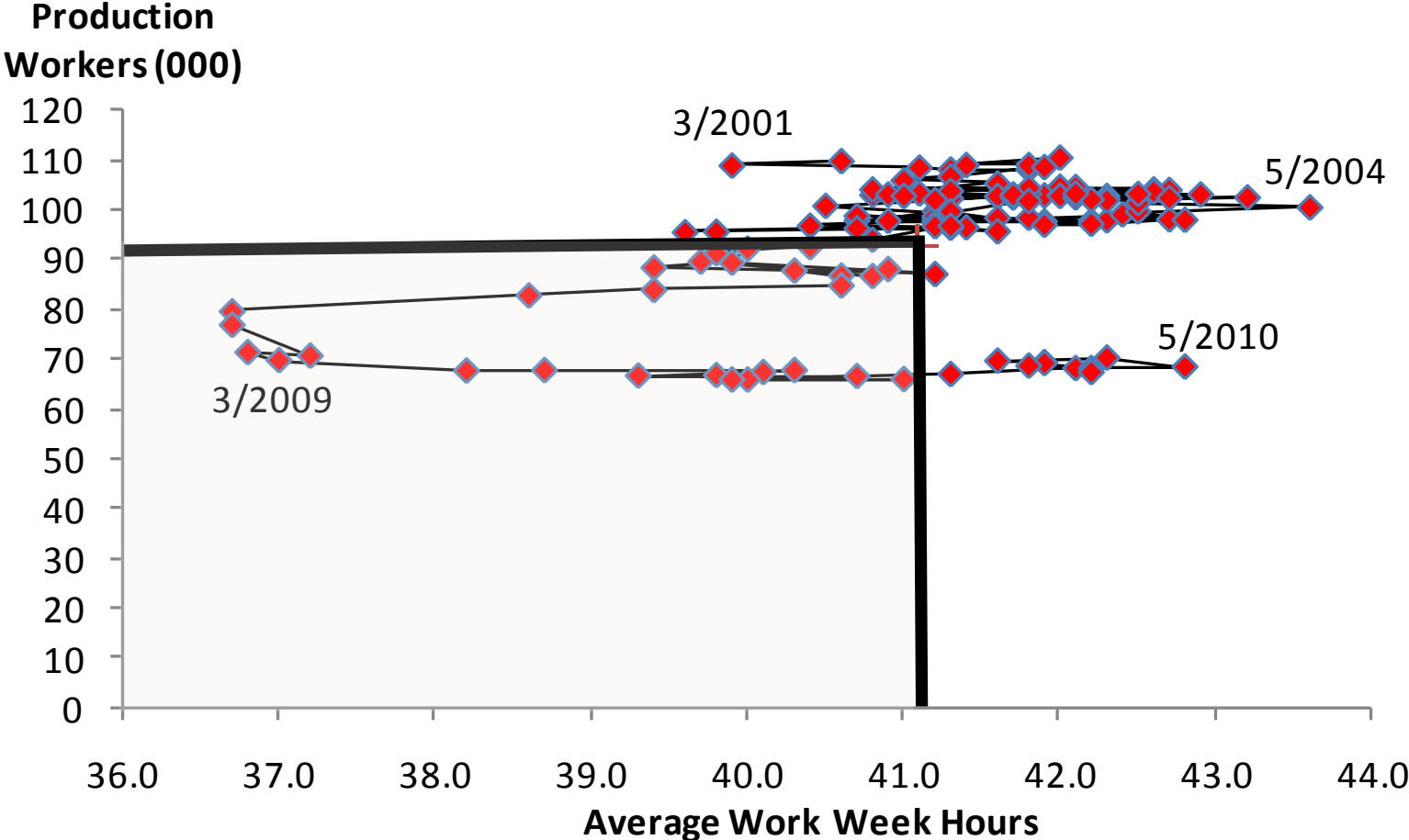


[www.census.gov/const/](http://www.census.gov/const/)

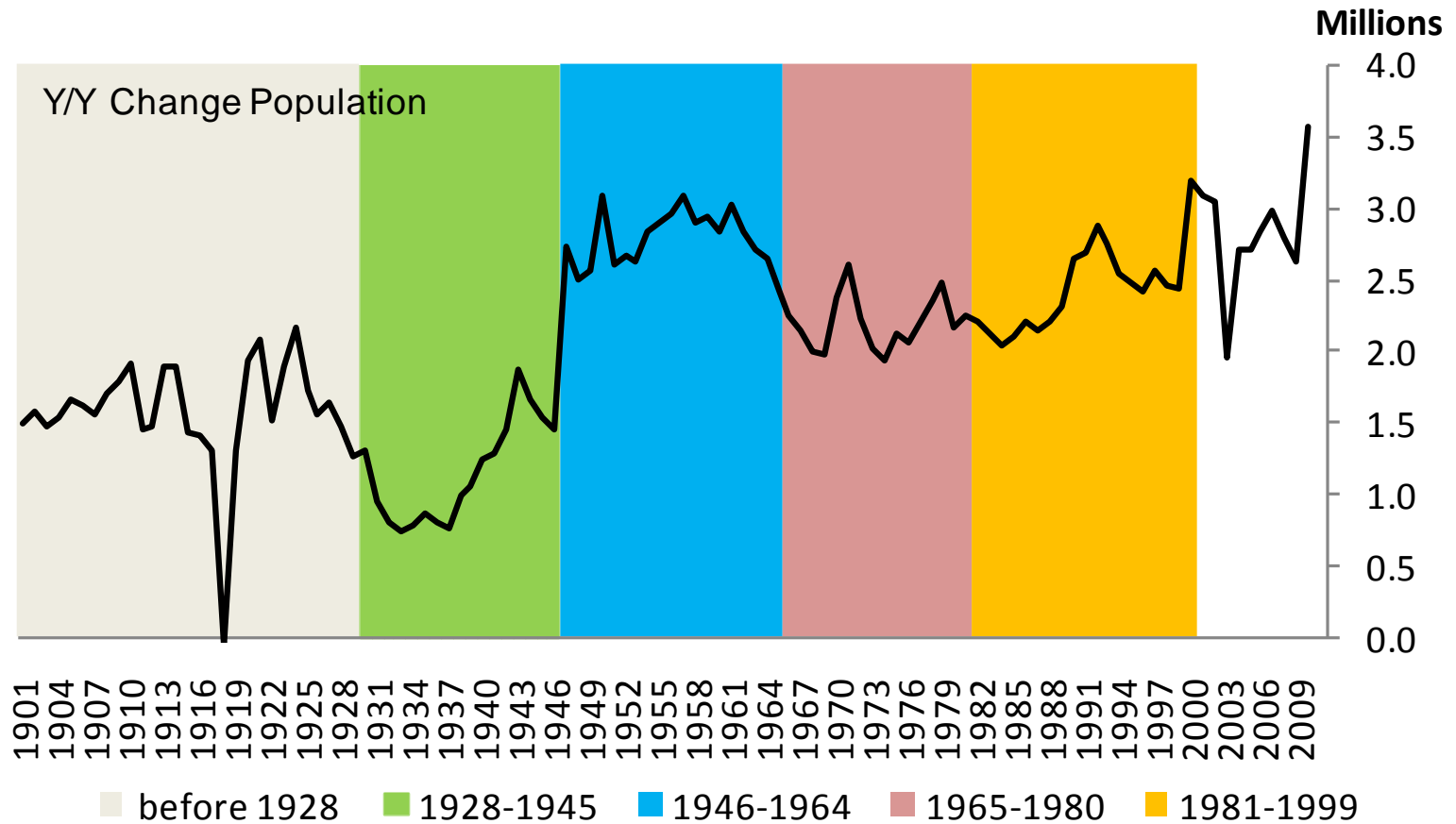
# Wood Product Utilization



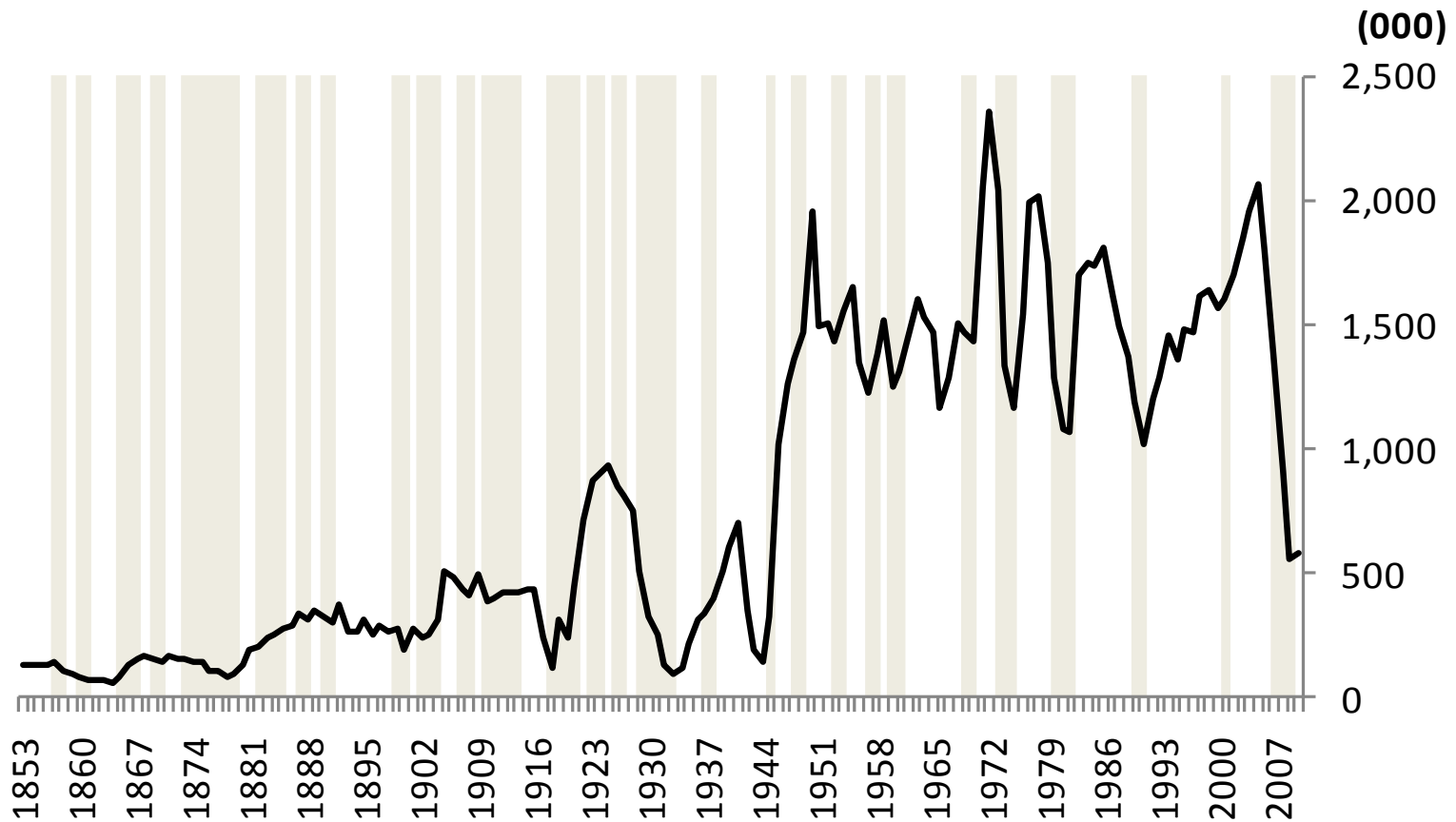
# Sawmill & Treating Employees and Average Work Week



# Population Growth

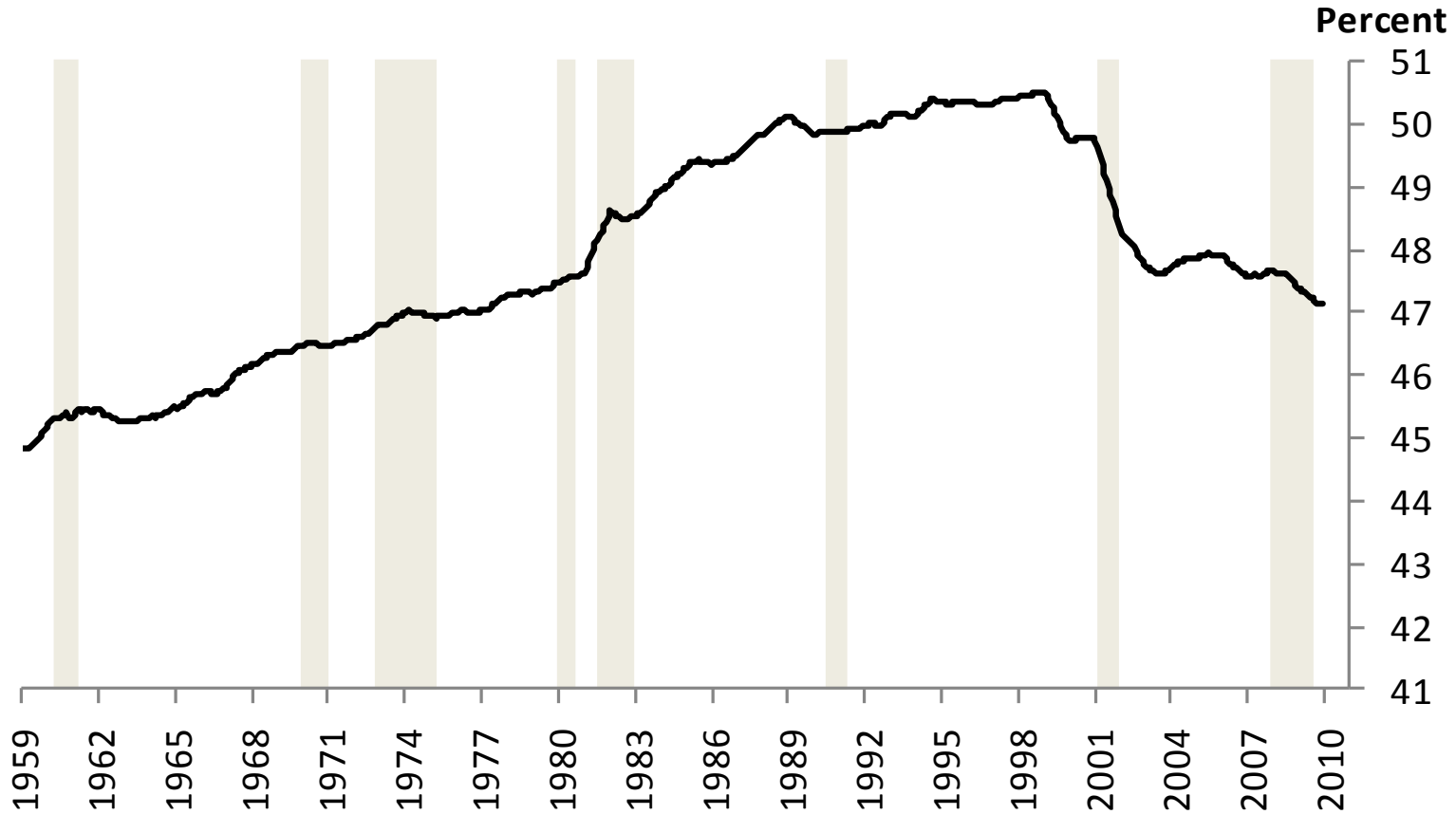


# Housing Starts



[www.census.gov/const/www/newresconstindex.html](http://www.census.gov/const/www/newresconstindex.html). Bureau Economic Analysis.

# Headship Rate



Headship Rate = number of households divided by civilian population

U.S. Census Bureau. [www.bls.gov/cps/](http://www.bls.gov/cps/)

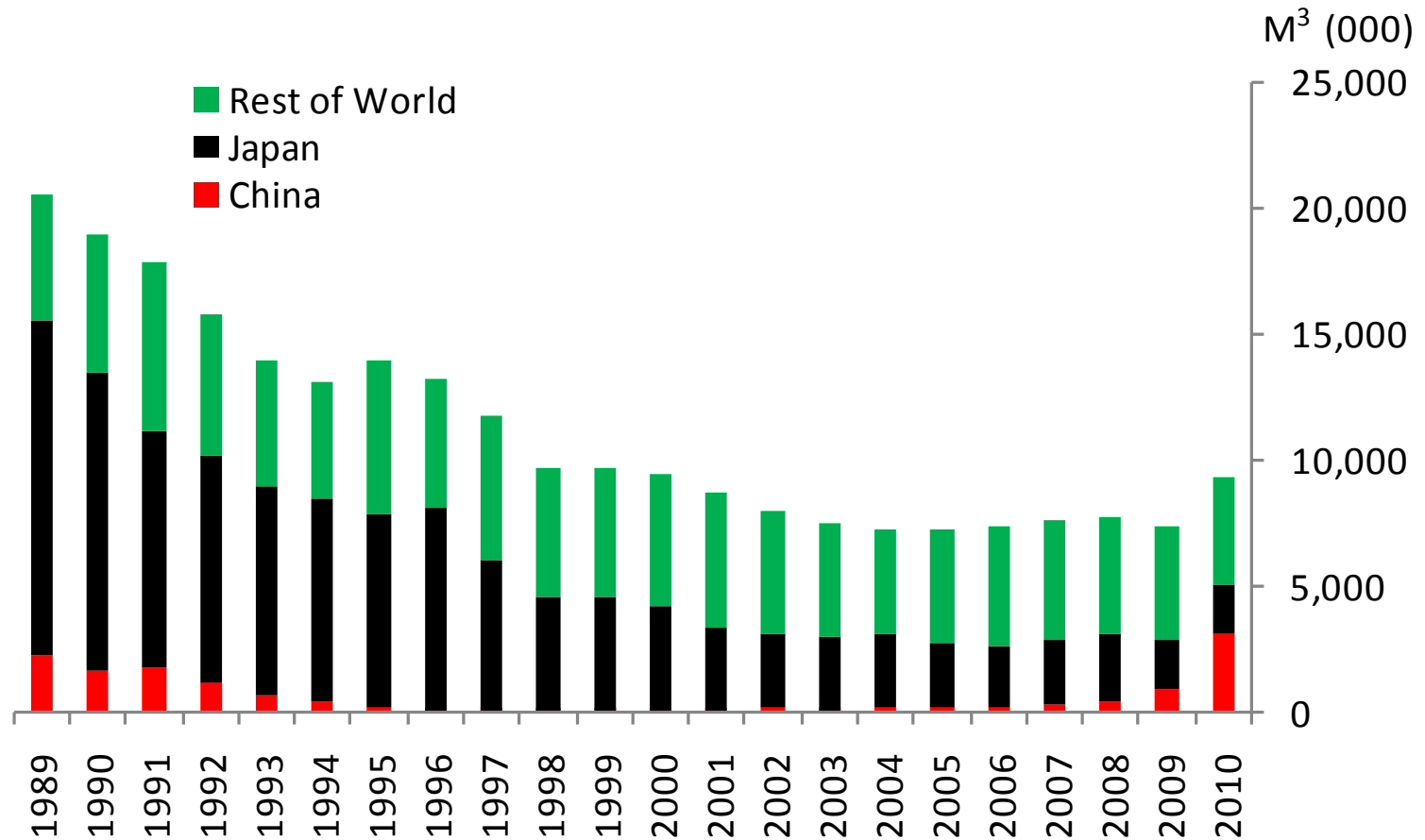
# Long-term Housing Demand

2010 to 2020	Low	High
(000)	Immigration	Immigration
Household Growth	11,802	13,828
Second/Vacant Homes	1,361	1,595
Net Removals	3,279	3,279
Projected Demand	16,442	18,702
<b>Annual average starts /year</b>	<b>1,644</b>	<b>1,870</b>

Joint Center for Housing Studies, Harvard University, Paper W10-9, table 6, pg 36

# Exports and China

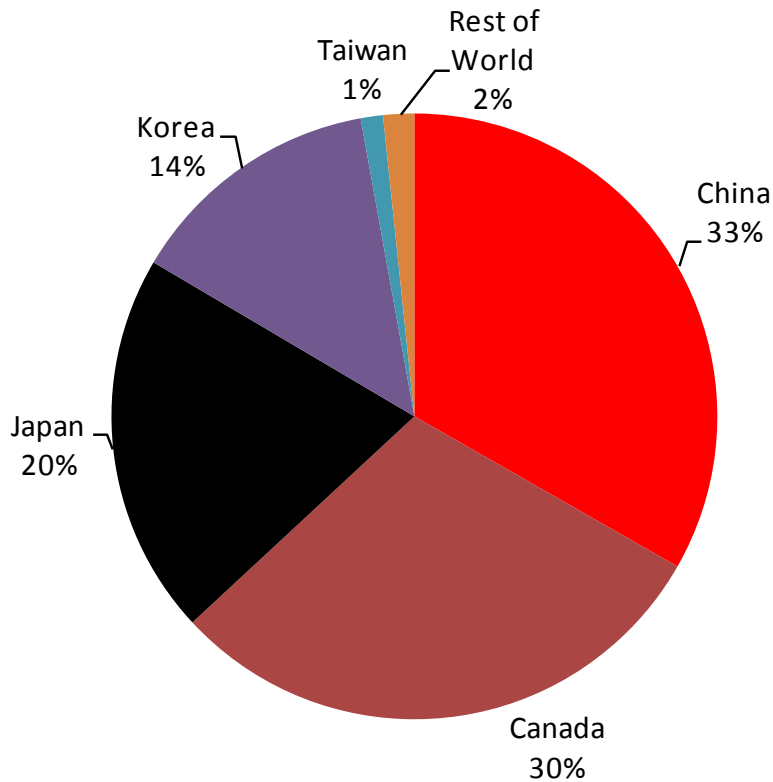
# U.S. Softwood Log Exports



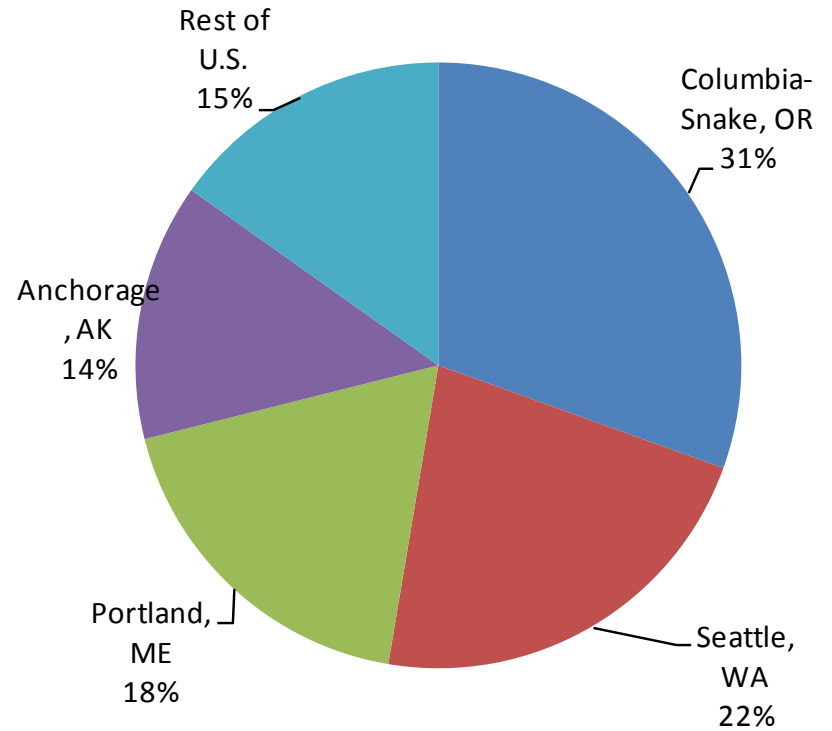
USITC Dataweb at <http://dataweb.usitc.gov>

# 2010 U.S. Softwood Log Exports

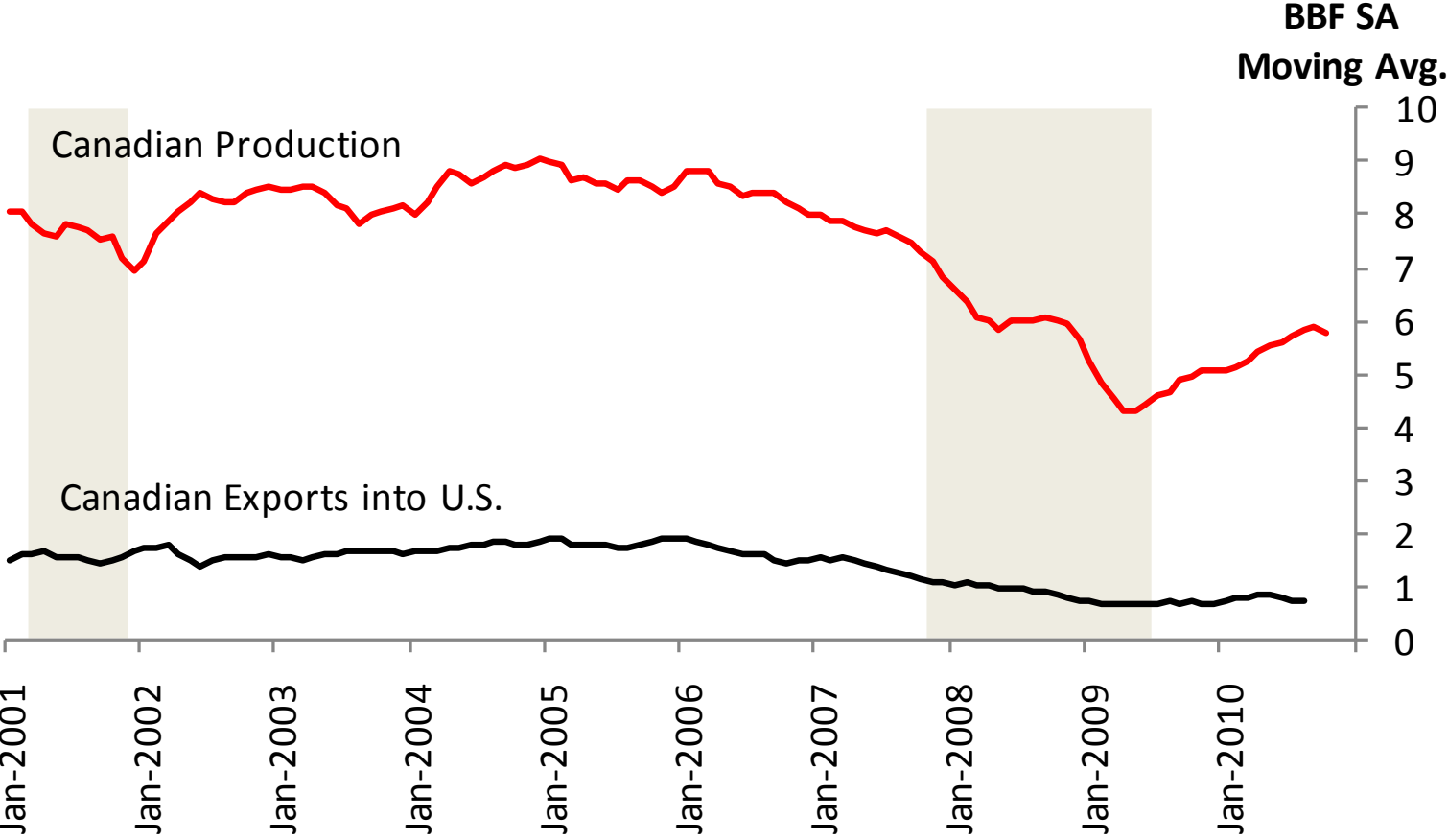
## Destination...



## Origination...

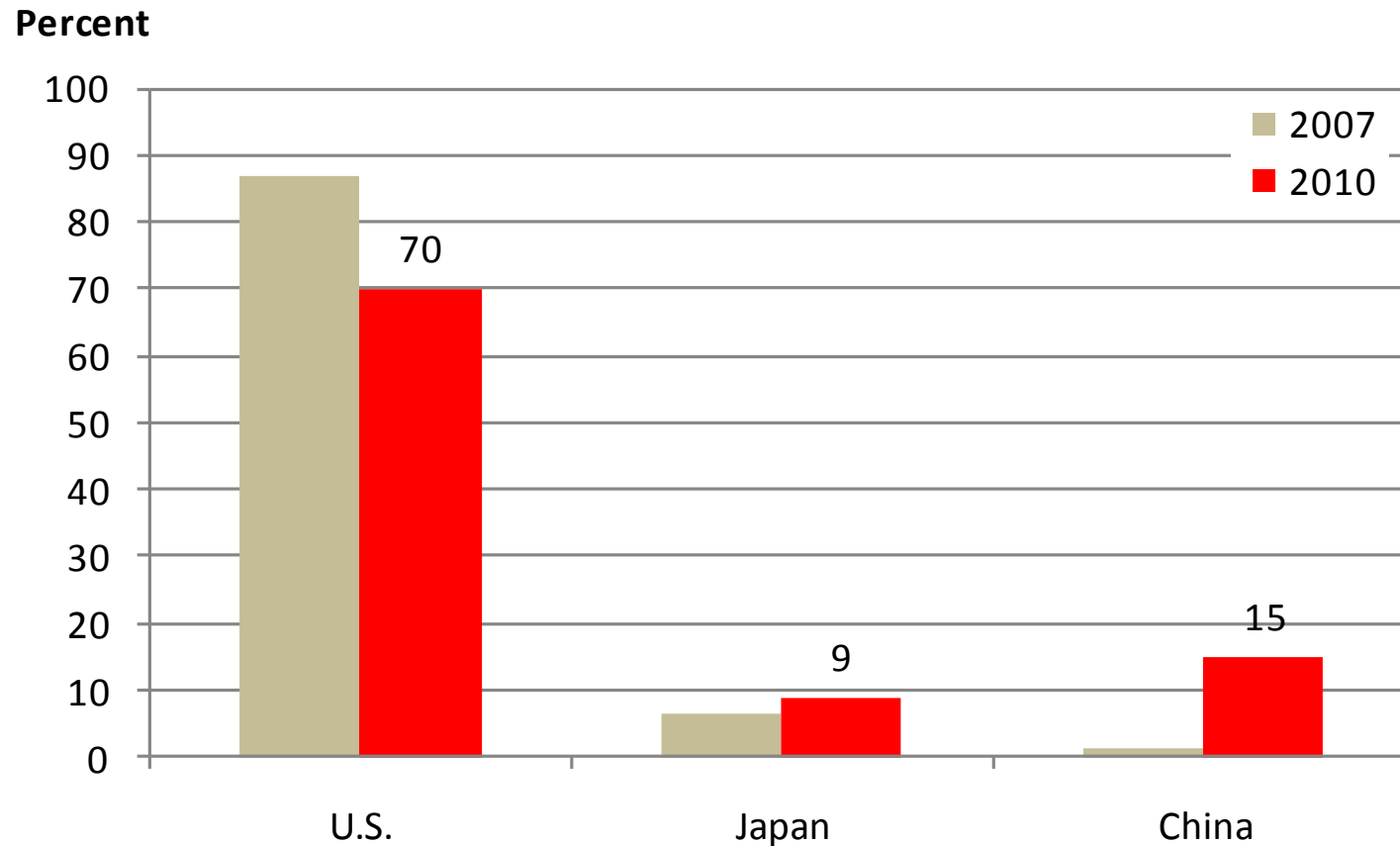


# Canadian Production v. Exports

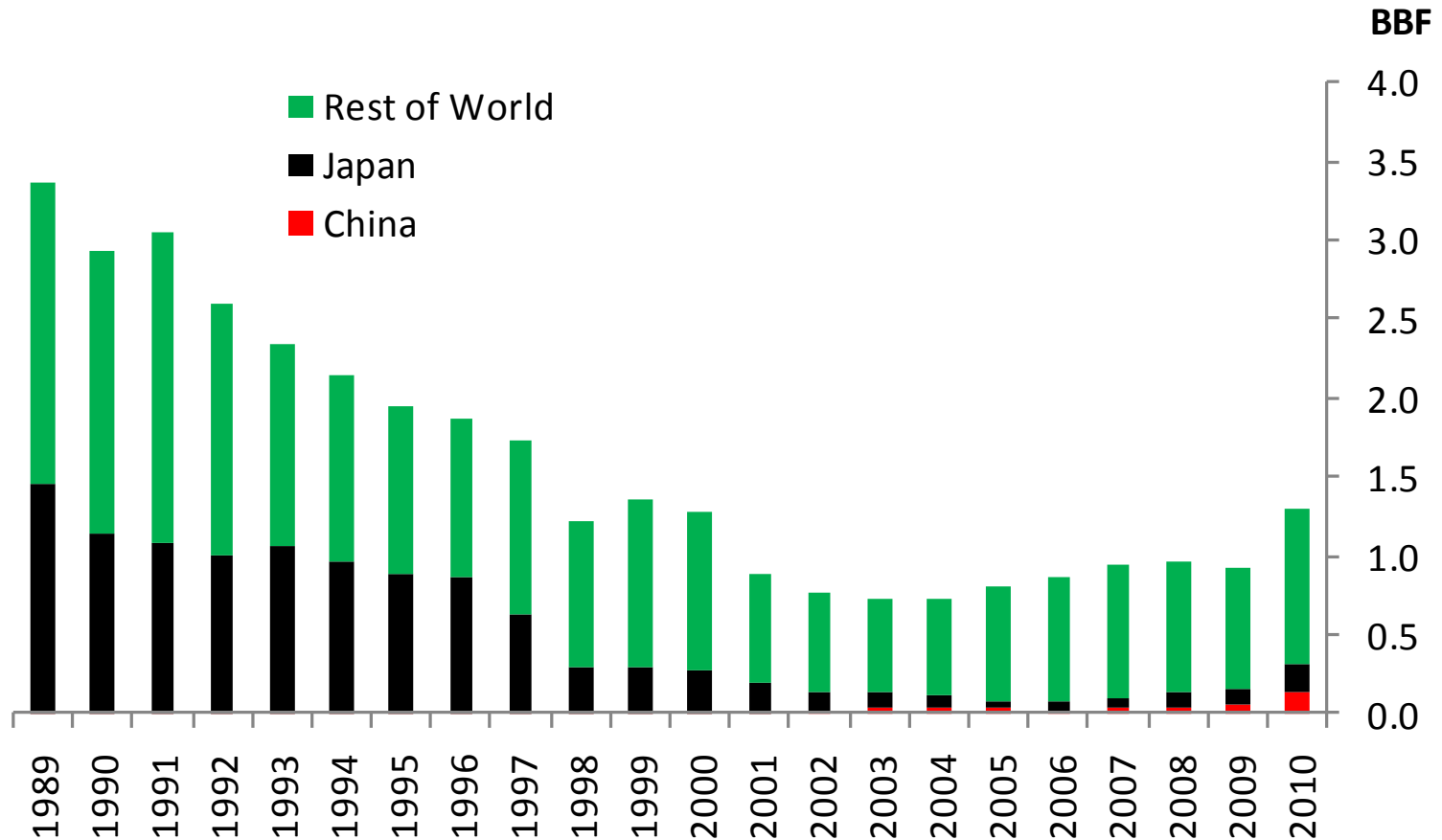


Foreign Agricultural Service GATs at [www.fas.usda/gats](http://www.fas.usda/gats)

# Canadian Softwood Lumber Export Destinations



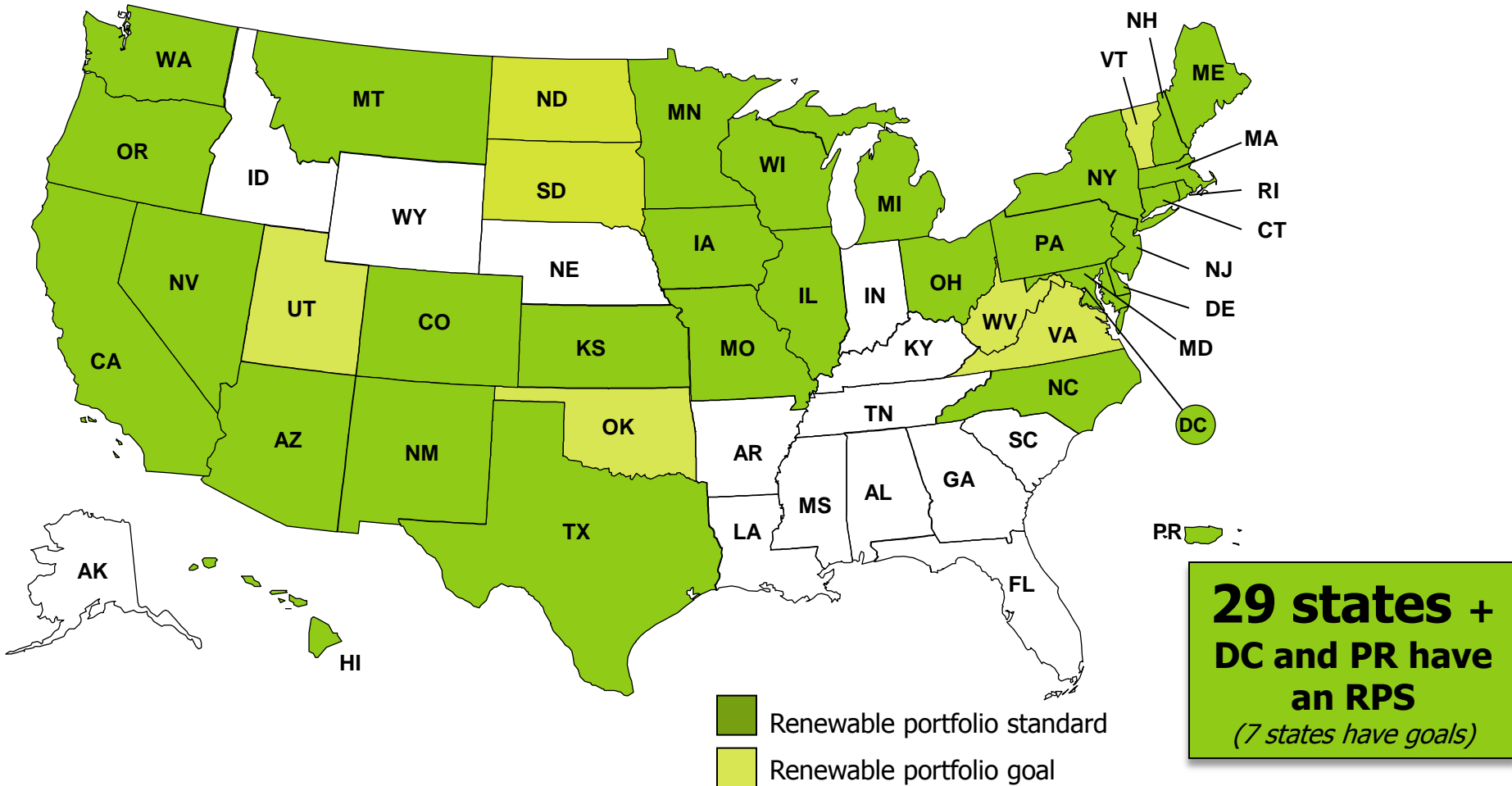
# U.S. Softwood Lumber Export Destinations



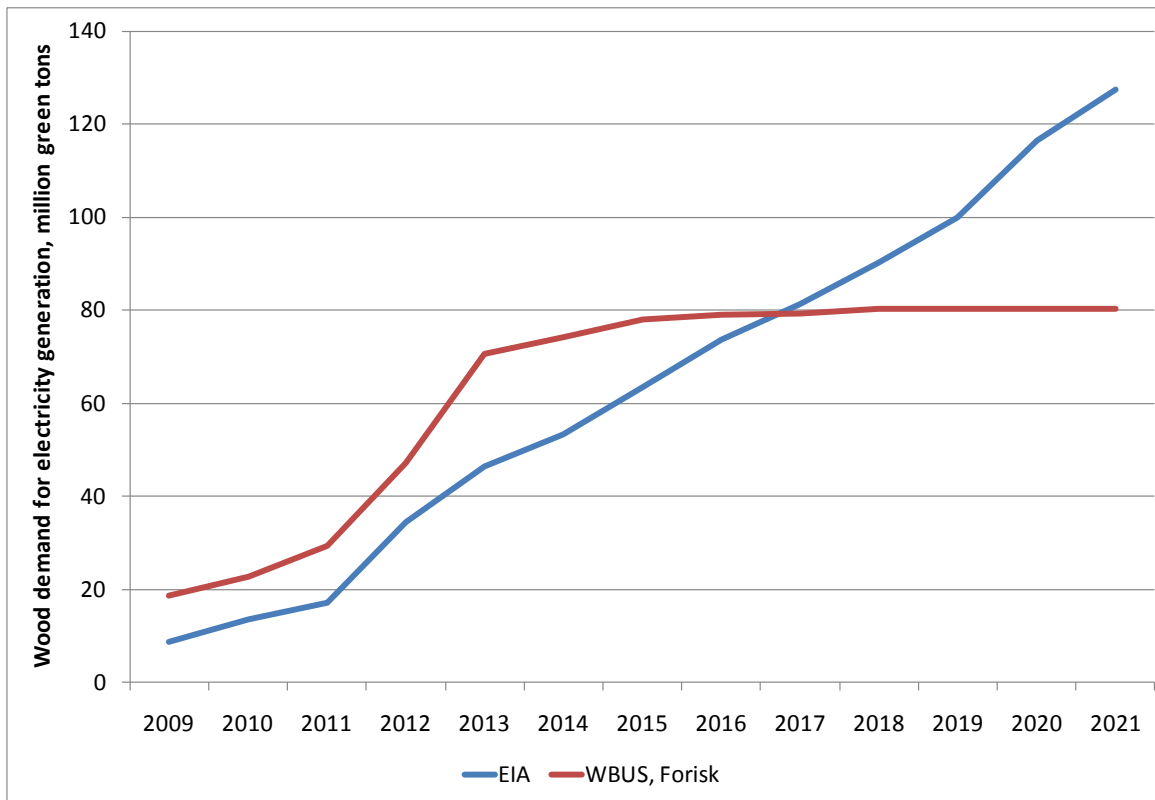
USITC Dataweb at <http://dataweb.usitc.gov>

# Biomass

# RPS Policies



# Federal RES: Biomass for electricity could rise



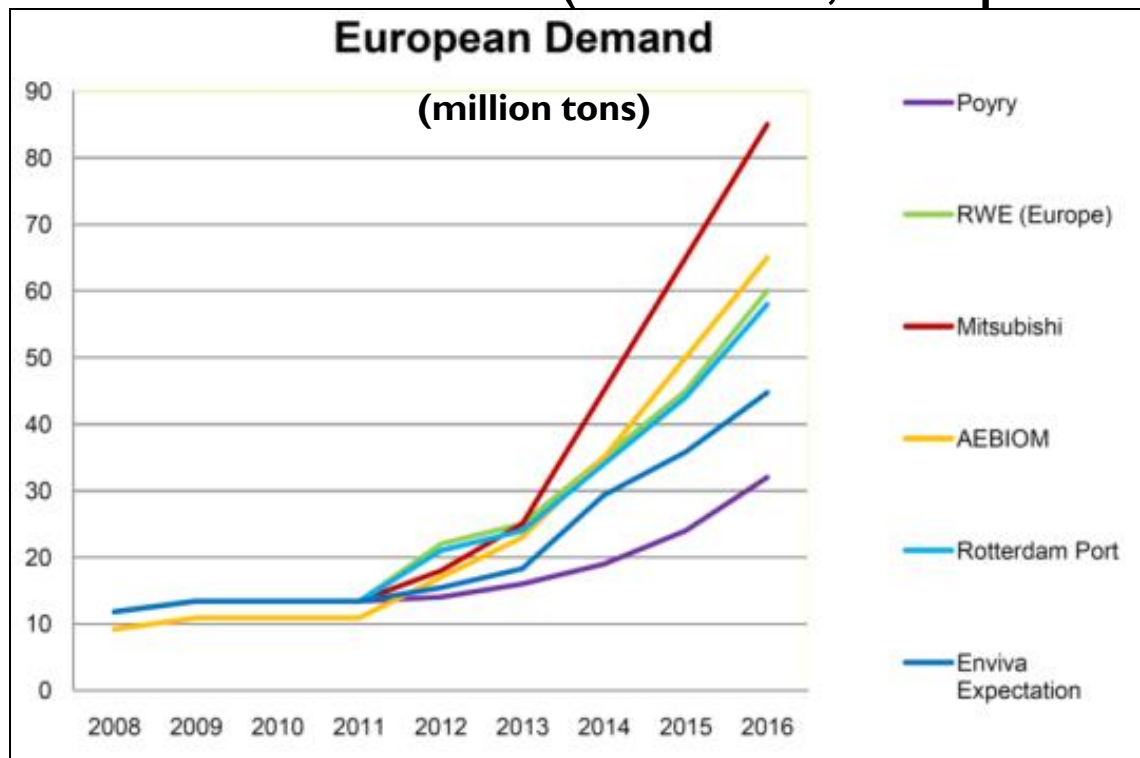
Bill	2011	2012	2015	2020	2021
Waxman-Markey (House)		6.0%	9.5%	20.0%	20.0%
Bingaman-Murkowski (Senate)	3.0%	3.0%	6.0%	12.0%	15.0%
Bingaman-Brownback (Senate)		3.0%	6.0%	12.0%	15.0%
Bingaman-Brownback (Senate) minus efficiency		2.2%	4.4%	8.8%	11.0%

# Biomass power costs more

Cost Element	Units	Pulverized Coal	Biomass	Natural Gas Combined Cycle
<b>"Overnight" Capital Cost</b>	\$/kW	2058	<b>3766</b>	948
Capital Recovery Charge	%	8.5	8.5	8.5
<b>Fixed O&amp;M</b>	\$/kW	27.5	<b>64.5</b>	11.7
<b>Variable O&amp;M</b>	\$/kWh	0.0045	<b>0.0067</b>	0.002
Project Life	Years	20	20	20
Capacity Factor	%	85	80	85
Operating Hours	Hours	7446	7008	7446
Capital Recovery Required	\$/kWh	0.02	0.05	0.01
Fixed O&M Recovery Required	\$/kWh	0	0.01	0
<b>Heat Rate</b>	BTU/kWh	9200	<b>9646</b>	6752
Fuel Cost	\$/MMBTU	1	1	4
<b>Fuel Cost per kWh</b>	\$/kWh	0.0092	<b>0.0096</b>	0.027
Levelized Cost of Electricity	\$/kWh	0.041	0.071	0.041
Transmission and Distribution	\$/kWh	0.02	0.02	0.02
<b>Cost of Electricity</b>	<b>cents/kWh</b>	<b>6.10</b>	<b>9.10</b>	<b>6.10</b>
<b>Cost Relative to Coal</b>	<b>ratio</b>	<b>1</b>	<b>1.50</b>	<b>1.01</b>

# Pellet Domestic & Export Markets

- ▶ European demand driving investment in large-scale pellet facilities in US
- ▶ Domestic market is primarily home heating with some commercial use (schools, hospitals)



# Pellets

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## ▶ Opportunities

- ▶ European demand for green energy
- ▶ Domestic utilities if federal RES passes
- ▶ Uniform product that can be easier to burn & transport than loose biomass

## ▶ Challenges

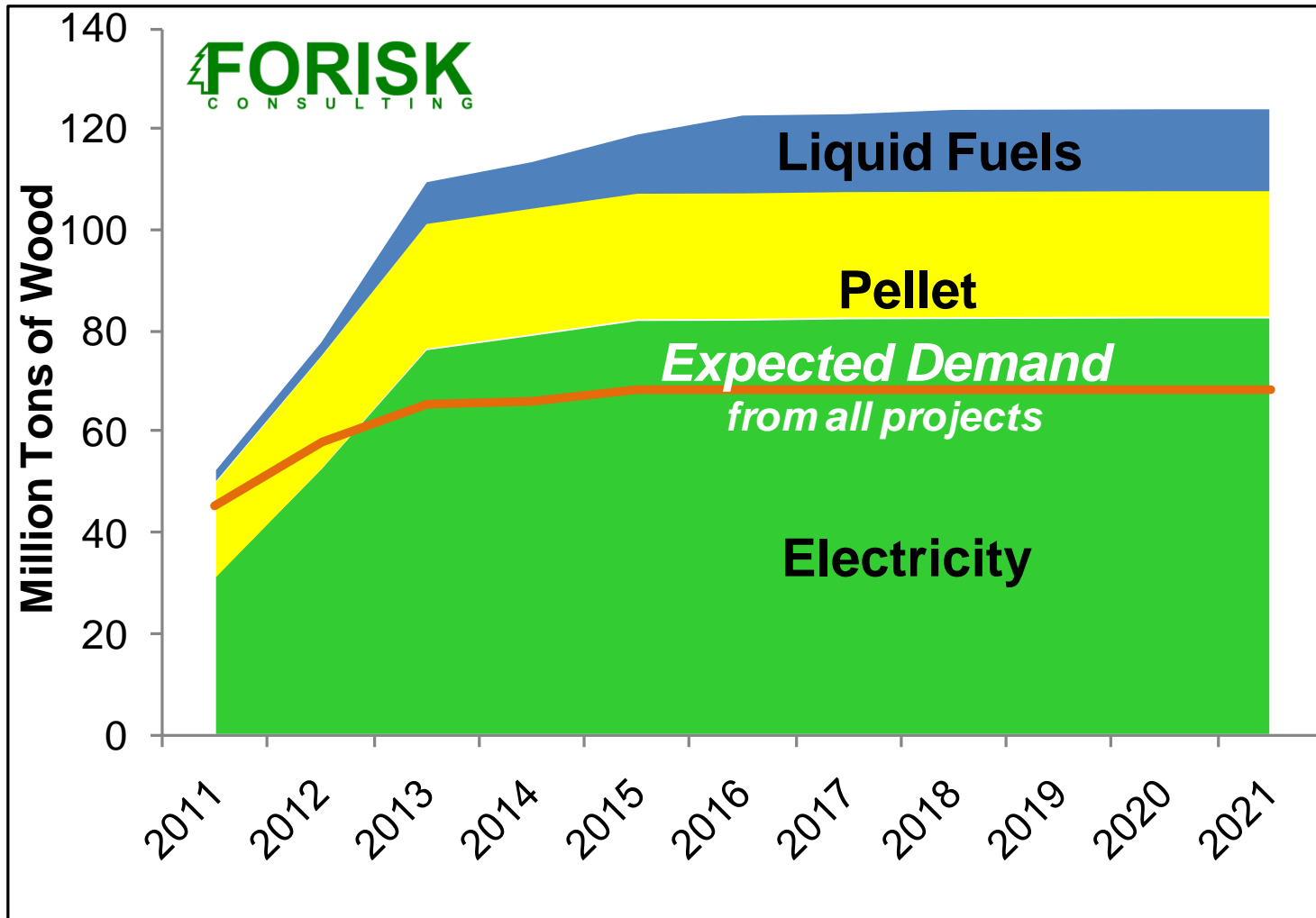
- ▶ European companies require wood supply agreements to sign off-take agreements
- ▶ Banks require wood supply agreements
- ▶ Wood suppliers often require financing...

## ▶ Feedstock type

- ▶ No bark or leaves/needles; clean wood or mill residues such as sawdust or wood chips

# Expected: 292 projects in US

## Resulting tons: 68.5 million



# Percent of plants using mill residuals by Count and Volume.

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<b>Status</b>	<b>Mill residue, % of total wood use (by volume)</b>	<b>% of projects that will use mill residuals as one of the sources of biomass (by project count)</b>
<b>Proposed</b>	9%	62%
<b>Under Construction</b>	17%	80%
<b>Operating</b>	39%	77%
<b>Total</b>	18%	70%

# Conclusion

- Expect homeownership to moderate/drop
- Lumber demand from housing drift sideways
- Global growth and China may displace housing?
- SP gains, but utilization rates remain low
- Post FMs, less volatility in residential markets
- Weak dollar + global growth = higher exports
- Pellets place small log diameters under pressure

# Questions

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