Hardwood Lumber
Domestic Market Update
WESTERN HARDWOODS ASSOCIATION
Annual Convention
Lincoln City, Oregon   August 18, 2022

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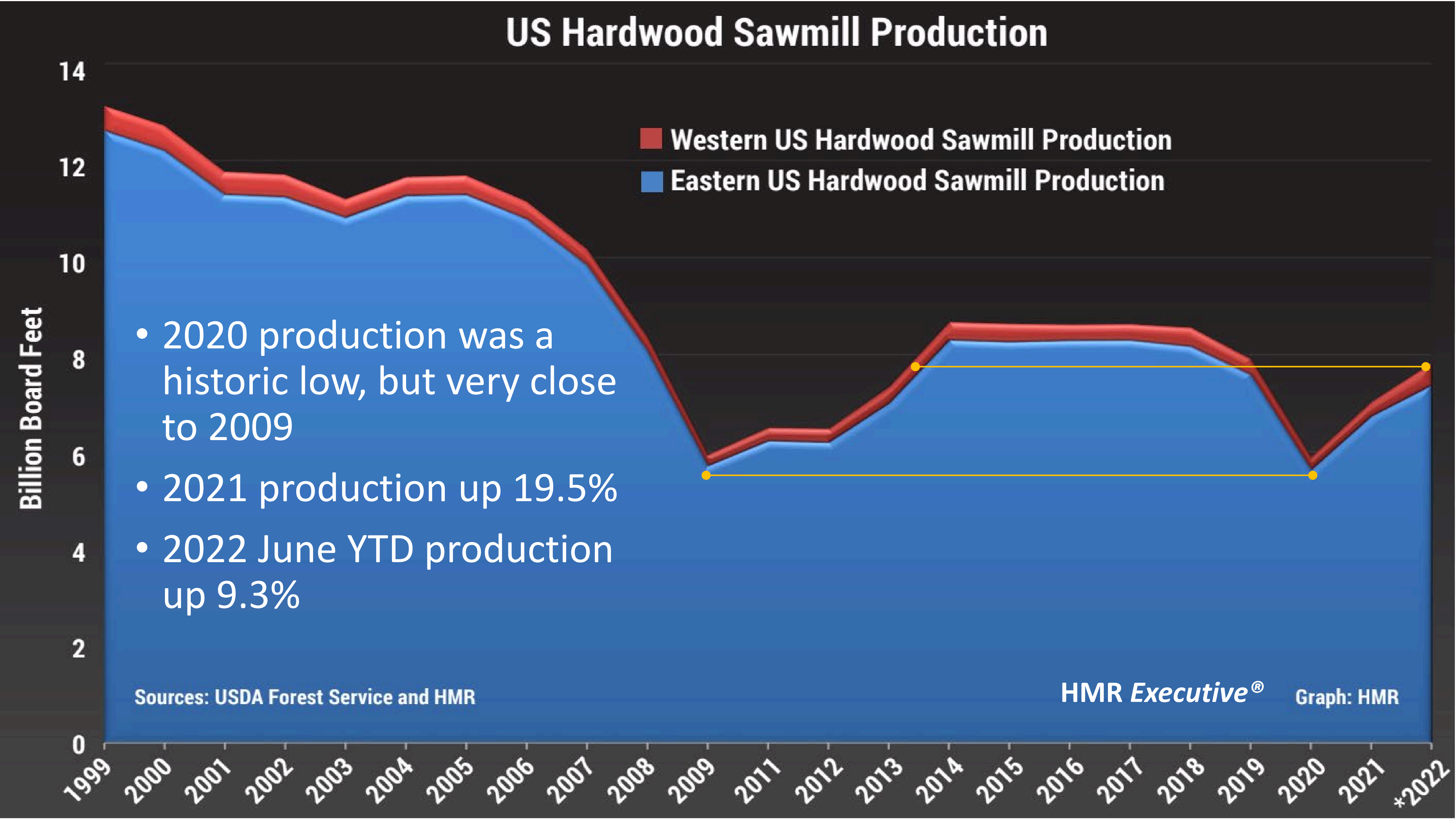
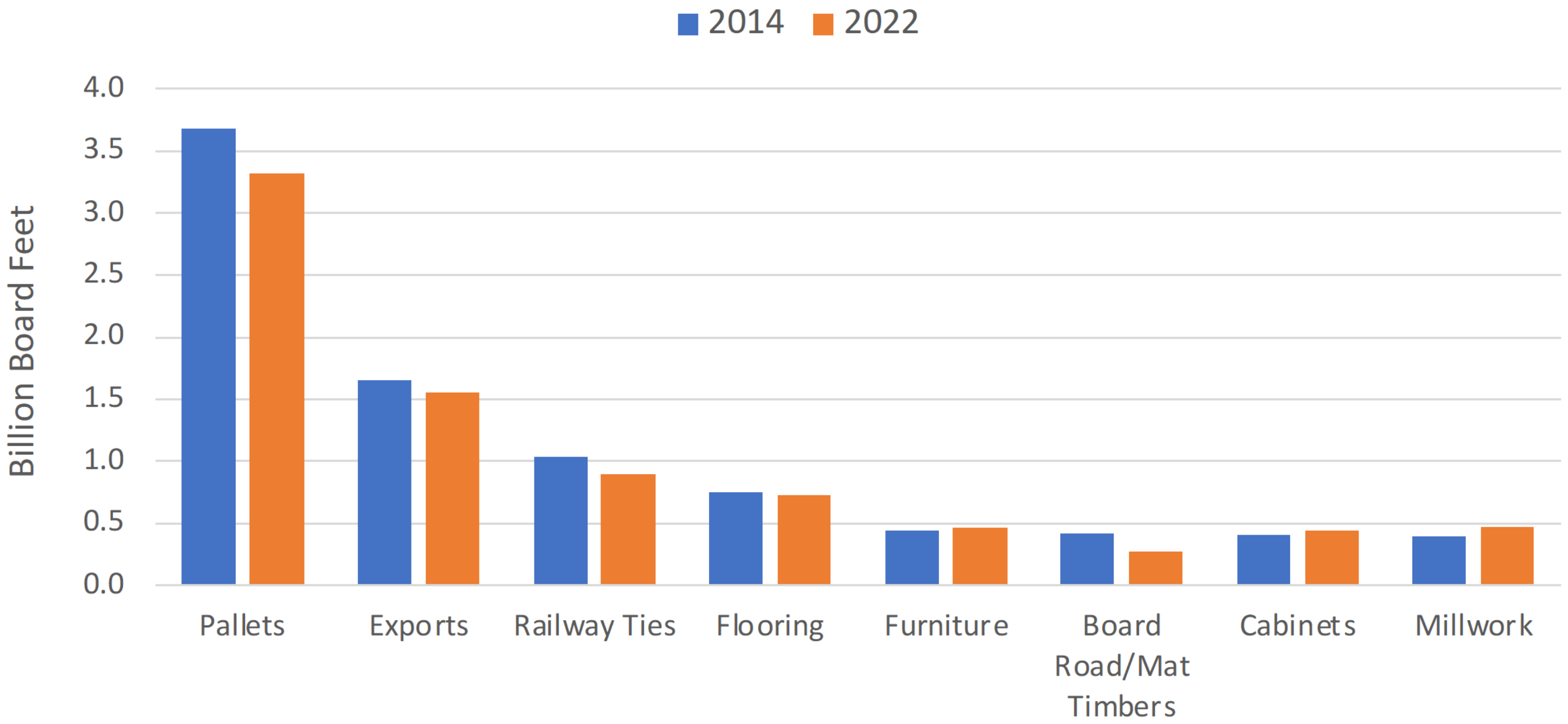

US Hardwood Sawmill Production
Western US Hardwood Sawmill Production
Eastern US Hardwood Sawmill Production
Billion Board Feet
14
12
10
8
6
4
2
0
• 2020 production was a historic low, but very close to 2009
• 2021 production up 19.5%
• 2022 June YTD production up 9.3%
Sources: USDA Forest Service and HMR
HMR Executive®
Graph: HMR
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
*2022

Consumption of Hardwood Lumber by Major U.S. Markets



Source: HMR Executive

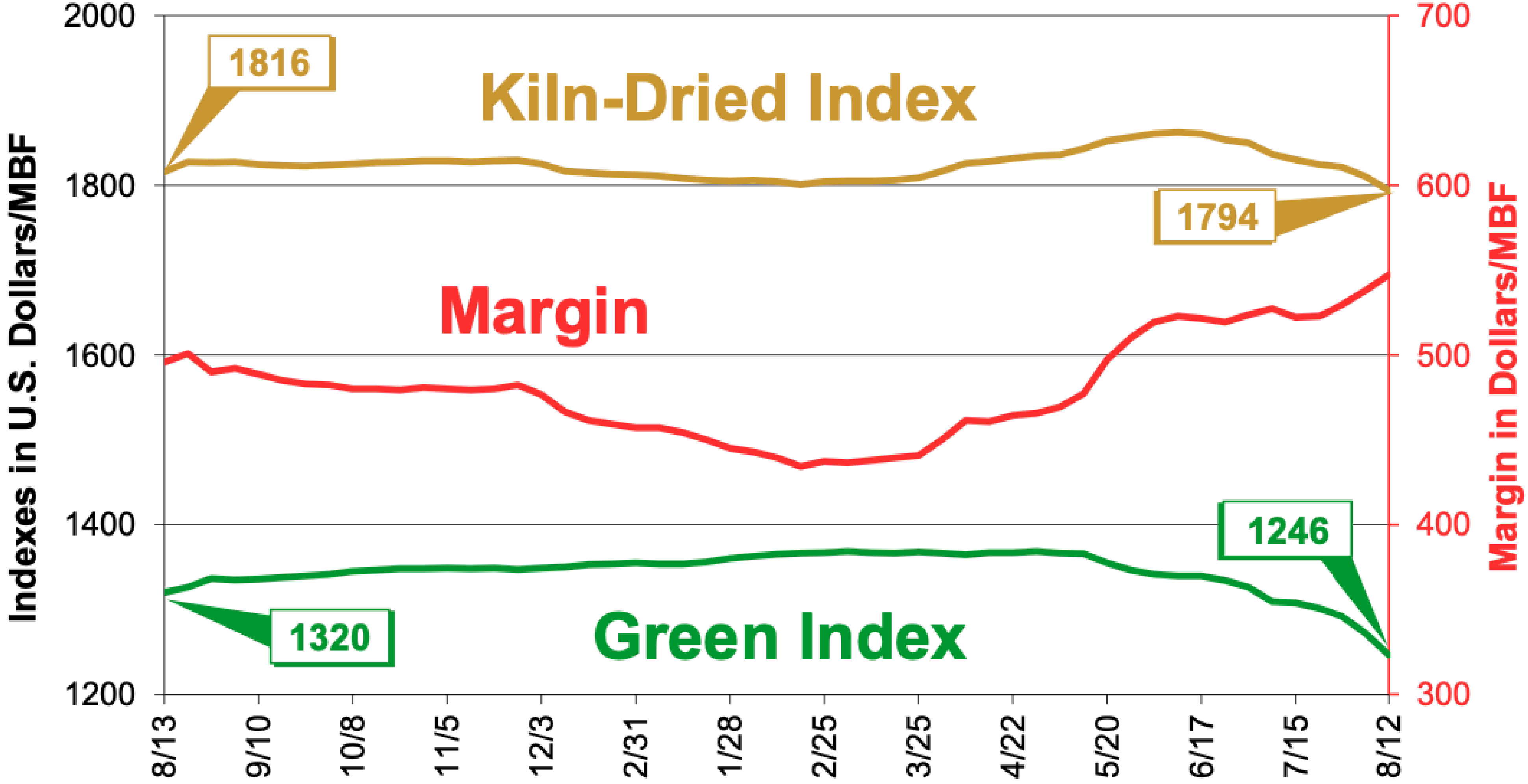
According to *HMR Executive,* Western hardwood sawmill production in the first half of 2022 was 473 million board feet, “the highest annual rate since the early 2000s”.

Western production is 6% of total U.S. hardwood lumber production.

Hardwood Lumber Price Indexes

One-Year Change in Kiln-Dried Price Index: -1.22%

One-Year Change in Green Price Index: -5.57%



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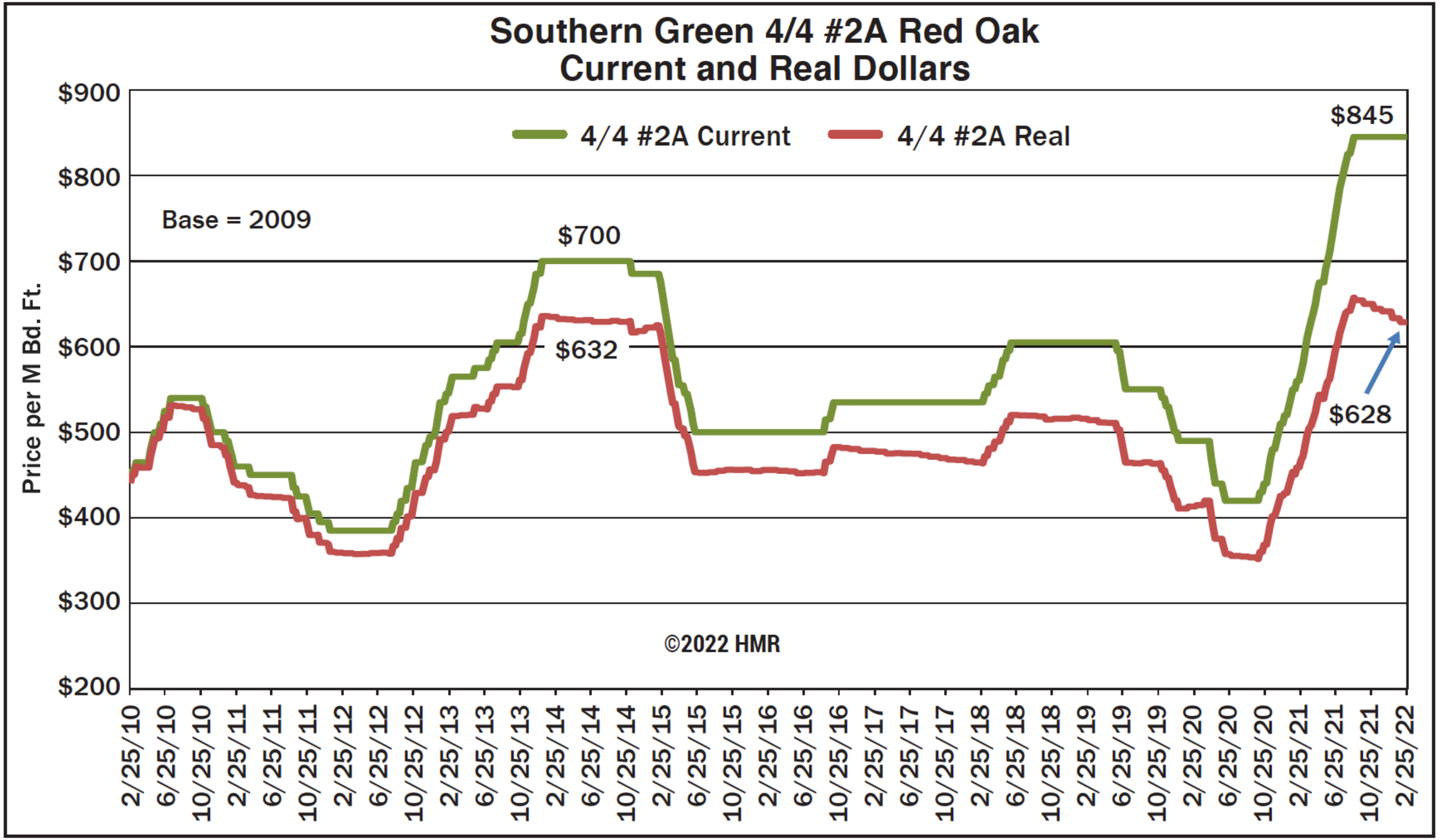
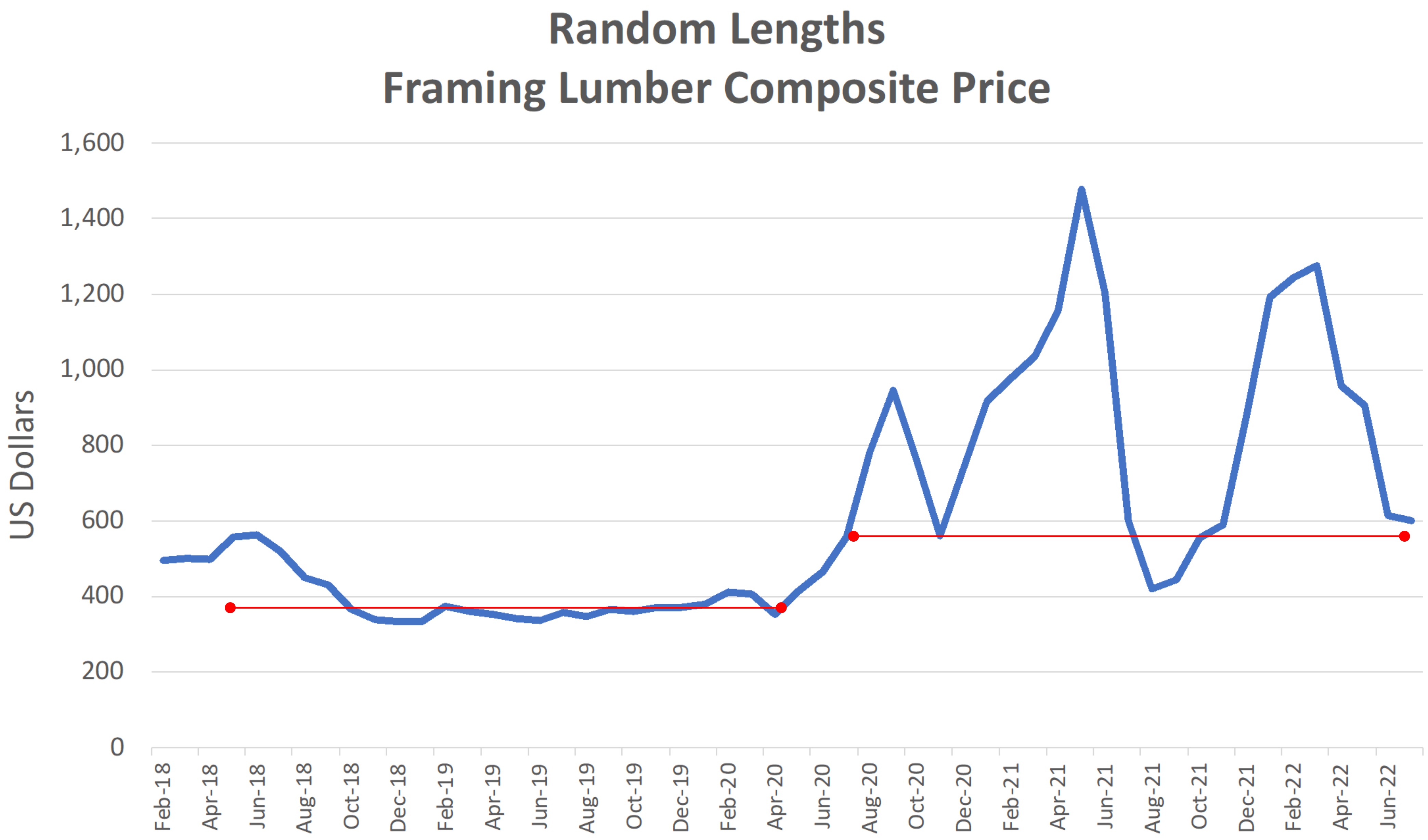
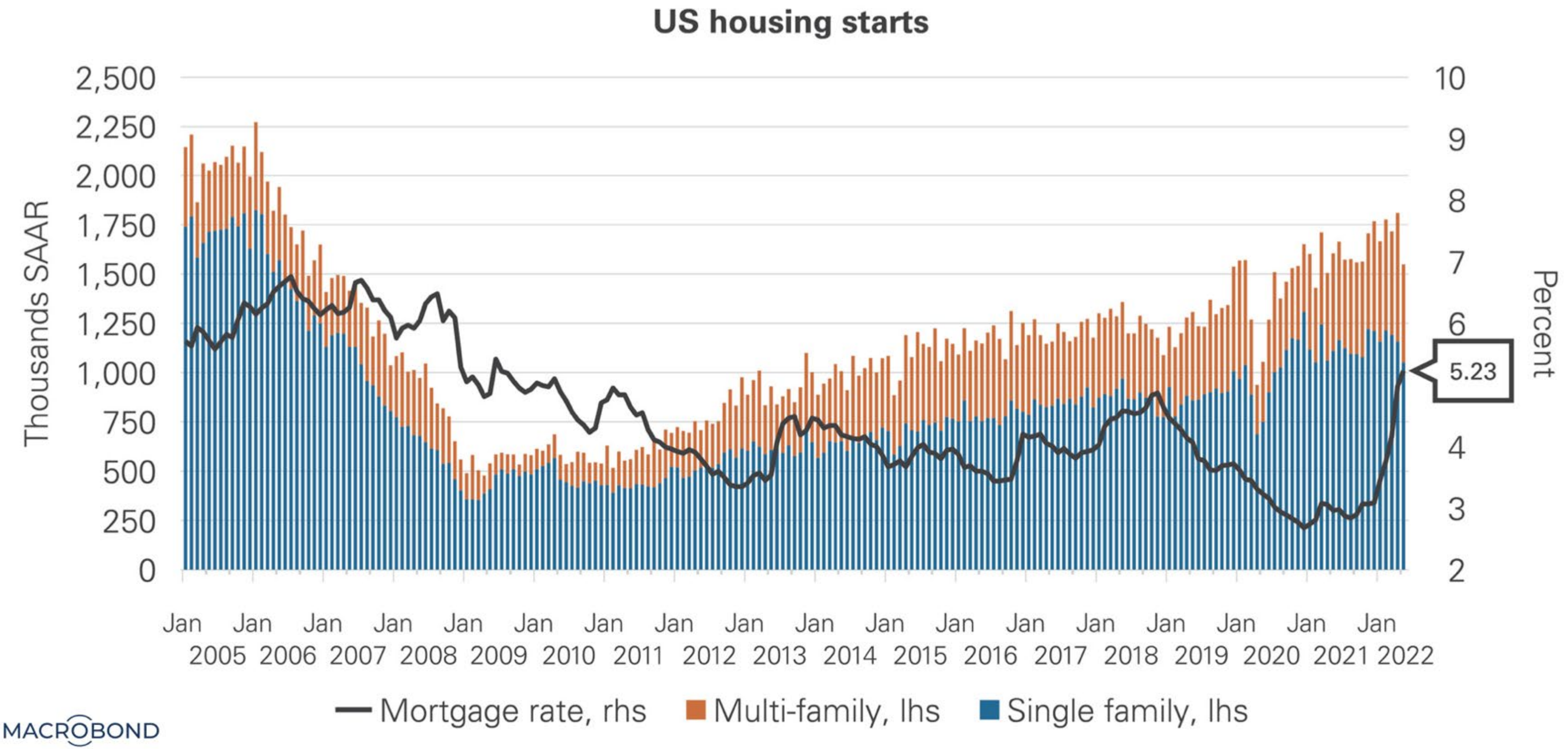




Source: Random Lengths


US housing starts
Thousands SAAR
2,500
2,250
2,000
1,750
1,500
1,250
1,000
750
500
250
0
10
9
8
7
6
5.23
4
3
2
Percent
Jan 2005
Jan 2006
Jan 2007
Jan 2008
Jan 2009
Jan 2010
Jan 2011
Jan 2012
Jan 2013
Jan 2014
Jan 2015
Jan 2016
Jan 2017
Jan 2018
Jan 2019
Jan 2020
Jan 2021
Jan 2022
Mortgage rate, rhs
Multi-family, lhs
Single family, lhs
MACROBOND

New Housing Starts

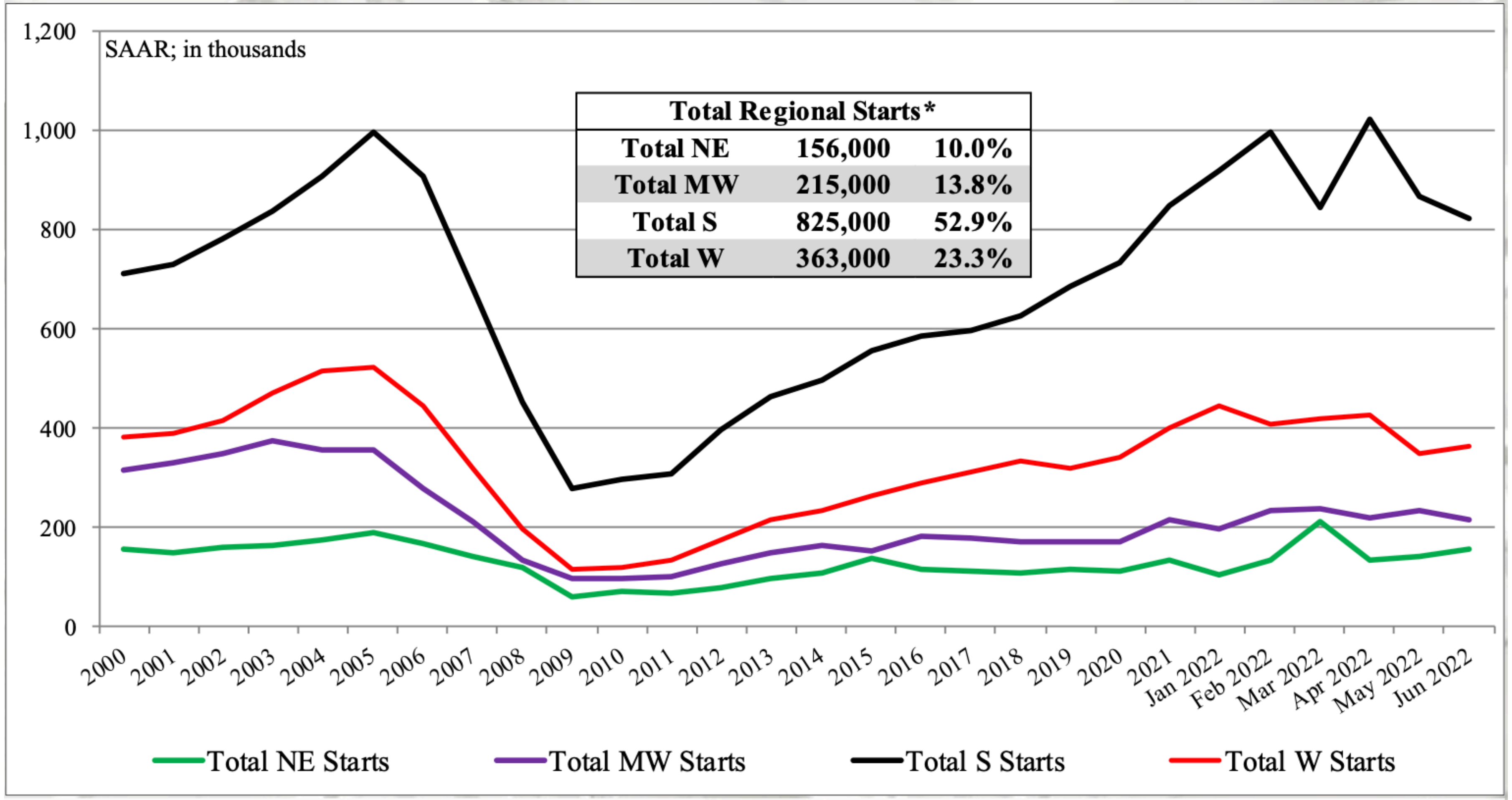
	Total Starts*	SF Starts	MF 2-4 Starts**	MF ≥5 Starts
June	1,559,000	982,000	9,000	568,000
May	1,591,000	1,068,000	29,000	494,000
2021	1,664,000	1,165,000	11,000	488,000
M/M change	-2.0%	-8.1%	-69.0%	15.0%
Y/Y change	-6.3%	-15.7%	-18.2%	16.4%

* All start data are presented at a seasonally adjusted annual rate (SAAR).

** US DOC does not report 2 to 4 multi-family starts directly; this is an estimation ((Total starts – (SF + 5-unit MF)).

Source: Virginia Tech–USDA Forest Service Housing Commentary

New Housing Starts by Region



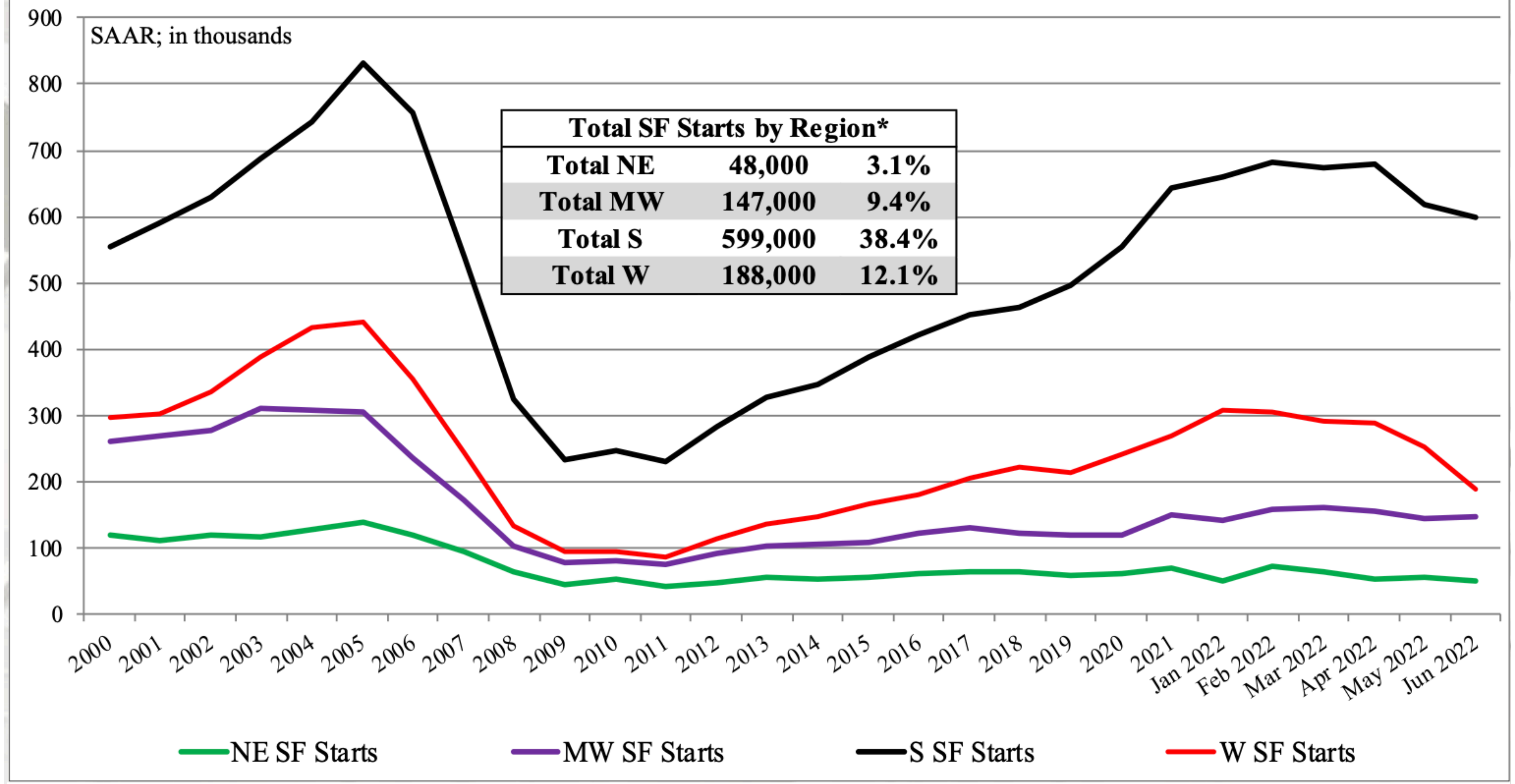
Total Regional Starts*		
Total NE	156,000	10.0%
Total MW	215,000	13.8%
Total S	825,000	52.9%
Total W	363,000	23.3%

NE = Northeast, MW = Midwest, S = South, W = West
US DOC does not report 2 to 4 multi-family starts directly; this is an estimation (Total starts – (SF + ≥ 5 MF starts).

* Percentage of total starts.

Source: Virginia Tech–USDA Forest Service Housing Commentary

Total SF Housing Starts by Region



Total SF Starts by Region*		
Total NE	48,000	3.1%
Total MW	147,000	9.4%
Total S	599,000	38.4%
Total W	188,000	12.1%

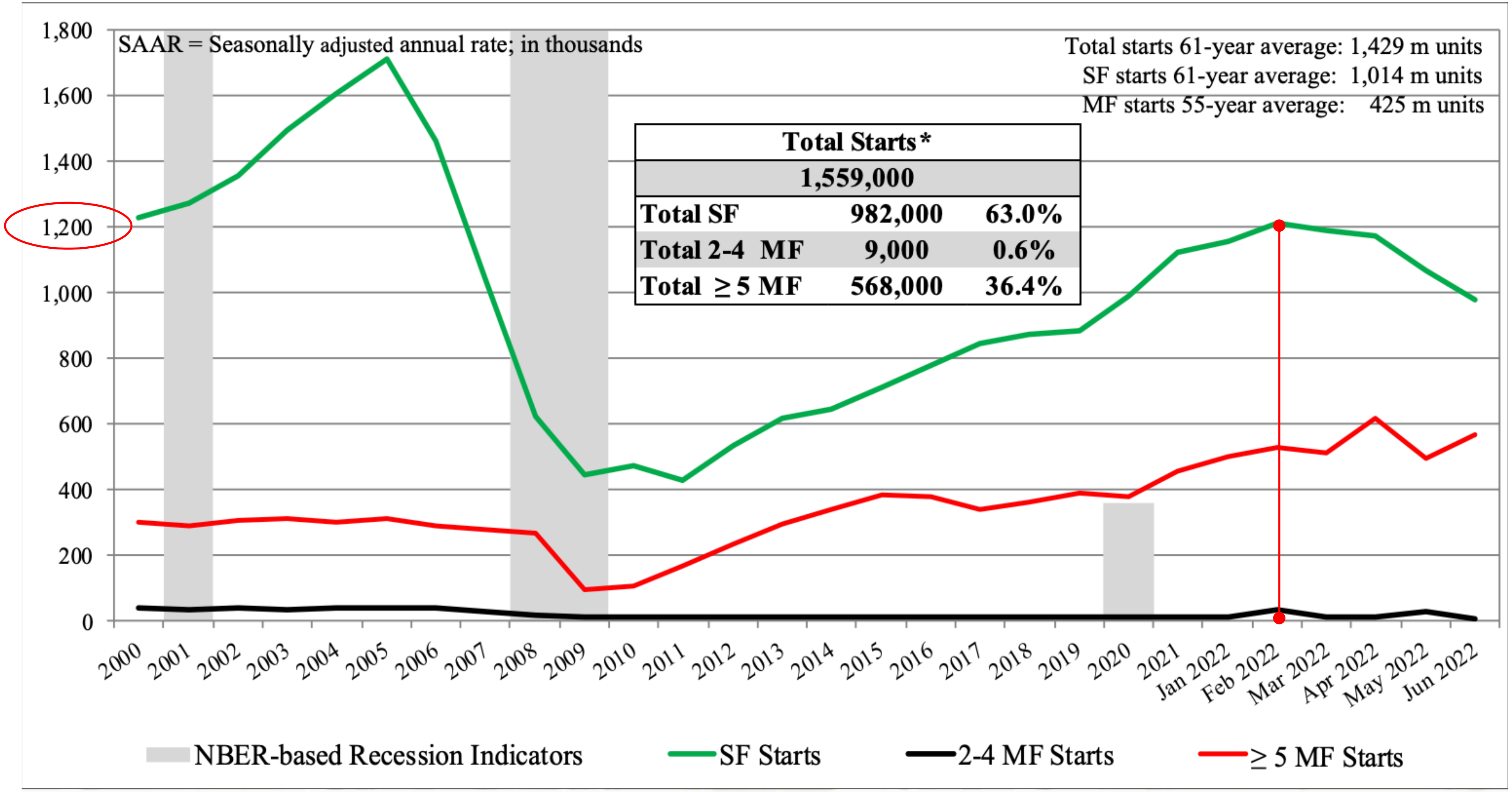
NE = Northeast, MW = Midwest, S = South, W = West

US DOC does not report 2 to 4 multi-family starts directly; this is an estimation (Total starts – (SF + ≥ 5 MF starts).

* Percentage of total starts.

Source: Virginia Tech–USDA Forest Service Housing Commentary

New Housing Starts



US DOC does not report 2 to 4 multi-family starts directly; this is an estimation: ((Total starts – (SF + ≥ MF)).

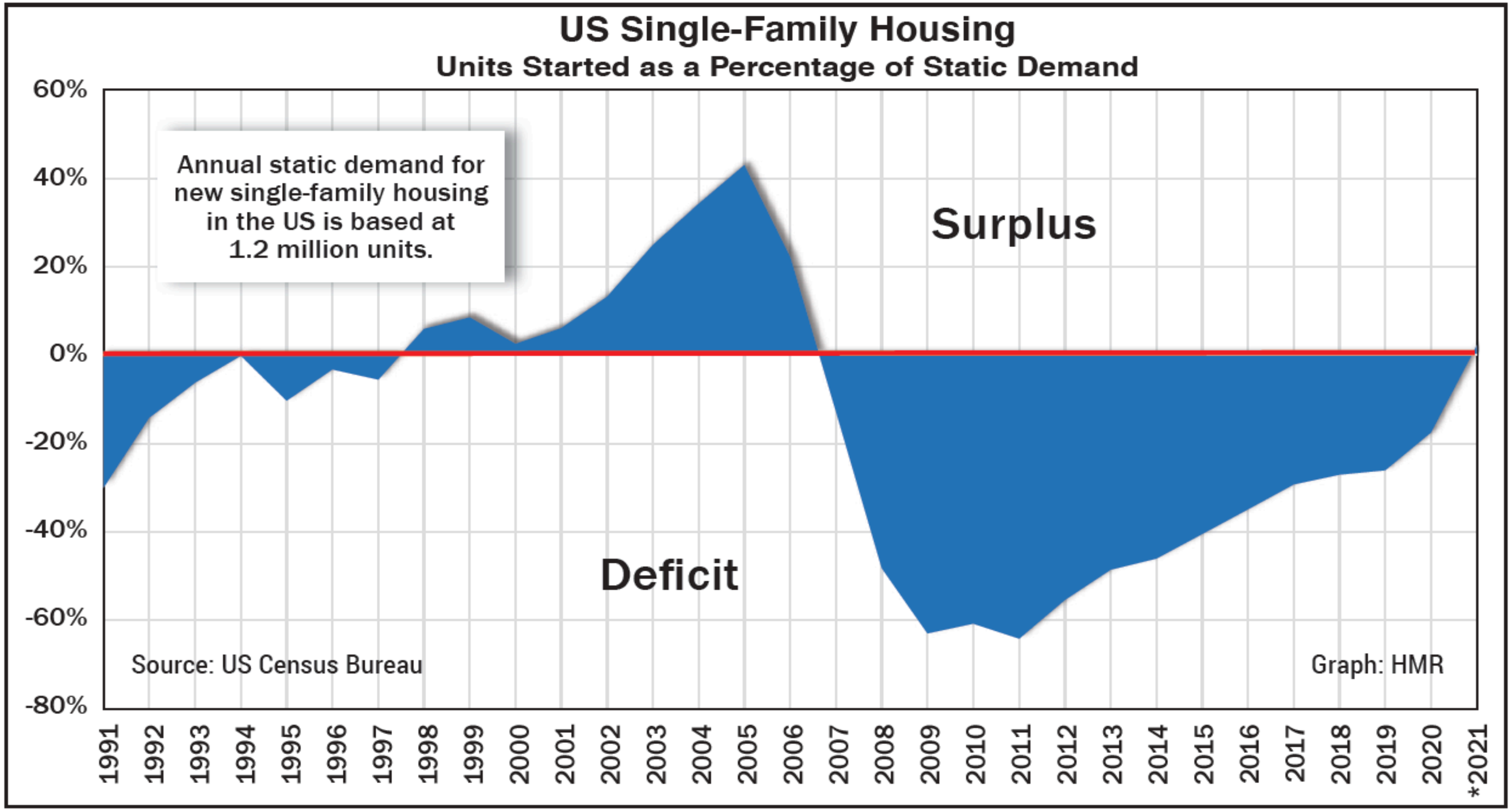
* Percentage of total starts.

NBER based Recession Indicator Bars for the United States from the Period following the Peak through the Trough (FRED, St. Louis).

Source: Virginia Tech–USDA Forest Service Housing Commentary

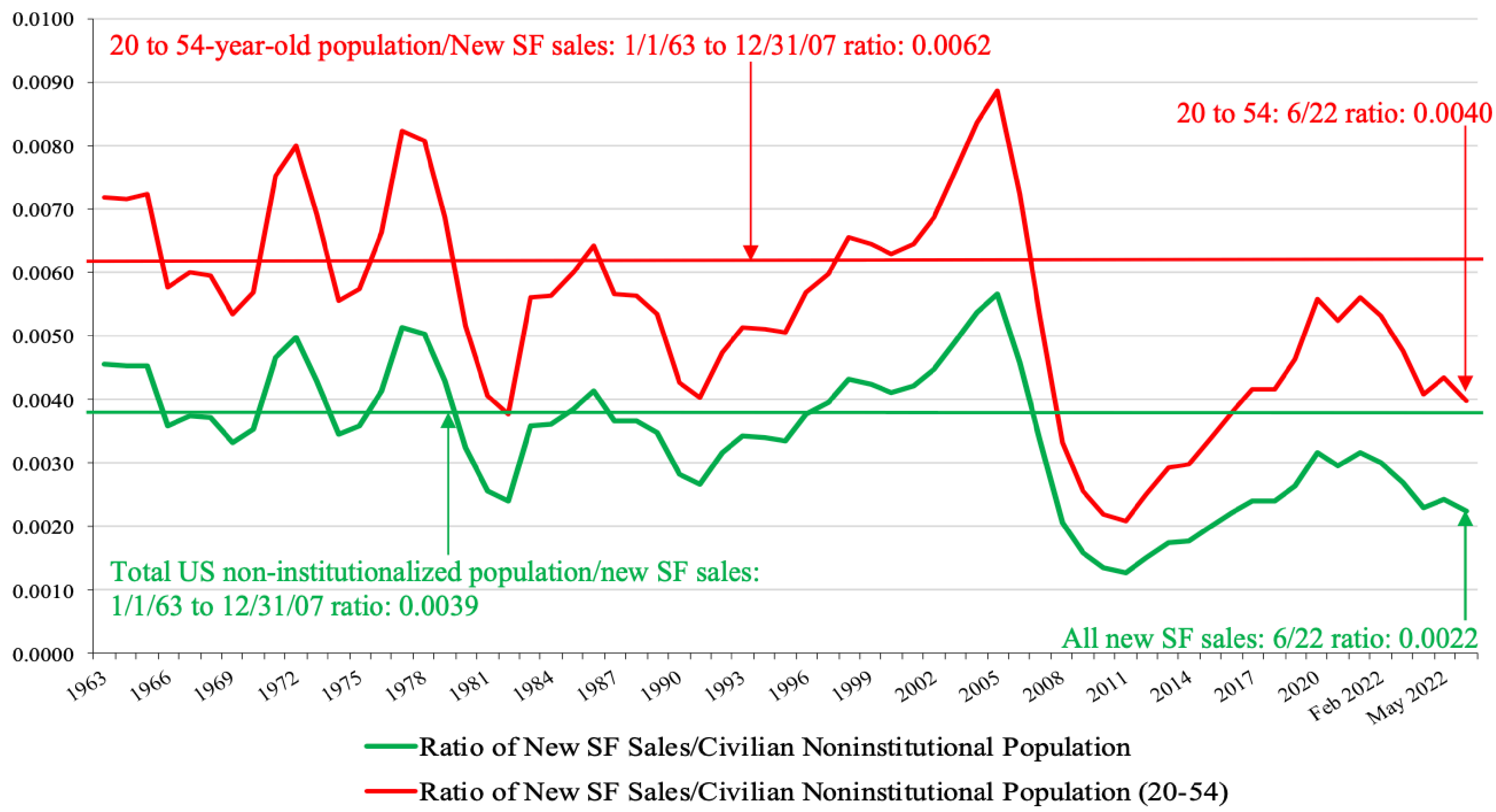
U.S. housing supply had been under-supplied for a decade

- The U.S. now has its largest adult population in its history. That population is growing and getting younger.
- There is a severe shortage of single-family houses in the U.S.



Source: HMR Executive

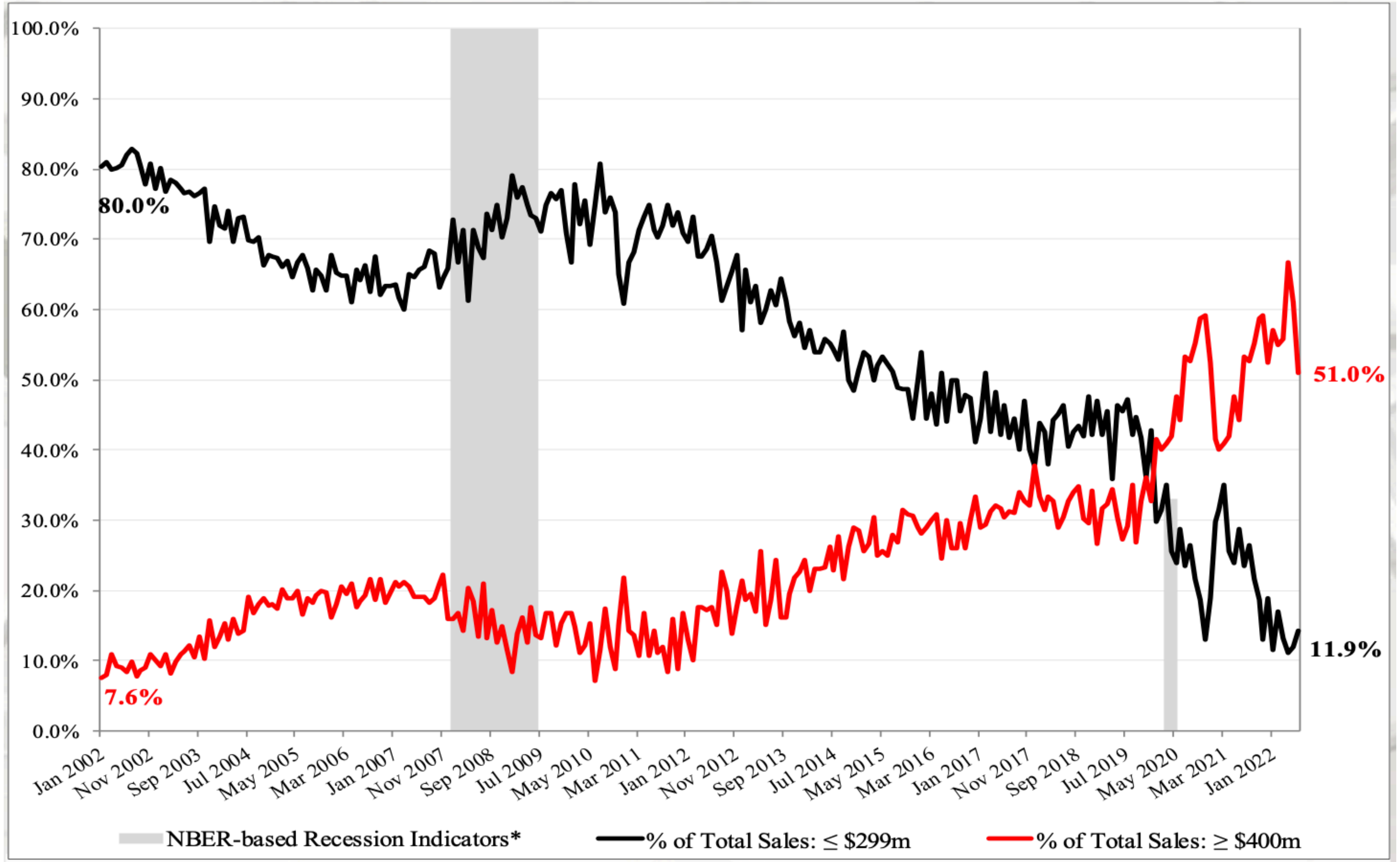
Single-family housing sales relative to population



Source: Virginia Tech–USDA Forest Service Housing Commentary

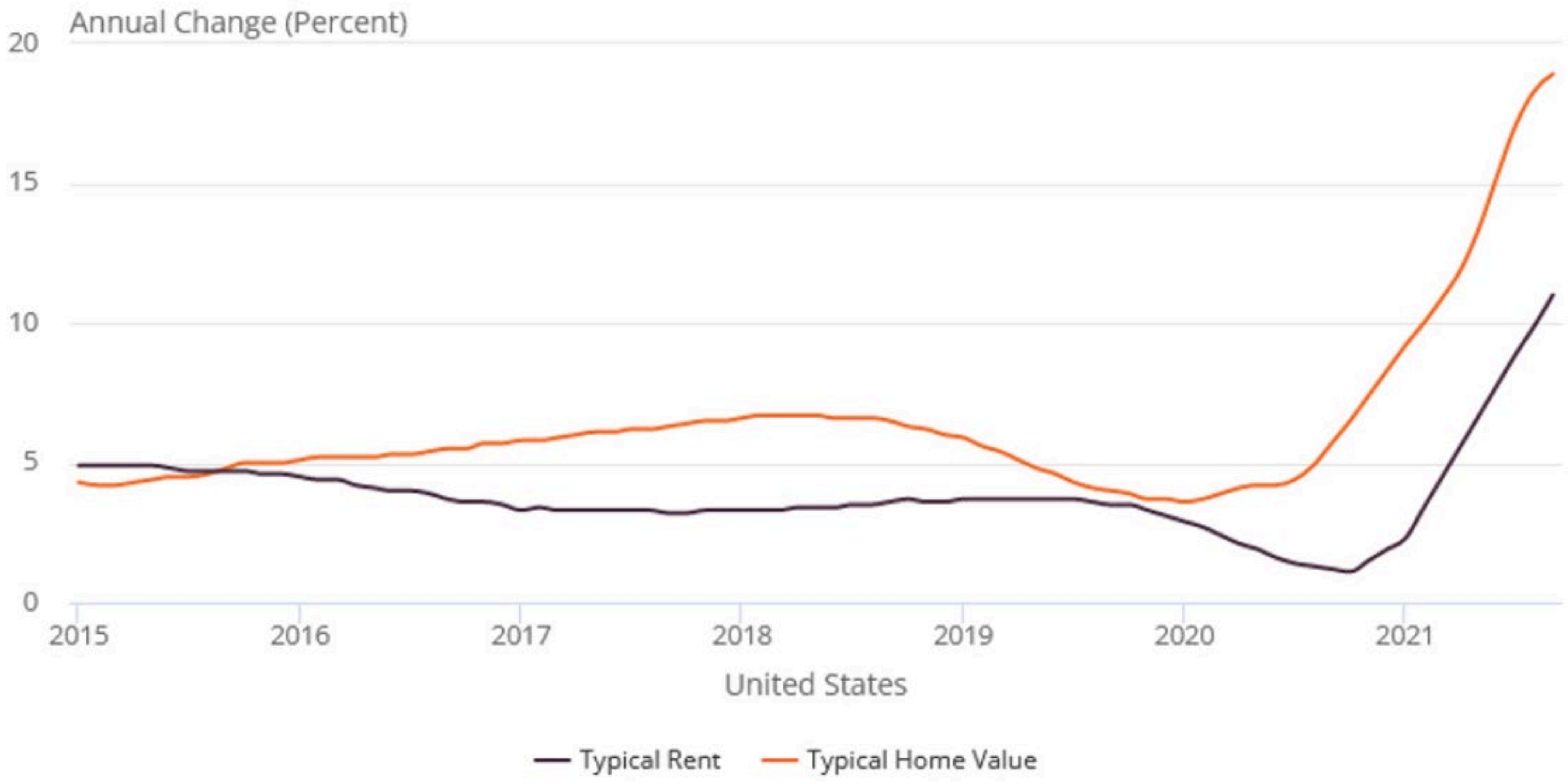
There remains a severe shortage of single-family houses in the U.S.

New SF House Sales



Source: Virginia Tech–USDA Forest Service Housing Commentary

Soaring home prices have increased pressure on rents



Source: Campbell Global Timber Trends February 2022

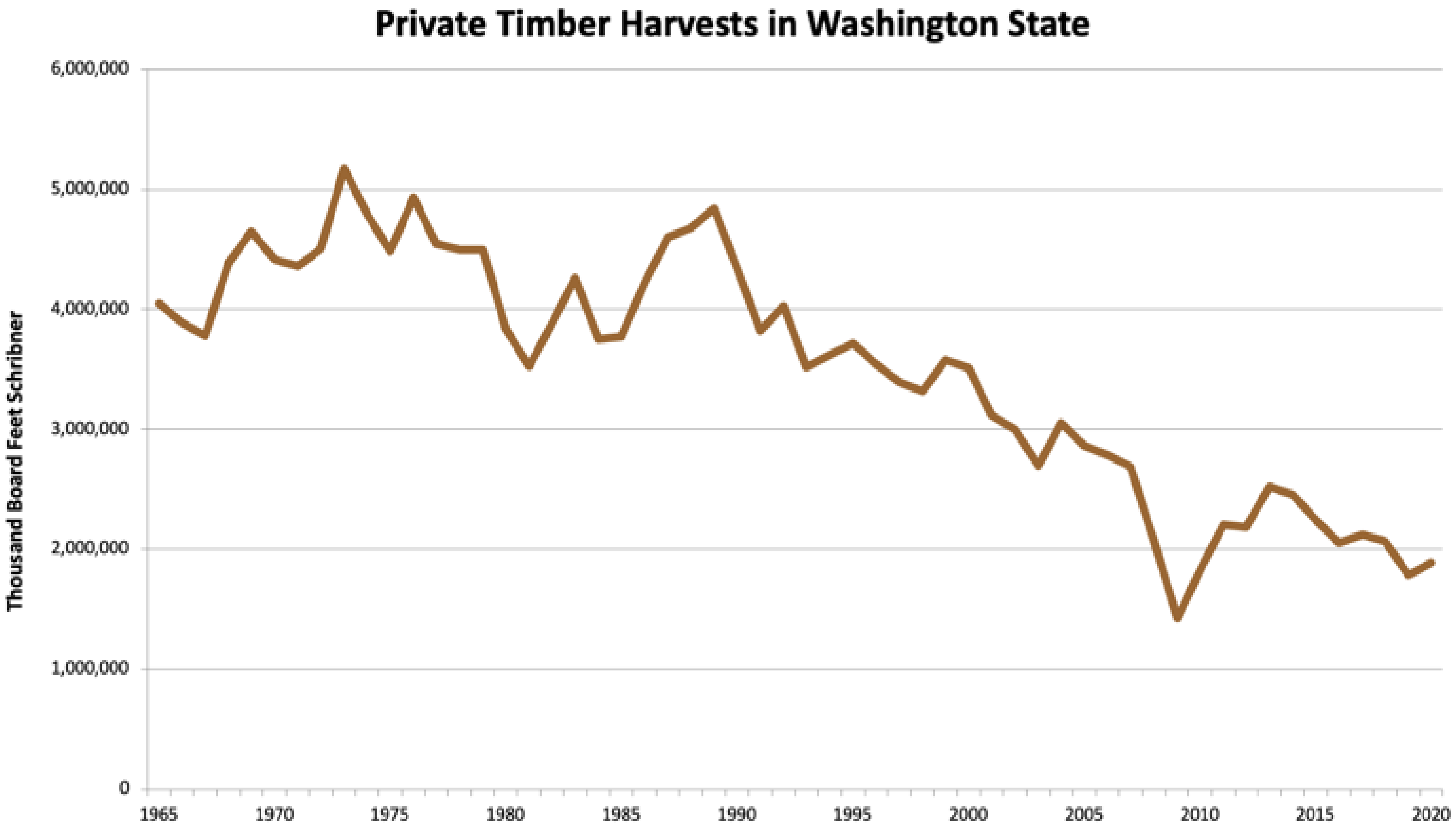
Leading Indicator of Remodeling Activity – Second Quarter 2022

Notes: Improvements include remodels, replacements, additions, and structural alterations that increase the value of homes. Routine maintenance and repairs preserve the current quality of homes. Historical estimates since 2019 are produced using the LIRA model until American Housing Survey benchmark data become available.

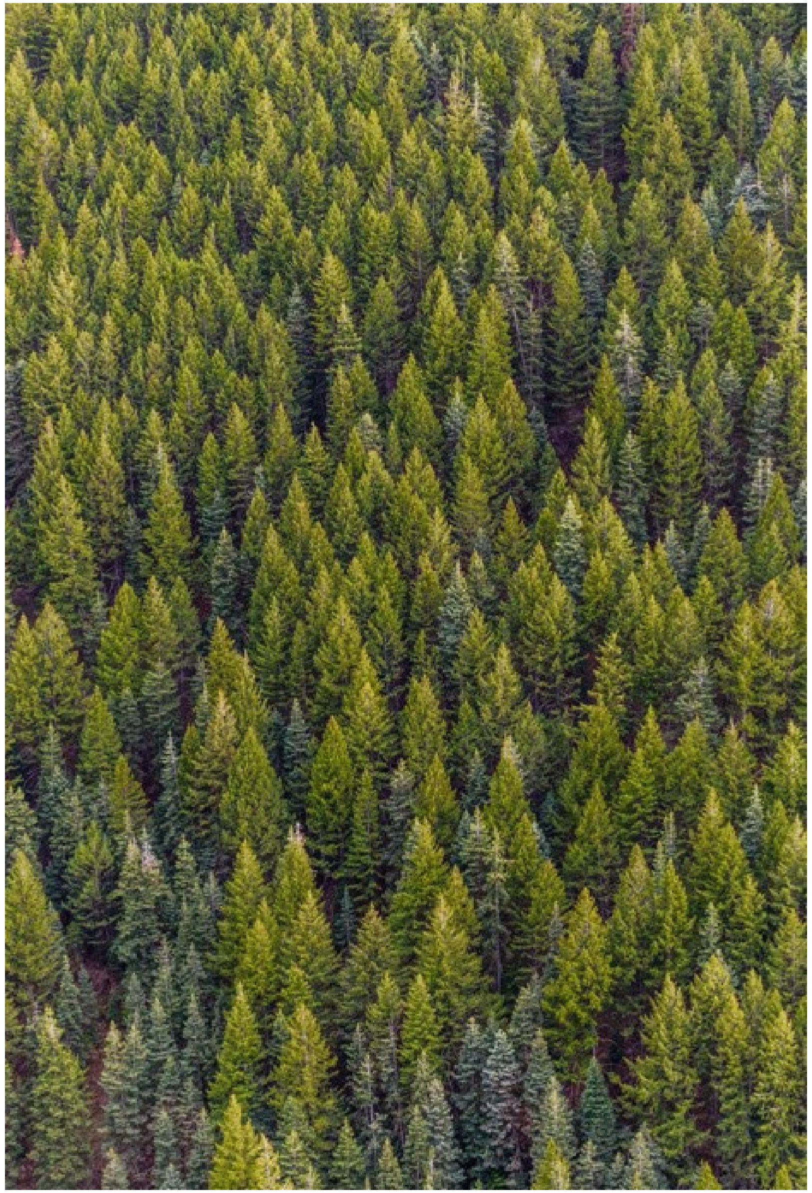
Joint Center for Housing Studies of Harvard University JCHS

Source: https://www.jchs.harvard.edu/blog/remodeling-gains-slide-lower-through-mid-year-2023; 7/19/22

Timber Harvests in the West are Shrinking



Source: Washington State Dept. of Revenue

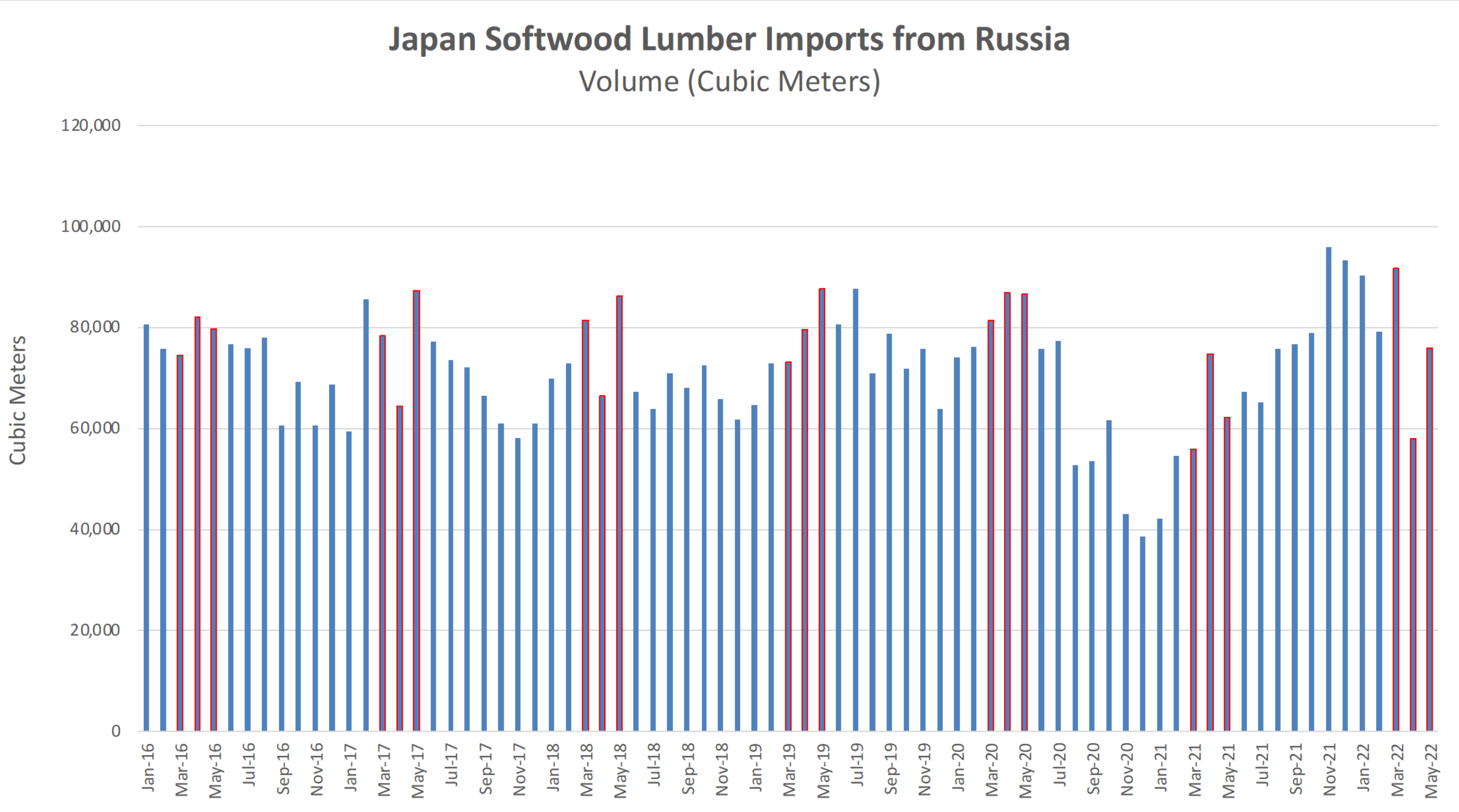


Northwest Timber Supply

- Recent and planned changes will reduce the annual harvest in Western Oregon and Washington by more than 575 million board feet, or about nine percent of the combined harvest in both states.
- Nine percent equates to approximately eight average size mills.
    - Oregon 2020 Labor Day Fires (175 mmbf annually for 40 years)
    - Oregon Forest Accord (270 mmbf)
    - Washington DNR Sustainable Harvest Calculation (85 mmbf)
    - Oregon Department of Forestry Habitat Conservation Plan (45 mmbf)
- Plus, more reductions in British Columbia due to the Old Growth Strategic Review and 2.2 million acres burned in the summer of 2021.

Russian invasion of Ukraine

- Total lumber exports from Russia, Belarus, and Ukraine were 34 million m^3 in 2021.
  - About half to China, 15.4 million m^3
  - 9.3 million m^3 to Europe
- Many countries have announced sanctions against Russia and Belarus.
- FSC and PEFC have labeled all timber from Russia and Belarus as “conflict timber”.
- It is estimated that Russia/Belarus exports may drop 10 million m^3.


Japan Softwood Lumber Imports from Russia
Volume (Cubic Meters)
Cubic Meters
120,000
100,000
80,000
60,000
40,000
20,000
0
Jan-16
Mar-16
May-16
Jul-16
Sep-16
Nov-16
Jan-17
Mar-17
May-17
Jul-17
Sep-17
Nov-17
Jan-18
Mar-18
May-18
Jul-18
Sep-18
Nov-18
Jan-19
Mar-19
May-19
Jul-19
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Nov-19
Jan-20
Mar-20
May-20
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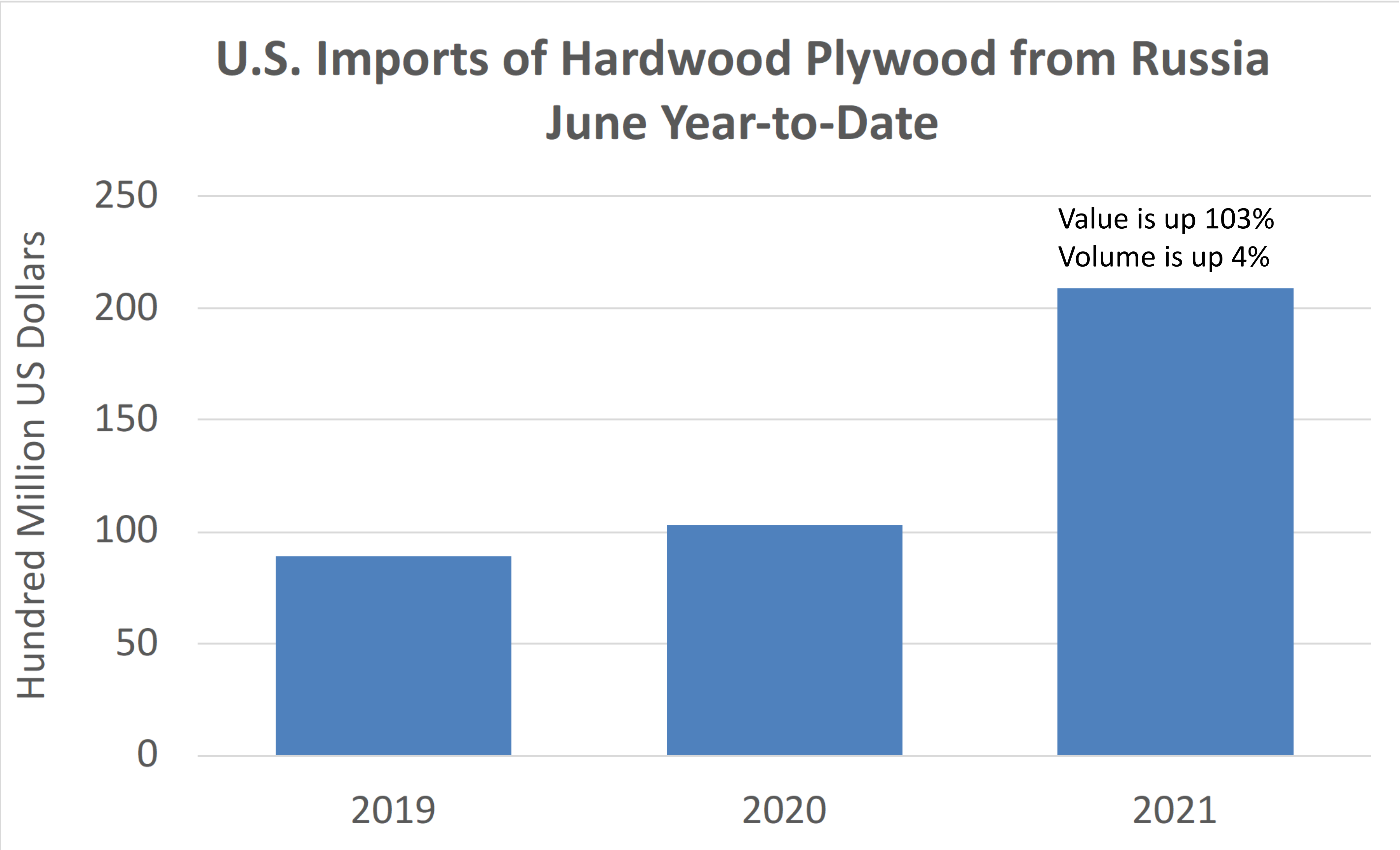
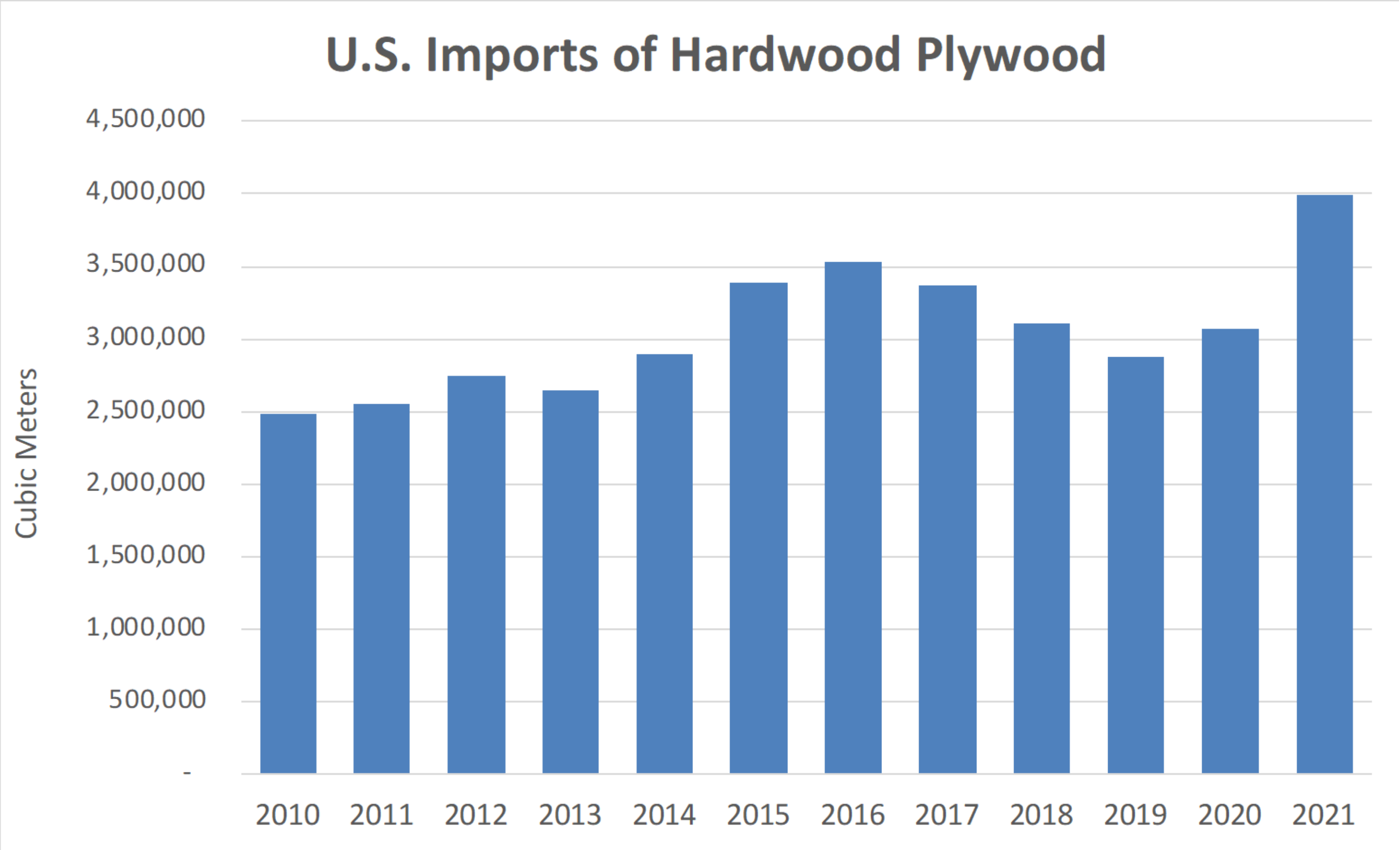
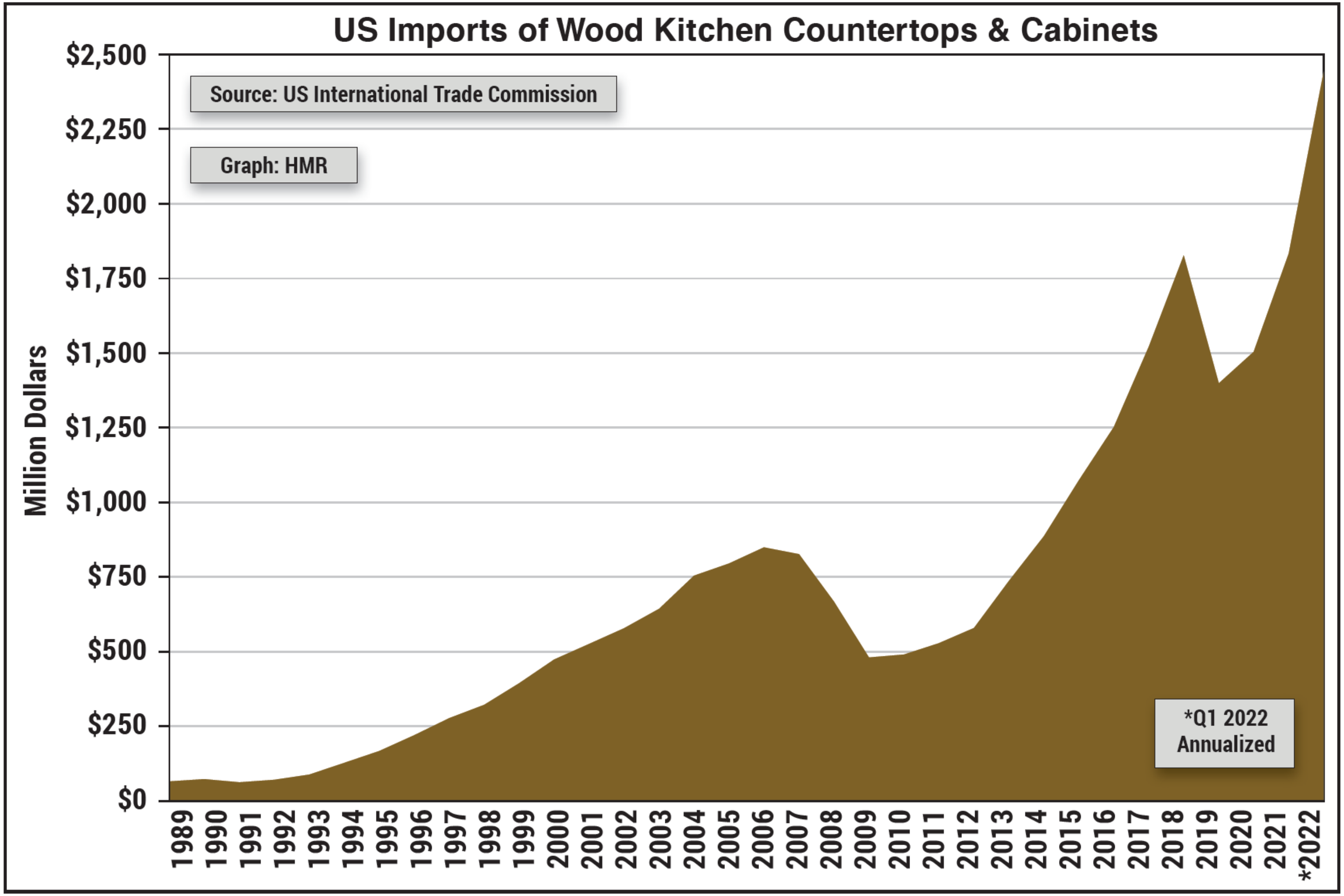
Jan-22
Mar-22
May-22


U.S. Imports of Hardwood Plywood from Russia
June Year-to-Date
Hundred Million US Dollars
250
200
150
100
50
0
Value is up 103%
Volume is up 4%
2019
2020
2021

Hardwood plywood imports

- $2.86 billion in 2021
- 2022 1st half
  - Up 57% in value
  - Up 34% in volume
- In 2016 China was 57% of supply
- In 2021:
  - Indonesia 22%
  - Vietnam 22%
  - Russia 14%
  - China 6%





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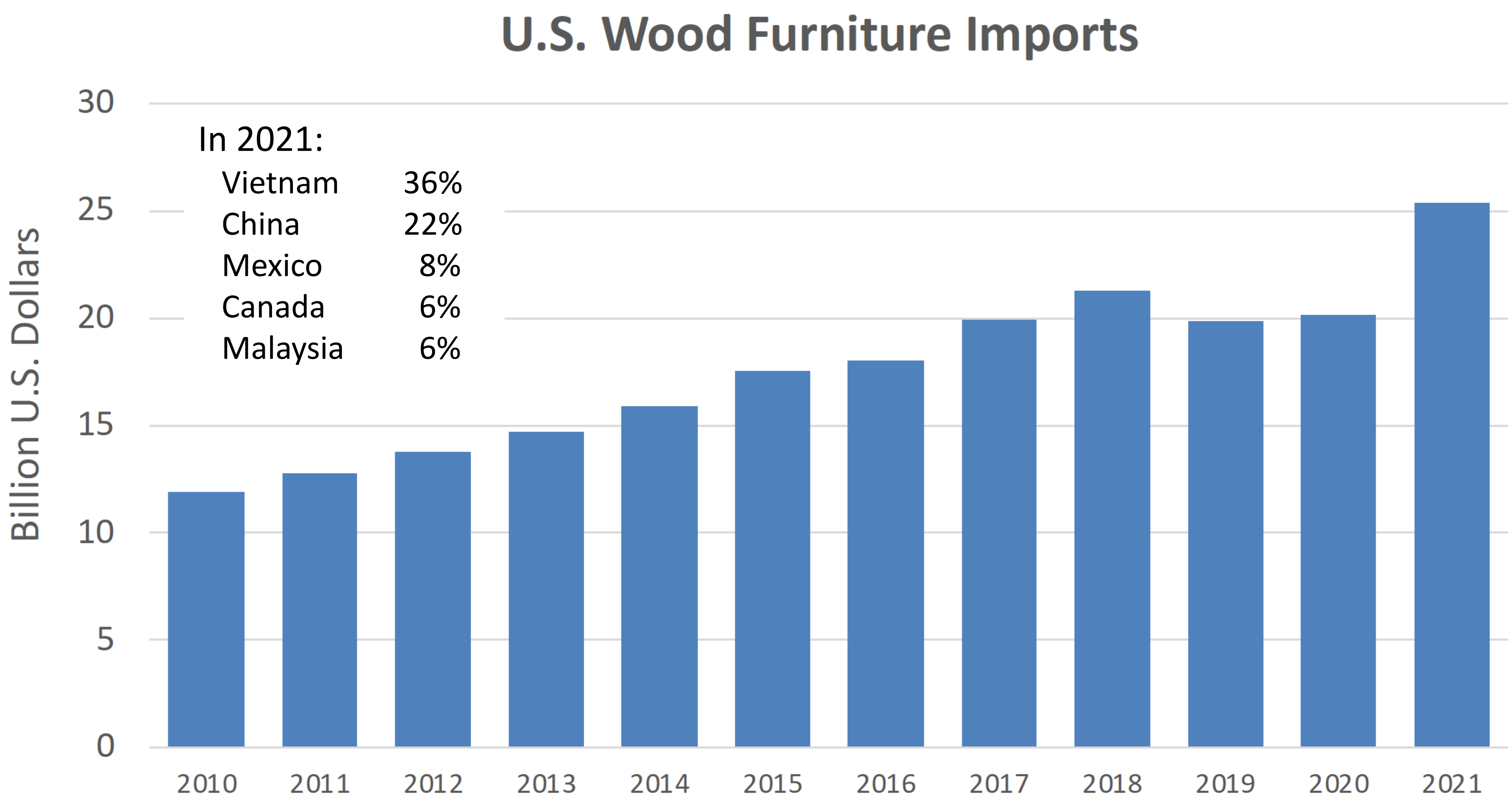
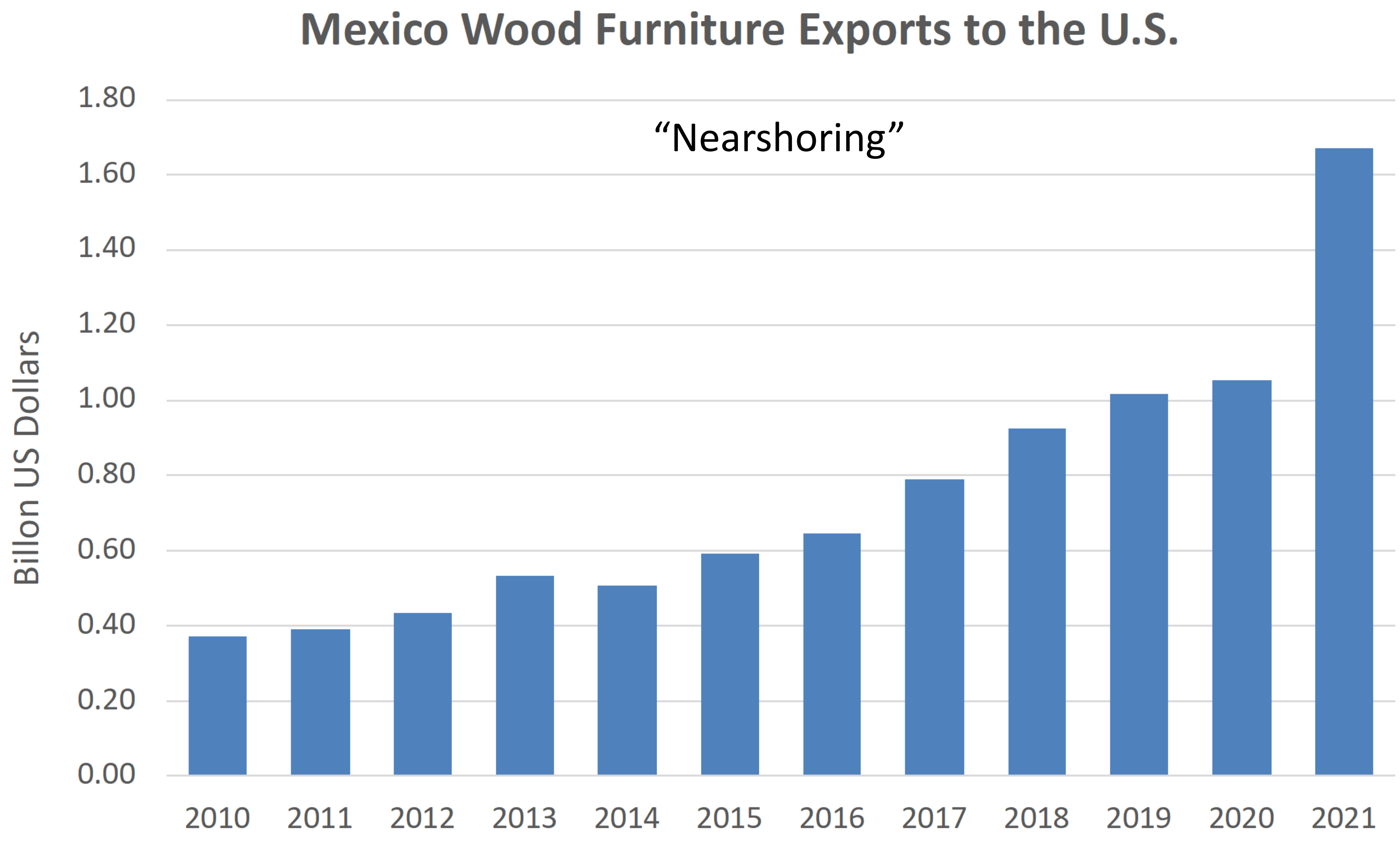

U.S. Wood Furniture Imports
Billion U.S. Dollars
30
25
20
15
10
5
0
In 2021:
Vietnam 36%
China 22%
Mexico 8%
Canada 6%
Malaysia 6%
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021

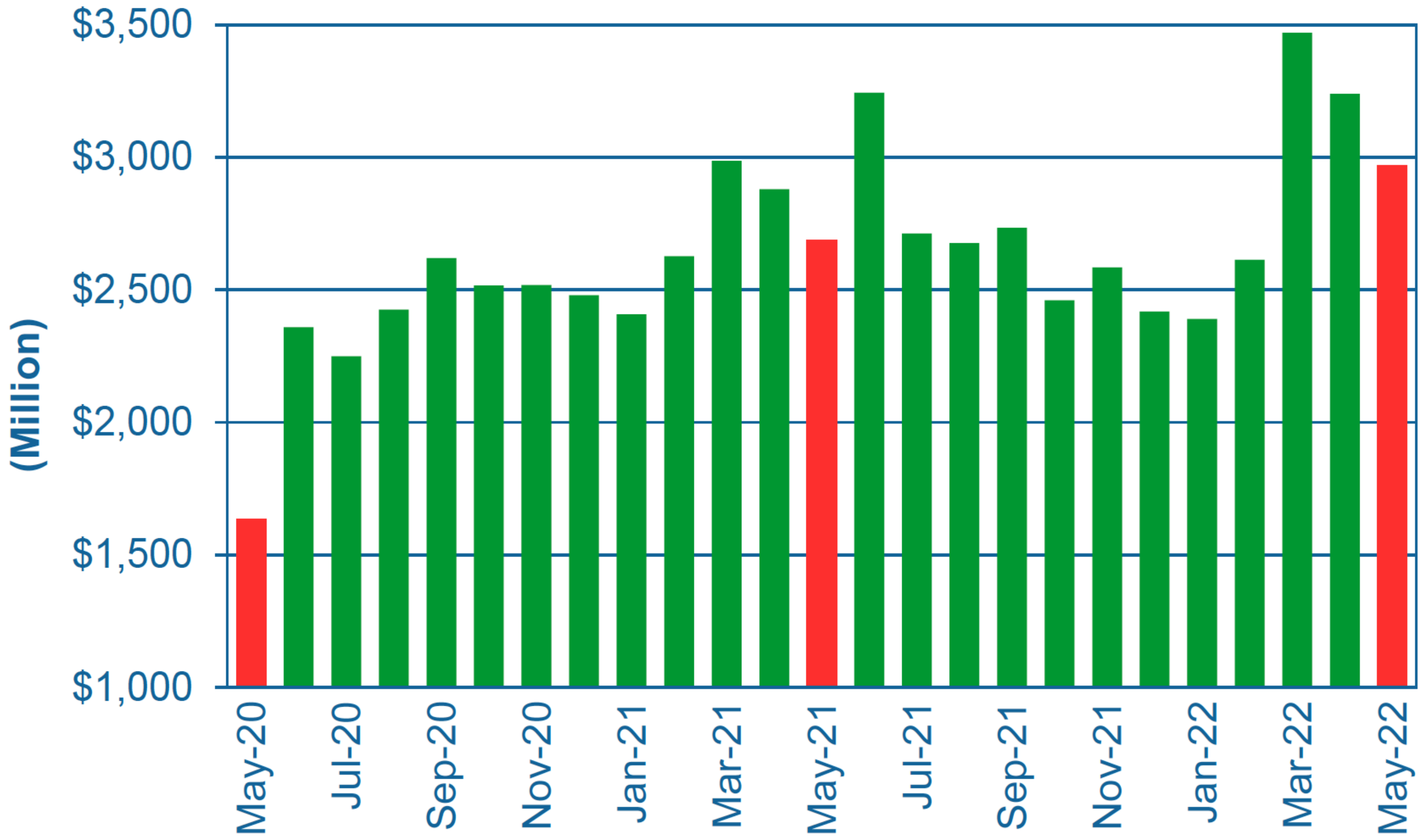

Mexico Wood Furniture Exports to the U.S.
"Nearshoring"
Billon US Dollars
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021

Source: HMR Executive

Reshoring furniture production

Over the past three years, 12,000 furniture jobs have been brought back to the U.S.

U.S. Furniture Factory Shipments



Source: Smith Leonard PLLC

Summary

- Pressure on wood supply and prices will remain.
  - BC supply not coming back for a while.
  - U.S. West harvests decline due to fires, environmental initiatives, and carbon credits for delayed harvest.
- Housing construction and R&R spending will stay strong.
- Labor will remain tight – especially in trades.
- Europe's domestic needs will increase as supply from Russia is suspended.
- Import options for the U.S. are limited.
- "High" lumber prices may be the new normal.

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Thank you!