

Reverse Mortgage Market Index (Q2 2015 RMMI)

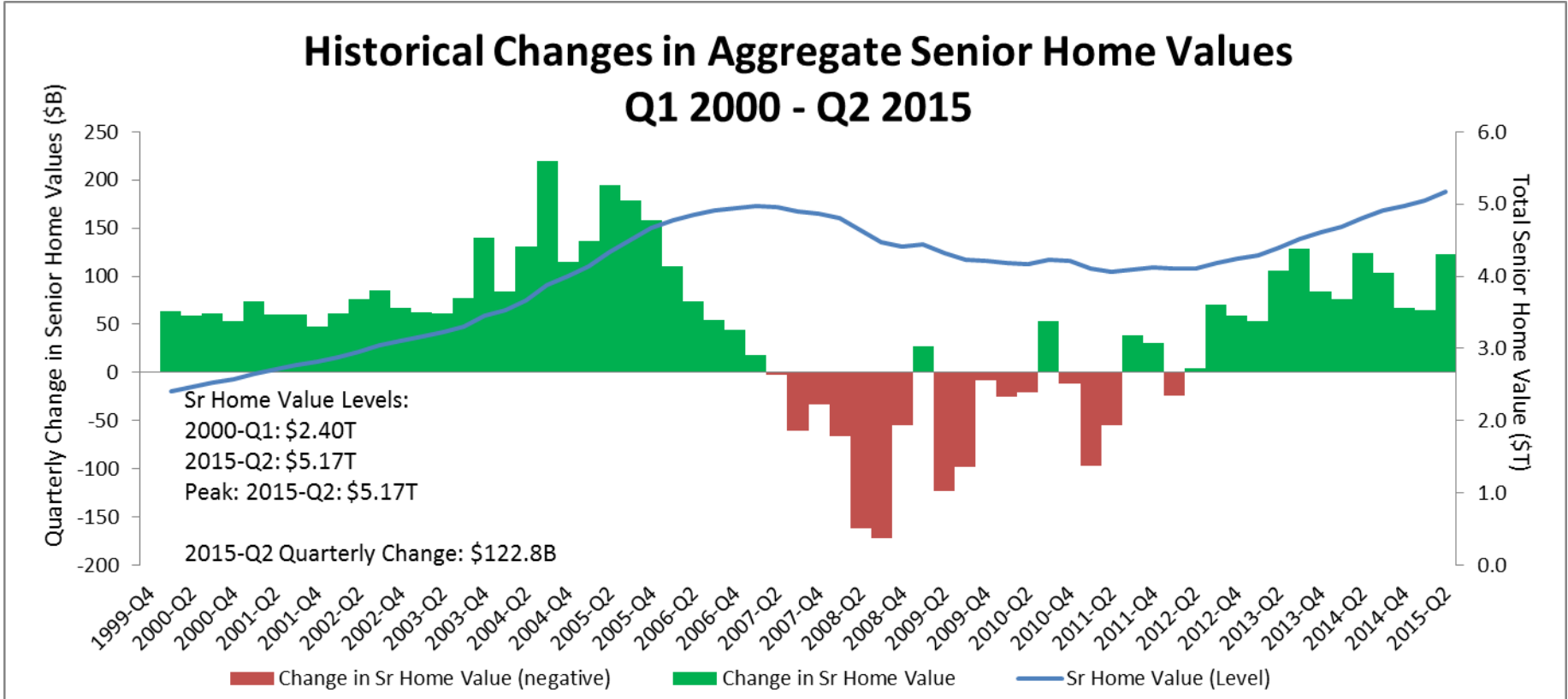


NRMLA/RiskSpan
September 21, 2015

Presentation Outline

- Trends in Senior Housing
 - Aggregate Home Values (Q1 2000 – Q2 2015)
 - Aggregate Mortgage Debt Levels (Q1 2000 – Q2 2015)
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 - Reverse Mortgage Market Index (RMMI) (Q1 2000 – Q2 2015)
 - Historical Summary of key RMMI components (Q1 2013 – Q2 2015)
- Overview of RMMI Data Sources
- Detailed Steps for RMMI Calculation
- Schedule of RMMI Release Dates

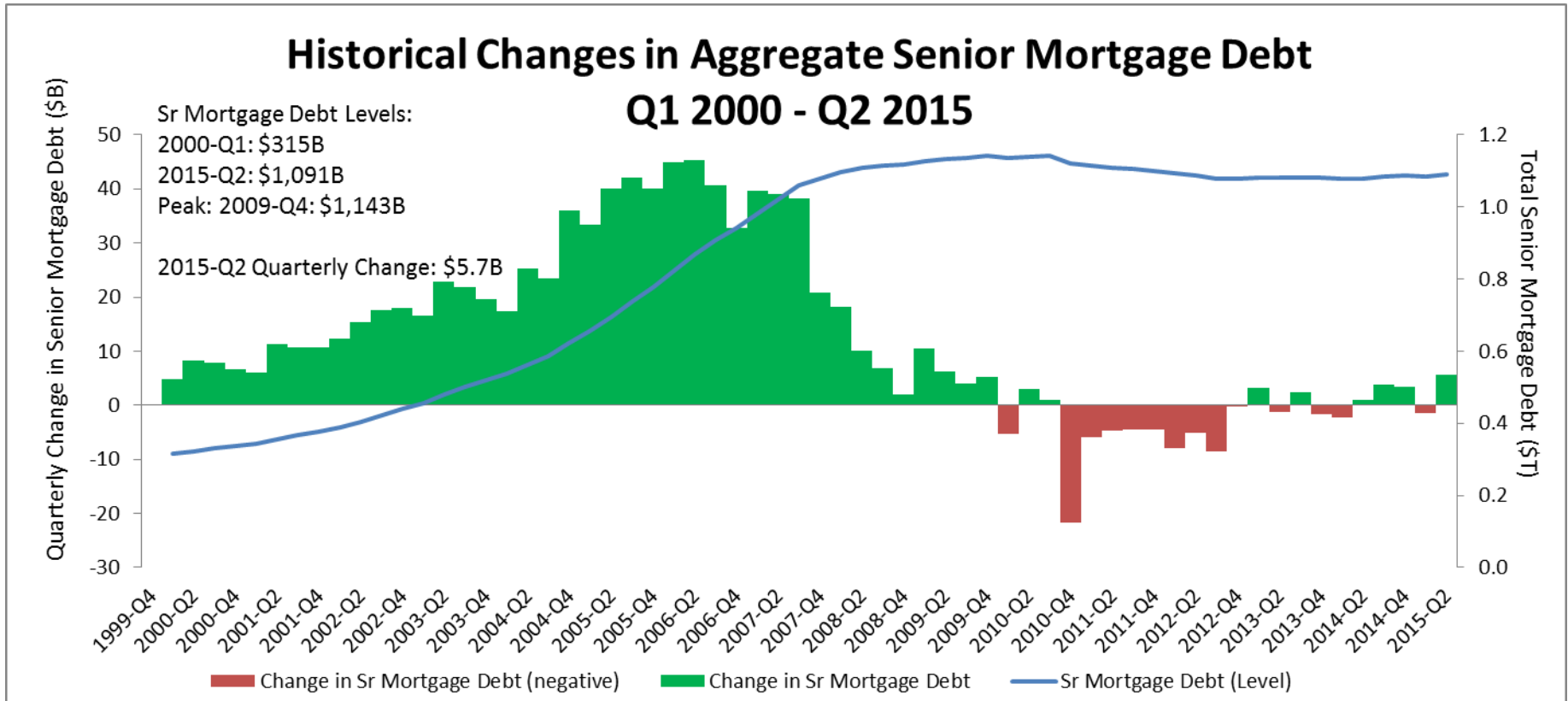
Quarter over quarter changes in senior home values



Prepared by RiskSpan, Inc.
 Data sources: American Community Survey, Census, FHFA

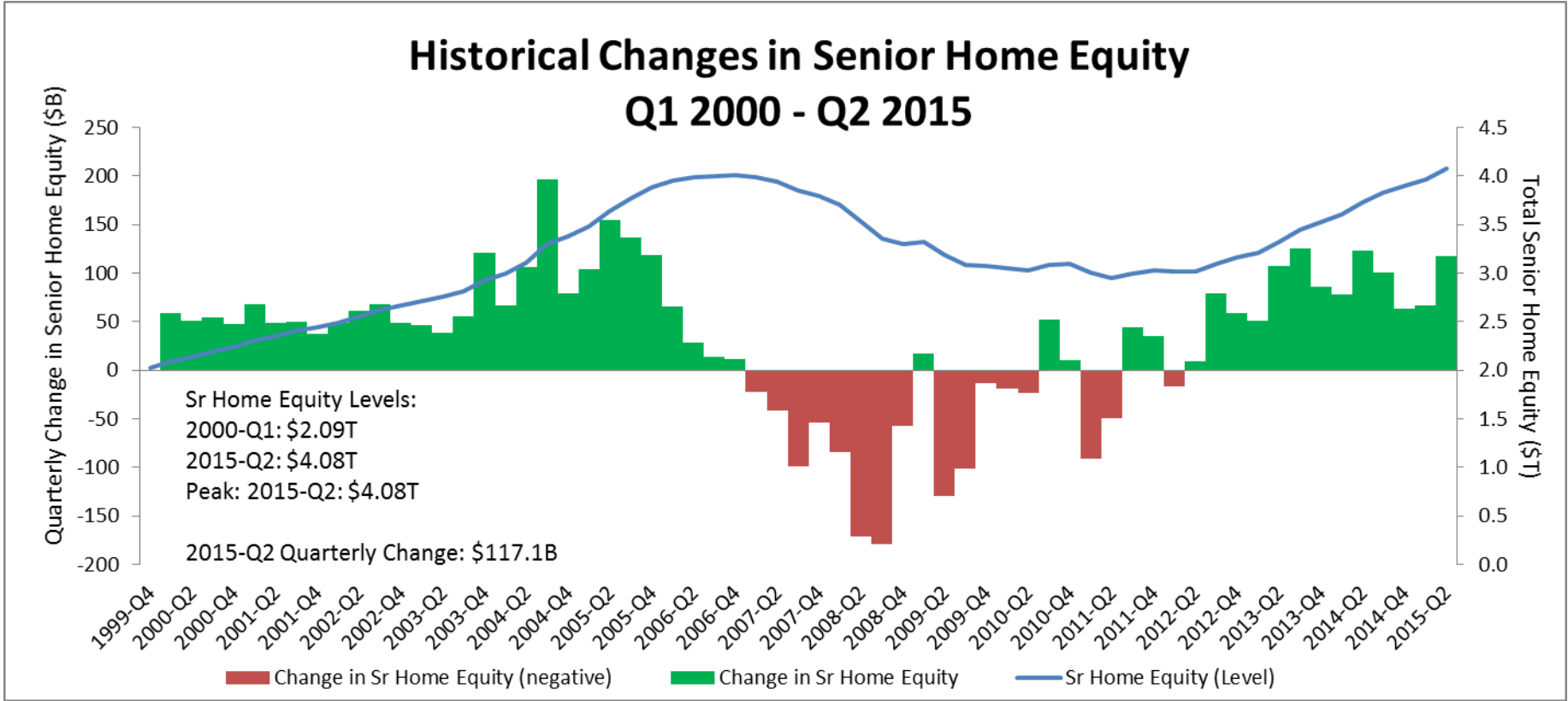


Quarter over quarter changes in senior mortgage debt levels



Prepared by RiskSpan, Inc.
 Data sources: Federal Reserve

Quarter over quarter changes in senior home equity

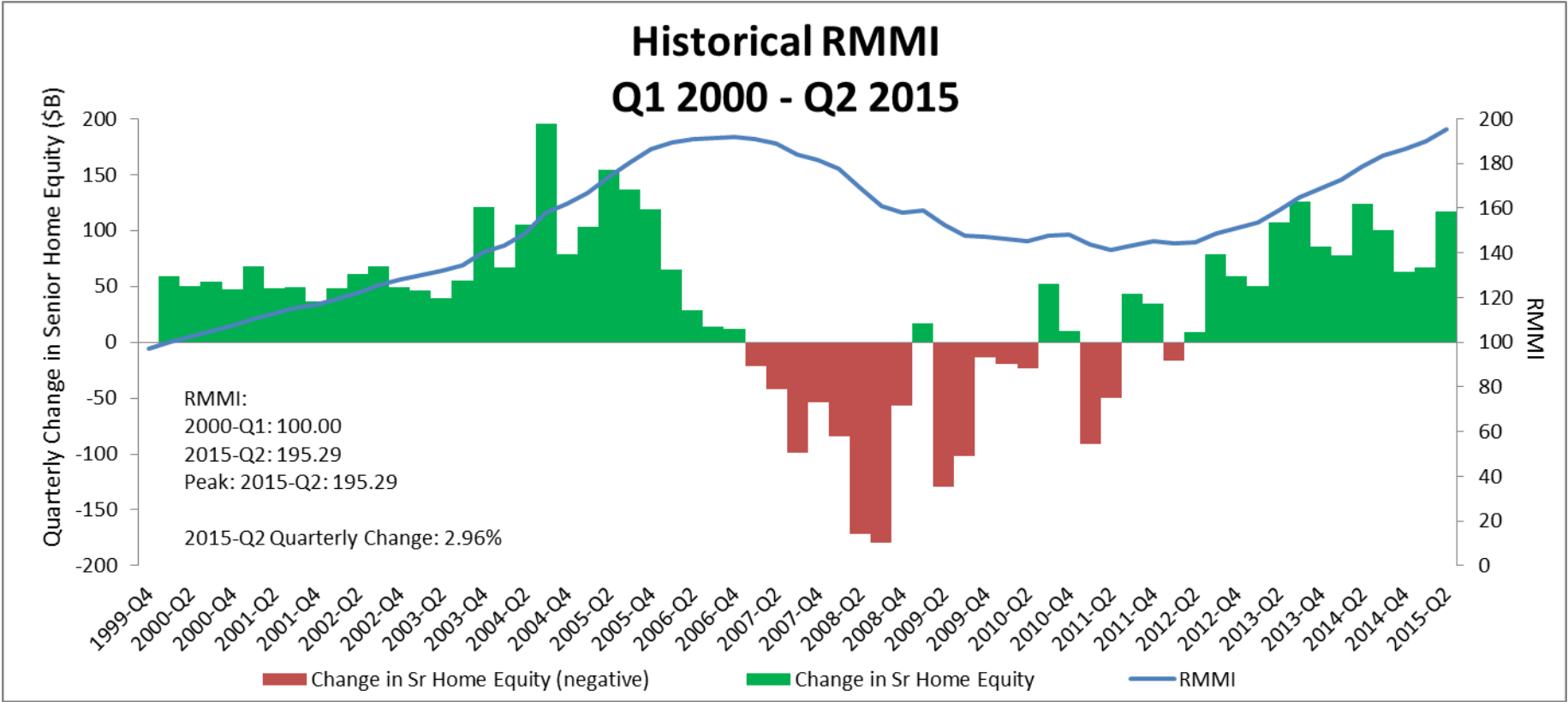


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 Data sources: American Community Survey, Census, FHFA, Federal Reserve

$$\text{RMMI (Q2 2015)} = \frac{\$4.08\text{T}}{\$2.09\text{T}} * 100 = 195.29$$



Quarter over quarter changes in RMMI



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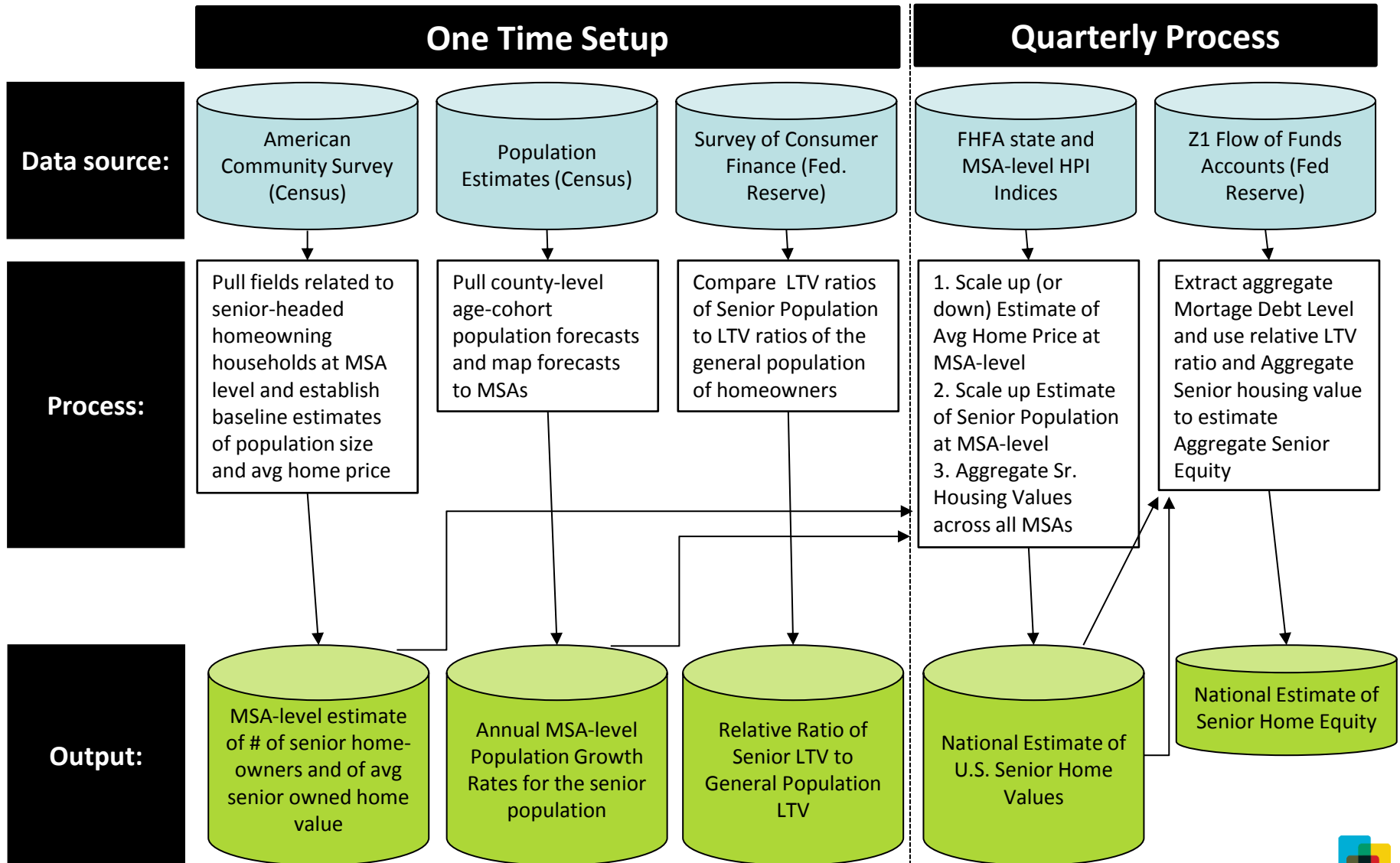
Historical RMMI

Quarter	Sr. home Value (\$T)	Senior Mortgage Debt (\$T)	Sr. home Equity (\$T)	RMMI	Quarterly Change
2013-Q1	4.29	1.08	3.21	153.74	1.60%
2013-Q2	4.40	1.08	3.32	158.88	3.35%
2013-Q3	4.52	1.08	3.44	164.91	3.79%
2013-Q4	4.61	1.08	3.53	169.01	2.49%
2014-Q1	4.68	1.08	3.61	172.76	2.22%
2014-Q2	4.81	1.08	3.73	178.67	3.42%
2014-Q3	4.91	1.08	3.83	183.46	2.68%
2014-Q4	4.98	1.09	3.89	186.48	1.65%
2015-Q1	5.04	1.09	3.96	189.68	1.71%
2015-Q2	5.17	1.09	4.08	195.29	2.96%

Prepared by RiskSpan, Inc.

Data sources: American Community Survey, Census, FHFA, Federal Reserve

Overview of RMMI Data Sources and Calculation Steps



Detailed Steps for Calculation of RMMI

Step 1: Use 2012 Survey of Consumer Finance to calculate LTV ratios for senior population and general population

	<u>Value</u>	<u>Source:</u>
1) % of home-owning senior households with mortgage	43.9%	SCF (every 3 years)
2) Median LTV for senior households with mortgage	43.5%	SCF (every 3 years)
3) LTV for senior home-owners-2010	19.1%	calculation: (1) * (2)
4) % of home-owning all households with mortgage	69.8%	SCF (every 3 years)
5) Median LTV for all households with mortgage	63.2%	SCF (every 3 years)
6) LTV for all home-owners-2010	44.1%	calculation: (4) * (5)
7) Relative LTV ratio (Senior to General Population)	43.2%	calculation: (3) / (6)

Step 2: Use Fed's Z1's total household mortgage debt estimate to estimate the LTV ratio for the general population (Q1 2015)

8) Total mortgage debt (\$T)	\$9.37	Z1 (quarterly)
9) Total Population Home Value (\$T)	\$18.84	RS Estimate (quarterly)
10) LTV (General Population)	49.7%	calculation: (8) / (9)

Step 3: Use relative LTV ratio and current general population LTV ratio to estimate Senior LTV ratio and Senior home equity (Q1 2015)

11) Home Value-Senior Population (\$T)	\$5.04	RS Estimate (quarterly)
12) Senior LTV ratio	21.5%	calculation: (7) * (10)
13) Senior Home Debt (\$T)	\$1.08	calculation: (11) * (12)
14) Senior Home Equity (\$T)	\$3.96	calculation: (11) - (13)

Step 4: Calculate Q1 2015 Reverse Mortgage Market Index (RMMI)

15) Estimate Senior Home Equity Level in Base Period (Q1 2000) (\$T)	\$2.09	RS Calculation (Senior House Value - Senior Debt Level)
16) RMMI = Q1 2015 / Q1 2000 Sr Home Equity Level	189.67	calculation: (14) / (15) * 100

Notes on mortgage estimate:

- 1) The LTV estimates from the SCF assume home values are equal for families with and without mortgages (in reality, values are probably higher for homes with mortgages).
- 2) This methodology allocates all of the US mortgage debt to the owned households within the sample—these households, however, represent only households in MSAs, as identified by the ACS. It excludes non-MSA households, which make up about 13% of all US owner-occupied homes. There several mitigating factors:
 - a) We think MSAs are the relevant market for the Reverse Mortgage product
 - b) The value of non-MSA homes is typically lower than MSA homes so the proportion of mortgage debt we are over-allocating to MSA homes will be <<13%
 - c) Allocating all of the mortgage debt to the households in our population adds some conservatism to home equity estimates

Schedule of RMMI Release Dates

The reverse mortgage market index is updated quarterly, about two and a half months after the close of the quarter. This timing is based on scheduled releases of public data used by RiskSpan to update the different components of the index.

The quarterly updates of the index are based on three components: changes in senior population (at the local MSA level); changes in house prices (at the local MSA level); changes in total mortgage debt (at the national level). The quarterly population change estimates are based on forecasts made by the Census bureau based on the last Census. Updates for this component are thus not dependent on release by an external source. House price change estimates are based on the FHFA indices released quarterly (about 7 weeks after the close of the quarter). Changes in national mortgage debt levels are based on the Federal Reserve's Z1 Flow of Funds Accounts released quarterly (about 9 weeks after the close of the quarter).

- HPI Release Dates:
 - <http://www.fhfa.gov/DataTools/Downloads/Pages/House-Price-Index.aspx#ReleaseDates>
 - Q2 2015: August 25, 2015
 - Q3 2015: November 25, 2015
- Federal Reserve Z1 Flow of Funds Report Release Dates:
 - <http://www.federalreserve.gov/releases/z1/>
 - Q2 2015: September 18, 2015
 - “These data are released during the second week of March, June, September, and December.”