

James Bianco

Understanding Fixed Income

MarcoVoices Podcast Slide Deck
December 17, 2019



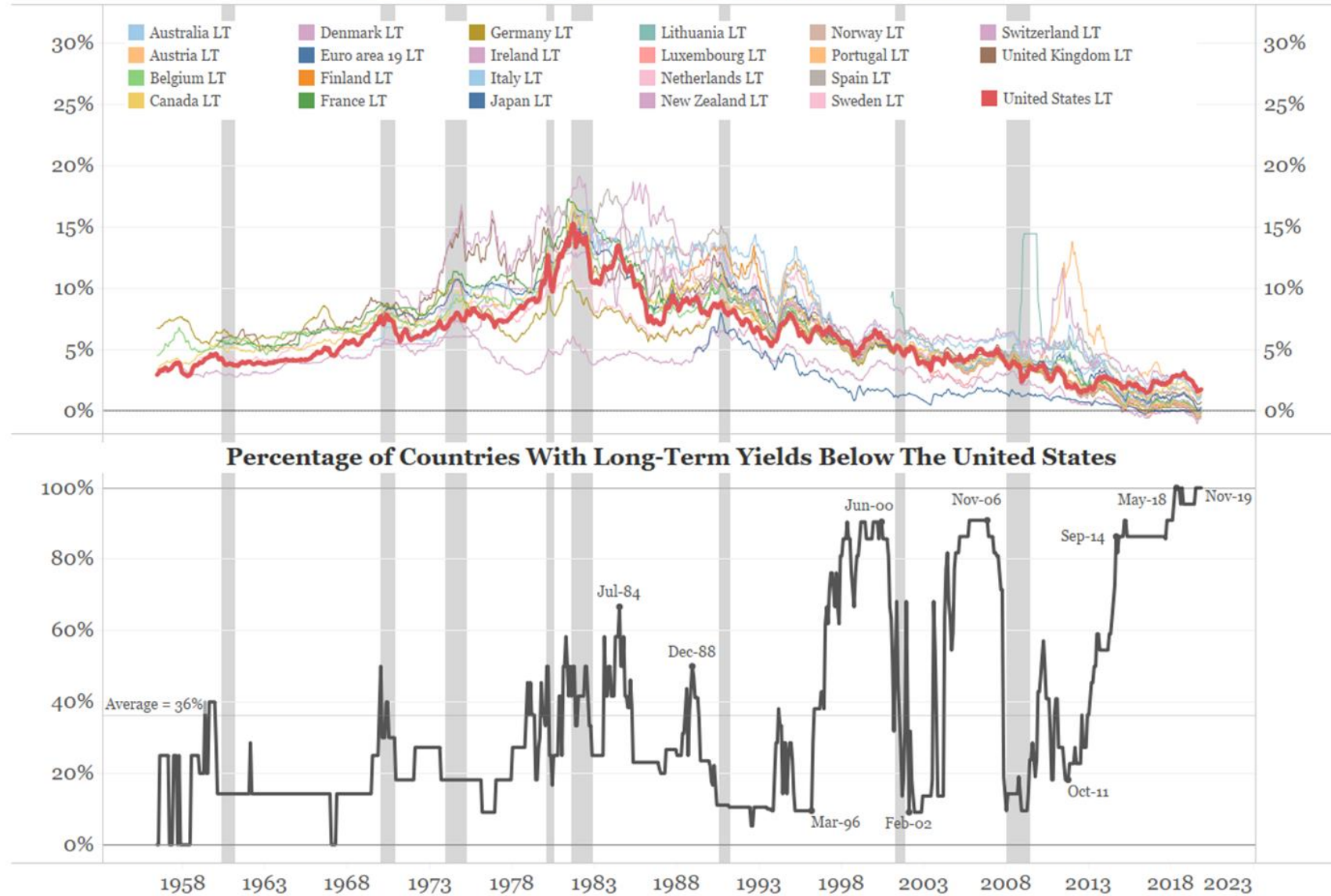
US 30-Year Treasury Yield



Source: Bloomberg

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Long-Term Yields - Developed Countries



Source: Organization for Economic Cooperation and Development

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Interest Rates in the Developed World

As of 12/16/2019

Country	Policy Rate	6-Month	1-Year	2-Year	3-Year	4-Year	5-Year	6-Year	7-Year	8-Year	9-Year	10-Year	15-Year	30-Year
Switzerland	-0.75	-0.80	-0.85	-0.78	-0.77	-0.74	-0.70	-0.68	-0.67	-0.63	-0.61	-0.58	-0.41	-0.25
Germany	-0.50	-0.66	-0.67	-0.63	-0.64	-0.61	-0.54	-0.52	-0.47	-0.42	-0.36	-0.28	-0.13	0.24
Netherlands	-0.50	-0.63		-0.63	-0.63	-0.59	-0.50	-0.42	-0.36	-0.29	-0.23	-0.15	-0.01	0.24
Denmark	-0.75	-0.78		-0.66			-0.49			-0.38		-0.24		
Finland	-0.50		-0.62	-0.63	-0.58	-0.52	-0.47	-0.33	-0.29	-0.18	-0.12	-0.06	0.19	0.45
Austria	-0.50		-0.63	-0.60	-0.58	-0.53	-0.42	-0.34	-0.27	-0.21	-0.14	-0.06	0.20	0.52
Japan	-0.10	-0.17	-0.15	-0.13	-0.14	-0.14	-0.12	-0.13	-0.12	-0.11	-0.07	-0.02	0.14	0.41
France	-0.50	-0.64	-0.61	-0.62	-0.58	-0.49	-0.37	-0.32	-0.24	-0.19	-0.07	0.02	0.28	0.80
Belgium	-0.50	-0.63	-0.60	-0.64	-0.60	-0.49	-0.39	-0.34	-0.26	-0.16	-0.09	-0.01	0.28	0.82
Sweden	-0.25	-0.42		-0.32		-0.33	-0.29	-0.23		-0.14	-0.06	0.05	0.23	
Ireland	-0.50		-0.64		-0.48	-0.48	-0.40	-0.30	-0.21		-0.07	0.01	0.30	0.83
Spain	-0.50	-0.47	-0.46	-0.40	-0.36	-0.22	-0.11	0.03	0.12	0.23	0.33	0.42	0.82	1.29
Portugal	-0.50	-0.54	-0.52	-0.56	-0.36	-0.22	-0.14	0.05	0.13	0.22	0.32	0.38	0.75	1.29
Italy	-0.50	-0.26	-0.20	-0.07	0.18	0.35	0.63	0.75	0.86	0.96	1.11	1.29	1.77	2.36
United Kingdom	0.75	0.78	0.66	0.59	0.58	0.61	0.63	0.60	0.64	0.68	0.74	0.82	1.06	1.32
Australia	0.75	0.92	0.83	0.77	0.74	0.75	0.80	0.87	0.95	1.07	1.14	1.16	1.40	1.79
New Zealand	1.00		1.73	1.05			1.25		1.40			1.53	1.93	
Canada	1.75	1.72	1.75	1.70	1.68	1.66	1.64		1.64			1.64		1.72
United States	1.63	1.57	1.51	1.63	1.65		1.70		1.81			1.87		2.29

Concept courtesy of @CharlieBilello

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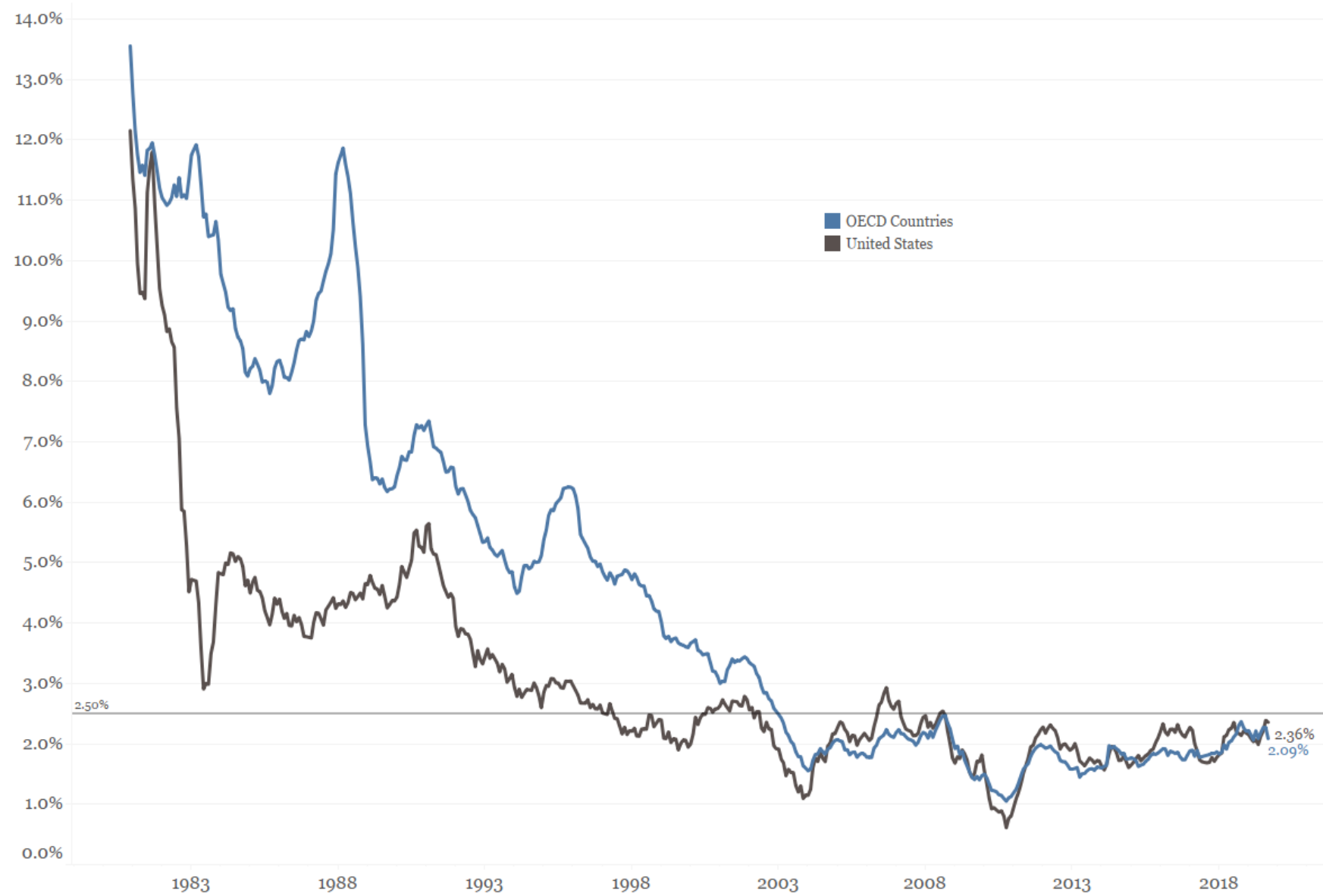
Total Negative Yielding Bonds Outstanding



Source: Bloomberg

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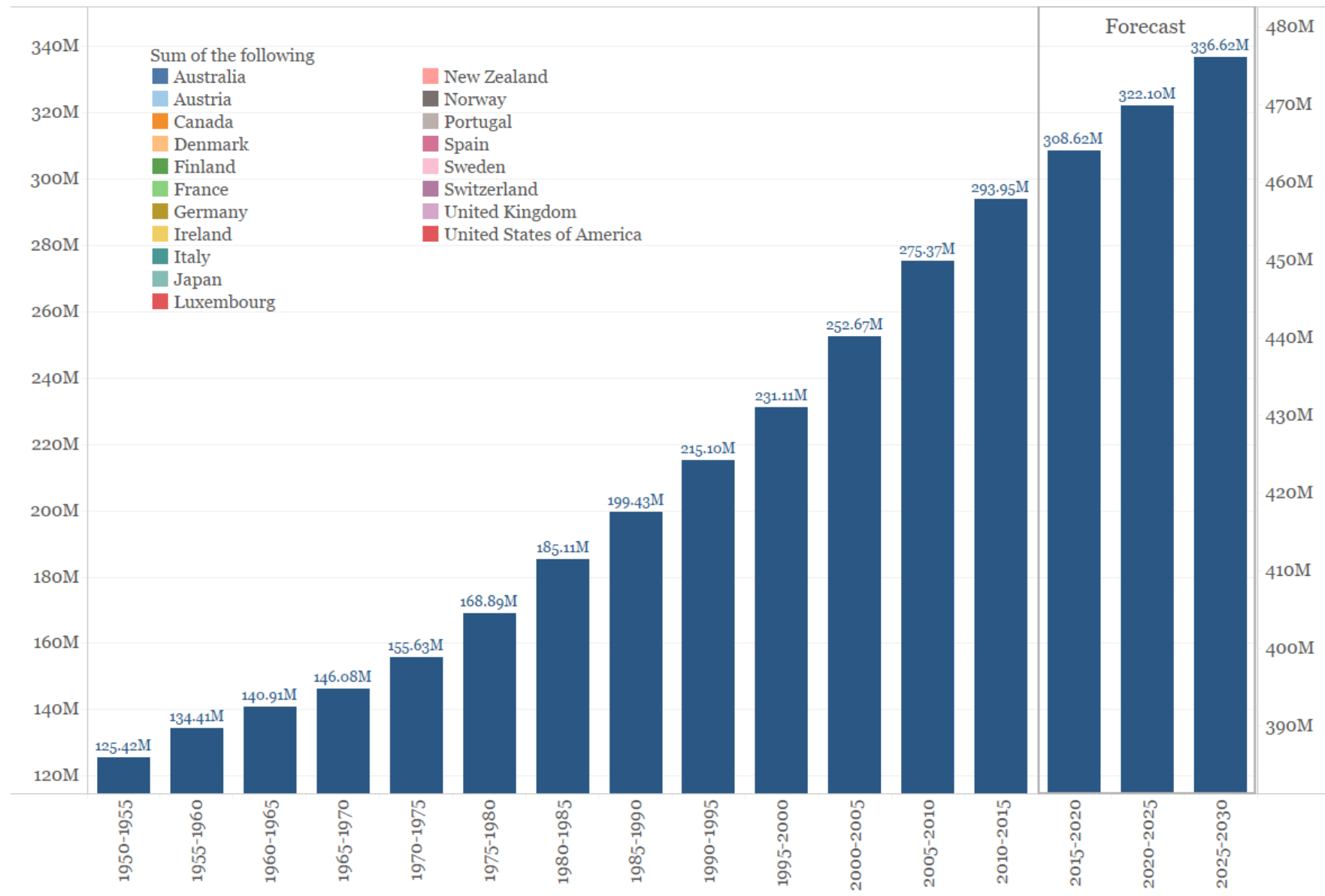
Technology Squashes Inflation



Source: Organization for Economic Cooperation and Development

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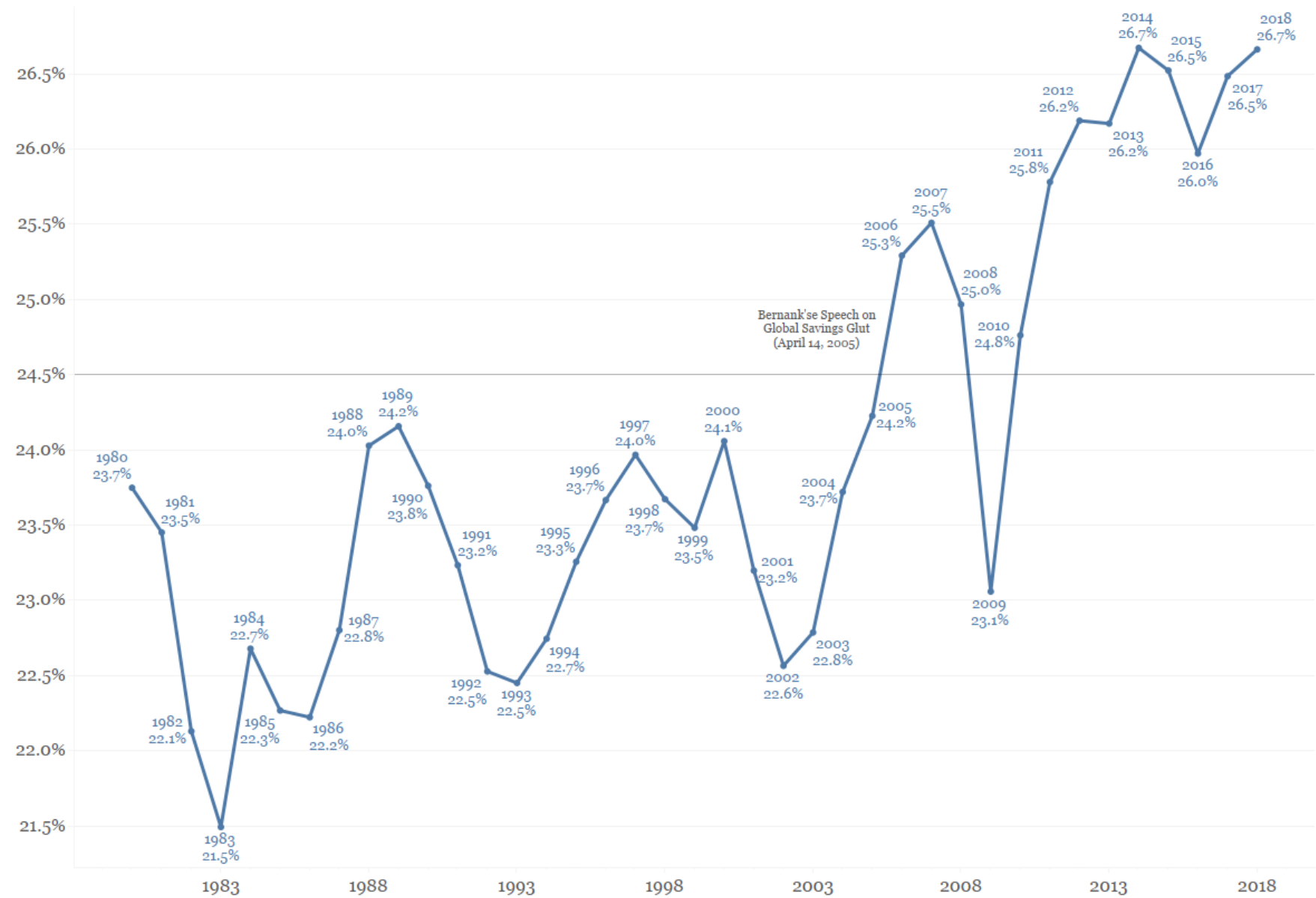
Total Population over 65



Data Source: United Nations, Department of Economic and Social Affairs, Population Division
<http://population.un.org/wpp>

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IMF World Gross National Savings as a Percent of GDP



Data Source: International Monetary Fund, Bloomberg

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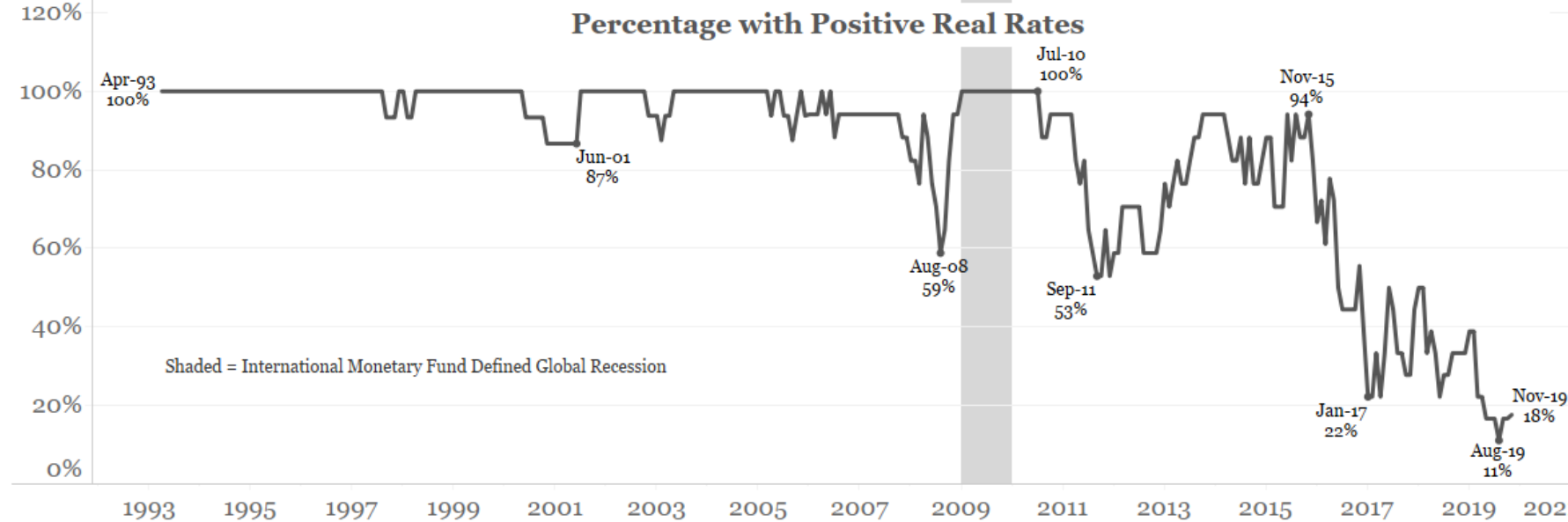
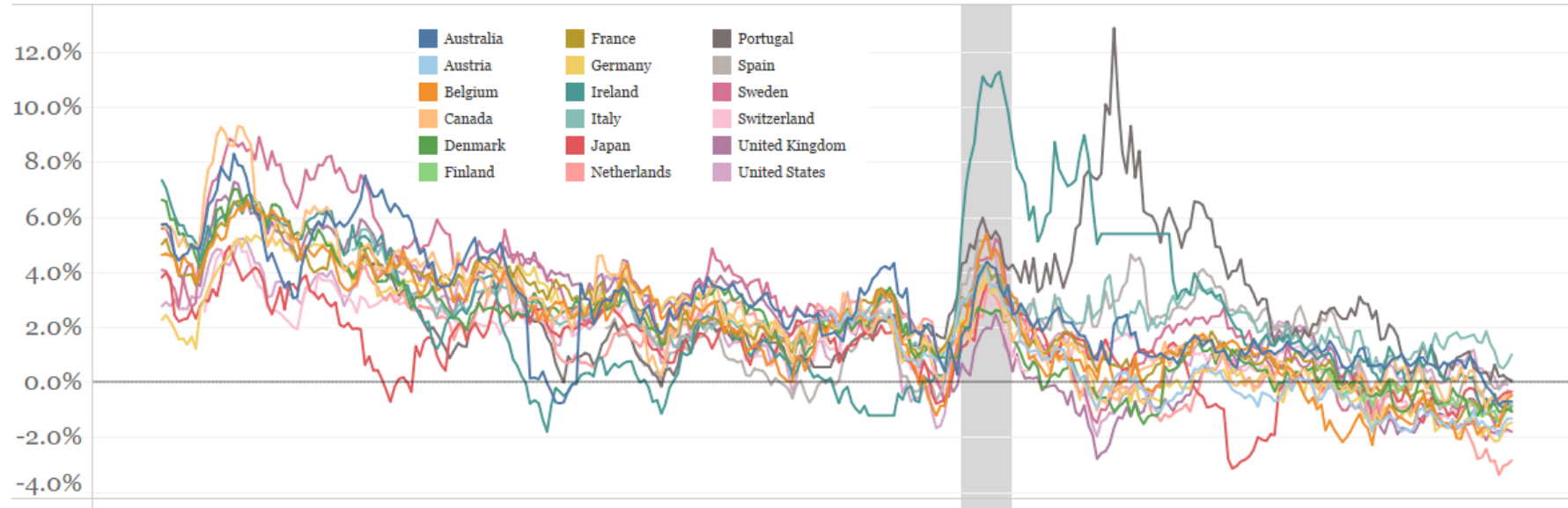
Real Interest Rates in the Developed World (Nominal Minus CPI)

As of 12/16/2019

Country	Inflation Rate	Policy Rate	6-Month	1-Year	2-Year	3-Year	4-Year	5-Year	6-Year	7-Year	8-Year	9-Year	10-Year	15-Year	30-Year
Switzerland	-0.10	-0.65	-0.70	-0.75	-0.68	-0.67	-0.64	-0.60	-0.58	-0.57	-0.53	-0.51	-0.48	-0.31	-0.15
Germany	1.10	-1.60	-1.76	-1.77	-1.73	-1.74	-1.71	-1.64	-1.62	-1.57	-1.52	-1.46	-1.38	-1.23	-0.86
Netherlands	2.60	-3.35	-3.38		-3.26			-3.09			-2.98		-2.84		
Sweden	1.80	-2.05	-2.22	-1.80	-2.12	-1.80	-2.13	-2.09	-2.03	-1.80	-1.94	-1.86	-1.75	-1.57	-1.80
Denmark	0.70	-1.45	-1.48		-1.36			-1.19			-1.08		-0.94		-0.70
Finland	0.70	-1.20		-1.32	-1.33	-1.28	-1.22	-1.17	-1.03	-0.99	-0.88	-0.82	-0.76	-0.51	-0.25
Austria	1.10	-1.60		-1.73	-1.70	-1.68	-1.63	-1.52	-1.44	-1.37	-1.31	-1.24	-1.16	-0.90	-0.58
Japan	0.20	-0.30	-0.37	-0.35	-0.33	-0.34	-0.34	-0.32	-0.33	-0.32	-0.31	-0.27	-0.22	-0.06	0.21
France	1.00	-1.50	-1.64	-1.61	-1.62	-1.58	-1.49	-1.37	-1.32	-1.24	-1.19	-1.07	-0.98	-0.72	-0.20
Belgium	0.39	-0.89	-1.02	-0.99	-1.03	-0.99	-0.88	-0.78	-0.73	-0.65	-0.55	-0.48	-0.40	-0.11	0.43
Ireland	1.10	-1.60		-1.74		-1.58	-1.58	-1.50	-1.40	-1.31		-1.17	-1.09	-0.80	-0.27
Spain	0.40	-0.90	-0.87	-0.86	-0.80	-0.76	-0.62	-0.51	-0.37	-0.28	-0.17	-0.07	0.02	0.42	0.89
Portugal	0.32	-0.82	-0.86	-0.84	-0.88	-0.68	-0.54	-0.46	-0.27	-0.19	-0.11	0.00	0.06	0.43	0.97
Italy	0.20	-0.70	-0.46	-0.40	-0.27	-0.02	0.15	0.43	0.55	0.66	0.76	0.91	1.09	1.57	2.16
United Kingdom	1.50	-0.75	-0.73	-0.84	-0.91	-0.92	-0.89	-0.87	-0.90	-0.87	-0.82	-0.76	-0.68	-0.44	-0.19
Australia	1.70	-0.95	-0.78	-0.87	-0.93	-0.96	-0.95	-0.90	-0.83	-0.75	-0.63	-0.57	-0.54	-0.31	0.09
New Zealand	1.50	-0.50		0.23	-0.45			-0.25		-0.10			0.03	0.43	
Canada	1.90	-0.15	-0.18	-0.15	-0.21	-0.22	-0.24	-0.26		-0.26			-0.27		-0.18
United States	2.10	-0.48	-0.53	-0.59	-0.47	-0.45		-0.40		-0.29			-0.23		0.19

Falling 10-Year Headline Real Rates

10-Year Yields Deflated by Headline CPI

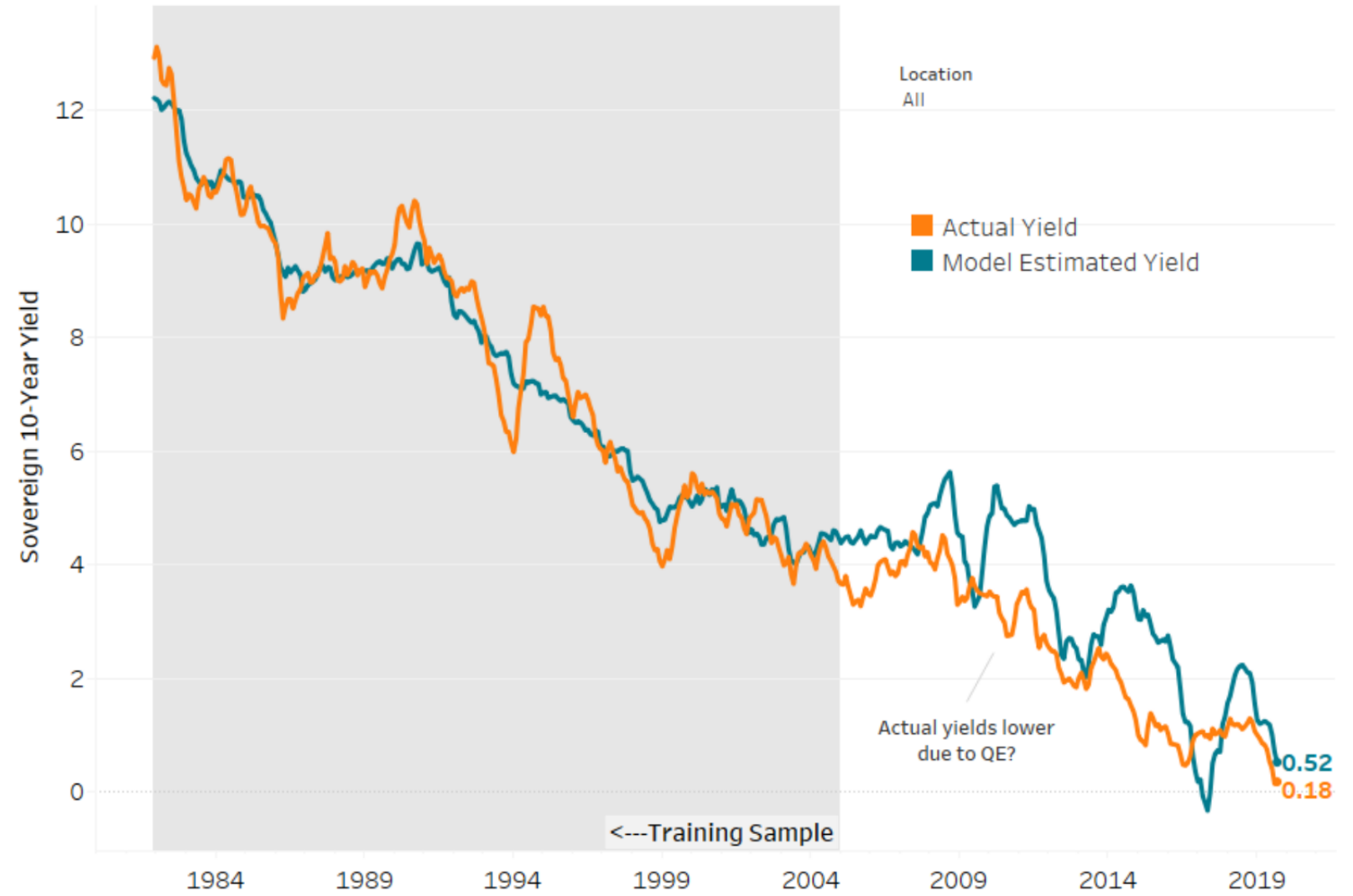


Source: Bloomberg, International Monetary Fund

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All 10-Year Yields Estimated From 2005 - Current

Ensemble of models using 12 variables covering growth, inflation, demographics, and policy uncertainty



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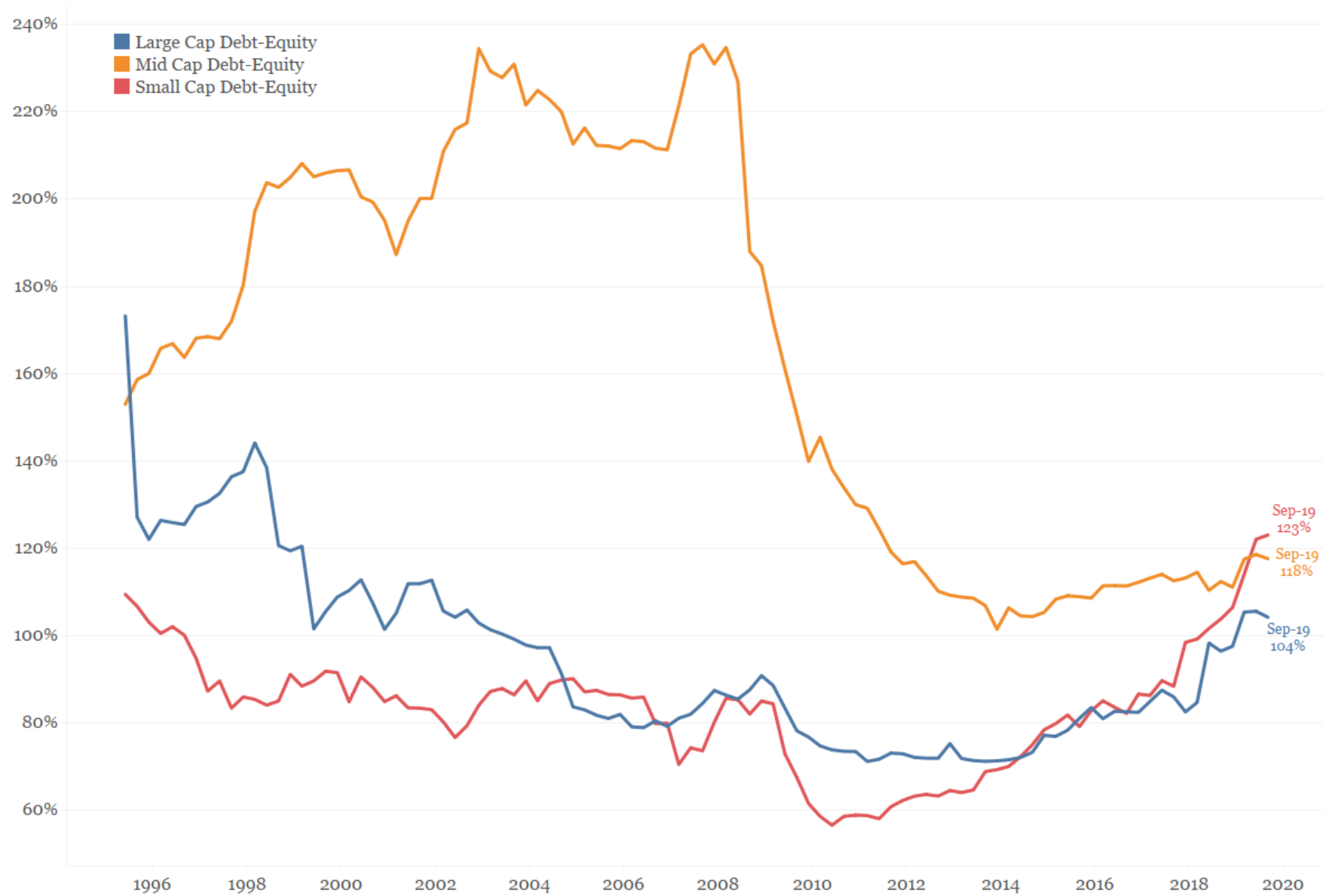
datascience.arborresearch.com

We purposely exclude central bank target rates and balance sheets to demonstrate yields are explainable with structural factors and traditional growth measures during and after the financial crisis.

The chart shows the **average estimate** and **actual yield** for all developed 10-year yields.

Out-of-sample estimates (2005-current) have moved higher than actual yields during obvious periods of quantitative easing. In other words, central banks efficiently dampened volatility.

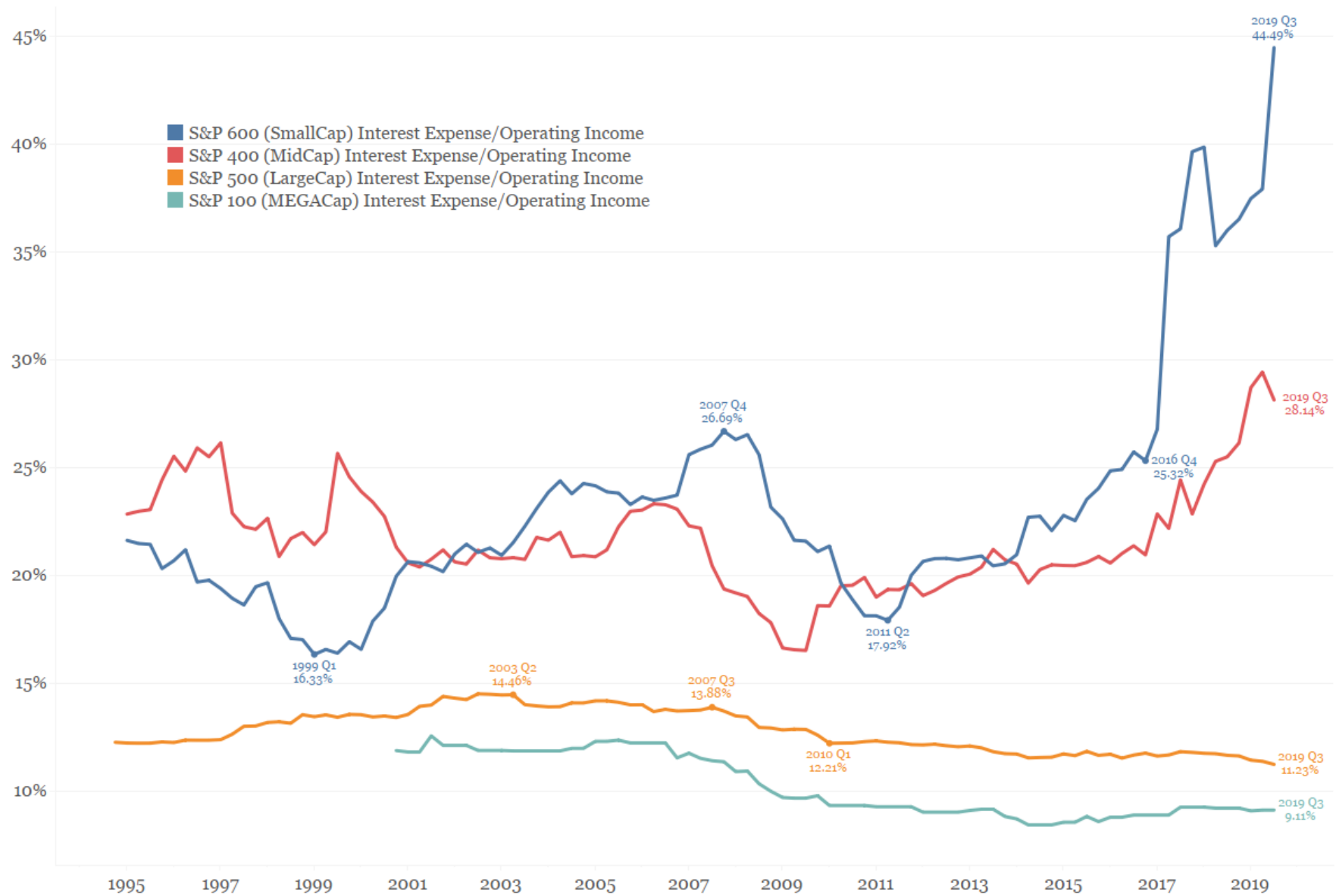
Debt to Equity Ratio



Source: Bloomberg

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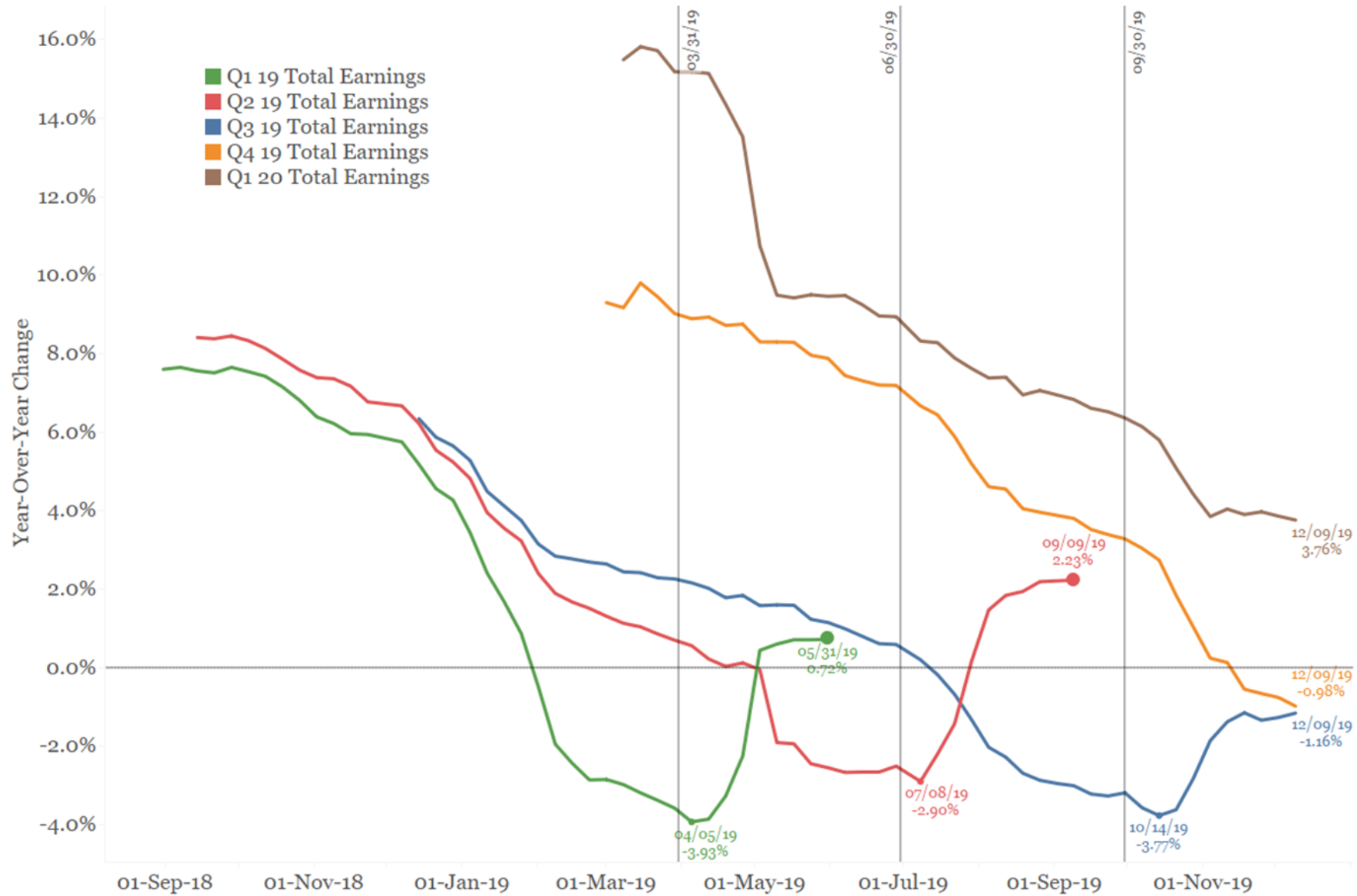
Interest Expense As A Percentage Of Operating Income



Source: Bloomberg, Standard & Poors

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2019 S&P 500 Operating Earnings Expectations



Source: Bloomberg

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Percentage of Citi Data Change Measures Above Zero Worldwide

Citigroup tracks over 40 worldwide measures of economic Growth



Data Source: Citigroup and Bloomberg

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2019 US GDP Forecast and the 10-Year Yield

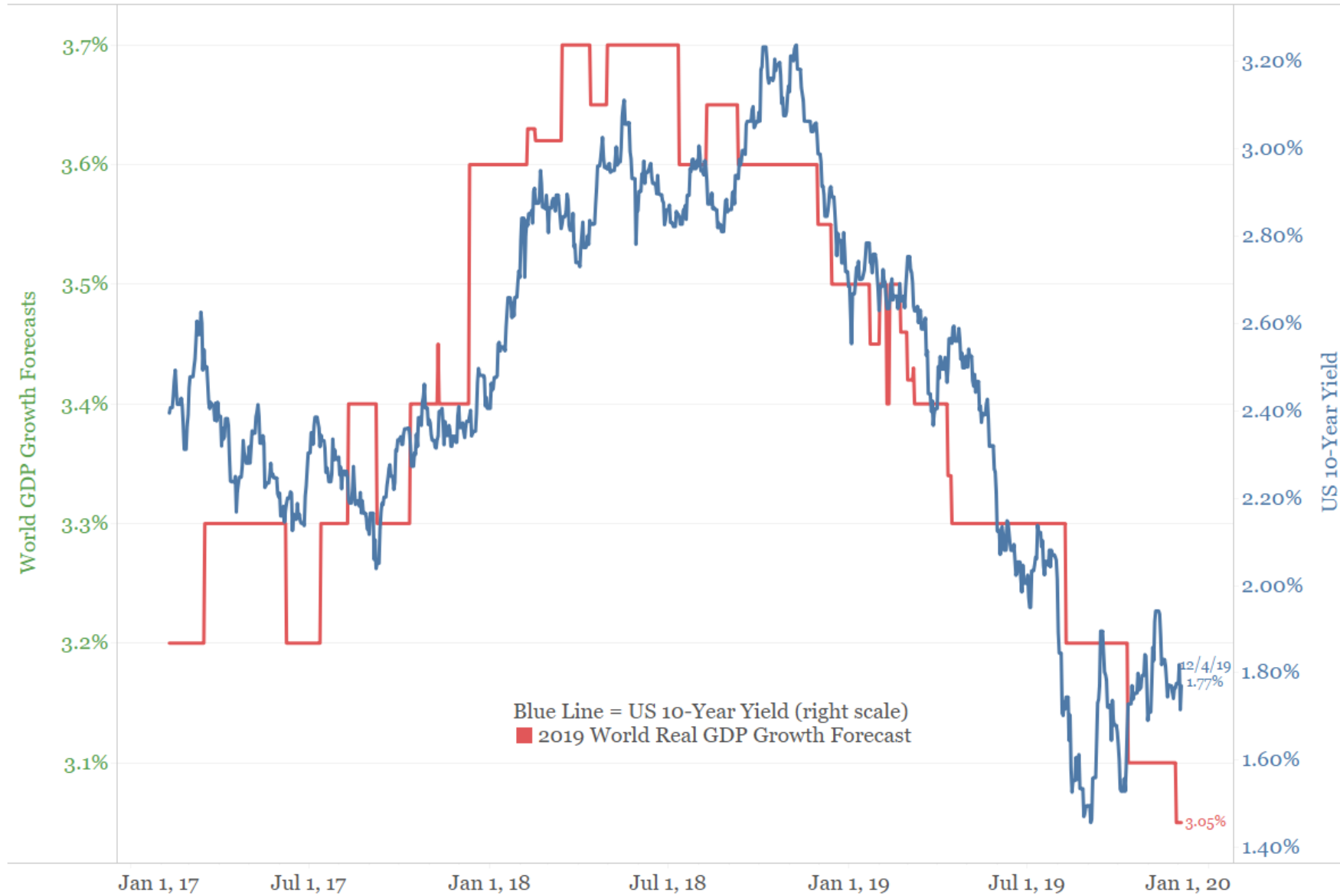
From a Regular Survey of Economists by Bloomberg



Data Source: Bloomberg

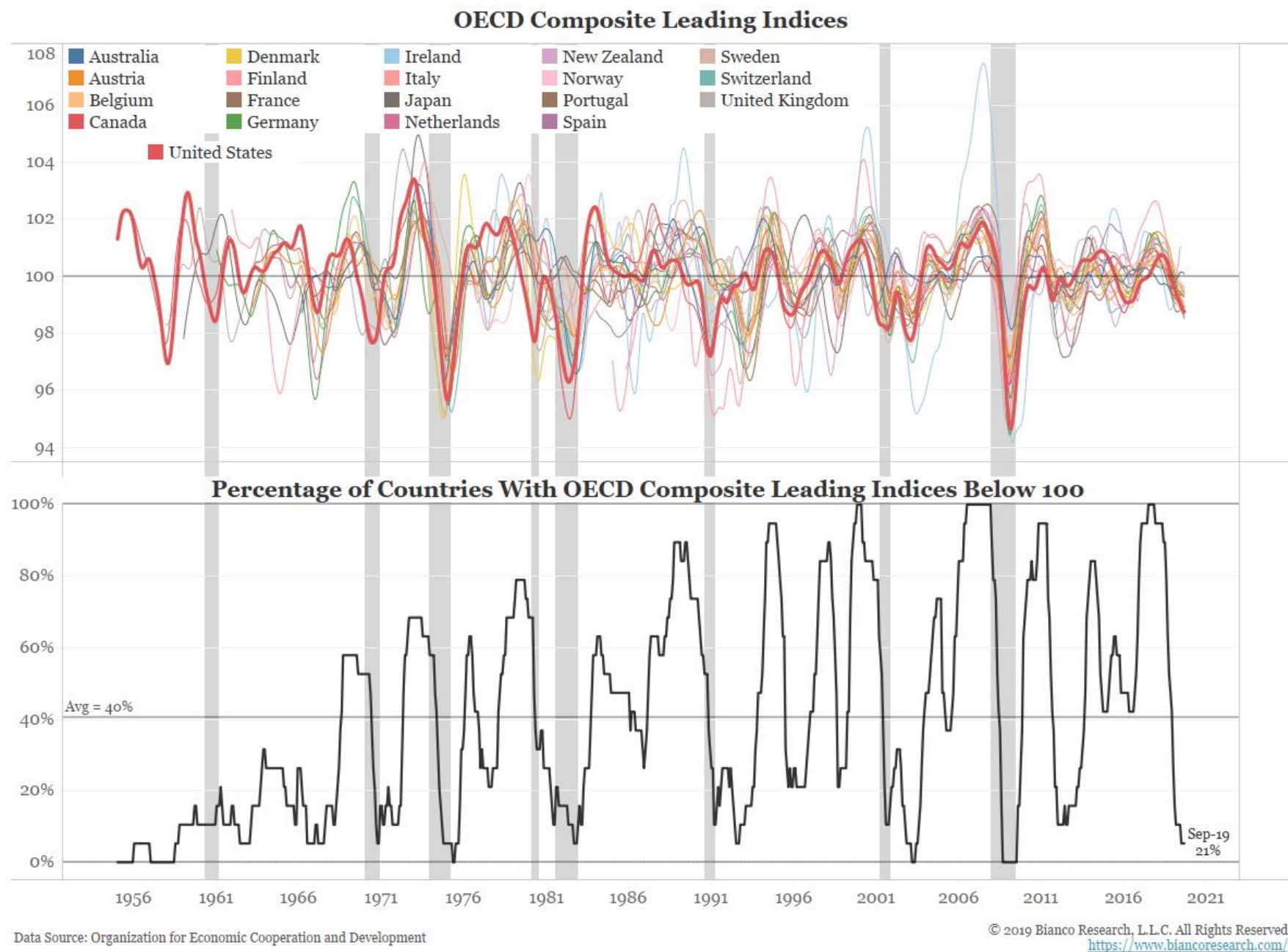
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2019 World GDP Forecast and the 10-Year Yield

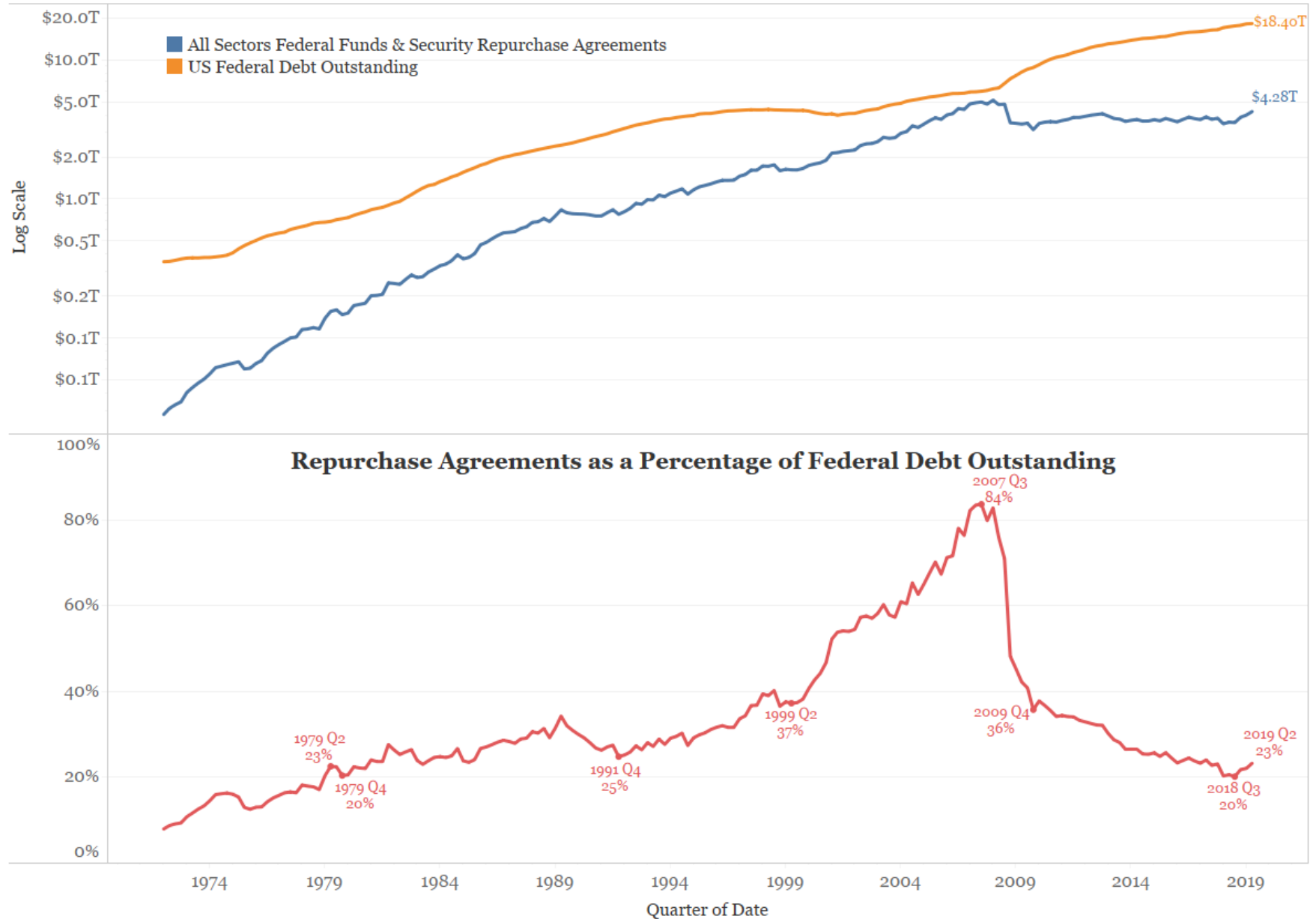


Data Source: Bloomberg

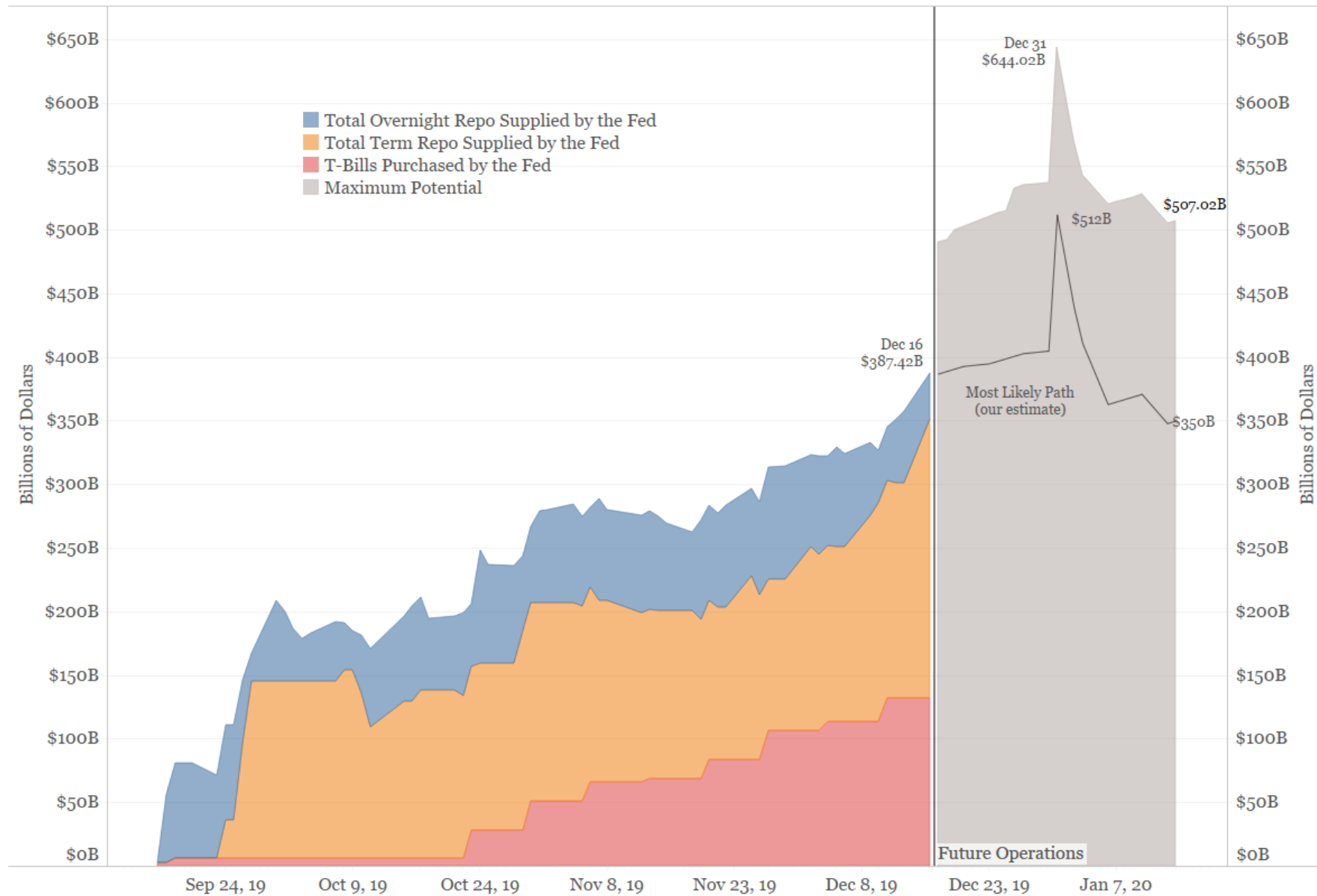
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The Shrinking Repo Market



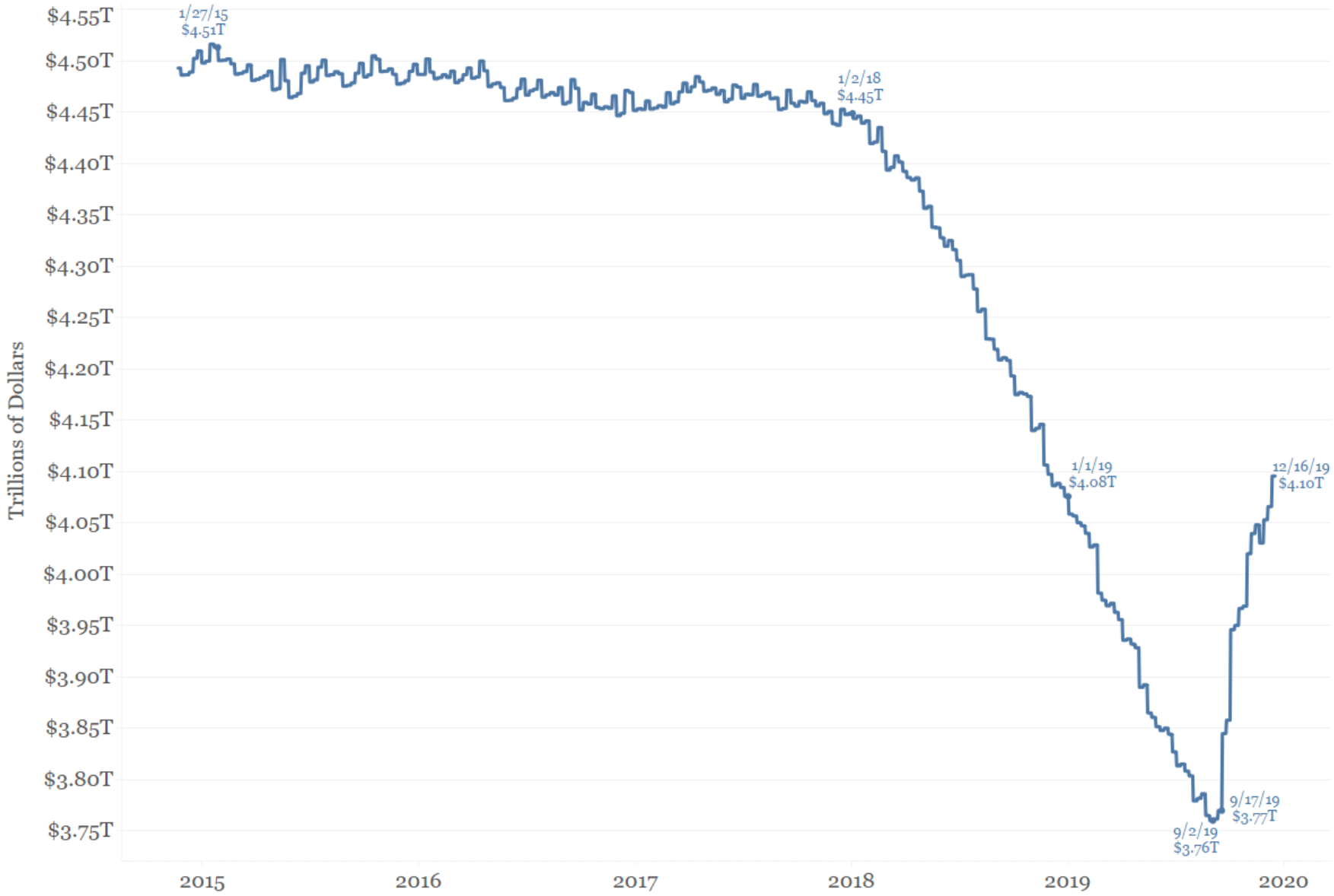
How Much Fed Support is Needed to Calm the Repo Market?



Source: NY Federal Reserve

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The Federal Reserve's Balance Sheet



Data Source: Fed, Bloomberg

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