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FinTech: Overview, Payments, and Regulation

Introduction

Professor Christopher Geczy PhD



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FinTech: Overview, Payments, and Regulation

What is FinTech?

Professor Christopher Geczy PhD

A Word Before We Begin

- It is not an offer to sell any product or services of any kind in any way
- This presentation is expressly educational in its nature, purpose and scope

What is FinTech?

- FinTech has significantly influenced business development in the financial services industry

“FinTech companies are businesses that leverage new technology to create new and better financial services for both consumers and businesses. It includes companies of all kinds that may operate in personal financial management, insurance, payment, asset management, etc..”

— MORNINGSTAR

What is FinTech?

- FinTech includes
 - Blockchain
 - Big data
 - AI (artificial intelligence)
 - Deep and thin learning
 - Automated CRM (customer relationship management)
 - Robo-advising
 - Insurtech
 - Payments
 - Technology for cash management
 - Lending platforms
 - Numerous other areas

What is FinTech?

- Main goals
 - Reducing transaction/service costs
 - Reaching market segments which would otherwise be impractical or uneconomic to engage
 - Creating, taking advantage of economies of scale
 - Improving customer experience
 - Segmenting market places



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Robo-Advising

Professor Christopher Geczy PhD

“Financial advisory business models that reduce costs of client service by disintermediating humans.”

Robo-Advisors

- Current loose definition
 - A financial advisory firm, or practice, that uses an algorithm to build a customer allocation, based on automated (online) inputs
- Usually provide:
 - Automated capture of client financial information, goals, and risk tolerance
 - Output of a recommended portfolio allocation (or set of allocation options)
 - Automated rebalancing and tax loss harvesting
 - Automated reporting

The Future of Robo-Advice: Some U.S. Perspectives

- There may be no such thing as a “pure” robo-advisors
- Two of the largest independent robos are Wealthfront and Betterment
 - Both have client service representatives and expanding business models
- From the industry viewpoint, the robo model is useful because it makes clients with relatively modest investable assets more economically viable to service

The Future of Robo-Advice: Some U.S. Perspectives

- Vanguard Personal Advisor Services rebranded as a robo in May 2015
 - By June it had \$21.2 billion AUM¹, and \$115 billion as of 1st quarter of 2019² and is likely the largest robo
 - Wealthfront has \$11 billion AUM as of 1st quarter of 2019
 - (Betterment overtook Wealthfront's AUM in July 2015³, and has \$16 billion as of 1st quarter of 2019)
 - 90% of Wealthfront AUM is in Vanguard funds ³
 - Betterment caught up with Wealthfront by pivoting its business model to emphasize DC plan sales to small companies

¹ Lisa Shidler blog post, www.riabiz.com, July 16, 2015.

² Robo-Advisor Pros, <https://www.roboadvisorpros.com/robo-advisors-with-most-aum-assets-under-management/>, March 30, 2019.

³ "Betterment catches up to Wealthfront in AUM as robo competition reaches boiling point," *Investment News*, July 30, 2015.

⁴ "It's Vanguard vs. Fidelity in the robo-advice game," *Investment News*, June 19, 2015.

The Future of Robo-Advice: Some U.S. Perspectives

- Vanguard Personal Advisor Services rebranded as a robo in May 2015
 - Over the last three years, various large brokerages or asset managers have acquired or built robos or robo-like offerings (e.g., Schwab, Merrill Lynch); and Fidelity controls much of Betterment's order flow and earns referral fees

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Defining the Market Size

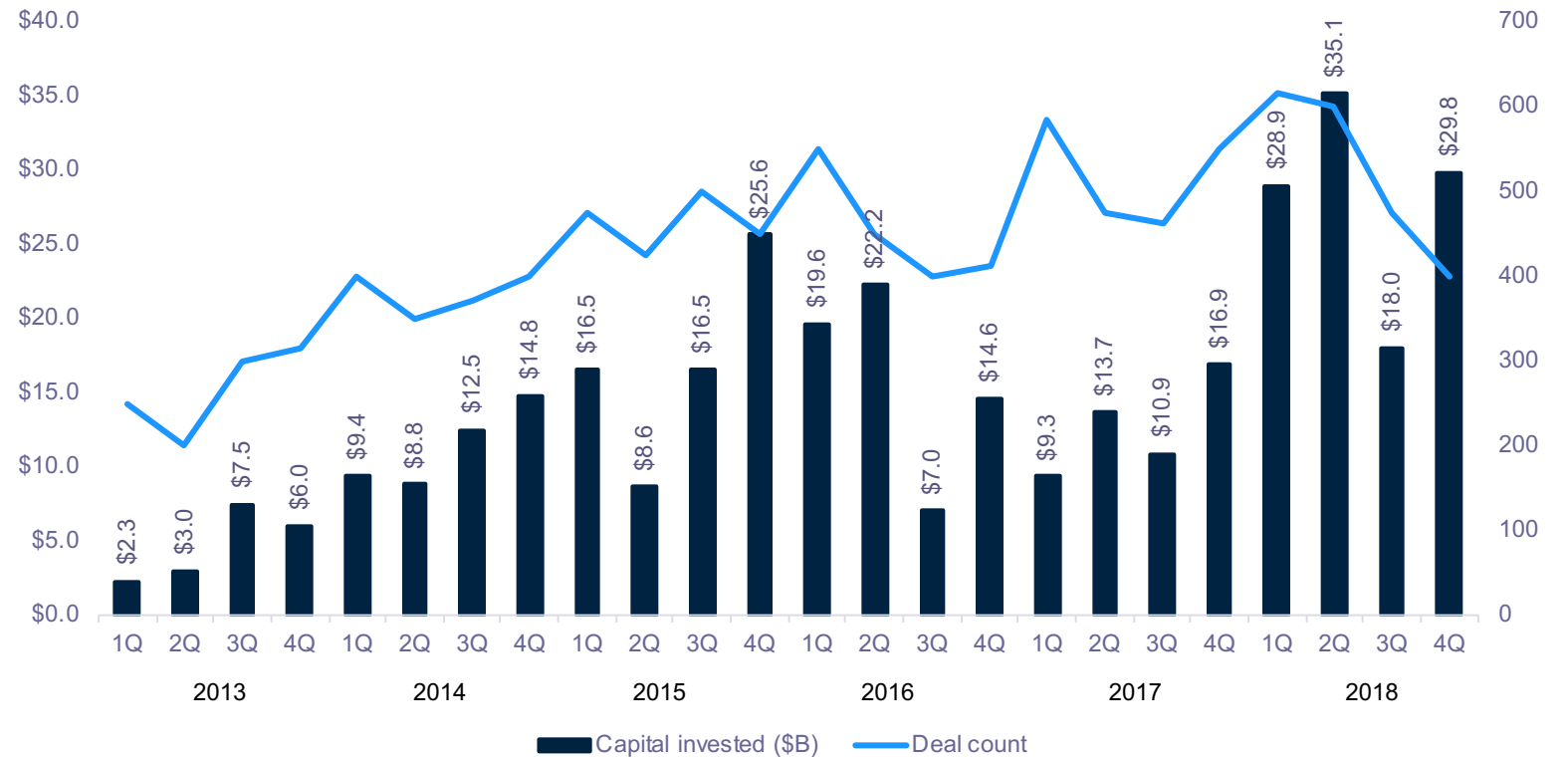
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FinTech: Market Size

- Global FinTech funding was about \$111.8 billion last year (KPMG Pulse of Fintech report, Feb. 13, 2019)

Digital Payments is by far the largest component of Fintech by transaction volume (est. \$3.6 trillion worldwide last year).

Total investment activity (VC, PE, and M&A) in fintech
2013-2018



Pulse of Fintech 2018, Global Analysis of Fintech, KPMG International (data provided by PitchBook) February 13, 2019



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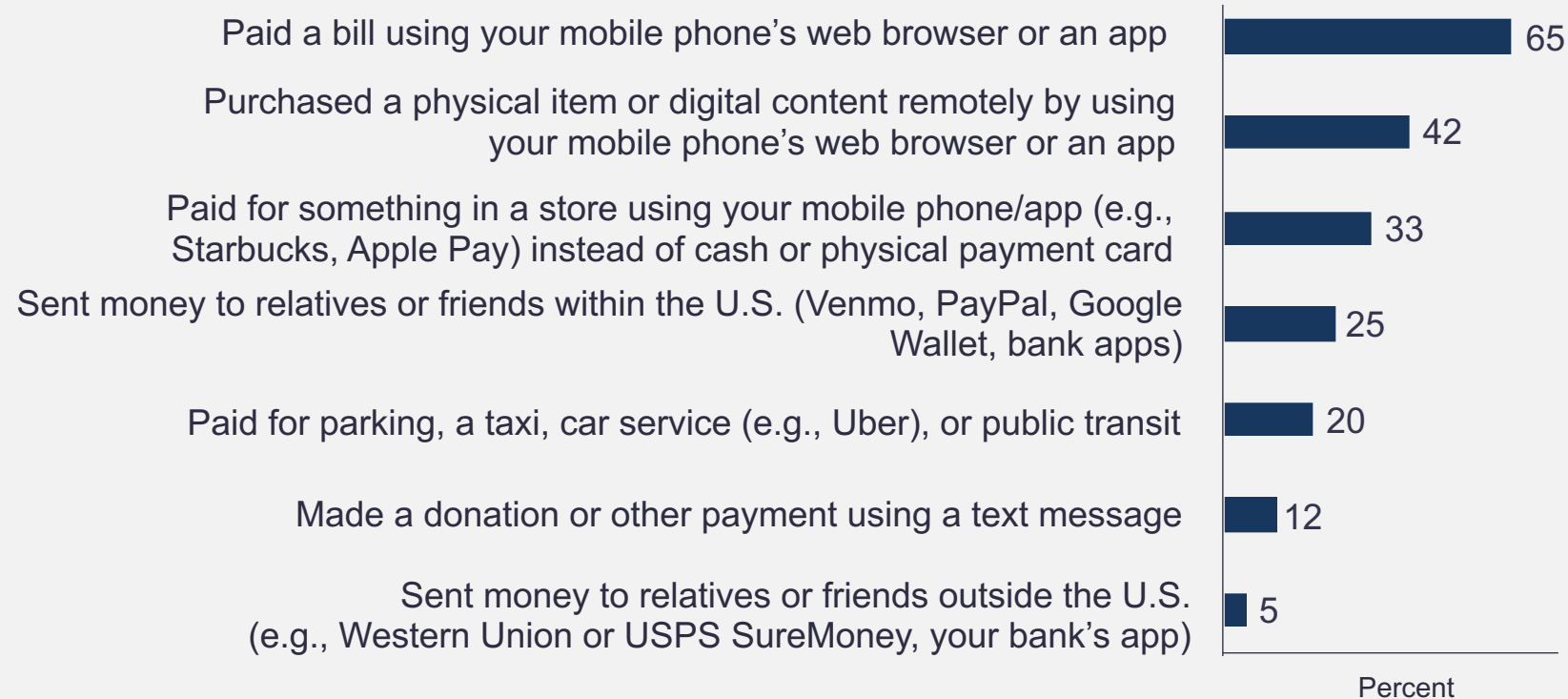
FinTech: Overview, Payments, and Regulation

Attitudes Towards Financial Apps

Professor Christopher Geczy PhD

General Attitudes Toward Financial Apps – U.S. Data

Figure 6. Using your mobile phone, have you done each of these in the past 12 months?

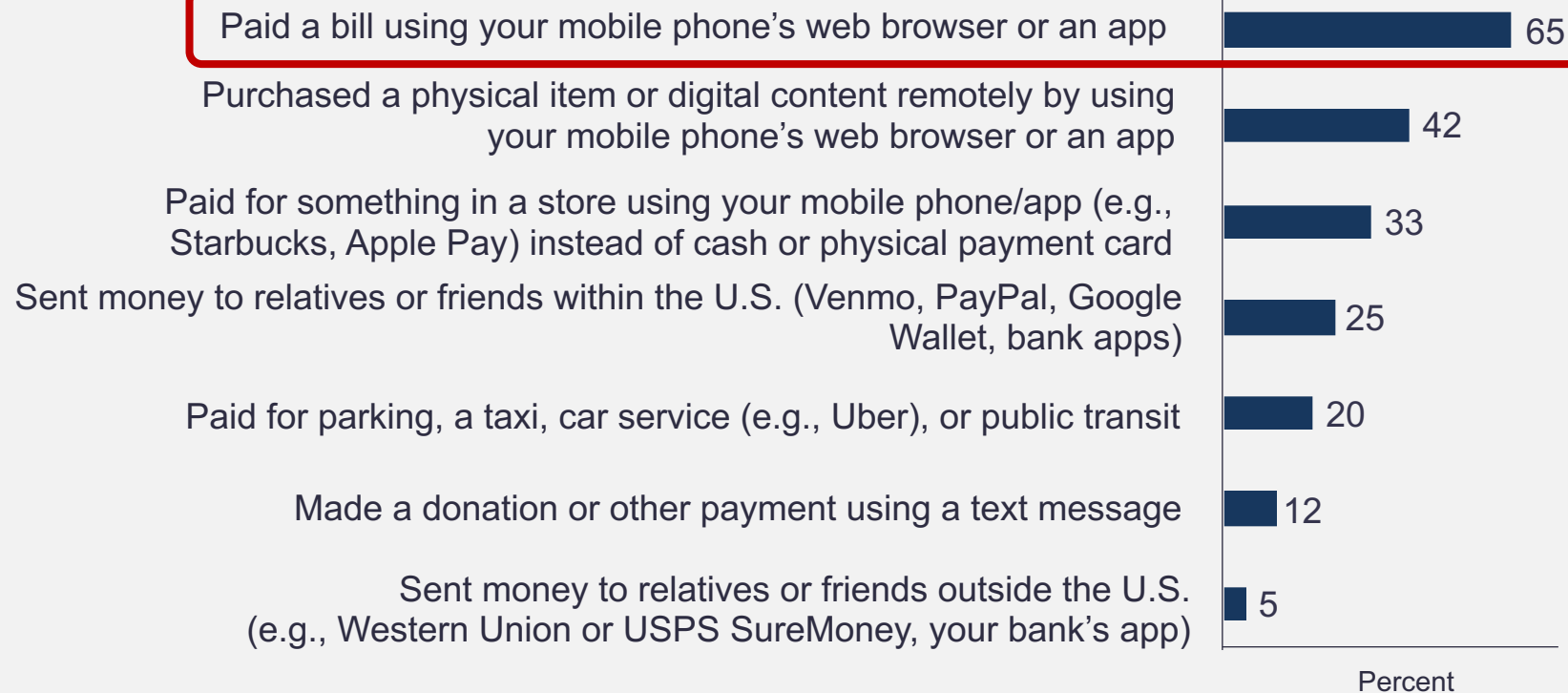


Note: Among those with a smartphone who used mobile payments in the past 12 months (n=406).

Federal Reserve Board of Governors, "Consumers and Mobile Financial Services," March (2016)

General Attitudes Toward Financial Apps – U.S. Data

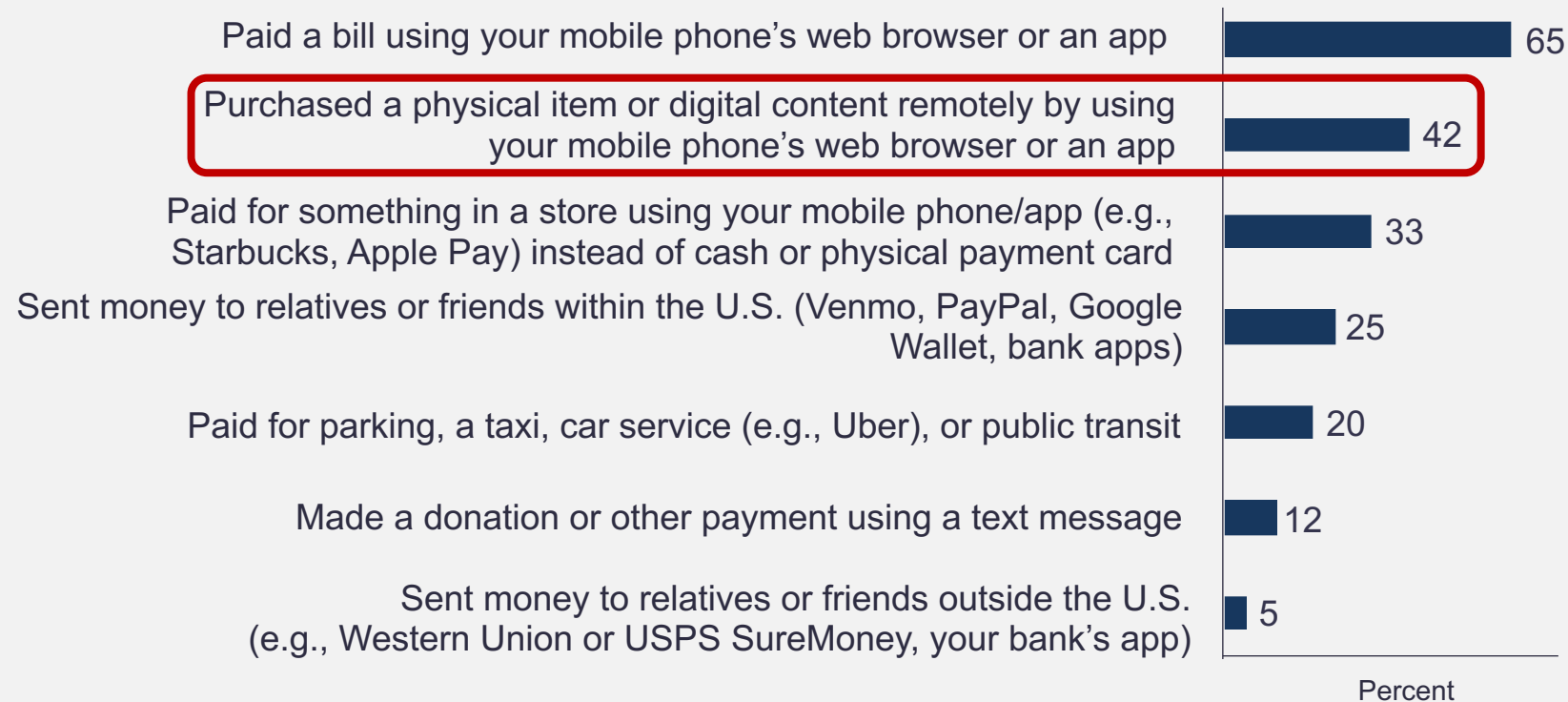
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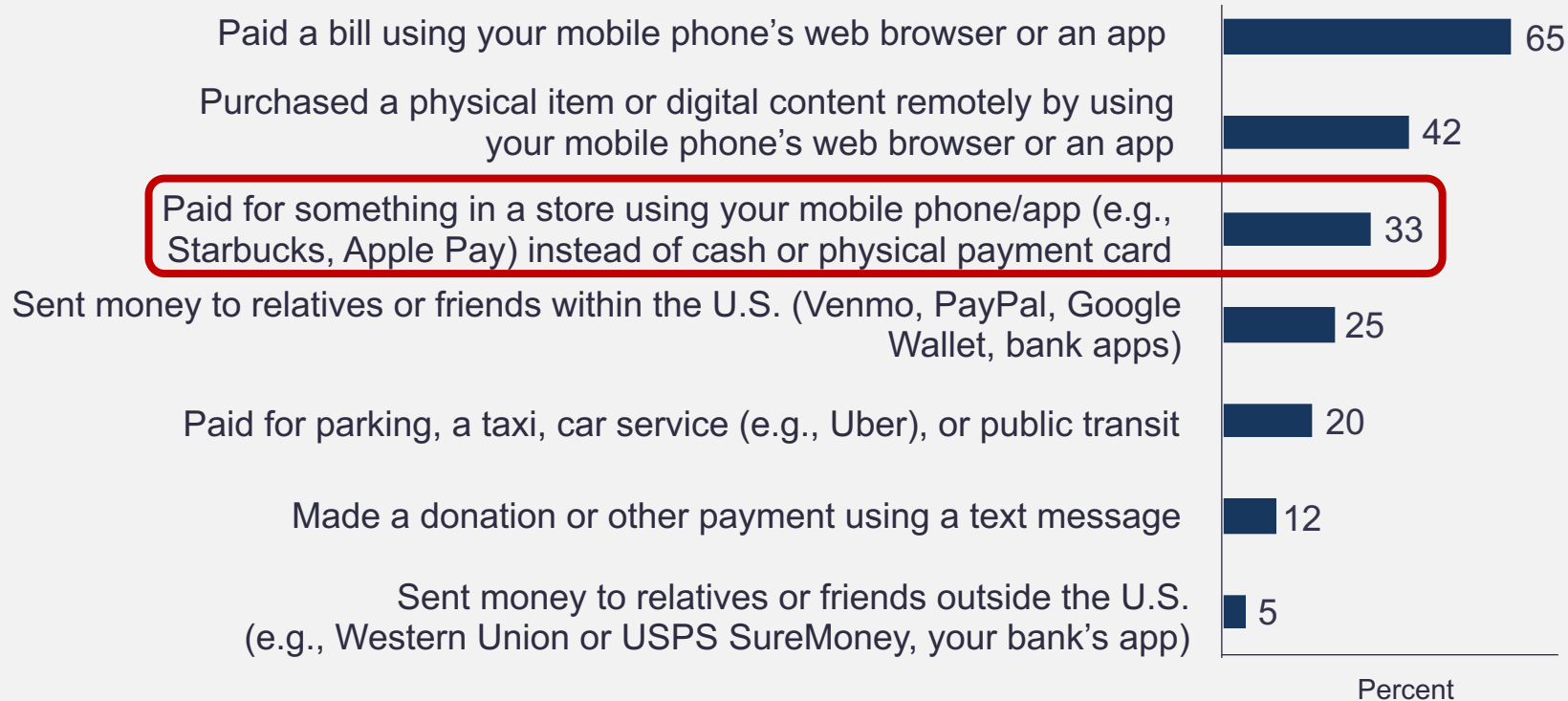
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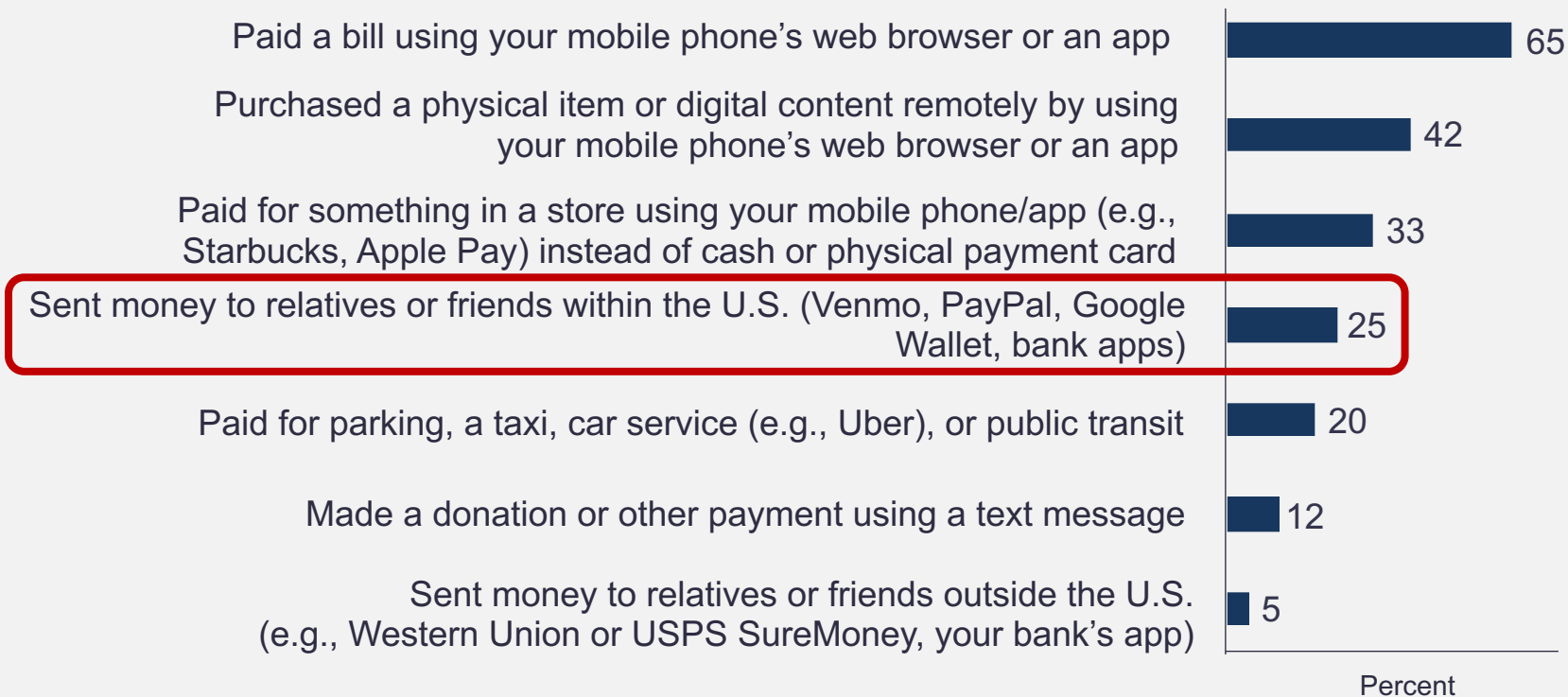
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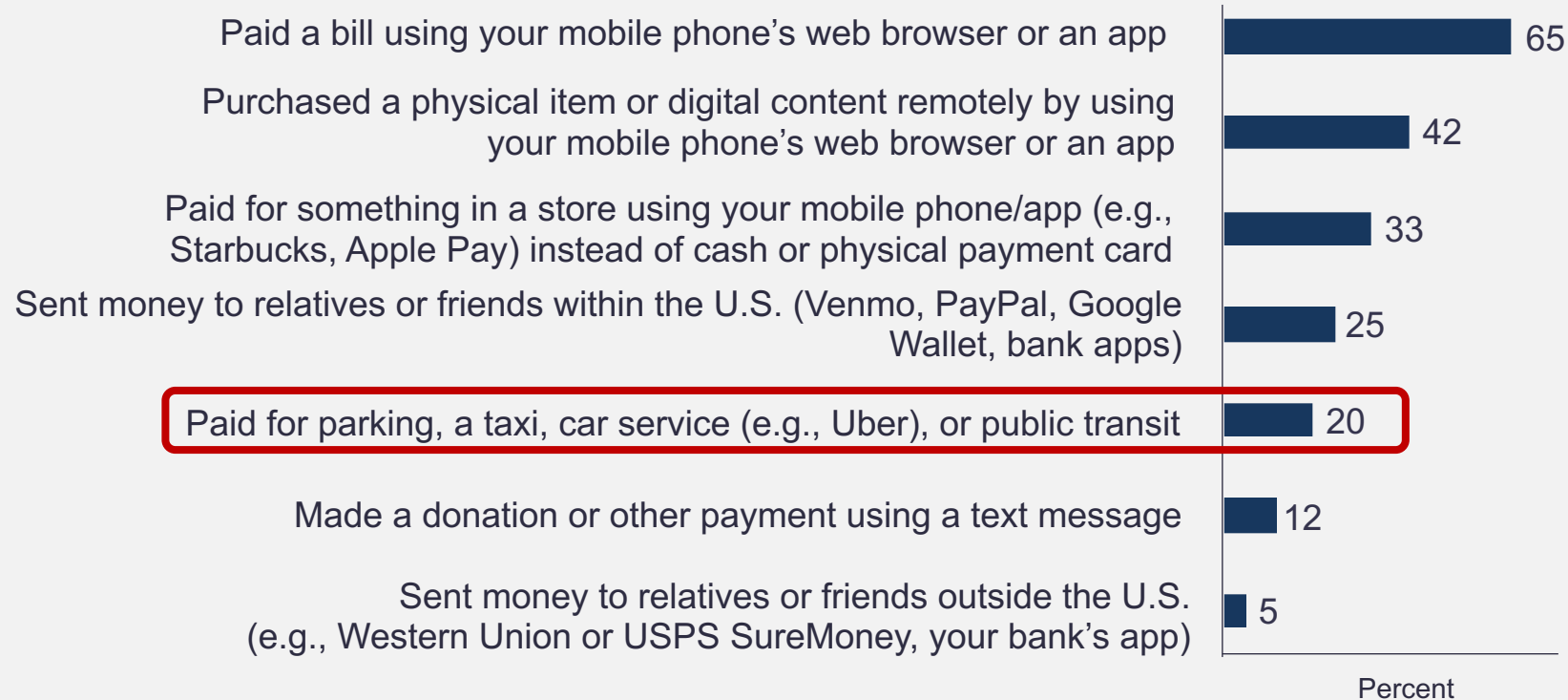
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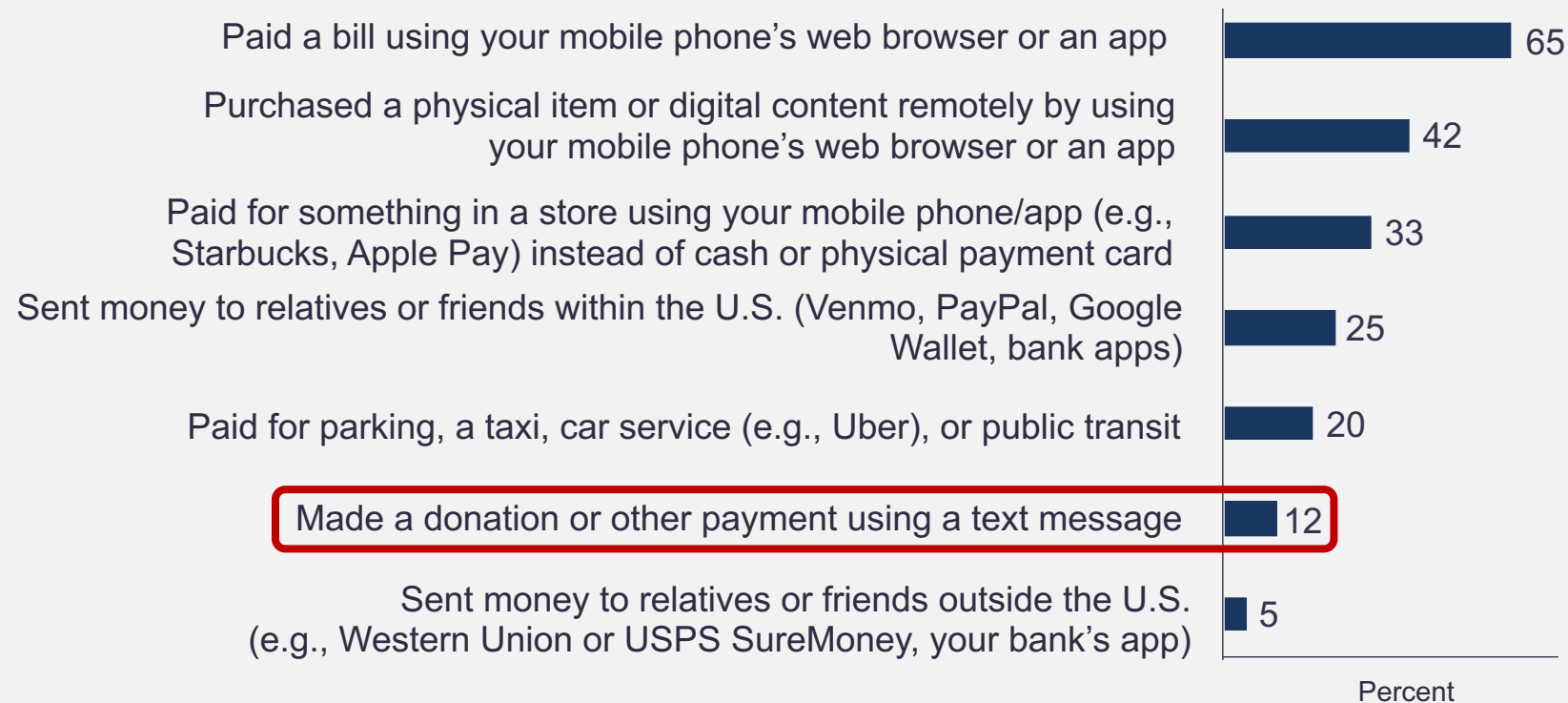
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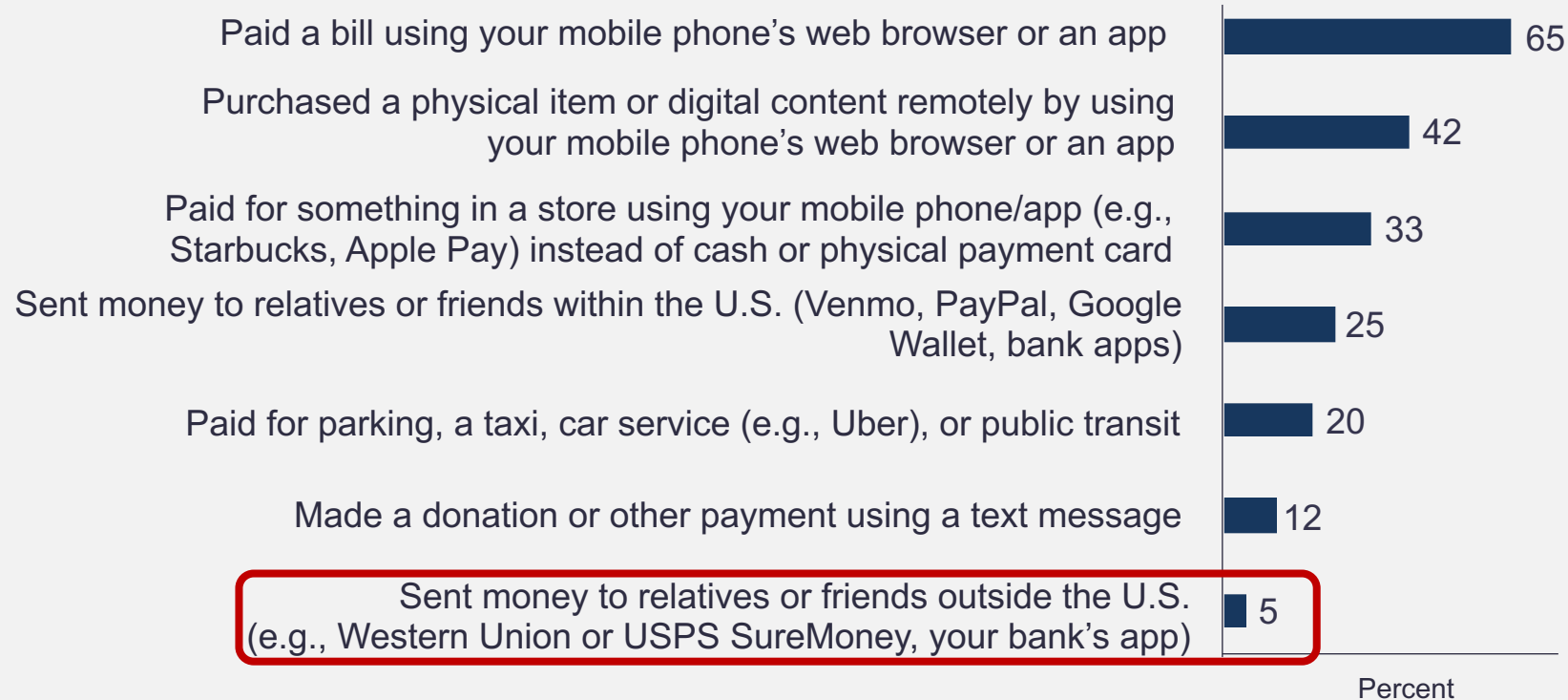
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Assets Under Management of Robo-Advisors

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Reported Valuations of Selected Robo-Advisors

Betterment Financing & Valuation History (\$ in mm)

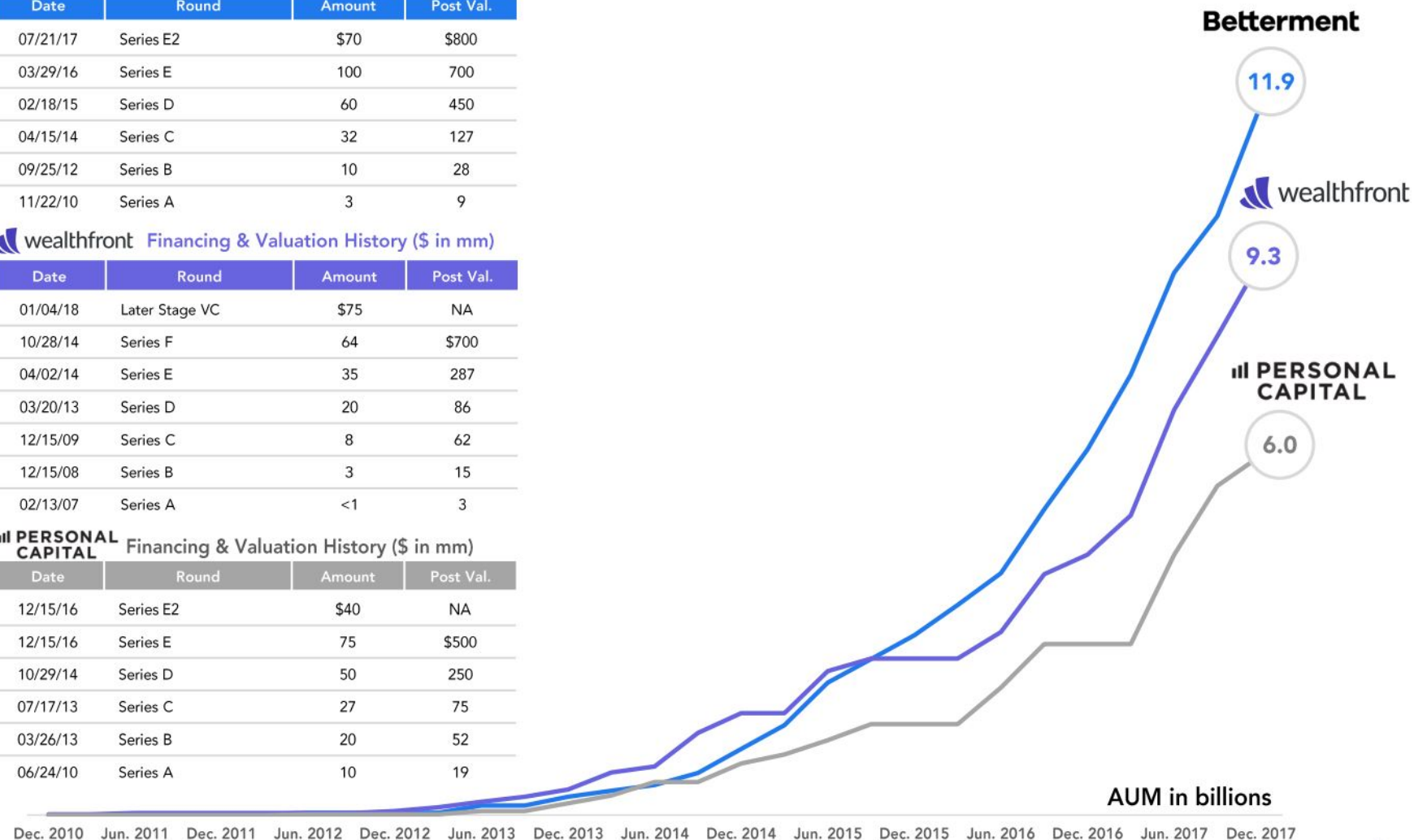
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02/18/15	Series D	60	450
04/15/14	Series C	32	127
09/25/12	Series B	10	28
11/22/10	Series A	3	9

wealthfront Financing & Valuation History (\$ in mm)

Date	Round	Amount	Post Val.
01/04/18	Later Stage VC	\$75	NA
10/28/14	Series F	64	\$700
04/02/14	Series E	35	287
03/20/13	Series D	20	86
12/15/09	Series C	8	62
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PERSONAL CAPITAL Financing & Valuation History (\$ in mm)

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Tiger Global Management, LLC: "Wealthfront Raises \$75 million in Financing led by Tiger Global Management, January 9, 2018

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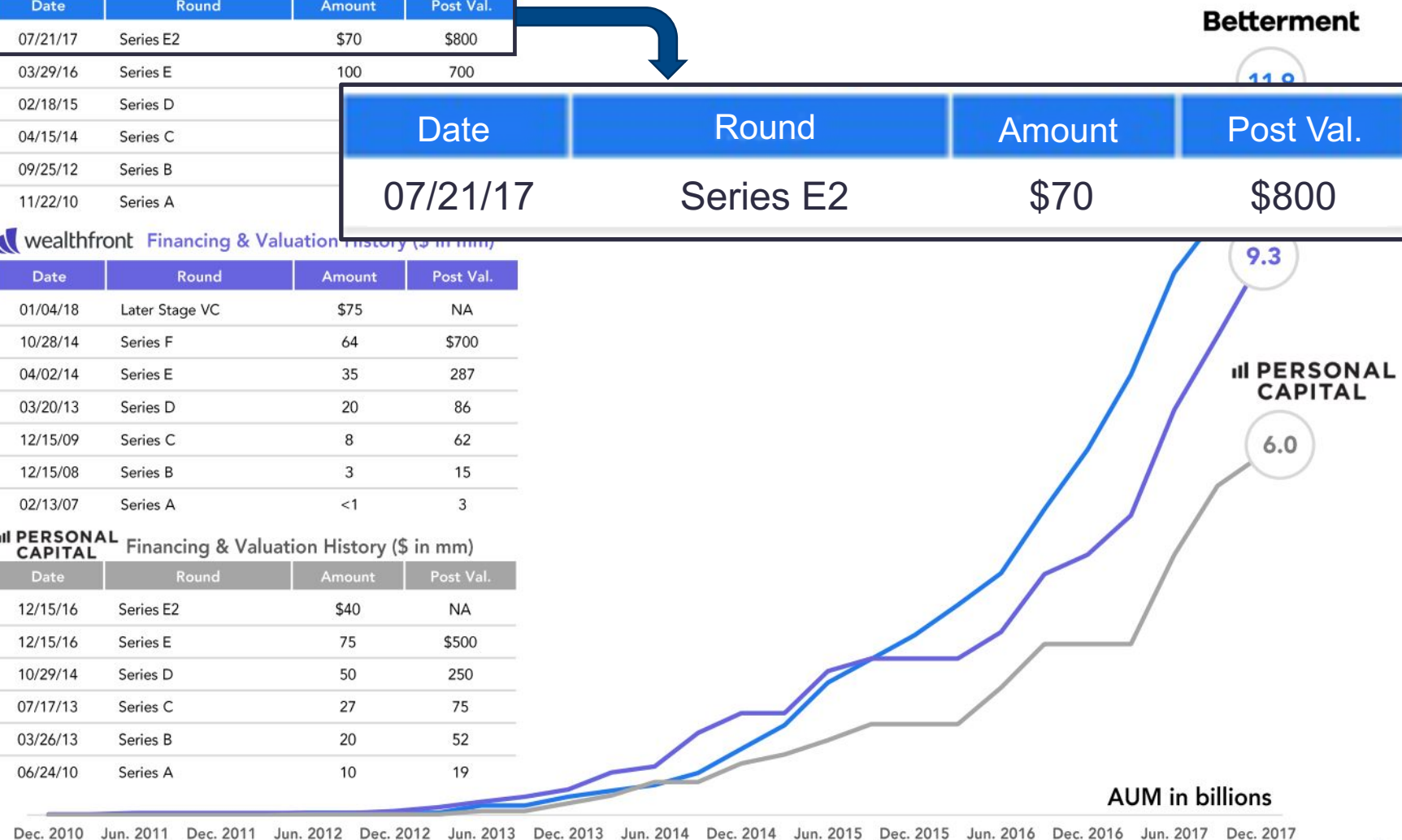
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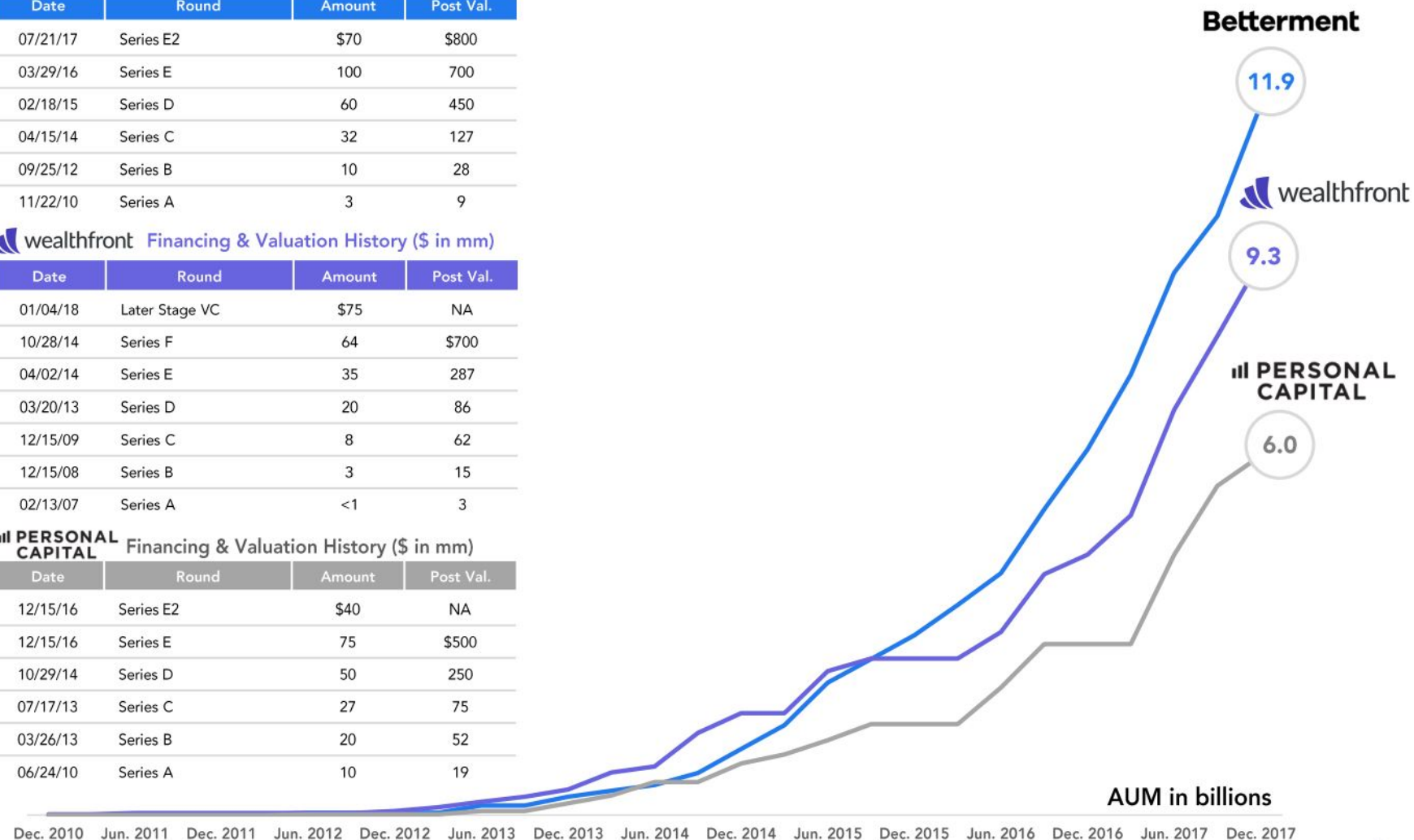
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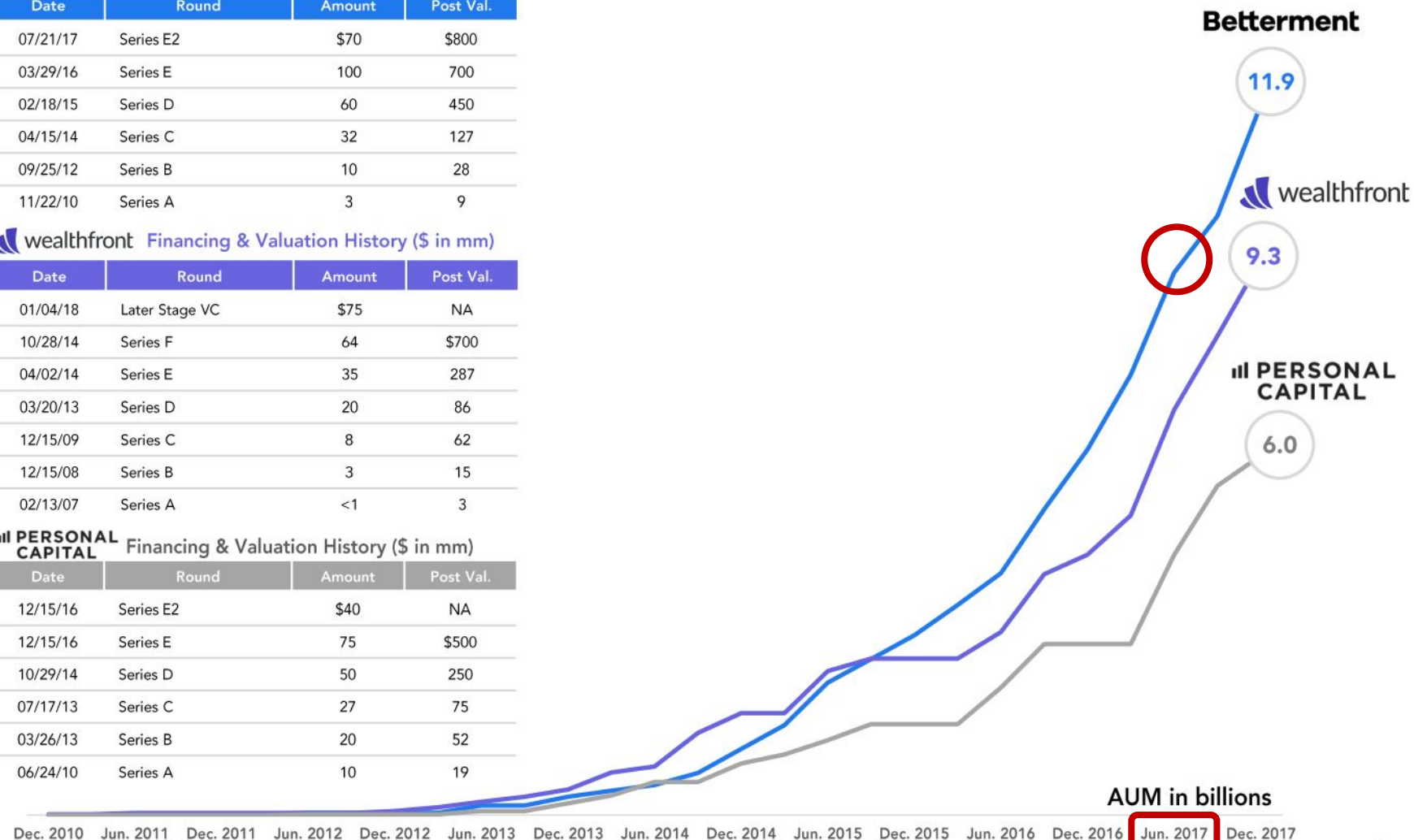
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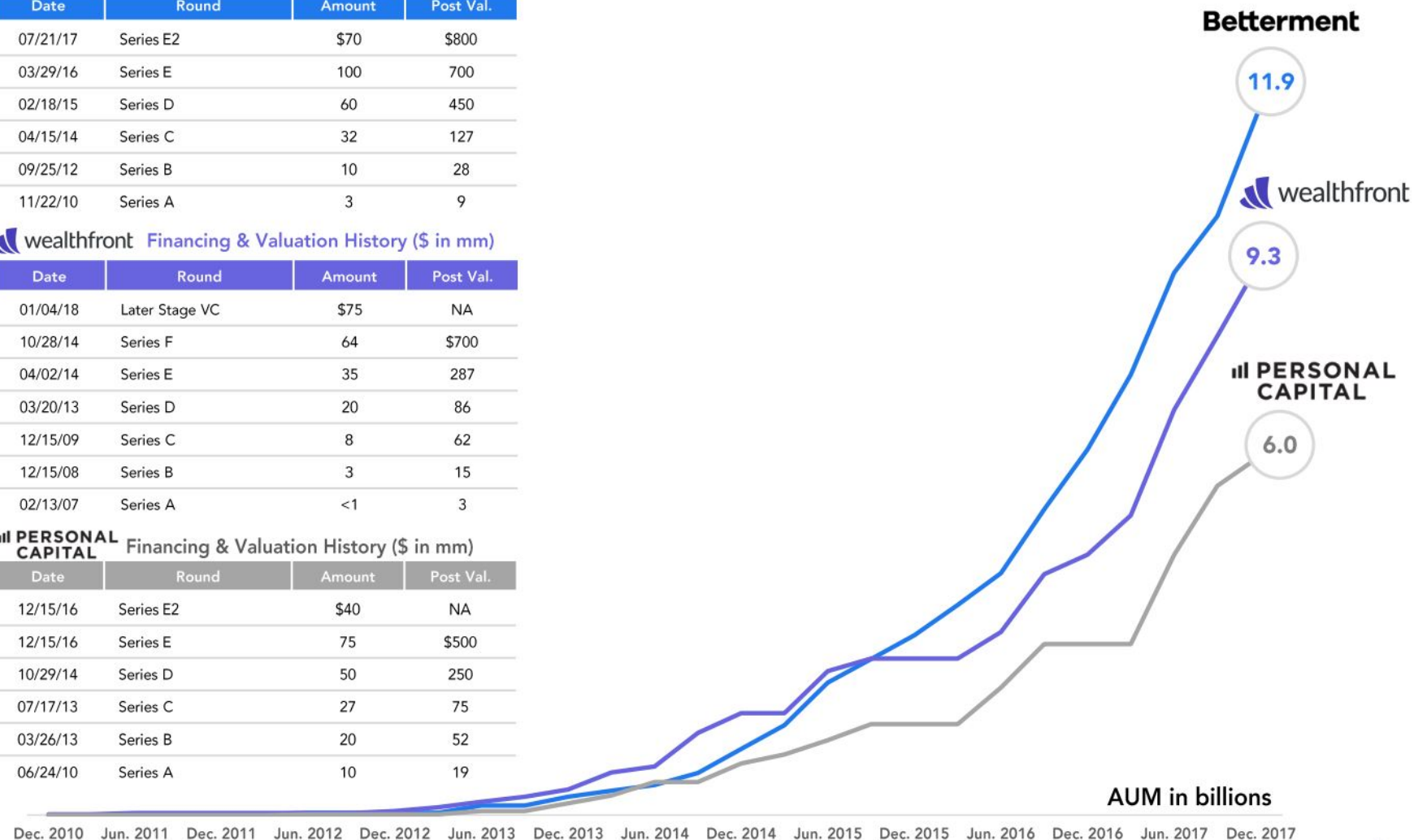
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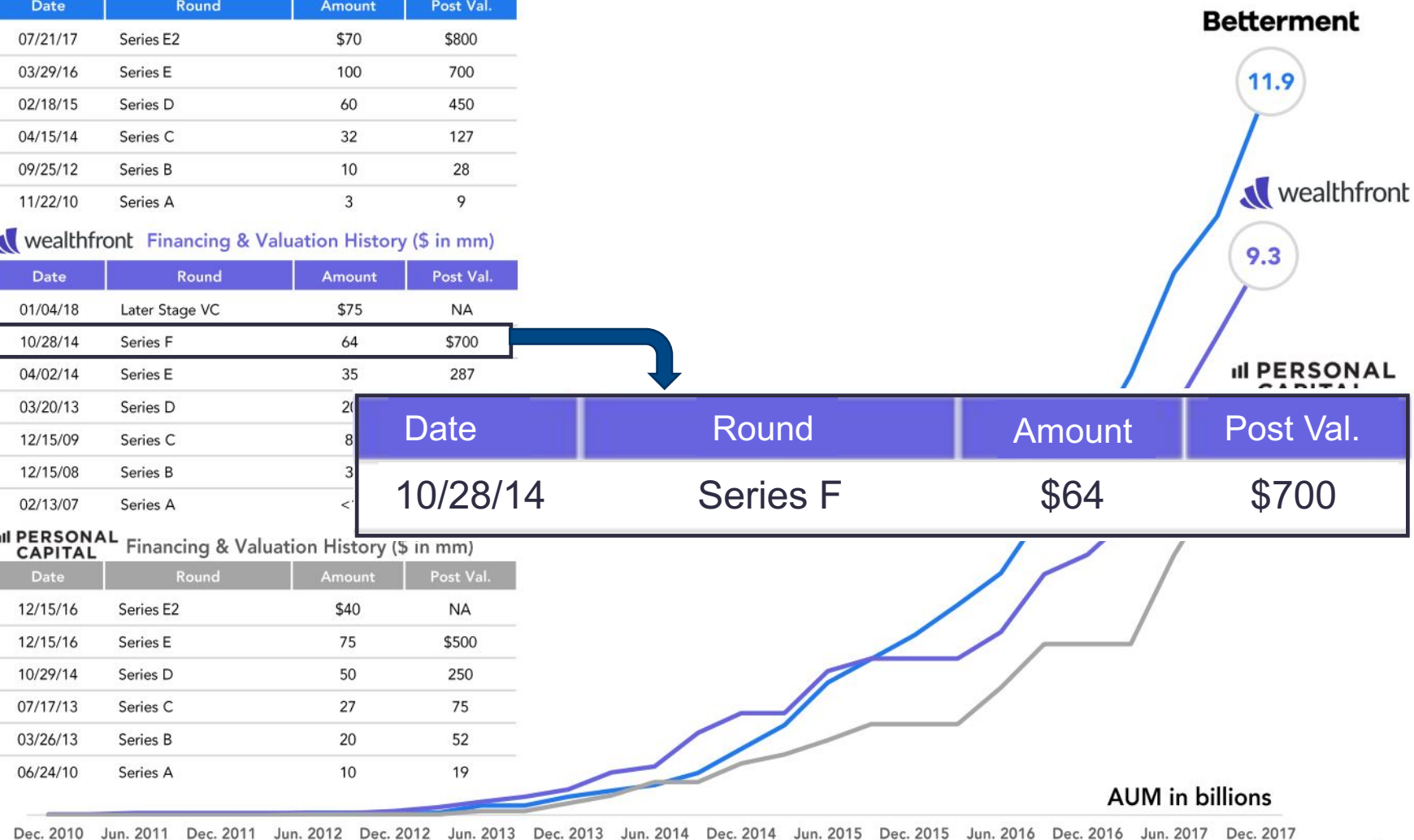
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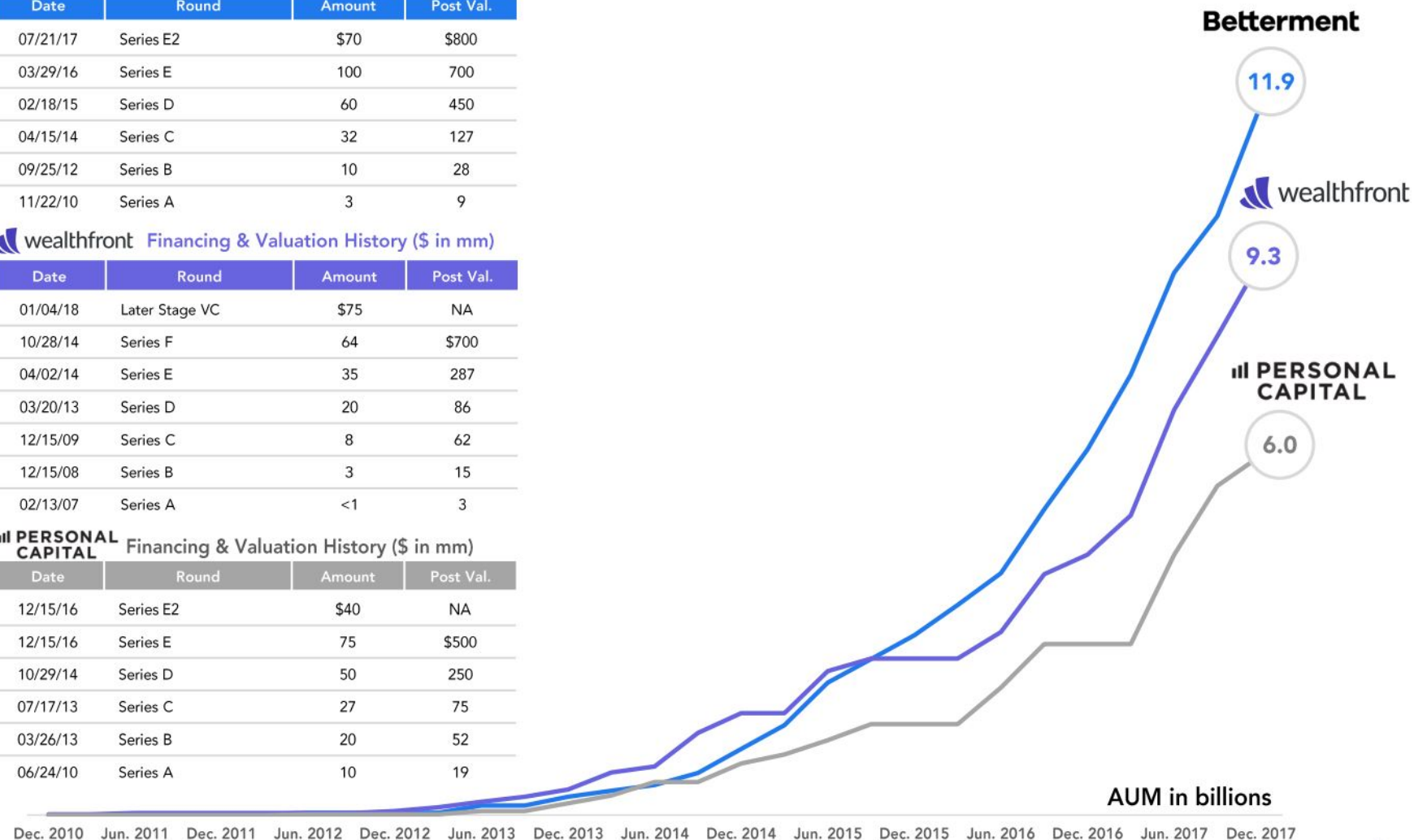
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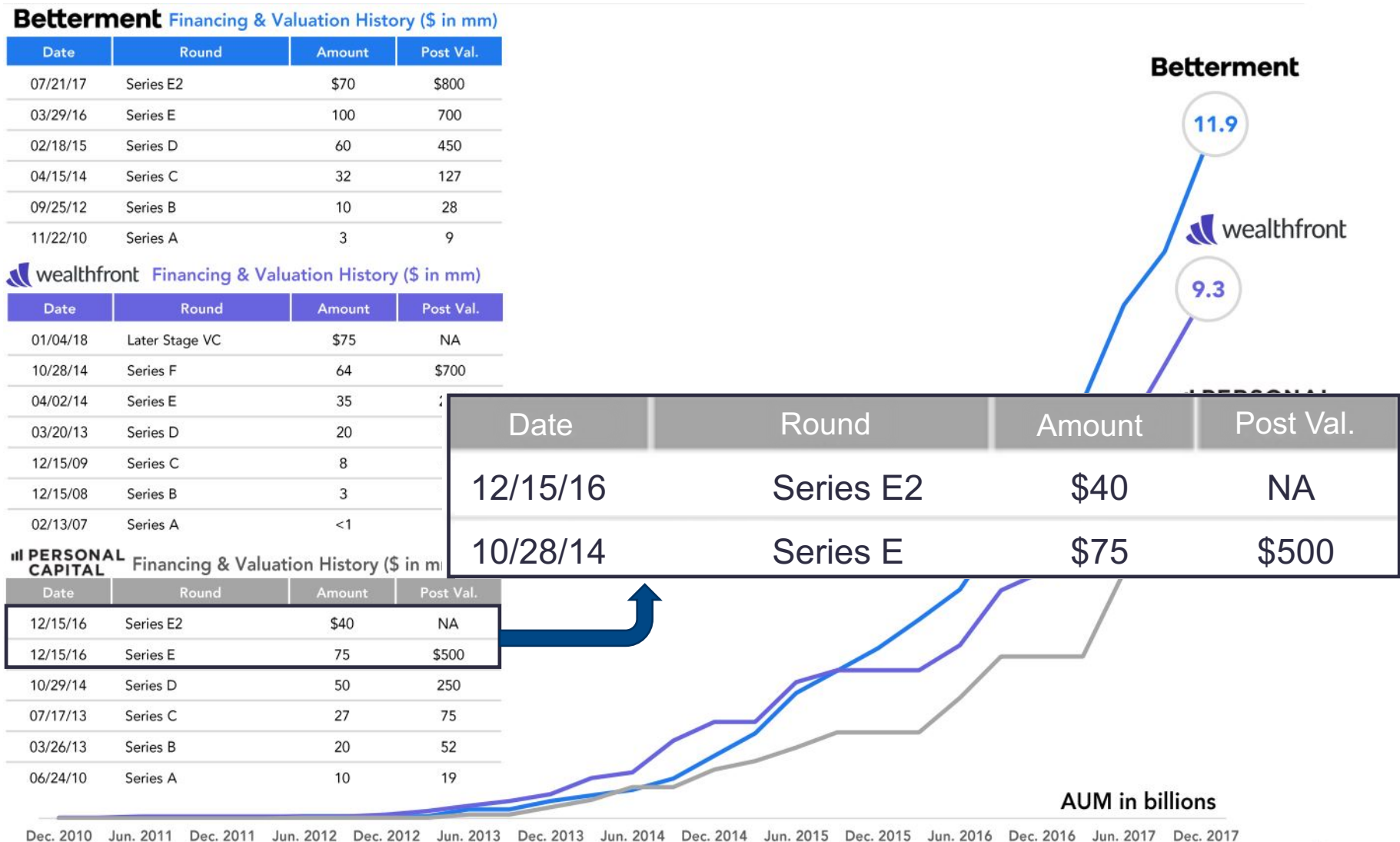
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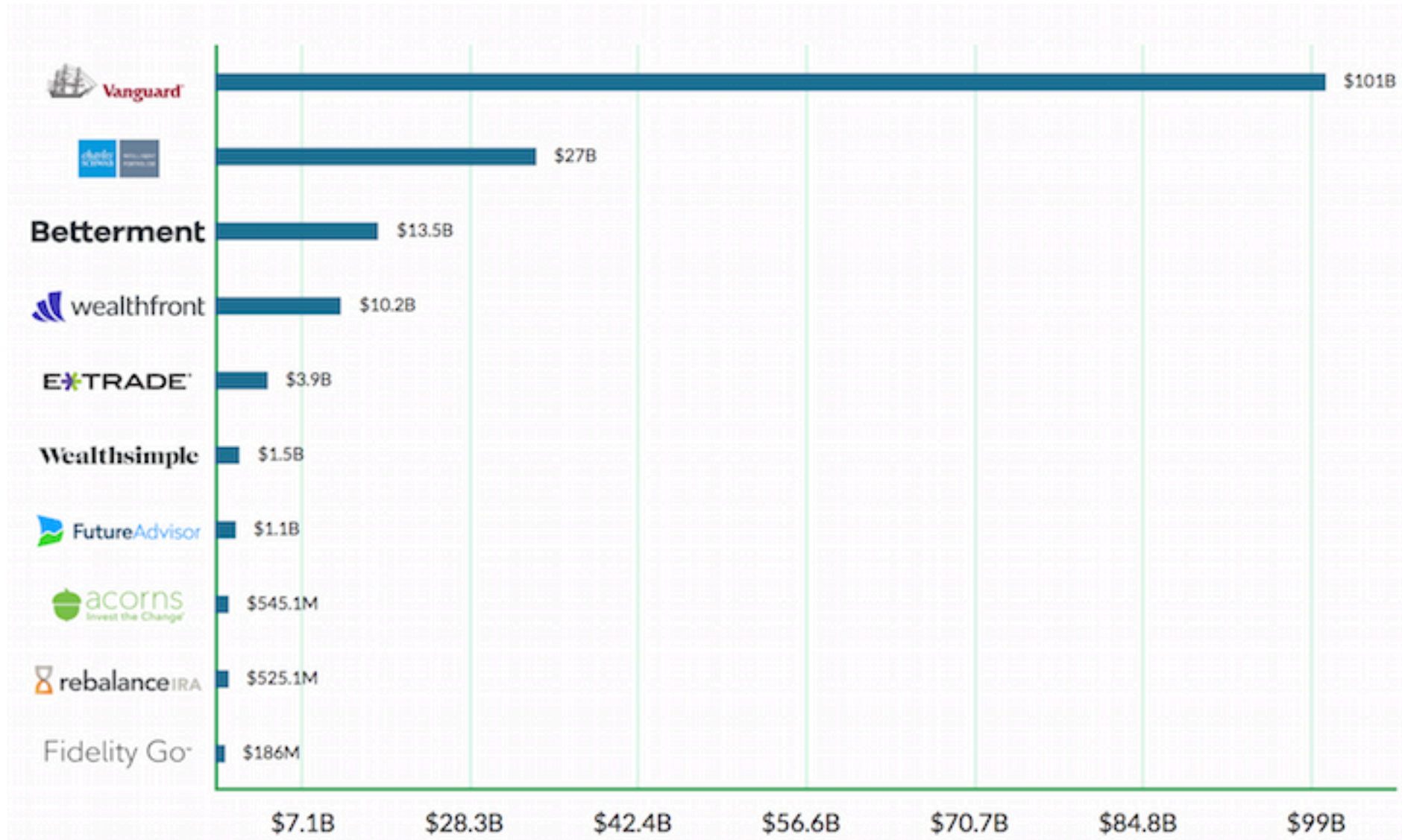
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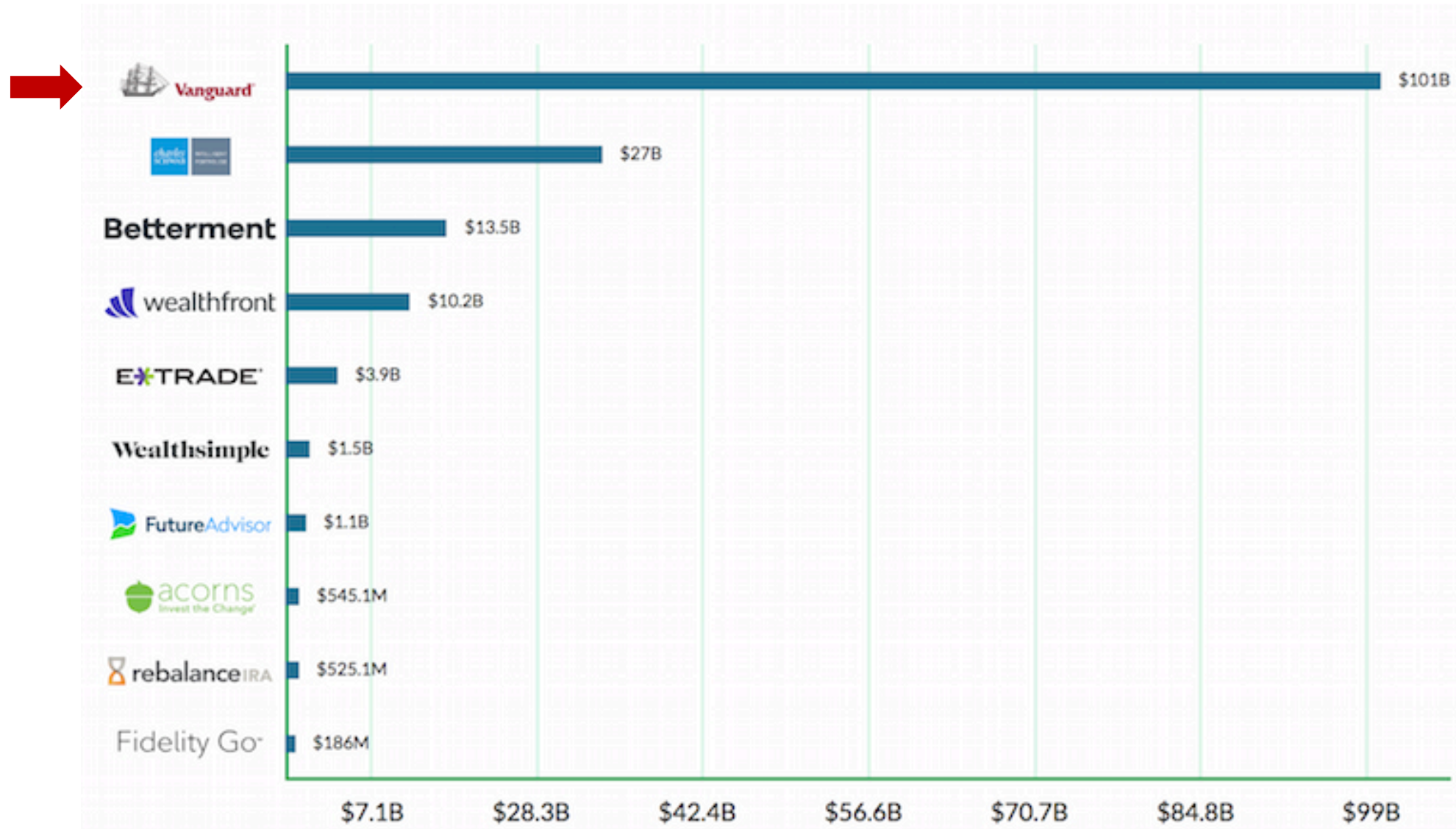
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Largest Robo-Advisors By Assets Under Management



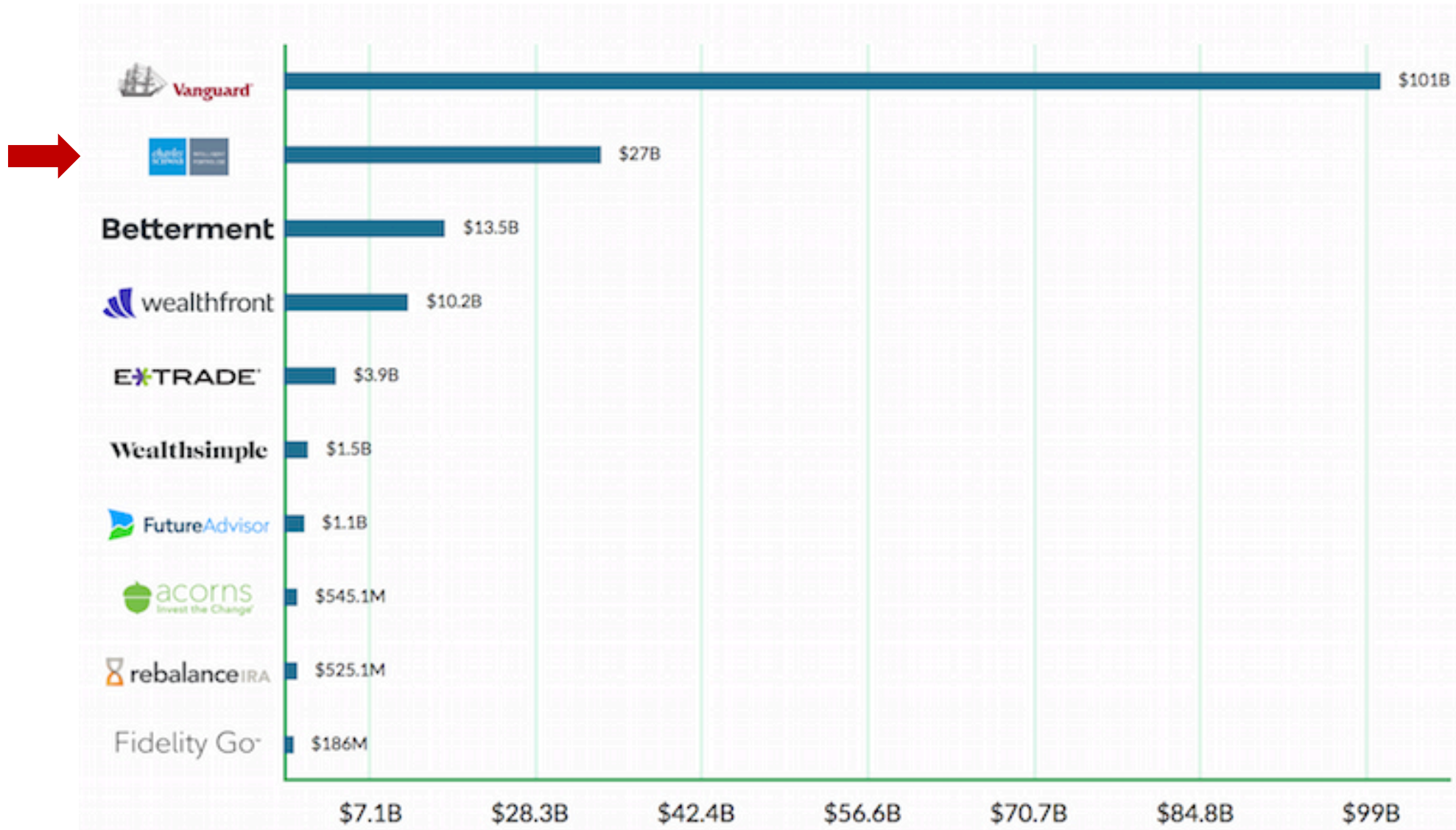
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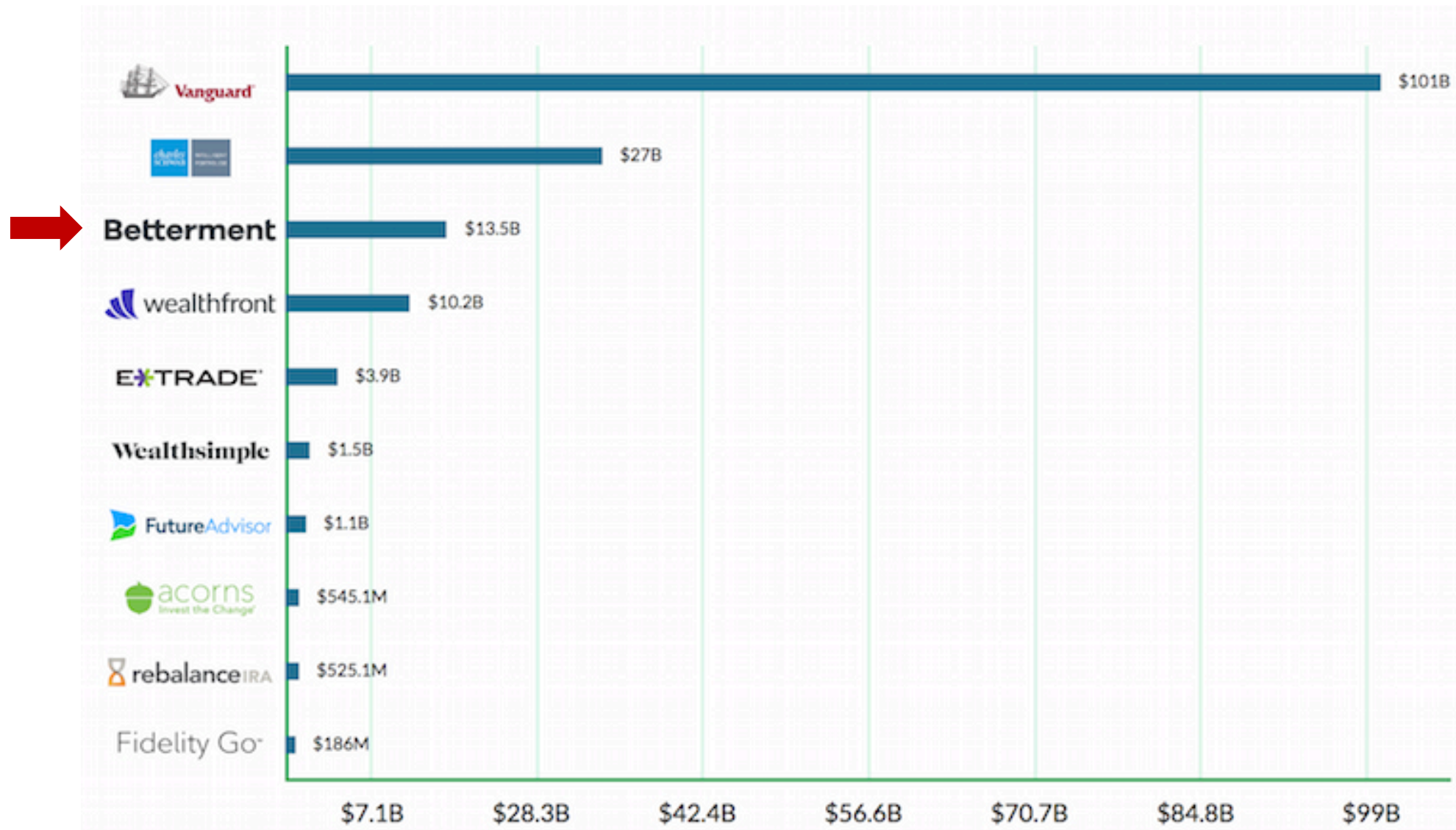
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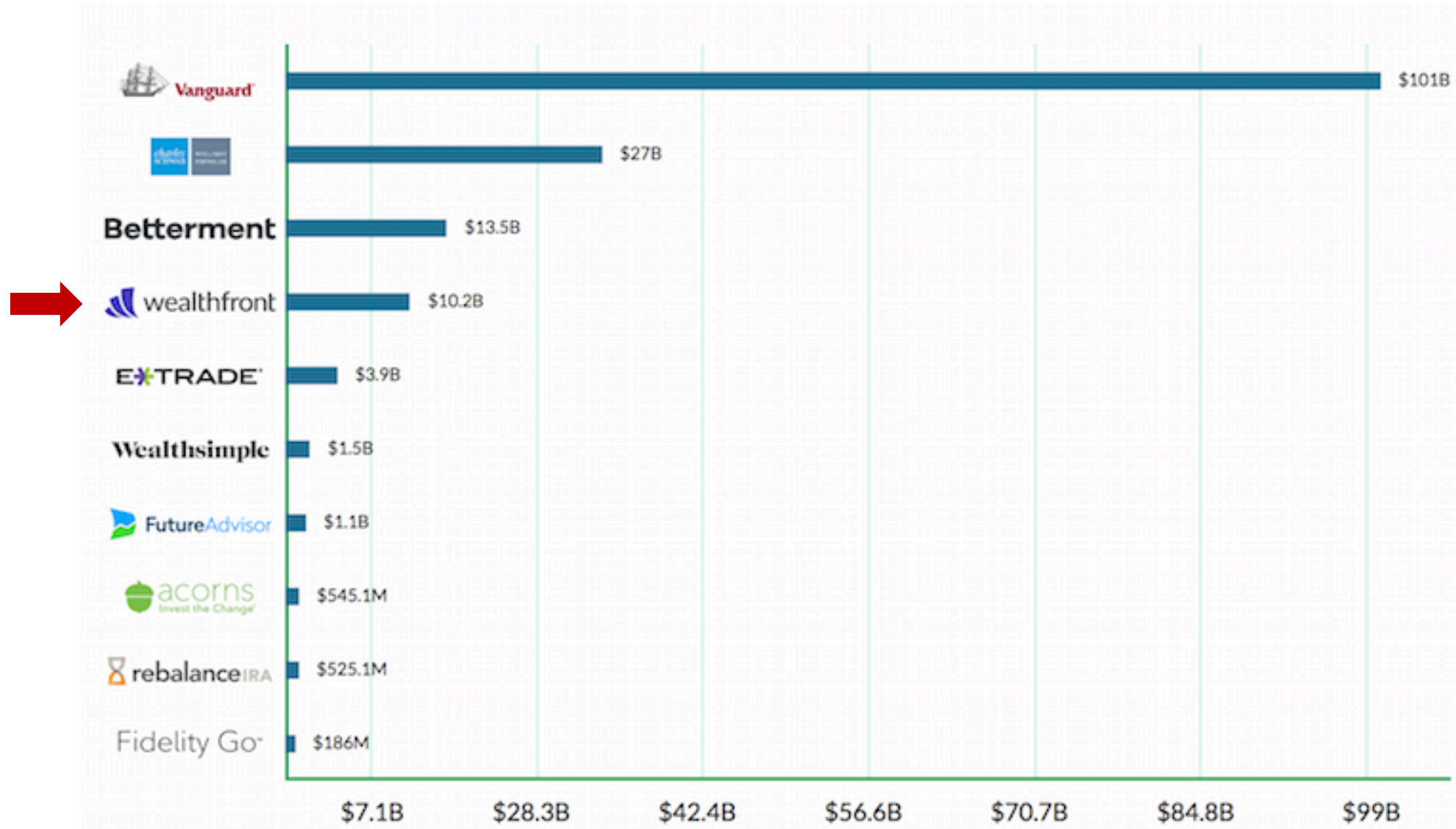
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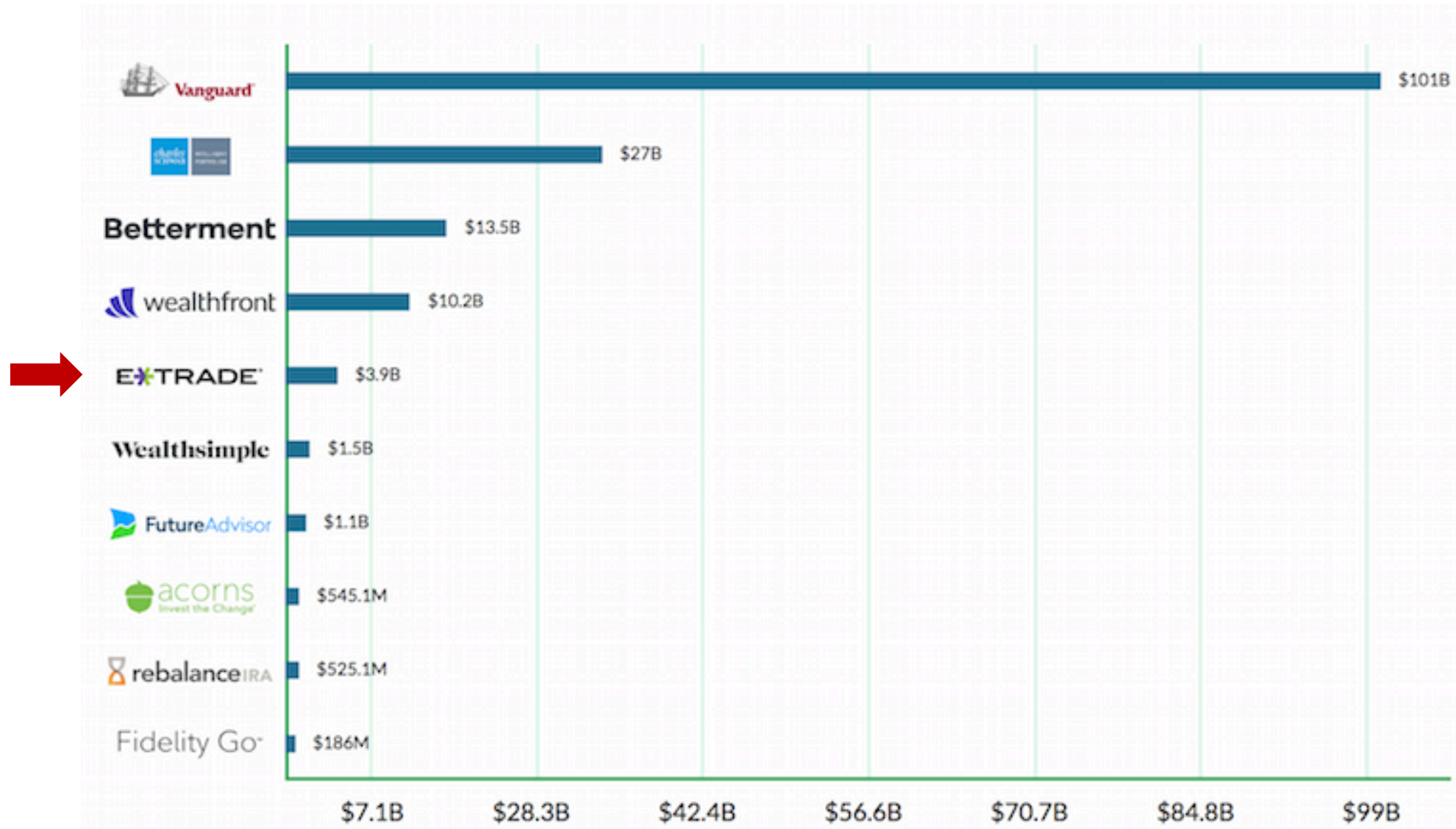
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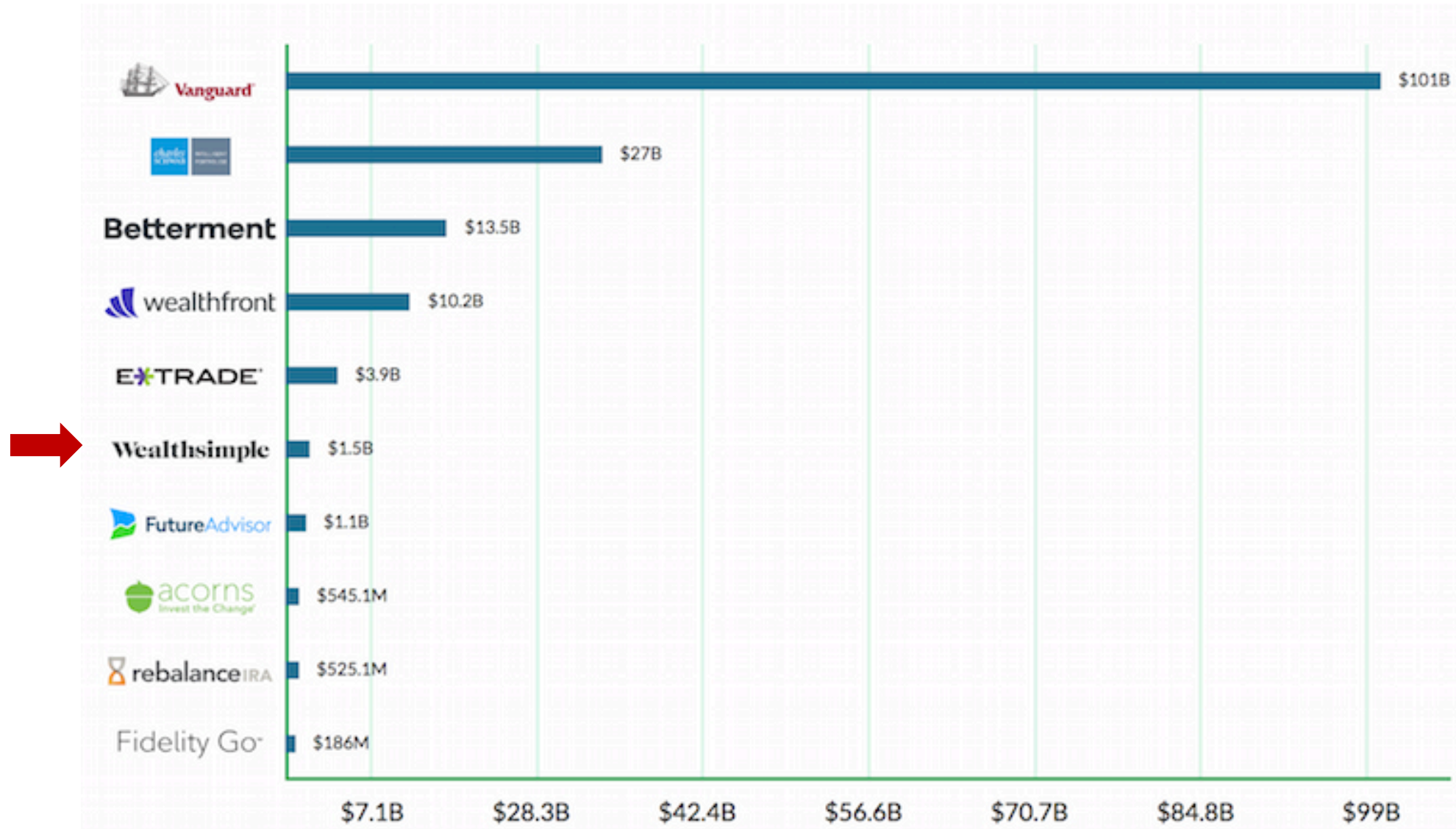
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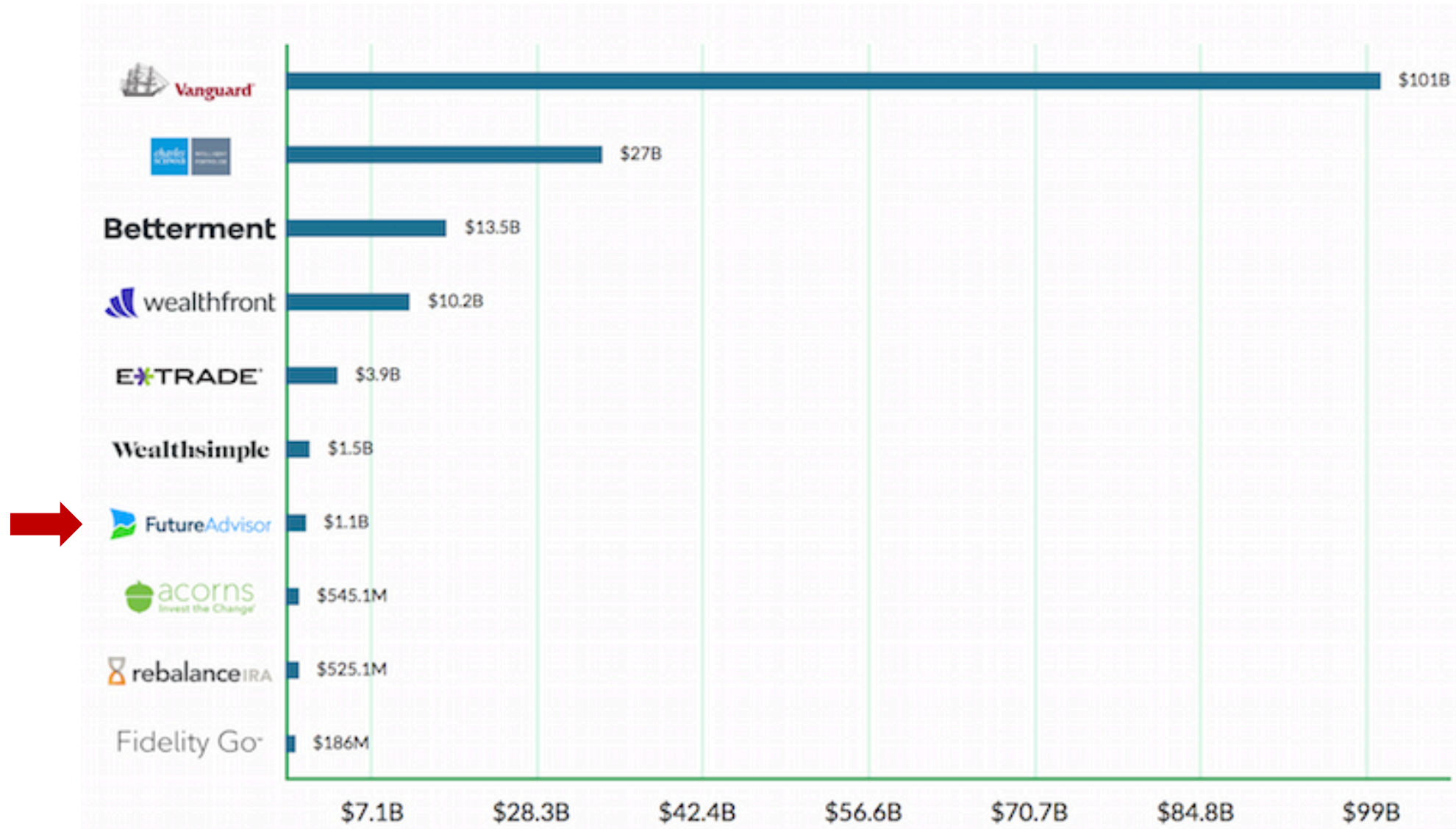
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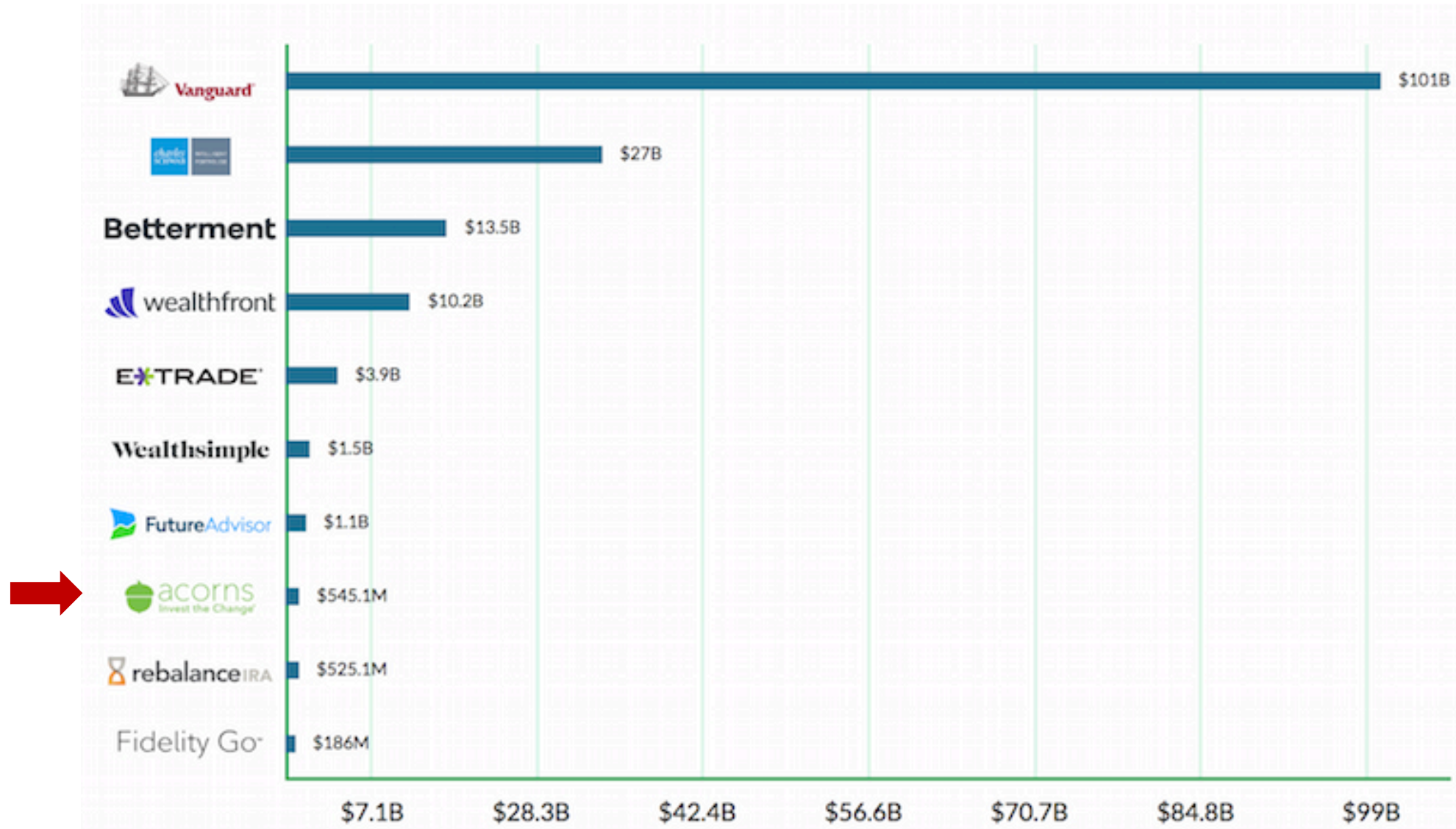
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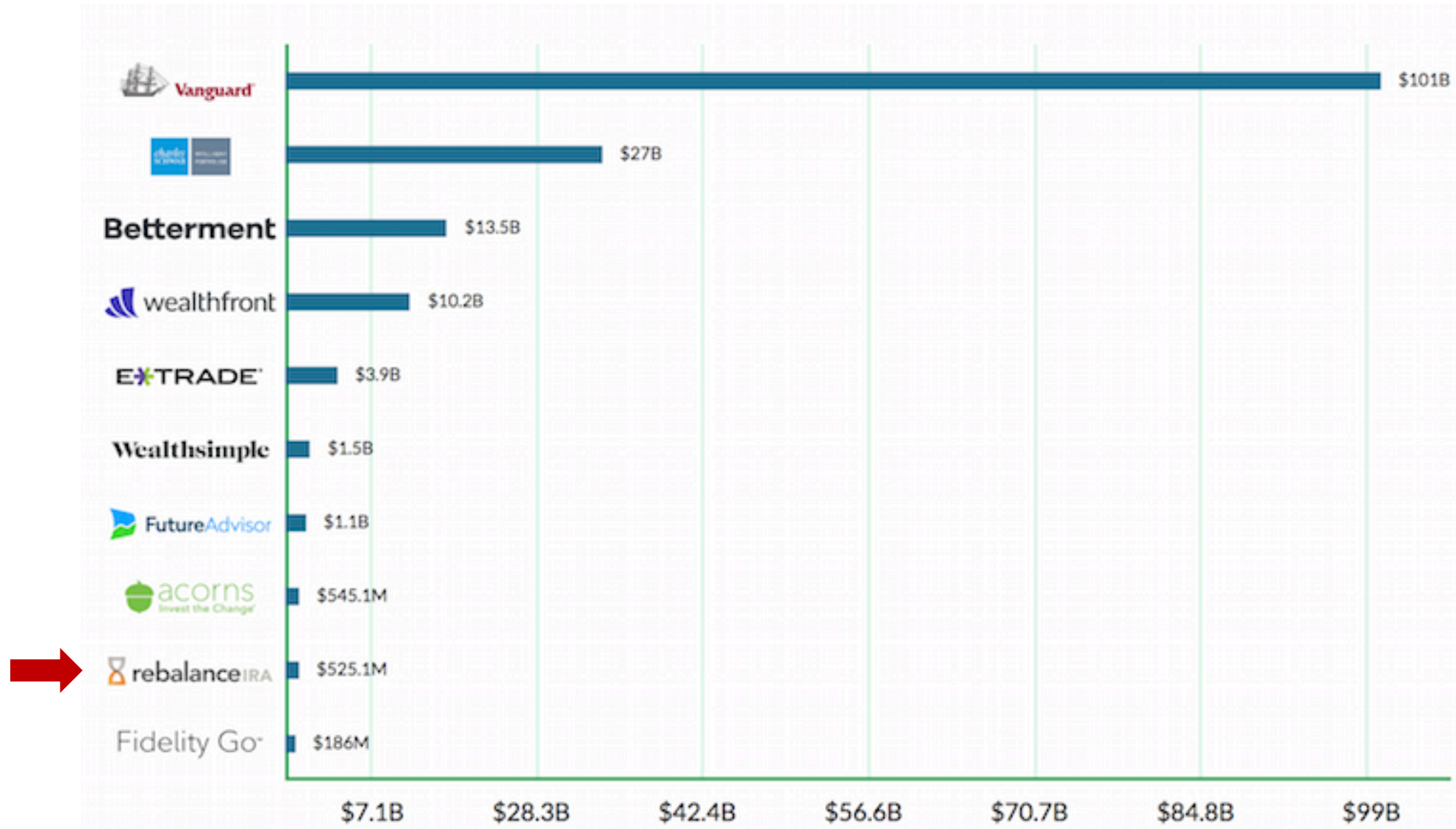
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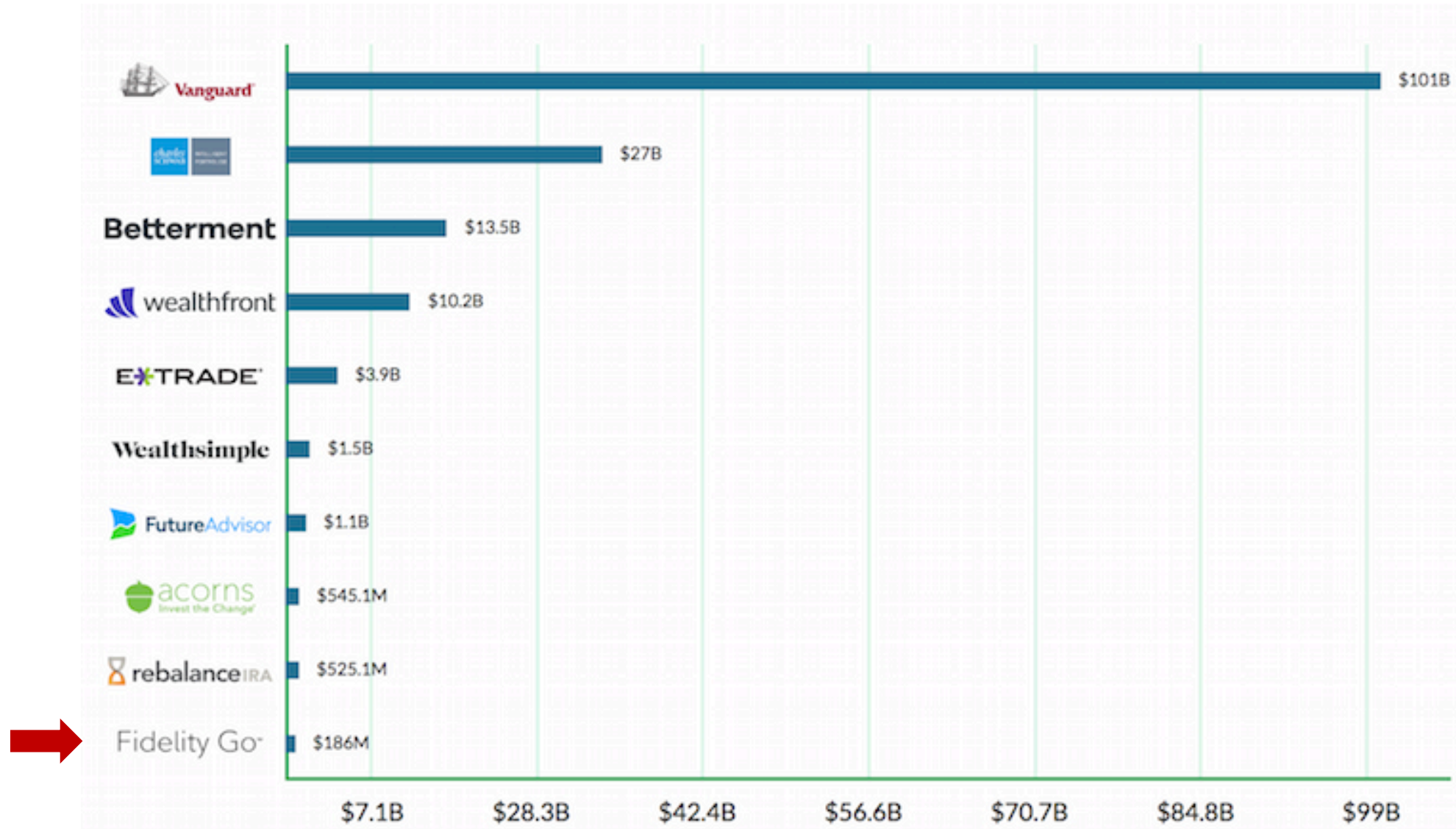
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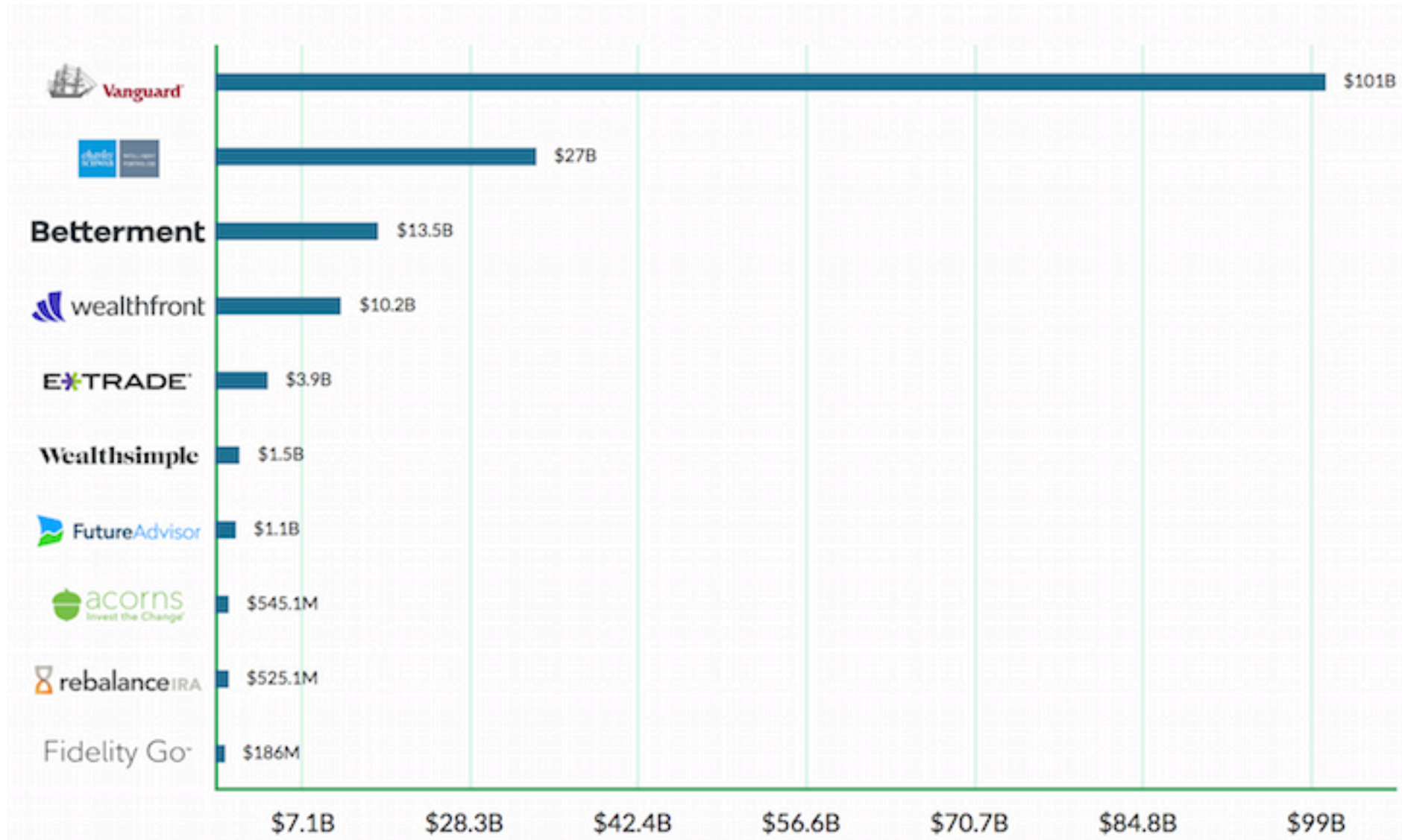
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Funding and Asset Under Management of Robo-Advisors as of December 2018

Robo	Raised to Date (Millions)	Last Funding Amount (Millions)	Last Funding Date	Post-Money Valuation at Last Funding Round (Millions)	AUM (in Millions)	Clients	Source of AUM and Client Figures
Acorns	\$152	\$50	May, 2018	Unknown	\$1,149	2,058,343	Recent ADV
Ally Invest Advisors	N/A	N/A	N/A	Acquired TradeKing for \$294 Million June, 2016	\$126	8,416	Recent ADV
Betterment	\$275	\$70	July, 2017	\$800	\$14,143	361,809	Recent ADV
Ellevest	\$45	\$35	July, 2017	\$83	\$192	15,670	Recent ADV
FutureAdvisor	N/A	N/A	N/A	Acquired by BlackRock for \$152 Million Aug, 2015	\$1,213	8,587	Recent ADV
Personal Capital	\$275	\$40	Aug, 2017	\$540	\$7,912	18,308	Recent ADV
Schwab Intelligent Portfolio Products	N/A	N/A	N/A	N/A	\$33,300	223,000 Accounts (# of clients unavailable)	AUM from Q2 18' Earnings Report; # of Accounts from Q4 17' Earnings Report
SigFig	\$118	\$51	June, 2018	\$471	\$308	5,977	Recent ADV
SoFi Wealth	N/A	N/A	N/A	N/A	\$43	9,163	Recent ADV
TD Ameritrade Selective, Essential, and Personalized Portfolios	N/A	N/A	N/A	N/A	\$19,600	Unknown	Company Reports
T Rowe Price ActivePlus Portfolios	N/A	N/A	N/A	N/A	\$355	Unknown	Company Representative
United Income	\$15	\$10	Aug, 2018	\$65	\$570	509	Recent ADV
Vanguard Personal Advisor Services	N/A	N/A	N/A	N/A	\$112,000	Unknown	News Media/Vanguard Spokesperson
Wealthfront	\$205	\$75	Jan, 2018	\$500	\$11,454	221,142	Recent ADV
Wealthsimple	\$115	\$52	Feb, 2018	Unknown	\$85 (U.S.)	10,596 (U.S.)	Recent ADV
WiseBanyan	N/A	N/A	N/A	Acquired by Axos Financial for undisclosed amount in Oct, 2018	\$153	31,772	Recent ADV

Funding and Asset Under Management of Robo-Advisors as of December 2018



Robo	Raised to Date (Millions)	Last Funding Amount (Millions)	Last Funding Date	Post-Money Valuation at Last Funding Round (Millions)	AUM (in Millions)	Clients	Source of AUM and Client Figures
Acorns	\$152	\$50	May, 2018	Unknown	\$1,149	2,058,343	Recent ADV
Ally Invest Advisors	N/A	N/A	N/A	Acquired TradeKing for \$294 Million June, 2016	\$126	8,416	Recent ADV
Betterment	\$275	\$70	July, 2017	\$800	\$14,143	361,809	Recent ADV
Ellevest	\$45	\$35	July, 2017	\$83	\$192	15,670	Recent ADV
FutureAdvisor	N/A	N/A	N/A	Acquired by BlackRock for \$152 Million Aug, 2015	\$1,213	8,587	Recent ADV
Personal Capital	\$275	\$40	Aug, 2017	\$540	\$7,912	18,308	Recent ADV
Schwab Intelligent Portfolio Products	N/A	N/A	N/A	N/A	\$33,300	223,000 Accounts (# of clients unavailable)	AUM from Q2 18' Earnings Report; # of Accounts from Q4 17' Earnings Report
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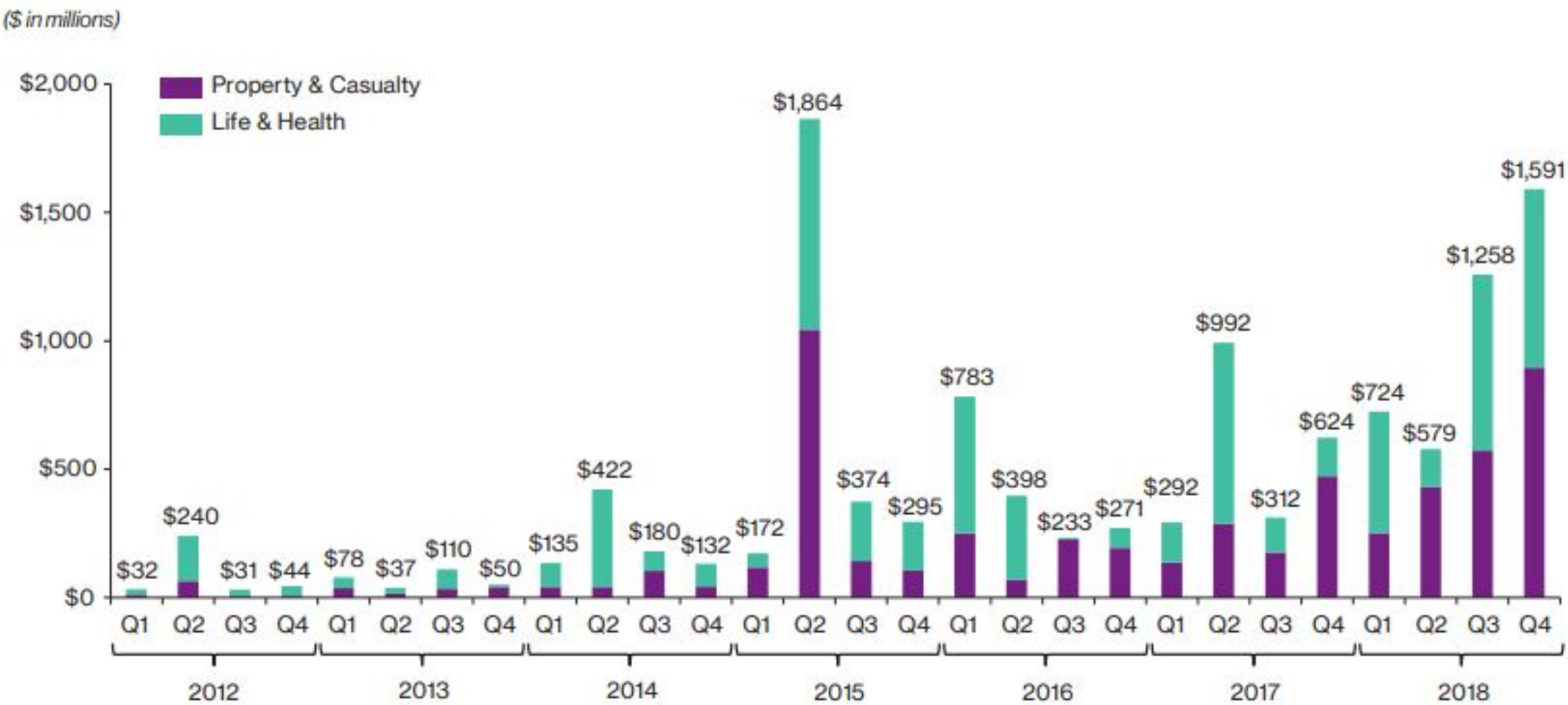
FinTech: Overview, Payments, and Regulation

The Insurtech Market

Professor Christopher Geczy PhD

Size of Insurtech Market

Quarterly InsurTech funding volume – all stages

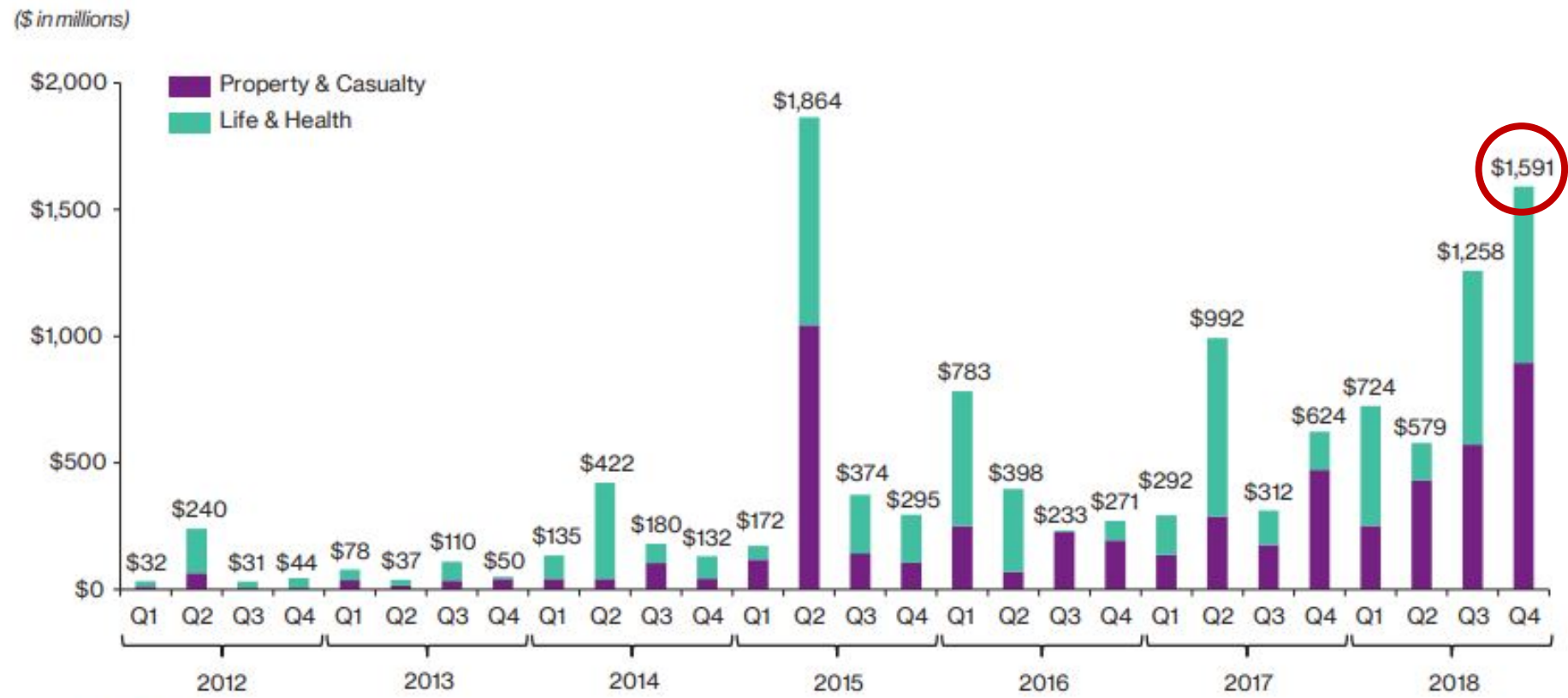


Deal Count

P&C:	5	3	4	4	5	4	12	9	10	7	16	8	16	14	16	20	44	18	33	29	23	33	27	42	43	44	40	41
L&H:	8	6	7	9	15	8	9	4	9	15	14	15	10	19	14	20	15	16	6	13	16	32	21	9	23	27	17	22

Size of Insurtech Market

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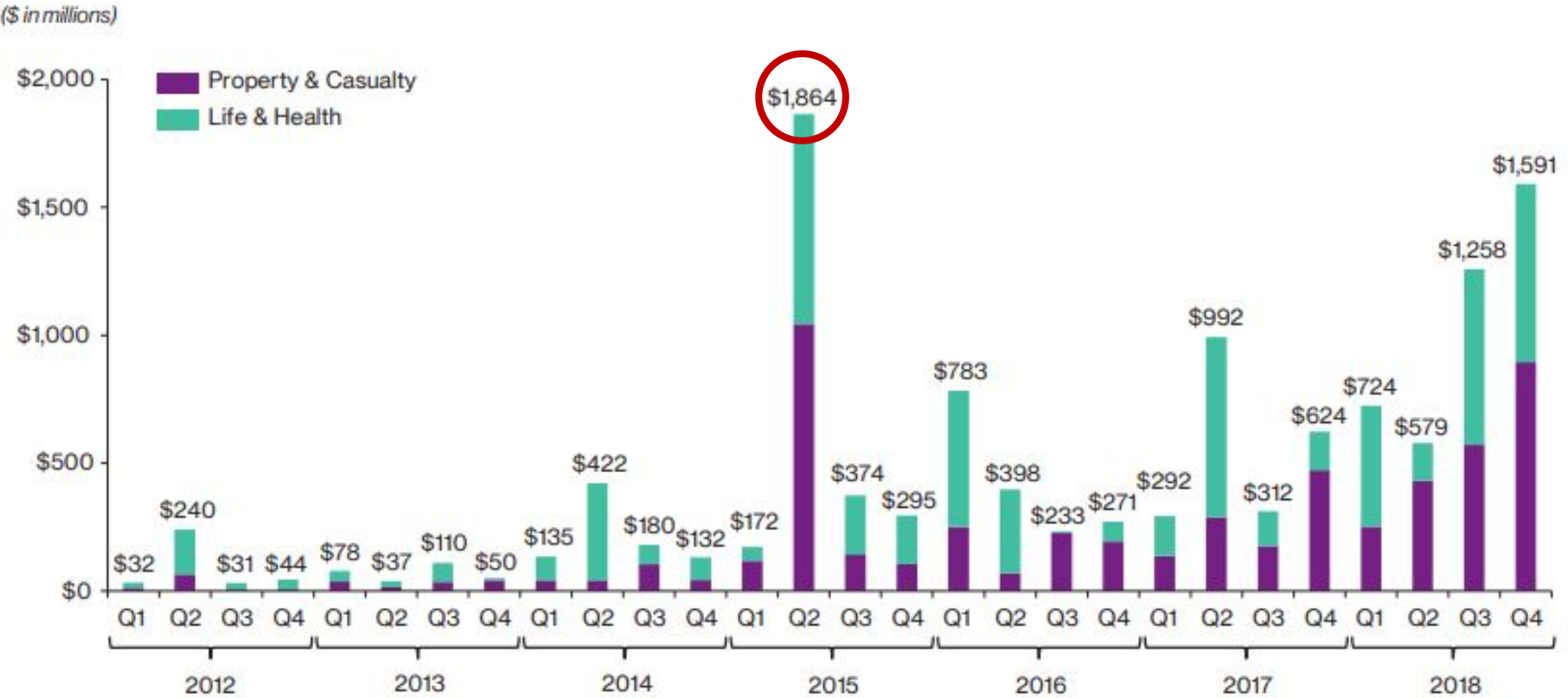


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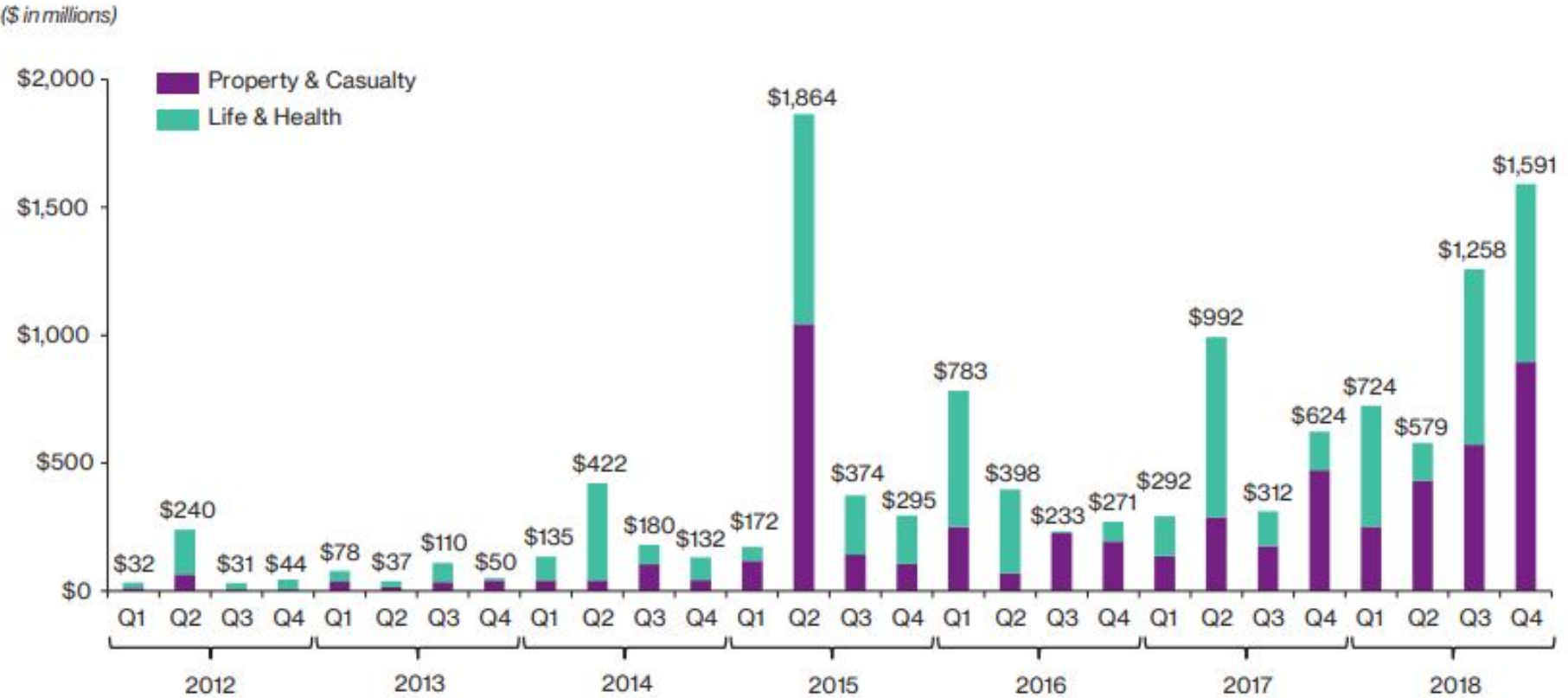


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FinTech: Overview, Payments, and Regulation

The Global Market

Professor Christopher Geczy PhD

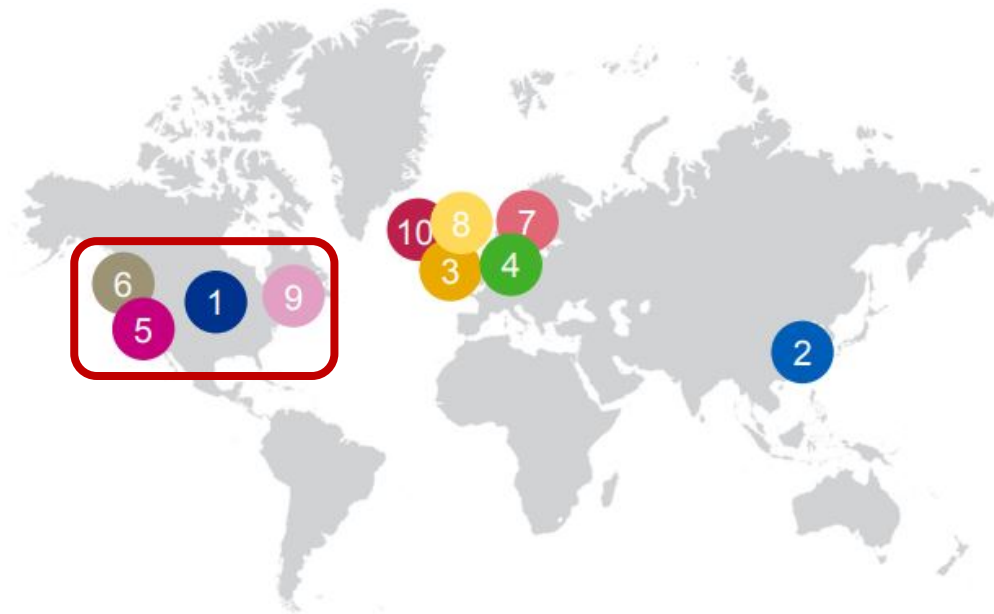
Global Top 10 Fintech Deals in 2018



- | | | | |
|---|--|----|--|
| 1 | Refinitiv — \$17B, Eagan, US
Institutional/B2B
<i>Buyout</i> | 6 | VeriFone — \$3.4B, San Jose, US
Payments/transactions
<i>Buyout</i> |
| 2 | Ant Financial — \$14B, Hangzhou, China
Payments/transactions
<i>Series C</i> | 7 | iZettle — \$2.2B, Stockholm, Sweden
Payments/transactions
<i>M&A</i> |
| 3 | Worldpay — \$12.9B, London, UK
Payments/transactions
<i>M&A</i> | 8 | Fidessa Group — \$2.1B, Woking, UK
Institutional/B2B
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Payments/transactions
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Pulse of Fintech 2018, Global Analysis of Fintech, KPMG International (data provided by PitchBook) February 13, 2019

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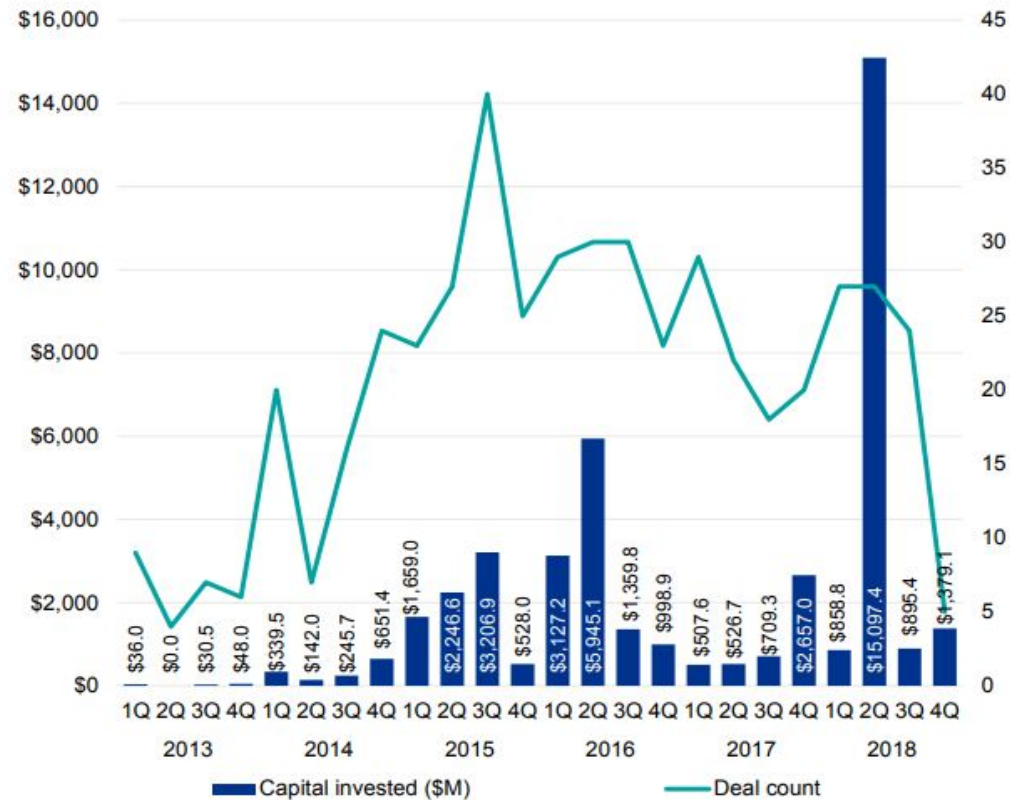
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FinTech: Market Size – China

China FinTech funding was about \$18.2 billion last year (KPMG Pulse of Fintech report, Feb. 13, 2019)

Total investment activity (VC, PE and M&A) in fintech in China
2013–2018



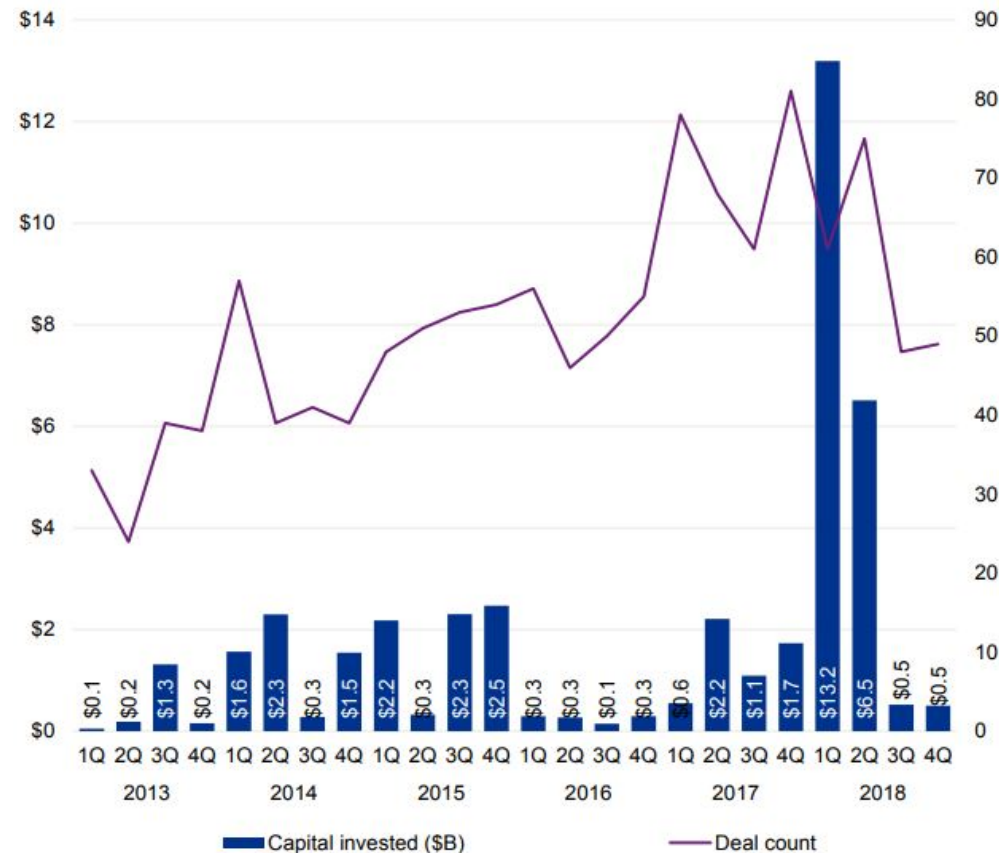
Pulse of Fintech 2018, Global Analysis of Fintech, KPMG International (data provided by PitchBook) February 13, 2019

FinTech: Market Size – United Kingdom

UK FinTech funding was about \$20.7 billion last year (KPMG Pulse of Fintech report, Feb. 13, 2019)

Total investment activity (VC, PE and M&A) in fintech in the United Kingdom

2013–2018

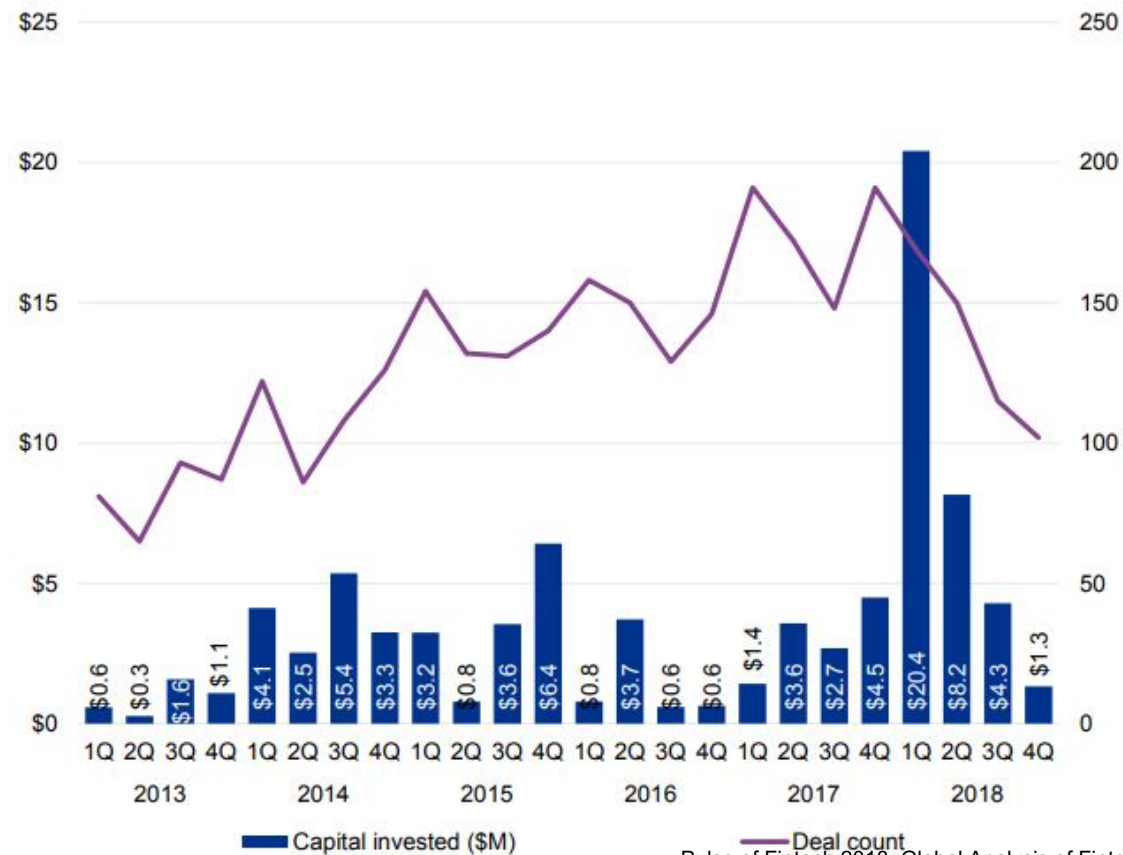


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FinTech: Market Size – Europe

Europe fintech funding was about \$34.2 million last year (KPMG Pulse of Fintech report, Feb. 13, 2019)

Total investment activity (VC, PE and M&A) in fintech in Europe
2013–2018



Pulse of Fintech 2018, Global Analysis of Fintech, KPMG International (data provided by PitchBook) February 13, 2019

Size of Global Real Estate Tech Market

A global market snapshot of venture capital investments in real estate tech.

Total Companies Funded: M-M

- December 2018: 22 (-8.3%)
- November 2018: 24

Largest Amount Raised: Global

- \$30 Million - NeueHouse
- \$25 Million - Juniper Square
- \$13 Million - Zesty.ai

Funding Amount

- December 2018: \$108,438,923 (-96%)
- November 2018: \$3,283,446,028

Median Funding Amount

- December 2018: \$3,188,124 (+121%)
- November 2018: \$1,443,876

Size of Global Real Estate Tech Market

Company	Location	Funding Amount (USD)
NeueHouse	New York, New York, United States	\$30,000,000.00
Juniper Square	San Francisco, California, United States	\$25,000,000.00
Zesty.ai	Oakland, California, United States	\$13,000,000.00
WhyHotel	Washington, District of Columbia, United States	\$10,000,000.00
Dazhu	Pingxiang, Hebei, China	\$7,260,000.00
Facilio	Atlanta, Georgia, United States	\$6,400,000.00
Home Hero	Herzliya, Tel Aviv, Israel	\$4,000,000.00
BuildSupply	Gurgaon, Haryana, India	\$3,538,370.00
Residently	London, England, United Kingdom	\$3,188,124.00
Wealth Migrate	Atlanta, Georgia, United States	\$1,531,731.00



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