



FinTech

What is True Financial Innovation?

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FinTech

- ▶ Financial services (such as payments, lending, and asset management) provided through modern technology
- ▶ Consumers can access data and information almost anywhere and everywhere
- ▶ Can adjust their investment portfolio or deposit a check while waiting for their Uber ride

Digital Banking

- ▶ Experience management
- ▶ Examples:
 - ▶ Mobile banking
 - ▶ Voice banking
 - ▶ Location services
 - ▶ Advanced authentication
 - ▶ Apple Pay integration

Bank Stock Performance – One Year



Small biz payment processing

- ▶ Farm stands in the middle of nowhere can accept credit and debit cards
 - ▶ Venmo and Square
- ▶ Bring as many people as possible into the ecosystem
 - ▶ Information vs. Short-term profitability
- ▶ Banks' response
 - ▶ Zelle

Payment Processing Stock Performance – One Year



Cryptocurrency

- ▶ Decentralized digital currency which uses encryption
- ▶ 'Bitcoin' is the first and one of the most prominent cryptocurrencies
 - ▶ Importance of Mining
 - ▶ 17.2 million on the way to the 21 million cap
- ▶ However, a currency is:
 - ▶ Medium of exchange
 - ▶ Unit of account
 - ▶ Store of value

Currency Performance – One Year



Blockchain

- ▶ A form of distributed ledger technology (DLT)
- ▶ The original blockchain network was created by bitcoin-founder Nakamoto to serve as the public ledger for all bitcoin transactions.
- ▶ The most recent transactions are recorded and added in chronological order; market participants keep track of transactions without central recordkeeping.

Crowdfunding

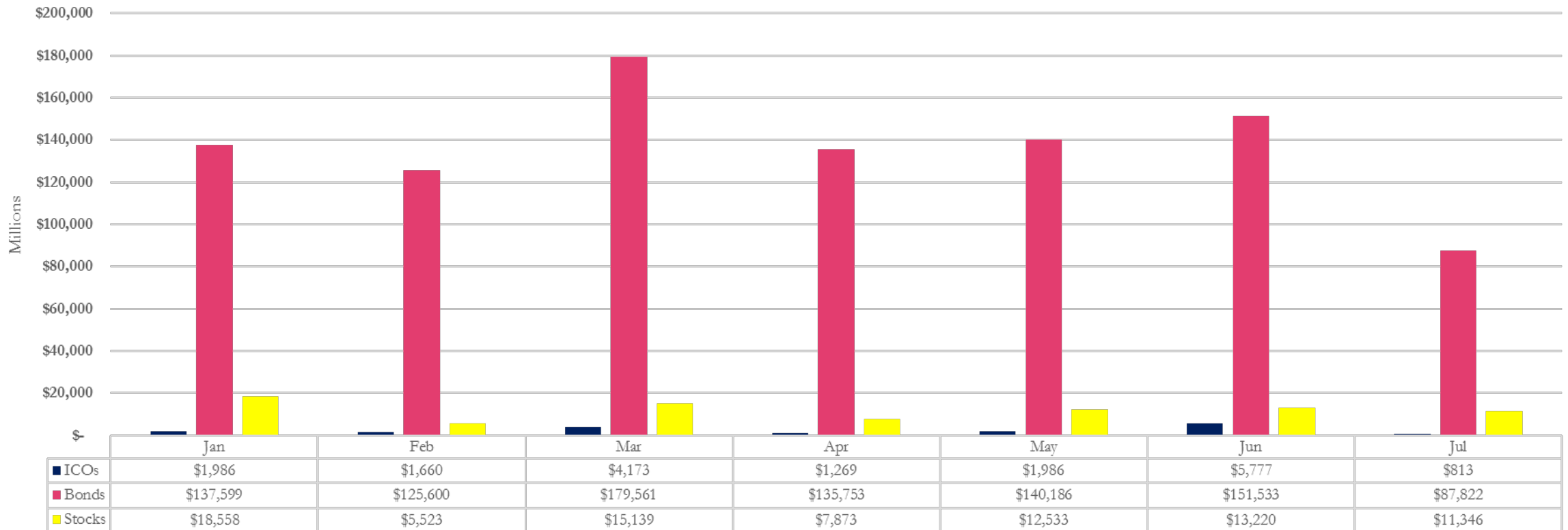
- ▶ Non-institutional financing
- ▶ Usually there is a financing goal defined by funding volume and time to reach this goal for every campaign.
- ▶ The only prerequisite is a valid payment account.
- ▶ Well-known platforms for these reward-based Crowdfunding campaigns are Kickstarter and Indiegogo.

Initial coin offering (ICO)

- ▶ Crowdfunding measure for start-ups.
- ▶ It involves the selling of a start-up's cryptocurrency units in return for cash.
- ▶ ICOs differ from IPOs in that they deal with a project rather than firm ownership

Initial coin offering (ICO)

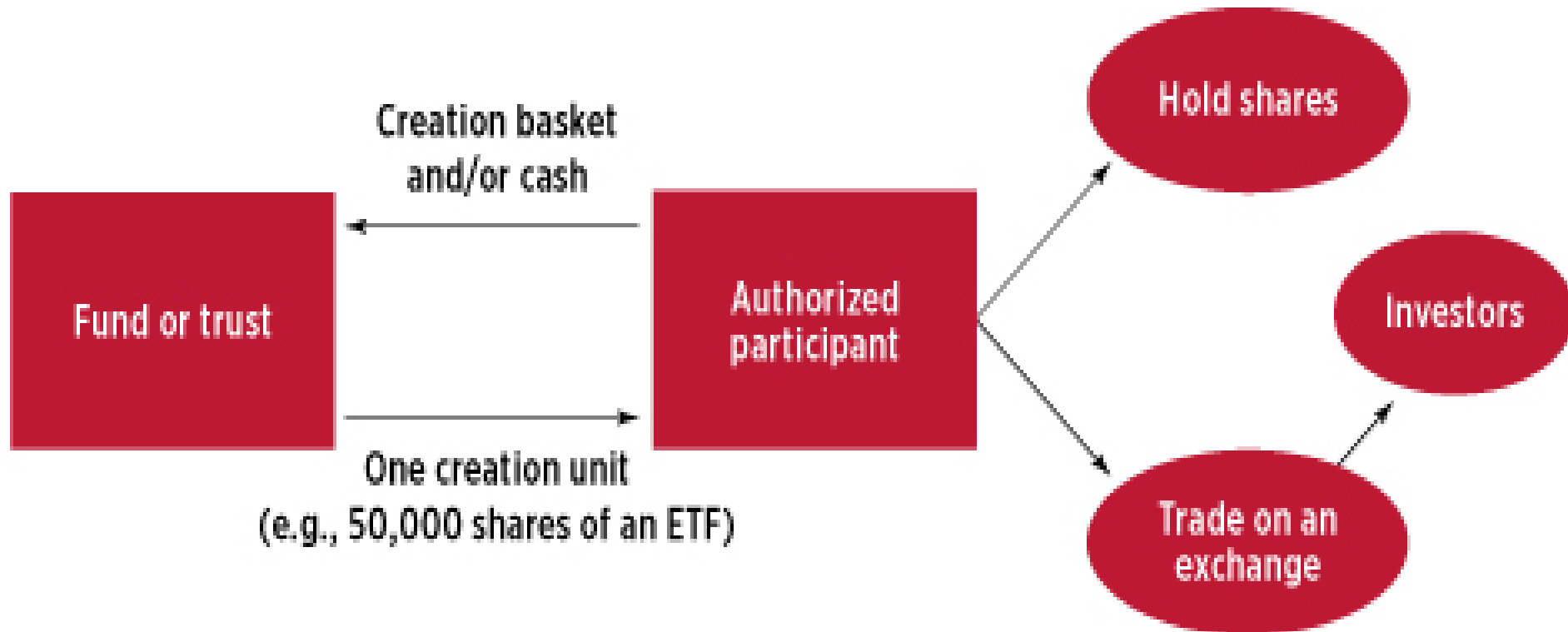
New Security Issues - 2018



Robo-Advisors

- ▶ Computer-driven asset allocation investment platforms.
- ▶ Main benefits are low cost and automatic rebalancing (with size qualifications)
- ▶ Possible issue are assumptions used in portfolio-construction and investment offerings

Exchange-traded funds (ETFs)



Exchange-traded funds (ETFs)

- ▶ Tax-Friendly Investing
- ▶ No Investment Minimums
- ▶ Lower Cost Alternative
- ▶ More Trading Control
- ▶ Type of Robo-advising

Exchange-traded funds (ETFs)

- ▶ At year-end 2017, there were 1,569 index-based ETFs with \$3.3 trillion in total net assets and 194 actively managed ETFs with \$45 billion in assets.
- ▶ Open-ended mutual funds approximately \$16 trillion AUM at the end of 2017, with 27% index funds.
- ▶ Largest asset classes:
 - ▶ **US Large-cap** \$1.0 trillion
 - ▶ **Bonds** \$0.6 trillion
 - ▶ **EAFE** \$0.5 trillion
 - ▶ **EM** \$0.2 trillion

Top Ten ETFs in the US

- ▶ **SPY** (S&P 500, State Street) \$268 billion
 - ▶ AAPL, MSFT, AMZN, FB, and GOOG 16% of fund
- ▶ **IVV** (S&P 500, BlackRock) \$163 billion
 - ▶ Cheaper than SPY (0.04% vs. 0.10% expense ratio)
- ▶ **VTI** (US Total Mkt.) \$104 billion
- ▶ **VOO** (S&P 500, Vanguard) \$102 billion

Top Ten ETFs in the US

- ▶ **QQQ** (Nasdaq 100) \$72 billion
 - ▶ AAPL, MSFT, AMZN, FB, and GOOG 50% of fund
 - ▶ 0.20% expense ratio
- ▶ **EFA** (EAFE, iShares) \$69 billion
 - ▶ Banks 12%
 - ▶ Japan, UK, France, and Germany 60%
 - ▶ 0.32% expense ratio
- ▶ **VEA** (FTSE ex-US) \$68 billion
 - ▶ Canada (8%)

Top Ten ETFs in the US

- ▶ **VWO** (FTSE EM) \$58 billion
 - ▶ Banks 15%
 - ▶ China, Taiwan, and India over 50%
 - ▶ 0.14% expense ratio
- ▶ **IEFA** (EAFE, iShares) \$57 billion
 - ▶ 2,500 stocks vs. 930 for EFA
 - ▶ 0.08% expense ratio
- ▶ **IJH** (S&P MidCap 400) \$50 billion
 - ▶ REITS and Banks 16%
 - ▶ 0.07% expense ratio

Top Ten ETFs in the US (2017-2018)

Security	SPY	IVV	VTI	VOO	QQQ	EFA	VEA	VWO	IEFA	IJH
SPY	1.000									
IVV	0.993	1.000								
VTI	0.990	0.992	1.000							
VOO	0.993	0.993	0.990	1.000						
QQQ	0.911	0.911	0.911	0.913	1.000					
EFA	0.806	0.804	0.790	0.798	0.694	1.000				
VEA	0.829	0.824	0.819	0.824	0.728	0.964	1.000			
VWO	0.750	0.755	0.748	0.752	0.718	0.791	0.835	1.000		
IEFA	0.807	0.806	0.790	0.800	0.700	0.995	0.969	0.800	1.000	
IJH	0.905	0.913	0.934	0.908	0.789	0.730	0.752	0.679	0.728	1.000

Correlations, another look

Security	SPY	LQD	TLT	DBC	IYR
SPY	1.000				
LQD	0.096	1.000			
TLT	-0.198	0.824	1.000		
DBC	0.343	0.062	-0.065	1.000	
IYR	0.533	0.376	0.264	0.091	1.000

Correlations, 2008-2009

Security	SPY	LQD	TLT	DBC	IYR
SPY	1.000				
LQD	0.291	1.000			
TLT	-0.352	0.316	1.000		
DBC	0.615	0.195	-0.364	1.000	
IYR	0.822	0.096	-0.311	0.479	1.000

What FinTech innovations will stay?

- ▶ Lower cost
- ▶ Improve customer experience
- ▶ Better risk management
- ▶ Access to products not available elsewhere