Deutsche Bank Research



Rating Buy

Asia China

Banking / Finance

Other Financial Services

Company Noah Holdings

Reuters Bloomberg NOAH.N NOAH US Exchange Ticker NYS NOAH

Date

Price at 10 Sep 2018 (USD)	40.19
Price target - 12mth (USD)	55.10
52-week range (USD)	67.61 - 27.54
S & P 500	2,877

Initiation of Coverage

Edward Du Hans Fan, CFA

12 September 2018

Research Associate Research Analyst (+852) 2203 6185 (+852) 2203 6353 edward.du@db.com hans.fan@db.com

Jacky Zuo, CFA

Research Analyst (+852) 2203 6255 jacky.zuo@db.com

Price/price relative



Performance (%)	1m	3m	12m
Absolute	-6.6	-38.3	49.3
S & P 500	1.5	3.5	16.9
Source: Deutsche Bank			

Steering a unique WM cruise; initiating with Buy

Most-compliant wealth manager rides the LT household wealth growth trend

We initiate coverage of Noah Holdings with a Buy rating and a target price of US\$55.1 (37% upside potential). We are positive over the trajectory of China's household (HH) wealth growth and Noah is well positioned for this long-term uptrend. In the meantime, we believe it will win market share from peers, underpinned by a strong sales force, comprehensive product solutions, and solid connections with clients and product providers. We view the company as the major winner of tighter scrutiny of China's asset management industry. We expect stronger-than-global-peers earnings growth (20% CAGR in 2018-20E vs. 8% average).

Key points supporting our Buy rating

- Well positioned for growing domestic retail wealth: We expect a domestic household financial asset CAGR of 11% in 2018-2020E; besides, we see changes in the household asset mix as leaving ample room for wealth management fees to grow (cash to financial assets). Net-net, organic growth of the wealth management market is likely to lead to low-to-mid teen growth p.a. in 2018-2020E. Furthermore, Noah's target client pool of high-net-worth clients could show faster investable asset growth (i.e. +25% CAGR in the past 10 years) than the general public (+20% CAGR).
- Top beneficiary of retail wealth expansion and share gainer: Noah is the leading independent financial advisor with a high-quality franchise. It's solid connections with leading PE/VC establish a niche point to provide comprehensive investment solutions. Notably, we estimate that every 1% market share that Noah wins from peers boosts its revenue by c.65%.
- Outshining peers amid tightening regulation: History speaks for itself: Noah is one of the most compliant wealth managers in the China market. We believe it attracts more liquidity from other subsectors in the asset management industry.
- Attractive valuation; good entry point: The share price has corrected 41% from the peak, dragged by tightening liquidity and the US-China trade war. Post the PBOC supplementary notice/ WMP guidelines released in late-July, we believe that the most severe stress period is over. Considering above-peers earnings growth, Noah's current valuation is attractive for participation in the ample growth of China's household wealth.

Valuation and key risks

- Valuation: the stock is trading at 14.3x 2019E P/E and 2.6x P/B with 18% RoE. Our valuation is based on 1.0x PEG (20% CAGR in 2018-2020E/19.6x 2019E P/E) which we believe is justified, given its leading position in IFA industry and secular earnings growth. This compares to global peers' 1.5-1.8x PEG (5-13% CAGR/7.8x-15.6x 2019E P/E).
- Key risks: unexpected tightening regulations, rising competition, operational risks, compliance risks, failure to meet clients' changing needs.

Deutsche Bank AG/Hong Kong

Distributed on: 11/09/2018 21:15:00 GMT

Deutsche Bank does and seeks to do business with companies covered in its research reports. Thus, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. DISCLOSURES AND ANALYST CERTIFICATIONS ARE LOCATED IN APPENDIX 1. MCI (P) 091/04/2018.



Model updated:11 September 2018
Running the numbers
Asia
China
Other Financial Services

Noah Holdings

Reuters: NOAH.N	Bloomberg: NOAH US
Buy	
Price (10 Sep 18)	USD 40.19
Target Price	USD 55.10
52 Week range	USD 27.54 - 67.61
Market Cap (m)	EURm 1,963

Company Profile

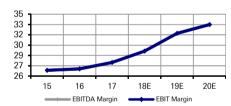
Noah Holdings Limited (NYSE: NOAH) is a leading wealth and asset management service provider in China that focuses on global investment and asset allocation services for high net worth individuals and enterprises. In 2017, Noah distributed RMB117.4bn (USD18.0 bn) of financial products. Through Gopher Asset Management, Noah had assets under management of RMB148.3 bn (USD22.8bn) as of end-2017.

USDm 2,296

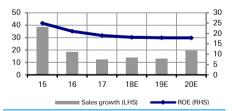
Price Performance



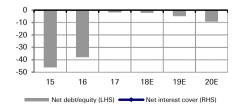
Margin Trends



Growth & Profitability



Solvency



Edward Du +852 2203 6185

edward.du@db.com

Fiscal year end 31-Dec	2015	2016	2017	2018E	2019E	2020E
Financial Summary						
DB EPS (CNY)	20.02	24.07	28.57	32.78	38.90	46.86
Reported EPS (CNY)	17.77	21.43	26.14	31.25	37.85	44.19
DPS (CNY)	0.00	0.00	0.00	0.00	0.00	0.00
BVPS (CNY)	87.2	130.1	156.6	190.1	229.9	277.7
Weighted average shares (m)	28	28	28	29	29	29
Average market cap (CNYm) Enterprise value (CNYm)	9,323 7,356	9,279 7,093	11,784 10,650	15,745 14,509	15,745 14,265	15,745 13,774
	7,000	7,000	.0,000	,000	,200	10,77
Valuation Metrics P/E (DB) (x)	16.6	13.7	14.6	16.8	14.2	11.8
P/E (Reported) (x)	18.7	15.4	15.9	17.6	14.6	12.5
P/BV (x)	4.03	2.24	3.99	2.90	2.40	1.99
FCF Yield (%)	5.8	6.3	4.0	4.7	6.2	7.9
Dividend Yield (%)	0.0	0.0	0.0	0.0	0.0	0.0
EV/Sales (x)	3.5	2.8	3.8	4.5	3.9	3.2
EV/EBITDA (x) EV/EBIT (x)	13.2 13.2	10.6 10.6	13.7 13.7	15.5 15.5	12.3 12.3	9.6 9.6
	10.2	10.0	10.7	10.0	12.0	0.0
Income Statement (CNYm)						
Sales revenue	2,120	2,514	2,827	3,220	3,643	4,354
Gross profit EBITDA	955 559	1,213 667	1,420 777	3,220 938	3,643 1,155	4,354 1,436
Depreciation	0	0	0	0	0	0
Amortisation	0	0	0	0	0	0
EBIT	559	667	777	938	1,155	1,436
Net interest income(expense) Associates/affiliates	24 0	20 0	21 0	21 0	32 0	43 0
Exceptionals/extraordinaries	0	0	0	0	0	0
Other pre-tax income/(expense)	52	46	71	71	78	85
Profit before tax	635	734	869	1,030	1,265	1,565
Income tax expense Minorities	109 -10	136 -41	106 -14	143 -7	197 -11	265 -16
Other post-tax income/(expense)	0	5	-6	0	0	0
Net profit	536	644	770	894	1,079	1,316
DB adjustments (including dilution)	68	79	94	107	121	144
DB Net profit	603	723	864	1,001	1,200	1,460
Cash Flow (CNYm)						
Cash flow from operations	675	686	630	822	1,070	1,367
Net Capex	-136	-101	-153	-75	-87	-101
Free cash flow Equity raised/(bought back)	539 -40	585 -8	477 -12	747 0	984 0	1,266 0
Dividends paid	0	0	0	0	0	0
Net inc/(dec) in borrowings	0	0	0	0	0	0
Other investing/financing cash flows	-116	273	-1,542	-798	-814	-759
Net cash flow Change in working capital	383 <i>0</i>	850 <i>0</i>	-1,077 <i>0</i>	-51 <i>0</i>	170 <i>0</i>	507 <i>0</i>
		-	-	-	-	
Balance Sheet (CNYm)	0.100	0.000	1.007	1.055	0.005	0.500
Cash and other liquid assets Tangible fixed assets	2,133 196	2,983 243	1,907 303	1,855 379	2,025 465	2,533 566
Goodwill/intangible assets	0	0	0	0	0	0
Associates/investments	886	838	1,129	1,194	1,224	1,273
Other assets	881	1,892	3,156	3,980	4,849	5,716
Total assets Interest bearing debt	4,097 967	5,956 1,576	6,495 1,823	7,408 1,742	8,563 1,709	10,088 1,791
Other liabilities	596	659	164	164	164	164
Total liabilities	1,563	2,235	1,987	1,906	1,872	1,954
Shareholders' equity	2,449	3,663	4,429	5,430	6,630	8,090
Minorities Total shareholders' equity	85 2,534	59 3,722	78 4,508	71 5,502	60 6,691	44 8,134
Net debt	-1,166	-1,407	-83	-113	-317	-742
Key Company Metrics						
Sales growth (%)	38.7	18.6	12.5	13.9	13.1	19.5
DB EPS growth (%)	17.9	20.2	18.7	14.7	18.7	20.5
EBITDA Margin (%)	26.4	26.5	27.5	29.1	31.7	33.0
EBIT Margin (%)	26.4	26.5	27.5	29.1	31.7	33.0
Payout ratio (%) ROE (%)	0.0 24.9	0.0 21.1	0.0 19.0	0.0 18.1	0.0 17.9	0.0 17.9
Capex/sales (%)	6.4	4.0	5.4	2.3	2.4	2.3
Capex/depreciation (x)	nm	nm	nm	nm	nm	nm
Net debt/equity (%)	-46.0	-37.8	-1.9	-2.1	-4.7	-9.1
Net interest cover (x)	nm	nm	nm	nm	nm	nm
Source: Company data, Deutsche Bank estir	nates					



Investment thesis

Well positioned for growing domestic retail wealth; total addressable market expanding rapidly

Noah is the leading independent wealth and asset management service provider in China which focuses on global investment and asset allocation solutions for high-net-worth investors. With c.1,500 relationship managers and an extensive distribution network covering 81 cities, Noah is well positioned to capture the opportunities provided by growing household wealth in the domestic market.

We initiate coverage of Noah with a Buy rating and a target price of US\$55.1, by adopting 1.0x 2018-2020E PE/G or implying 19.6x 2019E PE. Noah has continued to deliver strong growth in recent years, posting a five-year earnings CAGR of 26% in 2013-17 despite fluctuations in the macro environment and volatile capital markets. While our economist expects Chinese macroeconomic growth to slow down marginally, we believe this will not hinder Noah's growth momentum as it strives to strengthen its global presence, diversifying product offerings and enhancing operational efficiency.

Growth opportunities intact, underpinned by retail wealth expansion

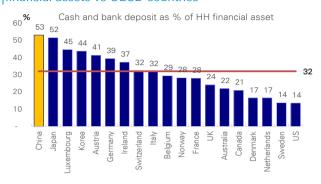
- Households' financial assets have outgrown total assets with a CAGR of 18% in the past 10 years, reaching Rmb144trn by end-2017, and we expect 2018-2020E financial asset CAGR at 11%.
- Cash, deposits and WMPs represent 66% of household financial assets, vs. 32% in OECD countries, leaving ample room for wealth managers to penetrate, in our view.
- Total investable assets held by high-net-worth individuals (Noah's target clients) have grown even faster at 25% over the past decade, compared with a 20% CAGR of total HH investable assets. And we expect this trend to sustain going forward.



Figure 1: We expect household financial assets posting a CAGR of 14% in 2010-2020E



Figure 2: China's HH cash and deposits as a % of financial assets vs OECD countries



Source: Deutsche Bank, CMB, Bain & Company, Wind

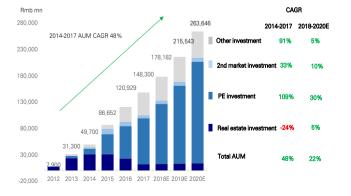
Noah – Top beneficiary of retail wealth expansion; winning share from peers

- Strong sales force and high-quality coverage: We see Noah's sales force as stronger than major peers, i.e., its average transaction amount per active client is twice that of key competitors. Meanwhile, Noah currently accounts for only 10-15% of its clients' wallet share; hence, we think it still has ample room to gain market share from banks' private banking and other asset management subsectors.
- Relying on solid connections with leading PE/VCs, Noah provides several channels/alternatives to high-net-worth clients to invest in leading PE/VCs, which its peers might be unable to compete with. We believe this niche advantage helps it attract investors with diversified asset allocation needs or aiming for alternative risk/reward investments.
- Small market share implies ample earnings growth potential: We calculate that Noah's revenue in 2017 accounted for only a 0.8% share of the total WM market, and that every 1% share gain would lift Noah's group revenue by 65%.

Figure 3: 65% revenue growth for each 1% share gain

Rmb mn	
Banks' total wealth mgmt and agency fee	313,633
Assume 85% market share from banks	85%
Total market size of WM fees	368,980
HNW market share	50%
HNW WM fee income	184,490
Noah's total revenue	2,846
Noah's market share in HNW WM fee market	1.5%
Noah's market share in WM fee market	0.8%
Noah's total revenue	2,846
1% gaining in HNW market	1,845
Contribution to Noah's group revenue	65%





Source: Deutsche Bank, Company data

Outshining peers amid tightening regulation

 Noah's products are all privately raised and compliant with newlyreleased asset management guidelines.

Source: Deutsche Bank, Company data



- We believe the main purpose of AM guidelines and WMP guidelines is to lower financial system risk, especially in banks' WMPs; however, privately raised funds are less impacted.
- Banking WMPs ought to be less attractive post the release of the asset management guidelines. Thus, we expect part of the money to shift to privately raised funds for better yields.

Valuation

We adopted PE/G as the major valuation methodology for Noah, given that it is the leading player in China's independent financial advisor industry, and we anticipate that the company will continue to generate solid earnings growth in the next three years. Our target price of US\$55.1 for Noah is based on 1.0x PEG, implying 19.6x 2019E P/E under our 20% non-GAAP earnings CAGR in 2018-2020E. In our view, Noah justifies a 1.0x PEG, considering its leading position in China's IFA industry and secular earnings growth in the upcoming three years. Compared to global peers' 1.5x-1.8x PEG, its valuation looks attractive.

Risk factors

- Any unexpected regulatory tightening of asset management sectors could hang over Noah's daily operations.
- Operational risks/reputation risks related to Noah's financial advisors' misconduct in the sales process.
- The gradual overseas expansion of its business poses several risks in terms of cross-border legal and geographical political risks.
- Competition is fierce with thousands of independent wealth managers and other financial institutions in the market. Failure to adapt to clients' changing needs could result in a loss of market share.
- Noah's business is sensitive to the macro environment, so a slowdown in China's economy and an uncertain global environment could impact Noah's business negatively.

Competitive advantages

- Strong sales force: Noah's transaction size per head in 2017 was around twice that of JP Investment, Noah's key competitor, although both companies have almost similar active client numbers. Compared to banks, IFAs can react to clients' needs in a more flexible, timely and comprehensive manner. In our view, the company offers a better client service package, providing one-stop solutions to fulfill clients' needs in wealth management, asset allocation, insurance, retirement plans and wealth inheritance.
- Solid connections with leading PE/VCs: Its subsidiary, Gopher's PE investment AUM posted a CAGR of 109% in 2014-2017, representing 59% of total AUM. This was due to Noah's having built good



relationships with leading PE/VCs in China, one of its early-mover advantages.

Most compliant product portfolio differentiates Noah from major asset management subsectors, as the company's offerings are mostly privately raised products without any implicit principal guarantees. In the long run, we believe Noah will attract more liquidity from other subsectors in asset management industry.



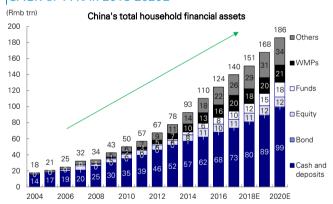
Top beneficiary of retail wealth expansion

China wealth management industry: growth opportunities intact, underpinned by retail wealth expansion

Wealth effect emerges with steady household financial asset expansion

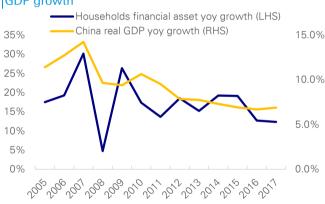
Benefiting from rapid economic development, Chinese households have been accumulating wealth at a fast pace over the past decade; our proprietary household balance sheet model shows household assets witnessing a CAGR of 15% from RMB96tn in 2008 to RMB349tn in 2017. Meanwhile, households' financial assets have outgrown total assets with a CAGR of 17% in the past 10 years, reaching Rmb140trn by end-2017. (*Note: financial assets include: cash, banking deposits, stock investments, insurance premiums, and other investments in asset management industries*). Meanwhile, we expect households' financial assets to maintain an 11% CAGR in 2018-2020E.

Figure 5: We expect household financial assets to post a CAGR of 11% in 2018-2020E



Source: Deutsche Bank estimates, CASS, PBOC, WIND, AMAC, CBIRC, Chinawealth.com.cn, Trust Association, WangDai/Thi.lia, NBS

Figure 6: Household financial assets' growth vs. real GDP growth



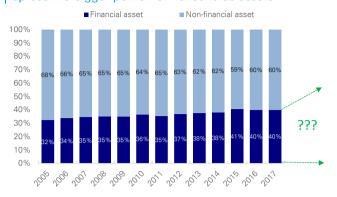
Source: Deutsche Bank estimates, CASS, PBOC, WIND, AMAC, CBIRC, Chinawealth.com.cn, Trust Association, WangDaiZhi.lia, NBS,

Change in mix in both household balance sheet and financial assets

As of end-2017, financial assets represented 40% of total household financial assets, up from 35% 10 years ago. The other 60% was from real estate (53%), automobiles and others (7%). With the announcement of the politburo meeting on 31 July 2017, the government reiterated its conviction on strongly curbing property prices. Under the expectation of slower property price elevation, we believe some investment-purpose properties will be cashed out and shifted to financial assets for better asset liquidity or yield.



Figure 7: Households financial assets are likely to represent a bigger portion of households assets



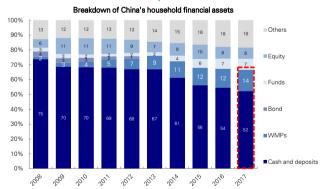
Source: Deutsche Bank estimates, CASS, PBOC, WIND, AMAC, CBIRC, Chinawealth.com.cn, Trust Association, WangDaiZhiJia, NBS,

Figure 8: Property prices to be well-curbed going forward



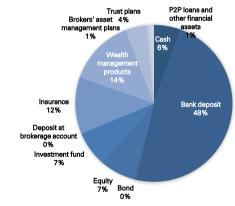
Looking into the breakdown of households' financial assets, cash and deposits still represented 52% of households' financial assets, compared to OECD countries' 32% in average. If adding back the WMPs, the cash and deposit portion represent 66% of households' financial assets. We believe the composition of households' financial assets will shift towards more investment and less cash/deposits, considering the balanced investment concept will be gradually perceived by the well-educated general public. Meanwhile, the newly-released asset management guidelines strictly prohibit any implicit principal guarantee in banks' off-B/S WMPs, which would also squeeze out households' wealth to other financial investments. Every 1% shift from cash and deposits to financial investments would release an estimated Rmb1.4trn liquidity into the wealth management market, and Rmb14bn WM fee contribution to the industry, if we assume 1% transaction fees.

Figure 9: Cash/deposit/WMPs together accounted for 66% of HH financial asset by end-2017



Source: Deutsche Bank estimates, CASS, PBOC, WIND, AMAC, CBIRC, Chinawealth.com.cn, Trust Association, WangDaiZhiJia, NBS,

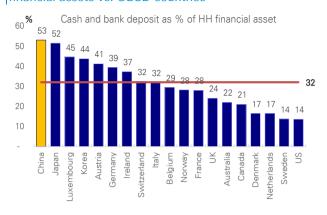
Figure 10: HH's financial asset breakdown (2017)



Source: Deutsche Bank estimates, CASS, PBOC, WIND, AMAC, CBIRC, Chinawealth.com.cn, Trust Association, WangDaiZhiJia, NBS,

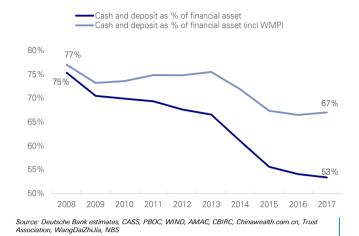


Figure 11: China's HH cash and deposits as a % of financial assets vs. OECD countries



Source: Deutsche Bank estimates, CASS, PBOC, WIND, AMAC, CBIRC, Chinawealth.com.cn, Trust Association, WangDaiZhiJia, NBS, OECD

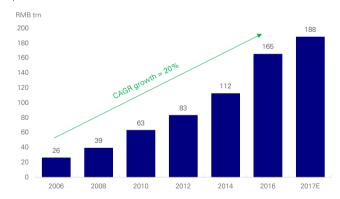
Figure 12: HH financial asset breakdown (2017)



High-net-worth wealth growth on a faster path

According to the China Private Wealth Survey, the total investable assets (financial asset plus properties for investment purpose) held by high-net-worth individuals (HNWIs, defined as individuals with investable assets exceeding RMB10m) experienced an even faster pace of growth of 25% over the past decade compared to the 20% CAGR of households' investable assets. Currently, over 30% of investable assets are held by HNWIs, versus 20% 10 years ago.

Figure 13: Size of households' investable assets (RMB tn)



Source: Deutsche Bank, CMB, Bain & Company, Wind

Figure 14: Total size of investable assets held by HNWIs

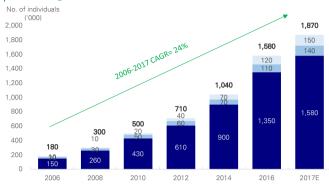


Source: Deutsche Bank, CMB, Bain & Company, Wind

The number of high-net-worth investors is expected to reach 1.87mn by end-2017, up from 181k in 2006, translating into an impressive ten-fold increase.

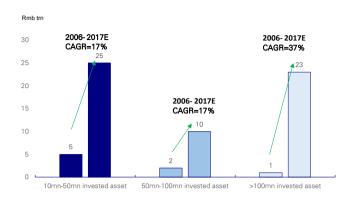


Figure 15: No. of individuals with investable assets exceeding RMB10m



Source: Deutsche Bank, CMB, Bain & Company, Wind

Figure 16: Growth of HWNI-held investable assets



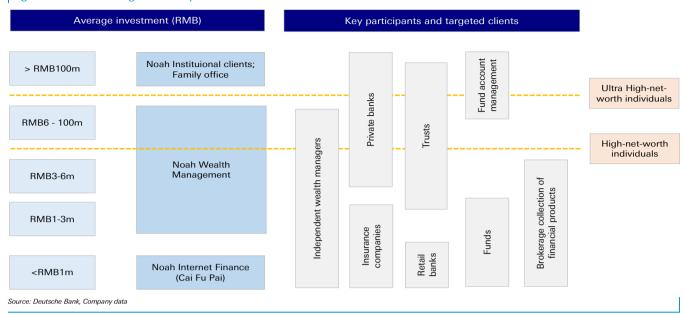
Source: Deutsche Bank, CMB, Bain & Company, Wind

Noah – well positioned for growing domestic wealth and winning market share from peers

Noah is the largest independent financial advisor (IFA)/wealth manager in China; it provides global wealth investment and asset allocation solutions to high-net-worth individuals and enterprise clients. Noah's comprehensive business coverage has enabled it not only to serve high net-worth-wealth individuals through Noah's wealth management business, but also allows it to move up to the higher end of the spectrum to serve ultra-high-net-worth individuals and institutional clients (Figure 17). Benefiting from the first-mover advantage, we believe that Noah is not only able to capture the opportunity of growing domestic wealth, but also to gain market share from peers, underpinned by its superior sales force and solid connection with leading PE/VCs in China.



Figure 17: Noah's target client spectrum



(1) Strong sales force and high-quality coverage

By 2Q18, its number of registered clients reached over 220k, up from 10k in 1Q10. And the annual number of active clients reached 12k in 2017 vs. only 1.6k in 2010. The company now employs around 1,500 relationship managers with a presence in 81 cities. In 2017, the amount of wealth management products distributed by Noah hit RMB117.4bn, seven times the RMB14bn in 2010.



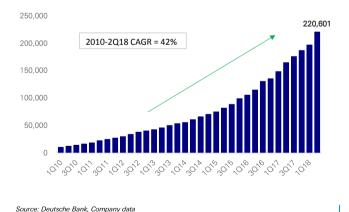


Figure 19: ... its WM annual distribution amount and size per client have continually increased



While there is no official data regarding the independent financial advisor (IFAs) industry, China Venture has ranked the 10 most competitive IFAs, filtered by AUM, team competitiveness, partnership, risk management, pace of development, service to investors and industry influence. We present the list below to give investors an idea of the main players in China.



Figure 20: Key competitive wealth managers

Company	Year of establishment	# city coverage	No. of clients
Noah (诺亚)	2003	<u>81</u>	~ 200,000
CreditEase (宜信)	2006	> 40	na
Hang Tang (恒天)	2011	na	> 77,000
HyWin (海银)	2006	> 51	>100,000
Datang (大唐)	2011	> 40	na
Jupai (钜派)	2010	48	~100,000
Xinhu (新湖)	2012	> 60	> 50,000
Nuoyuan (诺远)	2014	> 90	na
MyFP (展恒)	2004	na	na
LeadBank (利得)	2008	> 20	> 300,000
Source: Deutsche Bank, China Venture, company data	1		

Despite Noah's leading position in the IFA industry, when it is compared to the private banking arm of commercial banks, Noah, the largest domestic independent wealth manager, appears to be relatively small. In terms of AUM, CMB's private banking business is c.13 times larger than that of Noah, and Noah is only half of China Everbright in size.

- Compared with other IFA peers: Among these independent financial advisors, JP Investment is the only listed corporate with sufficient data for comparison, which is currently ranked top 3 among China's IFAs. Specifically, Noah's transaction size per head was around twice that of JP Investment, though the two companies' active client numbers were almost the same in 2017. This shows the strength of Noah's sales ability vs its key competitor, not to mention other smaller peers.
- Compared to major banks: IFA's AUM per head are generally lower than banks', as they do not have custodian accounts in which to place clients' money. For banks' AUM per head, we believe a meaningful portion was put in banking deposits, which leaves room for IFAs to gain market share from banks. Generally speaking, IFAs offer a better client service package, providing a one-stop solution to fulfill clients' needs in wealth management, asset allocation, insurance, retirement plans and wealth inheritance. Compared to banks, IFAs can react to clients' needs in a more flexible, timely and comprehensive manner. According to Noah, the company has only captured c.10-20% of existing clients' wallet share, and the other portion is still in banks and other AM subsectors. We believe that high-net-worth investors' wallet share will be gradually shifted toward IFAs, going forward.



Figure 21: No. of private banking clients vs. Noah's active clients in 2017

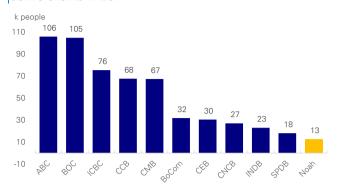
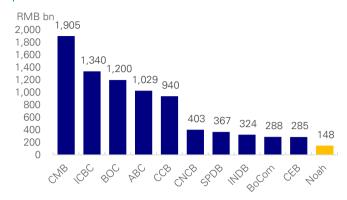


Figure 22: AUM of private banking division of commercial banks



Source: Deutsche Bank, Company data

Source: Deutsche Bank, Company data

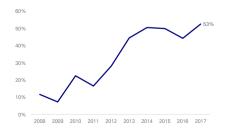
Figure 23: Noah's key operational indicators vs. JP Investment and key banks

	Noah	JP Investment	СМВ	ICBC	ССВ	ABC
Operating matrix						
Financial planner/sales agent (people)	1,495	1,525				
Covered cities	81	48	58			
Branches	239	76	128			
Registered clients (people)	220,601	na	67,417	75,500	67,670	106,000
Clients						
Active clients (people)	12,720	12,825				
Avg transaction amount per active client (Rmb mn)	9	4				
Avg transaction amount per sales (Rmb mn)	79	36				
Avg active client per sales	9	8				
Transaction value (Rmb bn)	117	54				
Total AUM (Rmb bn)	148	58	1,905	1,340	940	1,029
AUM per head (Rmb mn)	5	na	28	18	14	10

(2) Solid connection with leading PE/VCs in China to boost AUM growth

Established in 2010, Gopher is the asset management arm of the company, which contributed 40-50% of the group's revenue in 2017 or 47% in 1H18 (i.e. Noah started to disclose specific financial data starting from 1Q18), up from 20-30% in 2012 with an 85% CAGR of AUM in the past five years. Gopher's AUM reached Rmb161.5bn with a total CAGR of 40% in 2014-2Q18. We believe that Gopher will maintain c.20% AUM growth in 2018-2020E, underpinned by Noah Wealth Management's leading platform/brand image, comprehensive product categories and superior sales force. According to the China Private Wealth Survey 2017, brand image is the most important factor when high-net-worth clients are considering selecting an independent wealth manager; meanwhile, the second and third priorities that clients focus on are professional team and the quality of customized services.

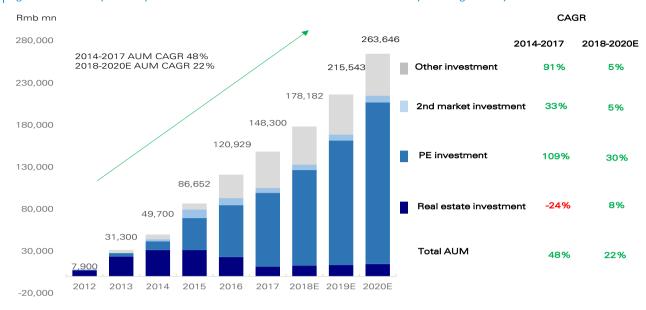
Figure 24: Related-party revenue as a % of total has continued to increase



Source: Deutsche Bank, Company data



Figure 25: We expect Gopher's AUM to maintain at c.20% CAGR in the upcoming three years



Source: Deutsche Bank, Company data

- Specifically, Gopher's PE investment AUM posted a CAGR of 109% in 2014-2017, and dominantly represented 59% of total AUM by end-2017. This is because Noah has built good relationships with leading PE/VCs in China, led by its early-mover advantage. As of FY2017, Gopher has cooperation with 11 out of the top 20 VC funds, seven out of the top 20 PE funds, eight out of the top 10 USD PE funds and five out of the top 10 hedge funds.
- According to the management team, once leading PE/VCs open a new project and seek limited partners (LPs), they generally consider Noah as their first priority. It is said that the company's internal product review meetings of PE/VC products have been fully booked till the end of 2018, and they will not seek for new LP opportunities this year. Relying on the solid connection, Noah can provide several options for high-net-worth clients to invest in and grow with those leading PE/VC, while other peers might be less likely to provide such comprehensive products.



Figure 26: Noah's cooperation with top funds

```
Top 20 RMB VC Funds (11/20)
2. Sequoia China (紅杉中国)*
4. Qiming Venture (启明创投)*
6. IDG Capital *
7. GGV Capital (纪源资本)*
8. Northern Light VC (北极光创投)*
9. Shenzhen Capital (深创投)*
10. Legend Capital (清務资本)*
11. Banyan Capital (高格资本)*
12. GSR Ventures (金沙江创投)*
13. SAIF Partners (赛富投资基金)*
15. Fortune Capital (达晨创投)*
```

```
Top 20 RMB PE Funds (8/20)
2. CDH Investments (鼎晖投资)*
3. Hillhouse Capital (高瓴资本)*
6. IDG Capital *
8. Legend Capital (君联资本)*
11. Carlyle Group*
13. JD Capital (九鼎投资)*
15. Warburg Pincus*
17. CITIC Capital (中信资本)*
```

```
Top 10 USD PE Funds (8/10)

1. Blackstone Group*

2. Goldman Sachs

3. Carlyle Group*

4. KKR*

5. TPG*

6. Oaktree Capital*

7. Apollo Global Mgmt*

8. Bain Capital*

9. Lone Star Funds

10. Warburg Pincus*
```

```
Top 10 RMB Hedge Funds (5/10)

1. Dapu Fund (大朴资产)

2. Springs Capital (淡水泉投资) *

3. Chongyang Inv't (重阳投资) *

4. Daoyi Fund (道谊资产)

5. DF Asset (鼎锋资产) *

6. F&D Assets (富恩德资产)

7. Heju Fund (和聚投资) *

8. Huizheng Inv't (惠正投资)

9. Elitimes Capital (菁英时代)

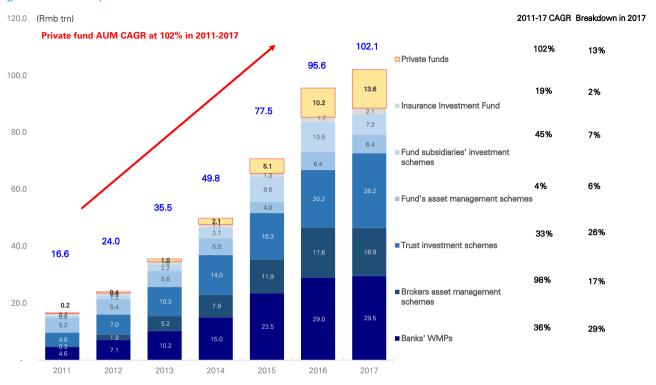
10. Greenwoods Asset (景林资产) *
```

Source: Deutsche Bank, China FOF Association, Preqing, ChinaFund Note: *Asterisk and bolding indicate the partners Noah have cooperated with

- From the demand side, high-net-worth investors have been more willing to chase wealth growth opportunities by participating in the rapid new economic development in China or diversifying their asset allocation. Looking into the breakdown of the asset management industry, privately raised funds have outgrown other subsectors in 2011-17 with an AUM CAGR of 102%, representing 13% of total industry AUM.
- Among the privately-raised funds, equity investment funds accounted for 59% of the total in 2017, up from 47% by end-2015, representing investors' interest being skewed toward equities. Traditionally, it is difficult for retail investors to find appropriate channels to invest in those PE/VCs, while Noah has opened another gate for retail investors.
- Overall PE industry AUM reached Rmb11.1trn by end-2017, and Gopher's PE investment was only at Rmb87.5bn at the same time, representing 0.8% of total industry AUM. We believe that Gopher's PE AUM will continue to expand with 22% CAGR in 2018-2020E, growing from the current low base.



Figure 27: Privately-raised funds' AUM CAGR came in at 102% in 2011-17



Source: Deutsche Bank estimates, PBOC, CBIRC, CSRC, AMAC, Trust Association

Figure 28: Noah's private equity investment AUM vs. % of industry AUM

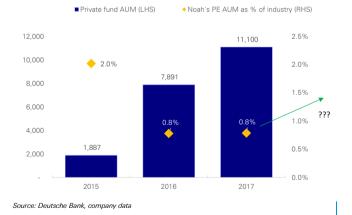
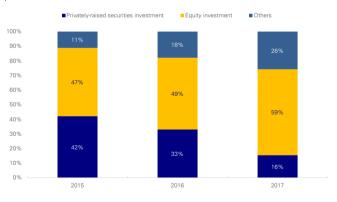


Figure 29: Equity investment accounted for 59% of private fund AUM in 2017



Source: Deutsche Bank, AMAC

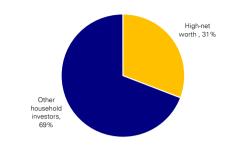
Earnings impact from share gains

Based on the assumption in the China Private Wealth Report that the big 4 banks and JSB and PSBC's WM and agency fee jointly accounted for 85% of the total wealth management fee market share in China, we estimate the total wealth management fee income size was at Rmb369bn in 2017.



- According to the survey, high-net-worth investors' investable assets represented 31% of the total, while this only represents HNW investors with over Rmb10mn AUM. Given Noah's client AUM floor is mostly above Rmb6mn, we assume >Rmb6mn investors accounted for 50% of total household investable assets. If we apply this 50% as a proxy for the wealth fee income market, fee income generated from HNW investors should come in at Rmb184bn in 2017.
- Noah's total revenue came in at Rmb2.8bn in 2017, only accounting for 1.5% market share in HNW wealth management industry or a 0.8% share in the total wealth management fee market.
- We calculate that every 1% share gained from banks' HNW fee income would lift Noah's group revenue by 65%.

Figure 30: HNW investors' investable assets account for 31% of total HH investable assets in China



Source: Deutsche Bank, Company data

Figure 31: Every 1% gain in HWN WM market could lift Noah's group revenue by 65%

Rmb mn	
Banks' total wealth mgmt and agency fee	313,633
Assume xx% market share from banks	85%
Total market size of WM fees	368,980
HNW market share	50%
HNW WM fee income	184,490
Noah's total revenue	2,846
Noah's market share in HNW WM fee market	1.5%
Noah's market share in WM fee market	0.8%
Noah's total revenue	2,846
1% gaining in HNW market	1,845
Contribution to Noah's group revenue	65%

Figure 32: Market share in wealth management market



Source: Deutsche Bank, Company data

Beneficiary of tightening regulation

The final version of asset management guidelines was released in Apr 2018, and we view Noah as the key beneficiary from the new regulations on the asset management industry, given the company is compliant with almost all of the requirements. Meanwhile, we are confident in Gopher's upcoming business development, despite WM product transaction headwinds in 1H18 dragged by weaker unfavorable market sentiment. We believe Noah or Gopher's business will be less impacted by the asset management guidelines, given:

- Gopher Asset Management's AUM is mostly privately-raised funds without: (1) asset pool operation, (2) multiple SPV layers, (3) duration mismatch.
- Gopher's asset management products are mostly net-asset-value type products (NAV), so there's no implicit guarantee behind them.
- Most of Gopher's funding is from high-net-worth investors, who are also the qualified investors.



Figure 33: Noah is compliant with all regulatory requirements in asset management guidelines

Key risks	Measures in new PBOC asset management (AM) business consultative guidance	Impact	Compliant?
	No asset pool operation; independent book management for each asset management product	Lower product yield; increase transparency	-√
	Product issuance on a rolling basis to transfer risk and reward among different investors would be treated as implicit	Lower product yield	٧.
	guarantee behaviors		٧
	Public raised product (e.g. bank WMP selling to mass market) should mainly invest in high liquidity fixed income assets	Lower product yield	NA
	Only close-end product can invest in unlisted equity with product maturity longer than exit day of the unlisted equity	Lower product yield; longer duration	√ V
	investment		*
Liquidity risks with asset pool	Maturity of non-standardized credit invested should be no longer than maturity of close-end product or next open day of	Longer product duration	√
operation	open-end product		,
operation	Close-end product term should no shorter than 90 days	Longer product duration	- √
	140%/200% leverage cap for open-end public fund/close-end public fund & private fund; 140% leverage cap for tranched	Lower product yield; lower leverage	4
	private funds		,
	For tranched private fund, senior tranche:equity tranche should below 3:1/2:1/1:1 for fixed income/mixed/equity products	Lower product yield; lower leverage	- √
	Products under one asset manager cannot invest in a single listed stock exceeding 30% of its total free float; Rmb30bn cap	Less liquidity risk	√
	for investing in a single asset		,
	Allow a grace period until Dec 2020 for this new AM rules with no impact on existing products	Less liquidity risk	NA
	AM product can invest in another AM product but only one layer is allowed (except for public raised mutual funds)	Lower financing cost; lower credit growth	- √
	Asset managers cannot provide channel business for other financial institutions for regulatory & leverage arbitrage	Lower financing cost; lower credit growth	√
	Treat all asset managers in a fair manner to avoid regulatory arbitrage	Lower financing cost	V
	Financial institutions can entrusted an asset manager to invest on their behalf but the asset manager cannot invest in AM	Lower financing cost	√
Contagion risks given multiple	products issued by others institutions (except public raised mutual funds)		•
SPV layers	Set up unified AM product information system; asset managers need to report their products to PBOC and relevant	Increase transparency; less regulatory arbitrage	V
	regulators upon set up/expiry and on a monthly basis		*
	Financial regulators should supervise asset managers by product type instead of institution type and identify ultimate	Increase transparency; less regulatory arbitrage	J
	investor and underlying asset of each product		•
	Clean up violation in asset management for non-financial institutions (e.g. internet companies)	Lower financing cost; lower credit growth	√
	Investment in non-standardized credit assets are under quota restriction, risk reserve requirement and liquidity requirement	Lower product yield; lower credit growth	√
Shadow banking risks	AM products cannot invest in restricted industry and areas	Lower product yield; lower credit growth	√
	Prohibit inappropriate connect transactions	Lower product yield; lower credit growth	V
	No implicit guarantee; all AM products should be managed based on NAV; at least weekly NAV report for public fund	Less liquidity risk; lower product yield	1
	Implicit guarantee activities by deposit-taking asset managers will be punished by paying equivalent deposit required	Lower product yield; higher yield volatilities	٧
	reserves, deposit insurance fees and penalties		Y
	No on-balance sheet AM business	Deposit pressure for banks with high on-B/S WMP	V
Implicit guarantees risks	Asset manager needs to set up risk reserves equal to 10% management fees until reaching 1% AUM	Better investor protection	- √
	Clear classification of AM product type & qualified investors	Better investor education	1
	Independent AM operation from non-AM business	More independence of bank WMP business	À
	Third-party independent custodian account	Better investor protection	4

Source: Deutsche Bank, PBOC, CBIRC

To gain share from banks' WMPs for better risk-reward

In our view, a portion of the liquidity will be shifted from banks' WMPs to privately-raised funds for adequate risk and reward. In our view, Noah will be the major beneficiary from the stricter AM regulations, considering:

- Banks are strictly prohibited from providing any form of implicit principal guarantee. Investors would review their risk and reward mix and rebalance their asset allocation.
- The banking WMPs ought to be less attractive as (1) newly-issued WMPs must meet the requirement of duration mismatch, namely longer tenor with only the same level yield offered as before, or (2) banks can still issue old products (duration mismatch is allowed), while the total existing balance can't be expanded, which means the supply of old products has been capped.
- Meanwhile, we believe the main purpose of the AM guidelines and WMP guidelines is to lower financial system risk, especially in banks' WMPs, but privately-raised funds are less impacted, i.e. the requirement of qualified investors was even loosened in the AM guidelines vs. CSRC's private fund regulations.

Market noise not a concern

In the past few months, we have seen several pieces of market news regarding client complaints against Noah, due to their investment loss from some individual incidents. However, we do not think this is a concern for Noah in the long run, in spite of the short-term noise, given Noah has been compliant with



the core value of asset management guidelines, and insisted on no principal guarantee on any product they provided to clients.

Figure 34: Recent noise about Noah Holdings

Date	Recent noise
May-18	Investors came to Noah HQ to protest for their loss from Huishan Diary's default
Mar-18	Noah's financial advisor was reported to sell financial products to investors, which is not monitored by Noah, causing investment loss to the investors
Mar-18	Noah Upright's mgmt had some dispute with investors
Source: Deuts	che Bank, media report

History speaks for itself. In the past few years, we have seen three major complaints among Noah and its clients. During the whole process, Noah didn't provide any principal return to those investors bearing investment losses, and this is also fully recognized by the market.

Figure 35: Historical disputes between Noah and clients, and how Noah dealt with it

	Previous dispute with investors	How Noah dealt with
Mar-17	Two of Gopher's investment funds were reported to have c.Rmb500mn exposure to Huishan Diary	Huishan Diary is currently under restructuring; and Noah has continually participated into the process on behalf of their investors
Nov-16	Noah's WM product, issued by Banyang Tree Residences, saw loss before project close, and some investors asked Noah to return their investment principal	Noah insisted on no principal guarantee/return. and by the end of project close, investors' return was positive
Aug-14	Noah's investment fund was embezzled by 3rd party funds	Noah won the lawsuit



Financials, valuation and risk

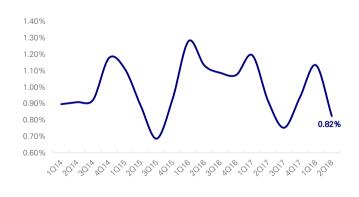
Earnings - anticipating non-GAAP profit to post CAGR of 20% in 2018-20E

Wealth management

We expect the wealth and asset management businesses to remain as the pillars of growth for Noah. We assign a quite stable growth assumption for Noah's wealth management business, assuming its amount maintains growth momentum with a stable fee rate in 2018-2020E.

- Fee rate: we expect the one-off commission fee to stay largely flat at around 1.0-1.2%, and the recurring charge stable. This implies the segment revenue will grow by 15% p.a. in 2018-2020E. The notable decline of one-off commission rate in 2Q18 was due mainly to product mix change under the market uncertainties, while management expects the full-year distribution fee rate to remain stable at c.1% in 2018E.
- Distribution amount: we expect its growth to post a CAGR of 18% in 2018-2020E. Fixed income product transaction growth will likely moderate, considering stricter regulation and weaker market sentiment. We expect this portion to post a 15% CAGR in 2018-2020E, while PE and secondary market equity fund products should maintain resilient growth at a 20%/30% CAGR, respectively, in 2018-2020E

Figure 36: Noah's implied fee rate in WM business



Source: Deutsche Bank, company data





Asset management:

For the asset management business, we believe Gopher will continue to expand, with growth mostly coming from PE investments. After repositioning the real estate business, the segment is also likely to pick up. We have modelled in AUM with 22% CAGR in 2018-2020E.

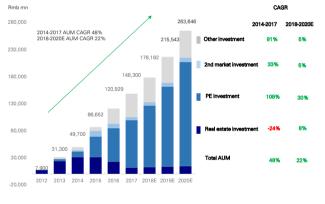


- Asset under management: as of 2Q18, PE investment represented 58% of Gopher's total AUM; we expect PE AUM to post a 30% CAGR in 2018-2020E, and will account for 73% AUM by 2020E.. Real estate AUM should see a rebound from down 48% yoy in 2017, as the management team has mentioned revisiting the property market by holding core assets. We estimate a 5% CAGR in the upcoming three years. For credit products/secondary market investment, we forecast a 5%/10% CAGR in 2018-2020E.
- Management fee rates: we expect the management fee rate to remain stable at c.40bps in 2018-2020E. Considering PE AUM will outgrow other asset classes, we believe a flattish management fee rates assumption is justified. The management also indicated management fee rate is expected to trend up going forward, to reflect their expansion of co-investment and direct investment (higher fee rate). Compared to one of its peers, Value Partner's, fee rate which is at relatively stable level of c.60bp, we believe our flattish management fee rate in the upcoming 3 years is achievable

Figure 38: Value Partner's (806 HK)

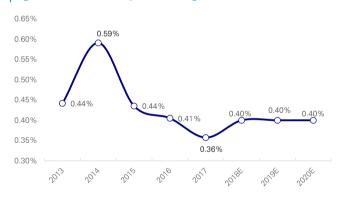


Figure 39: Noah's asset management AUM



business scales to profitability.

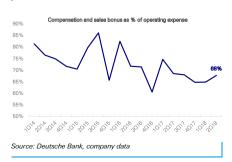
Figure 40: Noah's implied management fee rate



Source: Deutsche Bank, company data

- Internet finance: we have modelled in 14% top line growth. While we believe it will continue to be a drag for Noah, we assume it will gradually achieve breakeven as the company shifts its focus from
- Operating expense: we forecast Noah's operating expense growth at 21%/23% in 2018-2019E vs. 16% in 2017, due mainly to a c.Rmb100 increment in selling expense for advertisement and a rapid financial advisor increase (+34% yoy in 1H18). However, the cost to income ratio is expected to decrease from 72% in 2017 to 67% in 2020E from operating leverage, and OPM up from 27% in 2017 to 29-30% in 2018E. Among operating expense, compensation expense accounted for a meaningful portion (68% in 2018), this ratio has declined from the peak of 85% in 3015. Going forward, we expect this ratio to be

Figure 41: Compensation expense accounted for c.70% of opex



Deutsche Bank AG/Hong Kong

Page 21



relatively stable at c.70%, slightly higher than current level, which was lifted by its aggressive hire in 2Q18.

We also provide the earnings sensitivity table as below for reference, where we assess the impact to 2019E earnings growth impact from every 10% change in (1) wealth management product distribution yoy growth rate, and (2) Gopher's AUM yoy growth.

Figure 42: Earnings growth sensitivity in 2019E

			AUM yoy (%)											
		-9	1	11	21	31	41	51						
	(12)	-3%	0%	4%	7%	10%	13%	16%						
(%)	(2)	2%	5%	8%	11%	14%	17%	20%						
dist. yoy (%)	8	6%	9%	12%	15%	18%	21%	24%						
st.)	18	11%	14%	17%	20%	23%	26%	29%						
1 di	28	15%	18%	21%	24%	27%	30%	33%						
MM	38	19%	22%	25%	29%	31%	34%	37%						
	48	24%	27%	30%	33%	36%	39%	42%						

Source: Deutsche Bank estimates, company data



Figure 43: Income statement

Income statement (RMB mn)	2014	2015	2016	2017	2018E	2019E	2020E
Revenue	1,617	2,233	2,562	2,846	3,242	3,667	4,383
% yoy							
Third - party revenues	798	1,115	1,423	1,346	1,553	1,622	1,918
One-time commissions	423	391	811	541	735	652	772
Recurring service fees	320	401	475	547	546	682	840
Performance-based income	25	194	20	86	86	86	86
Other service fees	30	128	118	172	185	201	219
Related party revenues	819	1,118	1,138	1,500	1,689	2,046	2,465
One-time commissions	181	429	321	561	451	652	772
Recurring service fees	560	635	776	861	1,158	1,311	1,608
Performance-based income	76	54	40	55	55	55	55
Other service fees	2	1	2	23	26	28	31
Business taxes and related surcharges	-89	-113	-48	-19	-21	-24	-29
% revenue	5%	5%	2%	1%	1%	1%	1%
Net Revenue	1,528	2,120	2,514	2,827	3,220	3,643	4,354
Operating cost and expenses	-975	-1,561	-1,846	-2,050	-2,282	-2,488	-2,918
% revenue	60%	70%	72%	72%	70%	68%	67%
Operating income	553	559	667	777	938	1,155	1,436
OPM	36%	26%	27%	27%	29%	32%	33%
Other income	48	76	66	92	92	110	128
Profit before tax	602	635	734	869	1,030	1,265	1,565
Income tax	-151	-130	-158	-199	-236	-290	-359
Effective tax rate	25%	20%	22%	23%	23%	23%	23%
Associate income	14	21	22	93	93	93	93
Net Income	464	526	598	763	887	1,068	1,299
Minority interest	-17	10	41	14	7	11	16
Others	0	0	5	-6	0	0	0
Net income attributable to shareholders	447	536	644	770	894	1,079	1,316
% yoy	41%	20%	20%	20%	16%	21%	22%
Non-GAAP Net profit	479	603	723	864	1,001	1,200	1,460
% yoy	38%	26%	20%	19%	16%	20%	22%

Source: Deutsche Bank estimates, Company data



Figure 44: Balance sheet

Balance sheet (RMB mn)	2014	2015	2016	2017	2018E	2019E	2020E
Current asset	2,273	3,262	4,733	4,036	4,775	5,626	6,920
Cash and cash equivalents	1,750	2,133	2,983	1,907	1,855	2,025	2,533
Restricted cash	1	1	1	0	0	0	0
Short-term investments	138	560	299	160	225	255	305
Accounts receivable	68	122	204	176	200	226	270
Amounts due from related parties	193	238	439	515	574	626	734
Loans receivable, net of allowance for loan losses	43	132	114	765	1,148	1,493	1,866
Factoring receivables	0	0	604	257	308	370	444
Deferred tax assets	22	0	0	0	0	0	0
Other current assets	59	75	89	256	464	632	769
Non-current asset	402	835	1,224	2,459	2,633	2,937	3,168
Long-term investments	61	252	347	988	1,087	1,305	1,435
Investment in affiliates	222	326	539	969	969	969	969
Property and equipment, net	92	196	243	303	379	465	566
Other non-current assets	12	17	39	126	126	126	126
Non-current deferred tax assets	14	44	56	73	73	73	73
Total asset	2,675	4,097	5,956	6,495	7,408	8,563	10,088
Current liabilities	693	967	1,576	1,823	1,742	1,709	1,791
Accrued payroll and welfare expenses	320	495	555	622	709	801	958
Income tax payable	55	62	23	18	18	18	18
Deferred revenues	98	68	93	201	229	259	310
Payable to individual investors of factoring receivable	0	0	569	4	4	4	4
Other current liabilities	169	341	335	977	782	626	500
Short-term bank loan	50	0	0	0	0	0	0
Deferred tax liabilities	0	1	0	0	0	0	0
Non-current liabilities	42	596	659	164	164	164	164
Non-current uncertain tax position liabilities	11	0	0	0	0	0	0
Deferred tax liabilities	0	0	4	50	50	50	50
Other non-current liabilities	31	78	99	114	114	114	114
Convertible notes	0	518	555	0	0	0	0
Total Liabilities	735	1,563	2,235	1,987	1,906	1,872	1,954
Mezzanine Equity							
Redeemable MI of a Subsidiary	0	0	331	0	0	0	0
Shareholders' equity	1,851	2,449	3,332	4,429	5,430	6,630	8,090
Non-controlling interests	89	85	59	78	71	60	44
Total Shareholders' Equity	1,940	2,534	3,391	4,508	5,502	6,691	8,134
Source: Deutsche Bank estimates, Company data							

Figure 45: Cash flow

Source: Deutsche Bank estimates, Company data

Cash flow statement (RMB mn)	2014	2015	2016	2017	2018E	2019E	2020E
Net cash provided by operating activities	590	675	686	630	822	1,070	1,367
Net cash used in investing activities	(94)	(759)	(884)	(834)	(673)	(740)	(728)
Net cash (used in) provided by financing activities	60	463	995	(792)	(195)	(156)	(125)
Cash and cash equivalents—beginning of the period	1,187	1,750	2,133	2,984	1,907	1,855	2,025
Cash and cash equivalents—end of the period	1,750	2,133	2,983	1,907	1,855	2,025	2,533



Good track record of fulfilling its guidance

Noah gives one-year forward non-GAAP profit guidance. (The non-GAAP differs from GAAP where it is adjusted for share options and restricted shares.) Over the past few years, Noah has been consistent in beating it's upper range targets, with the exception of 2015 when the equity market was volatile. Having said that, the company still achieved a result that sat within the range of the earning guidance.

Given the company's strong track record, we believe our non-GAAP earnings forecast of RMB1,001mn is justified. The company's non-GAAP guidance for 2018 is RMB1,000mn-1,050mn.

Figure 46: Company guidance vs. actual results

	2012	2013	2014	2015	2016	2017	2018
Company guidance (RMB mn) - Non-GAAP							
Lower end	139	307	444	583	690	825	1,000
Upper end	158	338	469	615	720	860	1,050
Average	148	322	456	599	705	843	1,025
Non - GAAP actual	169	348	479	603	723	864	
% achieved of upper end guidance	107%	103%	102%	98%	100%	100%	

Source: Deutsche Bank, Company data

Valuation – PEG-based target price of US\$55.1

We have adopted PE to growth as the major valuation methodology for Noah, given it is the leading player in the Chinese independent financial advisor industry, and we anticipate the company to generate solid earnings growth.

- Our target price of US\$55.1/ADS for Noah is based on 1.0x PEG, implying 19.6x 2019E PE under our 20% non-GAAP earnings CAGR in 2018-2020E.
- In our view, 1.0x PEG is justified for Noah, considering its leading position in the China IFA industry and secular earnings growth in the upcoming three years. Compared to global wealth management/asset management peers' 1.5x-1.8x PEG (5-13% CAGR / 7.8x-15.6x 2019E P/E), we believe Noah's valuation looks attractive.

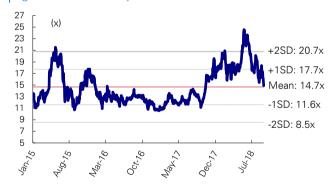


Figure 47: Our US\$55.1 target price for Noah is based on 1.0x PEG

1 -			
Valuation based on PEG		CNY/USD	6.9
2019E non-GAAP net profit (Rmb m)	1,200		
2018E-20E net profit CAGR	20%		
Target PEG	1.00		
Target P/E multiple	19.6		
Total valuation (Rmb mn)	23,467		
Total valuation (USD mn)	3,401		
Number of ADS - 2019E (mn)	62	Current pri	ce Upside
Target price (US\$)	55.1	40.	19 37.2%
	20174	2018E 2010	2020E

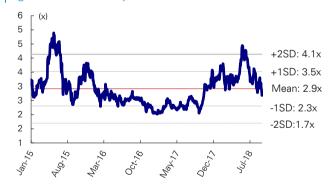
	2017A	2018E	2019E	2020E
Non-GAAP net profit (Rmb mn)	864	1,001	1,200	1,460
Non-GAAP net profit (USD mn)	125	145	174	212
# of ADS (mn)	60.5	61.1	61.7	62.3
EPADS FD (RMB)	14.29	16.39	19.45	23.43
EPADS FD (USD)	2.07	2.38	2.82	3.40
BVPADS FD (RMB)	74.5	90.1	108.5	130.6
BVPADS FD (USD)	10.8	13.1	15.7	18.9
Trading P/E	19.4	16.9	14.3	11.8
Trading P/B	3.7	3.1	2.6	2.1
Target P/E	26.6	23.2	19.6	16.2
Target P/B	5.1	4.2	3.5	2.9
Source: Deutsche Bank, Company data				1

Figure 48: Noah's 1-year forward PE band



Source: Deutsche Bank estimates, company data, Bloomberg Finance LP

Figure 49: Noah's 1-year forward PB band



Source: Deutsche Bank estimates, company data, Bloomberg Finance LP



Figure 50: Valuation comp – wealth managers & asset managers

	Ticker	Price	Mkt. Cap	- 1	P/E (X)		F	P/B (X)			ROE			ROA		PEG
		Px_last	(US\$mn)	18Y	19Y	20Y	18Y	19Y	20Y	18Y	19Y	20Y	18Y	19Y	20Y	19Y
Wealth Management																
Noah Holdings	Noah US Equity	40.2	2,307	16.8	14.2	11.8	3.1	2.5	2.1	17.9	17.7	17.7	14.4	15.0	15.7	0.7
Julius Baer	BAER SW Equity	49.9	11,159	11.9	10.9	10.0	1.8	1.6	1.5	15.1	15.1	15.0	1.0	1.0	1.0	1.2
Janus Henderson Group	JHG US Equity	28.3	5,678	9.9	9.5	9.1	1.1	1.0	1.0	11.4	11.4	11.6	9.3	9.4	10.0	2.2
Amundi	AMUN FP Equity	63.1	12,728	13.2	12.4	11.7	1.5	1.4	1.4	11.4	11.7	12.2	6.7	7.0	8.0	2.0
UBS	UBSG SW Equity	15.2	58,554	11.0	9.5	8.7	1.1	1.1	1.0	9.1	10.4	11.4	1.0	1.1	1.1	0.8
JP Investment	JP US Equity	11.0	366													
Avg				11.5	10.2	9.4	1.3	1.2	1.1	10.1	11.0	11.7	2.3	2.4	2.6	1.1
Avg excl UBS				12.4	11.5	10.6	1.6	1.5	1.4	11.9	12.0	12.2	4.7	4.8	5.3	1.7
Asset Management																
Blackstone	BX US Equity	35.9	44,404	11.7	11.0	10.7	6.1	5.8	5.6	26.6	37.2	32.0	22.2	na	na	2.5
Carlyle Group	CG US Equity	22.7	7,801	9.1	7.8	7.9	2.5	2.4	na	25.8	13.5	na	12.5	na	na	1.1
KKR & Co Inc	KKR US Equity	26.4	21,841	15.8	14.3	13.4	1.6	1.5	1.3	10.2	9.8	9.6	na	na	na	1.6
Invesco LTD	IVZ US Equity	24.4	10,004	9.1	8.5	8.0	1.1	1.0	1.0	12.6	12.6	12.3	3.4	5.2	na	1.4
Alliance Bernstein	AB US Equity	30.6	3,000	11.6	11.5	10.4	na	na	na	5.6	6.6	na	2.7	2.9	na	2.1
Blackrock	BLK US Equity	473.8	76,061	17.1	15.6	14.2	2.3	2.2	2.1	13.8	14.0	13.8	3.0	2.2	na	1.6
T.ROWE Price	TROW US Equity	109.5	26,625	14.9	14.0	12.8	4.1	3.8	3.5	29.5	28.1	26.1	23.2	23.9	na	1.7
Value Partner	806 HK Equity	5.6	1,286	12.3	10.1	8.2	2.1	1.9	1.6	16.6	20.1	20.4	14.6	17.9	18.0	0.5
Avg				14.5	13.4	12.4	3.3	3.1	2.8	18.9	20.7	18.5	10.4	4.6	0.1	1.8

Source: Deutsche Bank estimates,, Company data, Bloomberg Finance LP, share price was updated to 10 September 2018. Forward period are estimates

Risk factors

- Any unexpected regulatory tightening of asset management sectors could hang over Noah's daily operations.
- Operational risks/reputation risks related to Noah's financial advisors' misconduct in the sales process.
- The gradual overseas expansion of its business poses several risks in terms of cross-border legal and geographical political risks.
- Competition is fierce with thousands of independent wealth managers and other financial institutions in the market. Failure to adapt to clients' changing needs could result in a loss of market share.
- Noah's business is sensitive to the macro environment, so a slowdown in China's economy and an uncertain global environment could impact Noah's business negatively.



Appendix I - Company overview

Company introduction

Established in 2005, through a management buyout of the Xiangcai Securities, Noah is the leading wealth and asset management service provider in China, focusing on providing global investment and asset allocation solutions to HNWIs. The company went public in 2010, becoming the first Chinese wealth management company listed on the NYSE.

Noah provides direct access to China's high net worth populations, with c.1,500 relationship managers and a distribution network that covers 81 cities. This extensive network coverage has enabled Noah to capture the opportunities of growing household wealth in the domestic market. Over the past few years, Noah has been actively looking for opportunities to diversify its revenue stream, through: 1) the launch of Gopher Asset Management in 2010; 2) the establishment of an internet finance business in 2014; 3) the set-up of overseas business in HK in 2010, and its expansions to US/TW/Canada/Australia.

Noah was able to ride on China's fast economic expansion, it's revenue has posted a CAGR of 51% in the past 8 years. Despite the short-term noise of macroeconomic conditions in China, we believe this should not hinder Noah's growth momentum as Noah strives to strengthen its global presence, diversifying its product offerings and enhancing its operational efficiency.

Figure 52: Noah's revenue has continuously trended up

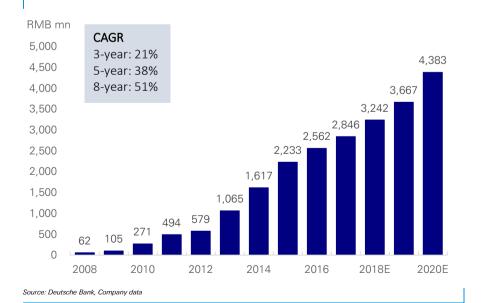


Figure 51: Noah's shareholding structure (1Q18)

Shareholder	Ownership %
Jingbo Wang, Chairman & CEO	24.40%
Sequoia China	7.90%
Frances Chang, CMO	7.50%
Zhe YIN, CEO of Gopher AM	5.80%
Boquan HE	5.80%
Ward Ferry Management	5.00%
JP Morgan	3.10%
Coronation Fund Management	3.10%
Wellington Management	3.10%
Yiheng Capital	2.80%
Tiger Pacific Capital	2.50%
Fidelity Worldwide	2.40%
GQG Partners	2.00%
Others	24.60%
Source: Deutsche Bank	



Noah's management team all have lengthy experience in the financial industry. The key co-founders have been closely involved in corporate operations since the company's inception (15 year ago).

Figure 53: Noah – management profile

Name	Age	Position/title	Background
Jingbo Wang	46	Co-founder/Chairman/CEO	Ms. Jingbo Wang has been the group CEO and chairman since Noah's inception. She has over twenty years of experience in the wealth and asset management industries. Before Noah, she has been several management roles in Xiangcai Securities. Ms. Wang received her master's degree in management and bachelor's degree in economics from Sichuan University. She also graduated from the Global CEO program of China Europe International Business School.
Zhe Yin	44	Co-founder/CEO of Gopher AM	Mr. Zhe Yin is the co-founder of Noah. He is also the CEO of Gopher Asset Management. Mr. Yin has over 15 years of experience in the wealth and asset management industries. Before Noah, he has working experience in Xiangcai Securities and BoCom. He received bachelor's degree in economics from Shanghai University of Finance and Economics. He also received EMBA degree from China Europe International Business School.
Chia-Yue Chang	58	СМО	Ms. Chang has over 30 years of experience in the asset management industry. Ms. Chang was the CEO of Greater China and South East Asia regions of Rebeco from 2007 to 2011; from 2004 to 2006, she was the China CEO of ABN AMRO AM. She received her master degree in library science from UCLA.
Kenny Lam	43	President	Mr. Kenny Lam has over 17 years of experience in strategic, operational and management transformations in financial industry. Before Noah, he was a global senior partner at McKinsey & Company a co-leader of Asia FIG Practice and Head of Asia Private Banking and AM Practice. Mr. Lam received master's degree in law from Oxford University and bachelor's degree in finance from University of Pennsylvania.
Shang Yan Chuang	36	CFO	Mr. Shang Yan Chuang has over 15 years of experience in financial services. In 2011, he joined Noah as Director of Investment Relations and Corporate Development. Prior to joining Noah, Mr. Chuang worked at Bank of America Merrill Lynch in Investment Banking Division and Asia Private Equity Division from 2003 to 2011. He received bachelor's degree in Finance from New York University
Harry B. Tsai	56	COO	Mr. Tsai has close to 30 years experience in financial industry. Prior to Noah, he was the EVP of Yuanta Securities in Taiwan since July 2008. Prior to Yuanta, he took management roles in several financial institutions. He received MBA degree from university of Illinois, and master's degree of science in chemical engineering from University of Southern California.

Wealth management

Noah started as an independent wealth manager, and it's wealth management segment has been the company's main revenue contributor, accounting for c.75% of the topline. Revenues primarily come from one-time commission and recurring fees paid by either third-parties or related-party providers. Such fees are calculated based on the value of wealth management products that the company distributes to its active clients.

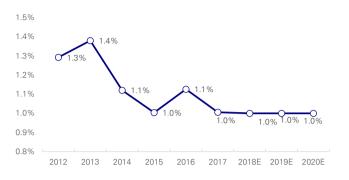
Specifically, one-time commissions are often associated with fixed-income products, while the company also receives recurring fees for other products it distributes, such as PE funds and secondary market equity fund products. The contribution of latter two items have gradually increased in recent years. Depending on the types of products, the commission rate and recurring fee vary at around 1% of the transacted amount.



Figure 54: Noah's wealth management product transaction breakdown

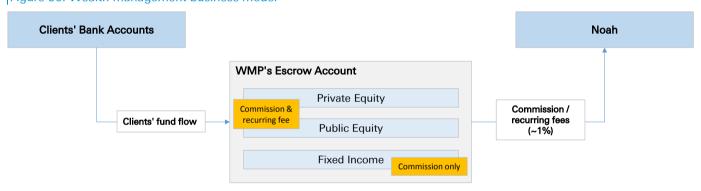


Figure 55: Noah's wealth management distribution fee rate



Source: Deutsche Bank, Company data

Figure 56: Wealth management business model



Source: Deutsche Bank, Company data

Source: Deutsche Bank, Company data

Figure 57: Annual wealth management revenue



Figure 58: Annual wealth management revenue (% breakdown)



Source: Deutsche Bank estimates, Company data Source: Deutsche Bank estimates, Company data

In terms of product distribution, fixed income remains the biggest investment product, while PE/VC products are growing fast. The amount of secondary market equity fund products distributed is generally in line with the broader A-



share market; this explains the abnormally high demand in 2015 (due to the surge in the second quarter) and weak demand in 2016. Going forward, Noah sees high growth potential in PE/VC products as growth in the new economy continues. For the fixed income products, the company will focus more on consumer financing, supply chain finance and auto finance, where they see healthy long-term growth potential. For real estate, the company will focus on holding and investing core and value-added projects.

On commission fees, 2Q18 effective one-time commission rates saw a meaningful decline, due to a change in product mixes. Despite a short-term distribution rate decrease, management indicated that the long-term rate will maintain at 0.8-1.2%.

Figure 59: Wealth management products distributed by Noah

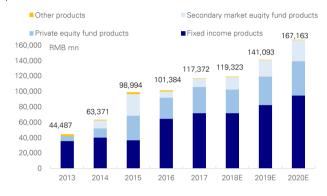
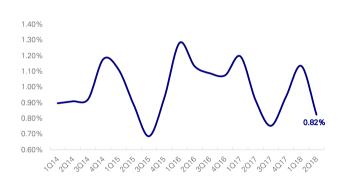


Figure 60: Implied one-time commission rate



Source: Deutsche Bank estimates, Company data Source: Deutsche Bank, Company data

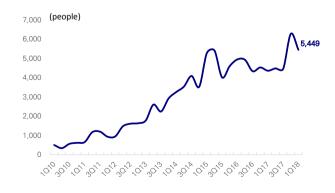
In 2Q18, the number of active clients declined 18% qoq yoy; dragged by unfavorable market sentiment. An important measure to look at, which drives the business growth, is the average transaction value per client. This could be a function of product mix. For example, PE products generally have a higher minimum investment requirement compared to fixed income or public market products. Noah's transaction amount has increased from Rmb14.4bn in 2010 to Rmb117.4bn in 2017.

Figure 61: Noah's WM annual transaction value vs. avg transaction value per client



Source: Deutsche Bank, Company data

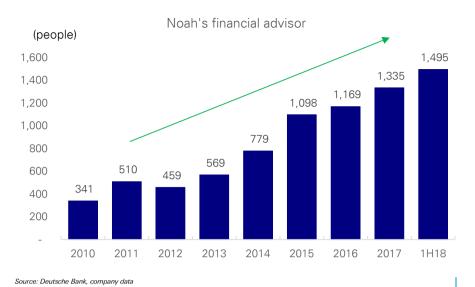
Figure 62: Noah's active client (quarterly)



Source: Deutsche Bank, Company data



Figure 63: Noah's financial advisor CAGR came at 22% during 2010-1H18



Noah's long-term target is to increase the average value per client further. One way to achieve this is to further segment clients, and to provide unique and best-in-class services to clients at the highest end. The company has launched new "Black Card" products with the aim of serving high-end clients, such as HNWIs and family office clients.

Noah has continued looking for changes and enhanced it's market competitiveness. The mindset of wealthy Chinese individuals has gradually been changing over the past few years, possibly due to the aging population. Although "wealth preservation" remains the top priority for wealthy individuals, the China Private Wealth Survey suggested that "wealth inheritance" is also gaining importance. Noah is adopting this change through the establishment of "Family Office" business under its Wealth Management division, which Noah intends to position as an important part of its long-term strategy.

Asset management

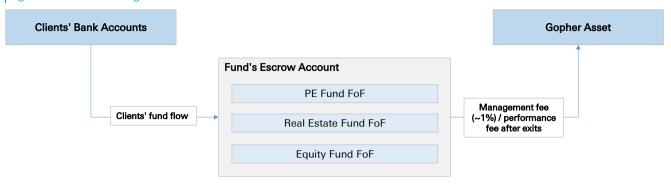
Established in 2010, Gopher is the asset management arm of the company. The set-up of the subsidiaries enable Noah to provide comprehensive services along the financial value chains, with the wealth management segment being the distribution channel, and Gopher acting as an investment platform.

For the asset management business, the company mainly receives management fees for all products it manages and performance-based income for certain funds. It also receives other types of revenue, such as 1) upfront subscription fees, management fees and redemption fees, paid by fund companies for distributing mutual fund products, 2) insurance brokerage commissions, and 3) service fees paid by clients for the internet financial services provided.

Source: Deutsche Bank, Company data



Figure 64: Asset management business model



The asset management business now contributes 21% of the group's topline in 2017, if we only include the recurring management fee and performance-based fee from Gopher Asset management. However, if we include the one-off commission by selling Gopher's products, total revenue contribution will be close to 50%. Over the years, Gopher has managed to develop mature product offerings, including PE/VC investment, real estate investment and secondary market investment. Its achievement has started to gain market recognition, placed as top 10 China Fund of Funds in 2017, and Best Fund of Funds, Most Active Fund of Funds, and Best Market-Oriented Funds for Funds in 2016.

Figure 65: Revenue of asset management business

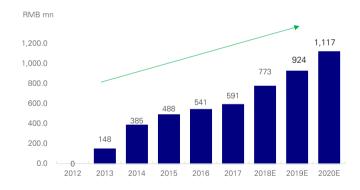
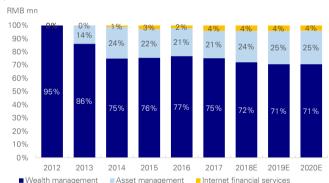


Figure 66: AM business now accounts for 21% of the group's topline



Source: Deutsche Bank estimates, Company data

Source: Deutsche Bank estimates, Company data

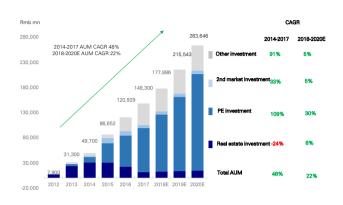
As one of the leading alternative asset managers in China, Gopher's AUM reached RMB1161.5bn in 2Q18. Since 2013, Gopher has gradually diversified its portfolio and product offerings, its main businesses include:

- Private equity investments: these include investments in the top private equity funds in China and overseas and direct investments in companies and projects;
- Real estate investments: the company has focused on funds and FoF for both residential and commercial real estate properties in China and overseas in the early stage, while this has gradually been reduced since 2014; recently, the company mentioned they will revisit the real estate market via preference shares and core asset investment;

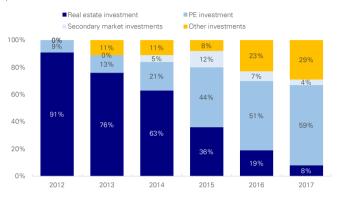


- Secondary market investments: these include primarily secondary market equity FoF managed by Gopher and sub-advised by outside fund managers;
- Other investments: these include funds and FoF of alternative credit, multi-strategy funds, multi-family heritage funds etc.

Figure 67: AUM of asset management segment







Source: Deutsche Bank, Company data

Source: Deutsche Bank, Company data

Gopher has cooperation with 11 out of the top 20 VC funds, seven out of the top 20 PE funds, eight out of the top 10 USD PE funds and five out of the top 10 hedge funds.

Internet finance

With an aim of building an online private bank to serve wider mass affluent white-collar clients in China, Noah established an internet finance business in 2014 through the introduction of:

"Cai Fu Pai (财富派)", focusing on distribution of standardized products, including mutual fund, mutual funds of funds, insurance products and insurance funds. The internet platform enables white-collar professionals to enjoy high-quality services and products provided by Noah which were previously only available to HNWIs...

Apart from building an online wealth management platform through "Cai Fu Pai", its internet finance business has further expanded and included:

- Noah Financial Express (诺亚融易通): To provide micro short-term lending services to its original high-net-worth clients; loan duration generally ranges between 6-12 months and collateralized by automobiles, properties or financial investment managed by Noah.
- Online IFA services (诺亚方舟): To provide online independent financial advisory service to attract and maintain client relationships.
- Noah Gold Way (诺亚金通支付): Noah cooperates with licensed thirdparty payment companies, facilitating transaction data processing and related services.

While this newly-established business continues to be a drag for the company, going forward, it will not focus only on the scale of business, but will have an increasing focus on profitability.



Global expansion

With a vision to provide comprehensive financial services to global Chinese, Noah has continued its expansion plan in 2017. As of 2Q18, its overseas AUM reached Rmb22.3, up 22% yoy.

- In 2016, Noah set up an office in the US which has started creating synergies with the Hong Kong office that opened in 2012. The US office has successfully obtained a Registered Investment Advisor license and an insurance agency license that will provide mainland Chinese clients with dollar asset allocation, US insurance, children's education, and other comprehensive financial services. Noah's US office will focus more on leading PE/VC funds in the US to provide high-net-worth clients with greater access to global product selections.
- The newly-established Jersey Island Trust company has also started operations, making Noah the first independent Chinese wealth manager to be licensed for the trust business outside of China.
- In Hong Kong, Noah has recently launched a Global Family Office to provide comprehensive wealth management service for ultra-high net worth families. Noah will continue expanding its global footprint with a focus in regions where a large population of high-net-worth Chinese are present.
- In 2017, Noah expanded its presence in Canada and Australia to serve Chinese high-net-worth clients.



Appendix 1

Important Disclosures

*Other information available upon request

Disclosure checklist			
Company	Ticker	Recent price*	Disclosure
Noah Holdings	NOAH.N	40.19 (USD) 10 Sep 18	NA

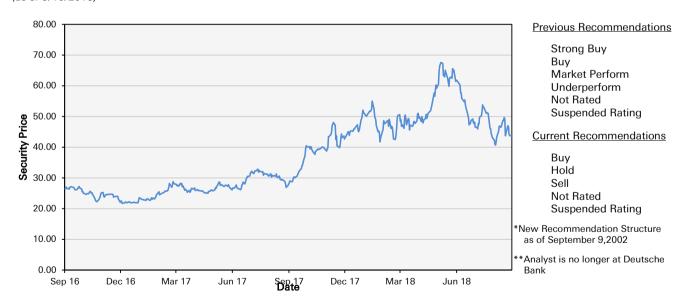
Prices are current as of the end of the previous trading session unless otherwise indicated and are sourced from local exchanges via Reuters, Bloomberg and other vendors. Other information is sourced from Deutsche Bank, subject companies, and other sources. For disclosures pertaining to recommendations or estimates made on securities other than the primary subject of this research, please see the most recently published company report or visit our global disclosure look-up page on our website at https://research.db.com/Research/Disclosures/CompanySearch. Aside from within this report, important conflict disclosures can also be found at https://research.db.com/Research/Topics/Equities?topicId=RB0002 under the "Disclosures Lookup" and "Legal" tabs. Investors are strongly encouraged to review this information before investing.

For disclosures pertaining to recommendations or estimates made on securities other than the primary subject of this research, please see the most recently published company report or visit our global disclosure look-up page on our website at https://research.db.com/Research/Disclosures/Company?ricCode=NOAH.N

Analyst Certification

The views expressed in this report accurately reflect the personal views of the undersigned lead analyst(s) about the subject issuer and the securities of the issuer. In addition, the undersigned lead analyst(s) has not and will not receive any compensation for providing a specific recommendation or view in this report. Edward Du

Historical recommendations and target price: Noah Holdings (NOAH.N) (as of 9/10/2018)





Equity rating key

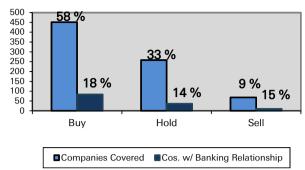
Buy: Based on a current 12- month view of total share-holder return (TSR = percentage change in share price from current price to projected target price plus pro-jected dividend yield), we recommend that investors buy the stock.

Sell: Based on a current 12-month view of total shareholder return, we recommend that investors sell the stock

Hold: We take a neutral view on the stock 12-months out and, based on this time horizon, do not recommend either a Buy or Sell.

Newly issued research recommendations and target prices supersede previously published research.

Equity rating dispersion and banking relationships



Asia-Pacific Universe



Additional Information

The information and opinions in this report were prepared by Deutsche Bank AG or one of its affiliates (collectively "Deutsche Bank"). Though the information herein is believed to be reliable and has been obtained from public sources believed to be reliable, Deutsche Bank makes no representation as to its accuracy or completeness. Hyperlinks to third-party websites in this report are provided for reader convenience only. Deutsche Bank neither endorses the content nor is responsible for the accuracy or security controls of those websites.

If you use the services of Deutsche Bank in connection with a purchase or sale of a security that is discussed in this report, or is included or discussed in another communication (oral or written) from a Deutsche Bank analyst, Deutsche Bank may act as principal for its own account or as agent for another person.

Deutsche Bank may consider this report in deciding to trade as principal. It may also engage in transactions, for its own account or with customers, in a manner inconsistent with the views taken in this research report. Others within Deutsche Bank, including strategists, sales staff and other analysts, may take views that are inconsistent with those taken in this research report. Deutsche Bank issues a variety of research products, including fundamental analysis, equity-linked analysis, quantitative analysis and trade ideas. Recommendations contained in one type of communication may differ from recommendations contained in others, whether as a result of differing time horizons, methodologies, perspectives or otherwise. Deutsche Bank and/or its affiliates may also be holding debt or equity securities of the issuers it writes on. Analysts are paid in part based on the profitability of Deutsche Bank AG and its affiliates, which includes investment banking, trading and principal trading revenues.

Opinions, estimates and projections constitute the current judgment of the author as of the date of this report. They do not necessarily reflect the opinions of Deutsche Bank and are subject to change without notice. Deutsche Bank provides liquidity for buyers and sellers of securities issued by the companies it covers. Deutsche Bank research analysts sometimes have shorter-term trade ideas that may be inconsistent with Deutsche Bank's existing longer-term ratings. Some trade ideas for equities are listed as Catalyst Calls on the Research Website (https://research.db.com/Research/), and can be found on the general coverage list and also on the covered company's page. A Catalyst Call represents a high-conviction belief by an analyst that a stock will outperform or underperform the market and/or a specified sector over a time frame of no less than two weeks and no more than three months. In addition to Catalyst Calls, analysts may occasionally discuss with our clients, and with Deutsche Bank salespersons and traders, trading strategies or ideas that reference catalysts or events that may have a near-term or medium-term impact on the market price of the securities discussed in this report, which impact may be directionally counter to the analysts' current 12-month view of total return or investment return as described herein. Deutsche Bank has no obligation to update, modify or amend this report or to otherwise notify a recipient thereof if an opinion, forecast or estimate changes or becomes inaccurate. Coverage and the frequency of changes in market conditions and in both general and company-specific economic prospects make it difficult to update research at defined intervals. Updates are at the sole discretion of the coverage analyst or of the Research Department Management, and the majority of reports are published at irregular intervals. This report is provided for informational purposes only and does not take into account the particular investment objectives, financial situations, or needs of individual clients. It is not an offer or a solicitation of an offer to buy or sell any financial instruments or to participate in any particular trading strategy. Target prices are inherently imprecise and a product of the analyst's judgment. The financial instruments discussed in this report may not be suitable for all investors, and investors must make their own informed investment decisions. Prices and availability of financial instruments are subject to change without notice, and investment transactions can lead to losses as a result of price fluctuations and other factors. If a financial instrument is denominated in a currency other than an investor's currency, a change in exchange rates may adversely affect the investment. Past performance is not necessarily indicative of future results. Performance calculations exclude transaction costs, unless otherwise indicated. Unless otherwise indicated, prices are current as of the end of the previous trading session and are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is also sourced from Deutsche Bank, subject companies,

The Deutsche Bank Research Department is independent of other business divisions of the Bank. Details regarding our organizational arrangements and information barriers we have to prevent and avoid conflicts of interest with respect to



our research are available on our website (https://research.db.com/Research/) under Disclaimer.

Macroeconomic fluctuations often account for most of the risks associated with exposures to instruments that promise to pay fixed or variable interest rates. For an investor who is long fixed-rate instruments (thus receiving these cash flows), increases in interest rates naturally lift the discount factors applied to the expected cash flows and thus cause a loss. The longer the maturity of a certain cash flow and the higher the move in the discount factor, the higher will be the loss. Upside surprises in inflation, fiscal funding needs, and FX depreciation rates are among the most common adverse macroeconomic shocks to receivers. But counterparty exposure, issuer creditworthiness, client segmentation, regulation (including changes in assets holding limits for different types of investors), changes in tax policies, currency convertibility (which may constrain currency conversion, repatriation of profits and/or liquidation of positions), and settlement issues related to local clearing houses are also important risk factors. The sensitivity of fixed-income instruments to macroeconomic shocks may be mitigated by indexing the contracted cash flows to inflation, to FX depreciation, or to specified interest rates - these are common in emerging markets. The index fixings may - by construction - lag or mis-measure the actual move in the underlying variables they are intended to track. The choice of the proper fixing (or metric) is particularly important in swaps markets, where floating coupon rates (i.e., coupons indexed to a typically short-dated interest rate reference index) are exchanged for fixed coupons. Funding in a currency that differs from the currency in which coupons are denominated carries FX risk. Options on swaps (swaptions) the risks typical options in addition to the risks related rates movements.

Derivative transactions involve numerous risks including market, counterparty default and illiquidity risk. The appropriateness of these products for use by investors depends on the investors' own circumstances, including their tax position, their regulatory environment and the nature of their other assets and liabilities; as such, investors should take expert legal and financial advice before entering into any transaction similar to or inspired by the contents of this publication. The risk of loss in futures trading and options, foreign or domestic, can be substantial. As a result of the high degree of leverage obtainable in futures and options trading, losses may be incurred that are greater than the amount of funds initially deposited – up to theoretically unlimited losses. Trading in options involves risk and is not suitable for all investors. Prior to buying or selling an option, investors must review the "Characteristics and Risks of Standardized Options", at http://www.optionsclearing.com/about/publications/character-risks.jsp. If you are unable to access the website, please contact your Deutsche Bank representative for a copy of this important document.

Participants in foreign exchange transactions may incur risks arising from several factors, including the following: (i) exchange rates can be volatile and are subject to large fluctuations; (ii) the value of currencies may be affected by numerous market factors, including world and national economic, political and regulatory events, events in equity and debt markets and changes in interest rates; and (iii) currencies may be subject to devaluation or government-imposed exchange controls, which could affect the value of the currency. Investors in securities such as ADRs, whose values are affected by the currency of an underlying security, effectively assume currency risk.

Unless governing law provides otherwise, all transactions should be executed through the Deutsche Bank entity in the investor's home jurisdiction. Aside from within this report, important conflict disclosures can also be found at https://research.db.com/Research/ on each company's research page. Investors are strongly encouraged to review this information before investing.

Deutsche Bank (which includes Deutsche Bank AG, its branches and affiliated companies) is not acting as a financial adviser, consultant or fiduciary to you or any of your agents (collectively, "You" or "Your") with respect to any information provided in this report. Deutsche Bank does not provide investment, legal, tax or accounting advice, Deutsche Bank is not acting as your impartial adviser, and does not express any opinion or recommendation whatsoever as to any strategies, products or any other information presented in the materials. Information contained herein is being provided solely on the basis that the recipient will make an independent assessment of the merits of any investment decision, and it does not constitute a recommendation of, or express an opinion on, any product or service or any trading strategy.

The information presented is general in nature and is not directed to retirement accounts or any specific person or account type, and is therefore provided to You on the express basis that it is not advice, and You may not rely upon it in making Your decision. The information we provide is being directed only to persons we believe to be financially



sophisticated, who are capable of evaluating investment risks independently, both in general and with regard to particular transactions and investment strategies, and who understand that Deutsche Bank has financial interests in the offering of its products and services. If this is not the case, or if You are an IRA or other retail investor receiving this directly from us, we ask that you inform us immediately.

In July 2018, Deutsche Bank revised its rating system for short term ideas whereby the branding has been changed to Catalyst Calls ("CC") from SOLAR ideas; the rating categories for Catalyst Calls originated in the Americas region have been made consistent with the categories used by Analysts globally; and the effective time period for CCs has been reduced from a maximum of 180 days to 90 days.

United States: Approved and/or distributed by Deutsche Bank Securities Incorporated, a member of FINRA, NFA and SIPC. Analysts located outside of the United States are employed by non-US affiliates that are not subject to FINRA regulations.

Germany: Approved and/or distributed by Deutsche Bank AG, a joint stock corporation with limited liability incorporated in the Federal Republic of Germany with its principal office in Frankfurt am Main. Deutsche Bank AG is authorized under German Banking Law and is subject to supervision by the European Central Bank and by BaFin, Germany's Federal Financial

Supervisory

Authority.

United Kingdom: Approved and/or distributed by Deutsche Bank AG acting through its London Branch at Winchester House, 1 Great Winchester Street, London EC2N 2DB. Deutsche Bank AG in the United Kingdom is authorised by the Prudential Regulation Authority and is subject to limited regulation by the Prudential Regulation Authority and Financial Conduct Authority. Details about the extent of our authorisation and regulation are available on request.

Hong Kong: Distributed by Deutsche Bank AG, Hong Kong Branch or Deutsche Securities Asia Limited (save that any research relating to futures contracts within the meaning of the Hong Kong Securities and Futures Ordinance Cap. 571 shall be distributed solely by Deutsche Securities Asia Limited). The provisions set out above in the "Additional Information" section shall apply to the fullest extent permissible by local laws and regulations, including without limitation the Code of Conduct for Persons Licensed or Registered with the Securities and Futures Commission.

India: Prepared by Deutsche Equities India Private Limited (DEIPL) having CIN: U65990MH2002PTC137431 and registered office at 14th Floor, The Capital, C-70, G Block, Bandra Kurla Complex Mumbai (India) 400051. Tel: + 91 22 7180 4444. It is registered by the Securities and Exchange Board of India (SEBI) as a Stock broker bearing registration nos.: NSE (Capital Market Segment) - INB231196834, NSE (F&O Segment) INF231196834, NSE (Currency Derivatives Segment) INE231196834, BSE (Capital Market Segment) INB011196830; Merchant Banker bearing SEBI Registration no.: INM000010833 and Research Analyst bearing SEBI Registration no.: INH000001741. DEIPL may have received administrative warnings from the SEBI for breaches of Indian regulations. The transmission of research through DEIPL is Deutsche Bank's determination and will not make a recipient a client of DEIPL. Deutsche Bank and/or its affiliate(s) may have debt holdings or positions in the subject company. With regard to information on associates, please refer to the "Shareholdings" section in the Annual https://www.db.com/ir/en/annual-reports.htm. Report at:

Japan: Approved and/or distributed by Deutsche Securities Inc.(DSI). Registration number - Registered as a financial instruments dealer by the Head of the Kanto Local Finance Bureau (Kinsho) No. 117. Member of associations: JSDA, Type II Financial Instruments Firms Association and The Financial Futures Association of Japan. Commissions and risks involved in stock transactions - for stock transactions, we charge stock commissions and consumption tax by multiplying the transaction amount by the commission rate agreed with each customer. Stock transactions can lead to losses as a result of share price fluctuations and other factors. Transactions in foreign stocks can lead to additional losses stemming from foreign exchange fluctuations. We may also charge commissions and fees for certain categories of investment advice, products and services. Recommended investment strategies, products and services carry the risk of losses to principal and other losses as a result of changes in market and/or economic trends, and/or fluctuations in market value. Before deciding on the purchase of financial products and/or services, customers should carefully read the relevant disclosures, prospectuses and other documentation. "Moody's", "Standard & Poor's", and "Fitch" mentioned in this report are not registered credit rating agencies in Japan unless Japan or "Nippon" is specifically designated in the name of the entity. Reports on Japanese listed companies not written by analysts of DSI are written by Deutsche Bank



Group's analysts with the coverage companies specified by DSI. Some of the foreign securities stated on this report are not disclosed according to the Financial Instruments and Exchange Law of Japan. Target prices set by Deutsche Bank's equity analysts are based on a 12-month forecast period.

Korea: Distributed by Deutsche Securities Korea Co.

South Africa: Deutsche Bank AG Johannesburg is incorporated in the Federal Republic of Germany (Branch Register Number in South Africa: 1998/003298/10).

Singapore: This report is issued by Deutsche Bank AG, Singapore Branch or Deutsche Securities Asia Limited, Singapore Branch (One Raffles Quay #18-00 South Tower Singapore 048583, +65 6423 8001), which may be contacted in respect of any matters arising from, or in connection with, this report. Where this report is issued or promulgated by Deutsche Bank in Singapore to a person who is not an accredited investor, expert investor or institutional investor (as defined in the applicable Singapore laws and regulations), they accept legal responsibility to such person for its contents.

Taiwan: Information on securities/investments that trade in Taiwan is for your reference only. Readers should independently evaluate investment risks and are solely responsible for their investment decisions. Deutsche Bank research may not be distributed to the Taiwan public media or quoted or used by the Taiwan public media without written consent. Information on securities/instruments that do not trade in Taiwan is for informational purposes only and is not to be construed as a recommendation to trade in such securities/instruments. Deutsche Securities Asia Limited, Taipei Branch may not execute transactions for clients in these securities/instruments.

Qatar: Deutsche Bank AG in the Qatar Financial Centre (registered no. 00032) is regulated by the Qatar Financial Centre Regulatory Authority. Deutsche Bank AG - QFC Branch may undertake only the financial services activities that fall within the scope of its existing QFCRA license. Its principal place of business in the QFC: Qatar Financial Centre, Tower, West Bay, Level 5, PO Box 14928, Doha, Qatar. This information has been distributed by Deutsche Bank AG. Related financial products or services are only available only to Business Customers, as defined by the Qatar Financial Centre Regulatory

Authority.

Russia: The information, interpretation and opinions submitted herein are not in the context of, and do not constitute, any appraisal or evaluation activity requiring a license in the Russian Federation.

Kingdom of Saudi Arabia: Deutsche Securities Saudi Arabia LLC Company (registered no. 07073-37) is regulated by the Capital Market Authority. Deutsche Securities Saudi Arabia may undertake only the financial services activities that fall within the scope of its existing CMA license. Its principal place of business in Saudi Arabia: King Fahad Road, Al Olaya District, P.O. Box 301809, Faisaliah Tower - 17th Floor, 11372 Riyadh, Saudi Arabia.

United Arab Emirates: Deutsche Bank AG in the Dubai International Financial Centre (registered no. 00045) is regulated by the Dubai Financial Services Authority. Deutsche Bank AG - DIFC Branch may only undertake the financial services activities that fall within the scope of its existing DFSA license. Principal place of business in the DIFC: Dubai International Financial Centre, The Gate Village, Building 5, PO Box 504902, Dubai, U.A.E. This information has been distributed by Deutsche Bank AG. Related financial products or services are available only to Professional Clients, as defined by the Dubai Financial Services Authority.

Australia and New Zealand: This research is intended only for "wholesale clients" within the meaning of the Australian Corporations Act and New Zealand Financial Advisors Act, respectively. Please refer to Australia-specific research disclosures and related information at https://australia.db.com/australia/content/research-information.html Where research refers to any particular financial product recipients of the research should consider any product disclosure statement, prospectus or other applicable disclosure document before making any decision about whether to acquire the product. In preparing this report, the primary analyst or an individual who assisted in the preparation of this report has likely been in contact with the company that is the subject of this research for confirmation/clarification of data, facts, statements, permission to use company-sourced material in the report, and/or site-visit attendance. Without prior approval from Research Management, analysts may not accept from current or potential Banking clients the costs of travel, accommodations, or other expenses incurred by analysts attending site visits, conferences, social events, and the



like. Similarly, without prior approval from Research Management and Anti-Bribery and Corruption ("ABC") team, analysts may not accept perks or other items of value for their personal use from issuers they cover.

Additional information relative to securities, other financial products or issuers discussed in this report is available upon request. This report may not be reproduced, distributed or published without Deutsche Bank's prior written consent. Copyright © 2018 Deutsche Bank AG



David Folkerts-Landau

Group Chief Economist and Global Head of Research

Pam Finelli Global Chief Operating Officer Research

Michael Spencer Head of APAC Research Global Head of Economics

Steve Pollard Head of Americas Research Global Head of Equity Research

Anthony Klarman Global Head of Debt Research

Kinner Lakhani Head of EMEA **Equity Research**

Dave Clark Head of APAC **Equity Research**

Andreas Neubauer Head of Research - Germany

Spyros Mesomeris Global Head of Quantitative and QIS Research

International locations

Deutsche Bank AG

Deutsche Bank Place

Level 16

Corner of Hunter & Phillip Streets

Sydney, NSW 2000

Australia

Tel: (61) 2 8258 1234

Deutsche Bank AG

Mainzer Landstrasse 11-17 60329 Frankfurt am Main Germany

Tel: (49) 69 910 00

Deutsche Bank AG Filiale Hongkong

International Commerce Centre, 1 Austin Road West, Kowloon,

Hong Kong

Tel: (852) 2203 8888

Deutsche Securities Inc.

2-11-1 Nagatacho Sanno Park Tower Chiyoda-ku, Tokyo 100-6171

Japan Tel: (81) 3 5156 6770

Deutsche Bank AG London

1 Great Winchester Street London EC2N 2EQ United Kingdom

Tel: (44) 20 7545 8000

Deutsche Bank Securities Inc.

60 Wall Street New York, NY 10005 United States of America Tel: (1) 212 250 2500