Business Education

Financial Training

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Memories of industry's dark days are good for schools

Experiences of the 2008 crisis have led to more interest in financial training. By *Jonathan Moules*

Providing financial services is an increasingly complex task, whether because of the mountain of regulation, new methods of delivery or alternative business models enabled by new technology. This has been good news for those providing financial training degree courses.

Ever since the 2008 crisis, and the realisation that many of those implicated in the meltdown were ignorant of the risks they were taking, training has been high on the agenda for those seeking a career in financial services.

However, growth in demand for masters in finance degree programmes is also being driven by students who have no intention of working in financial services, but who feel such specialist masters qualifications, which can be completed in 12 months, are better value than a two-year MBA.

MIT Sloan received a record 2,083 applications for its masters in finance course this year, 22 per cent more than in 2015 — that is 17 applicants for every available place.

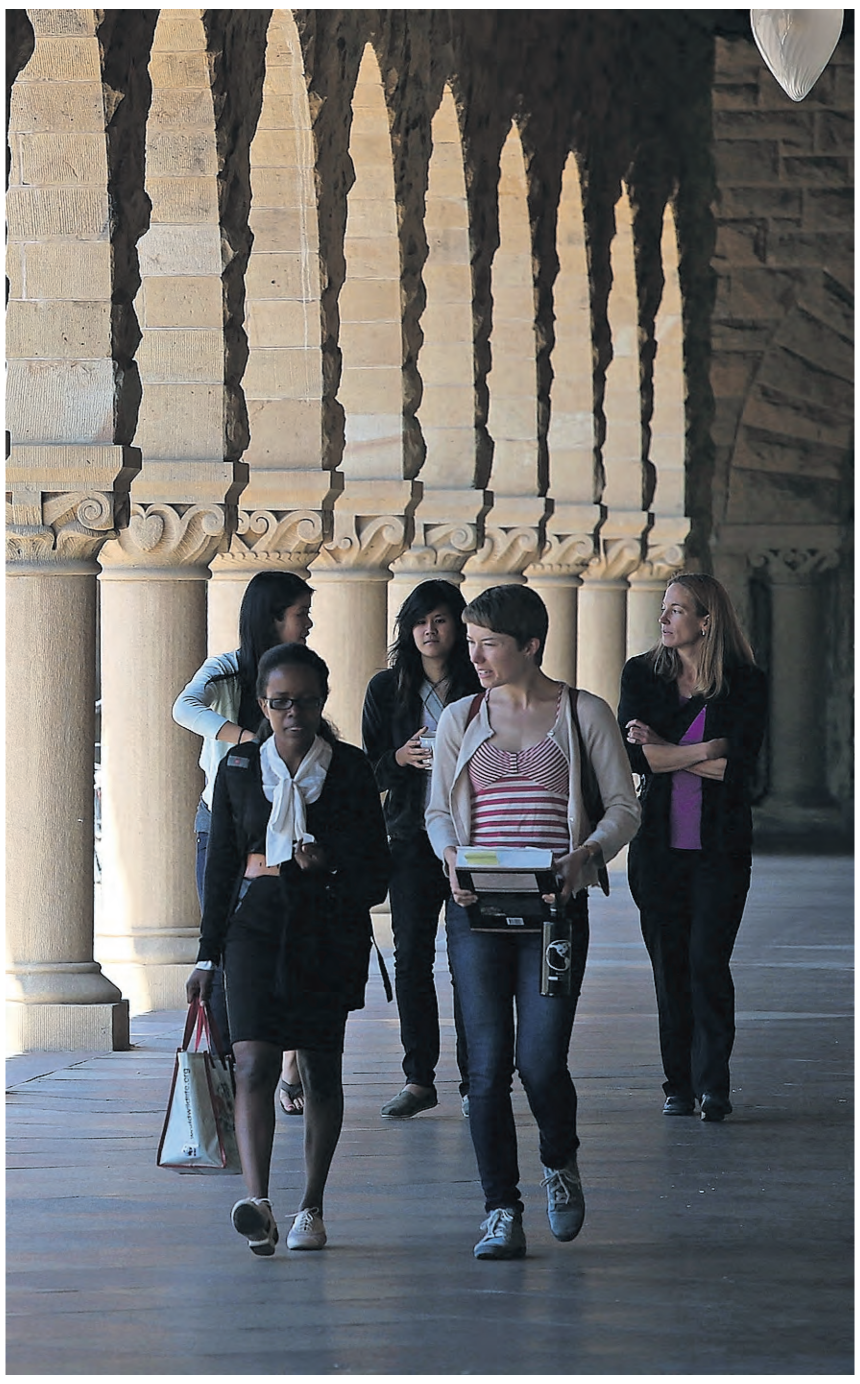
A masters in finance is seen as more attractive to graduates because they can get a "deeper dive" into the subject and at a lower cost than with an MBA, according to Heidi Pickett, director of the master of finance programme at MIT Sloan.

Fewer than a fifth of students graduating from the school's master of finance degree programme last year took jobs in investment banking compared with more than a quarter who went to work in jobs outside financial services.

"Certainly financial services [companies] want to hire credible people with the relevant knowledge to work in the industry, but the skill set can also be applied to jobs in other sectors," Ms Pickett says.

A major attraction of masters in finance courses is that they can be completed straight after an undergraduate degree. This is in contrast to an MBA, which requires several years of prior work experience and, in the US at least, usually necessitates a two-year career break.

"Students feel they get a step ahead of their peers with a specialised masters programme," says Ms Pickett.



Firm footing: strong interest in university finance courses — Justin Sullivan/Getty Images

'Pushing numbers too hard would compromise the quality of the product'

The University of Minnesota's Carlson School of Management is one of several US business schools that have added masters in finance courses to their roster of degree programmes in recent years. This is reflected in the increased number of institutions in this year's FT ranking, from 50 to 55.

Carlson was in part responding to what it saw as latent demand in the market. It received 150 applications for the 27 places available before it had even advertised the course.

However, the introduction of a master of finance degree has also benefited existing programmes run by the school because it has justified the creation of additional specialist teaching modules

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Financial Times Global Masters in Finance 2016 – post-experience programmes

						Alumni career progress							School diversity						International experience & research						
2016	2015	2014	3-year average	School name	Country	Salary today (US$)	Salary percentage increase	Value for money rank	Career progress rank	Aims achieved (%)	Placement success rank	Employed at three months/overall alumni data (%)	Women faculty (%)	Women students (%)	Women on board (%)	International faculty (%)	International students (%)	International board (%)	International mobility rank	International course experience rank	Additional languages needed to graduate	Faculty with doctorates (%)	Average course length (months)*	Company internships (%)*	2016 rank
1	2	2	2	University of Cambridge: Judge	UK	130,203	68	1	1	85	1	83/97	20	36	29	84	95	47	1	3	0	98	13	24	1
2	1	1	1	London Business School	UK	136,613	50	3	2	83	3	90/98	27	26	37	86	96	71	2	1	0	100	13	42	2
3	3	-	-	Singapore Management University: Lee Kong Chian	Singapore	91,476	90	2	5	68	2	89/74	22	48	21	66	83	47	4	2	0	95	12	74	3
4	4	3	4	University of Illinois at Urbana-Champaign	US	66,393	86	5	3	78	5	79/74	26	58	23	18	98	2	3	4	0	86	12	0	4
5	5	5	5	Florida International University: Chapman	US	66,605	39	4	4	78	4	24/44	32	40	30	55	56	0	5	4	0	83	12	5	5

Financial Times Global Masters in Finance 2016 – pre-experience programmes

The top 55 masters in finance programmes

						Alumni career progress						School diversity						International experience & research						
2016	2015	2014	3-year average	School name	Country	Salary today (US$)	Value for money rank	Careers rank	Aims achieved (%)	Placement success rank	Employed at three months/overall alumni data (%)	Women faculty (%)	Women students (%)	Women on board (%)	International faculty (%)	International students (%)	International board (%)	International mobility rank	International course experience rank	Additional languages needed to graduate	Faculty with doctorates (%)	Average course length (months)*	Company internships (%)*	2016 rank
1	1	1	1	HEC Paris	France	96,260	8	6	92	8	98/74	19	22	13	69	89	67	1	9	1	100	10	100	1
2	3	8	4	ESCP Europe	FR/UK/DE/ES/IT	85,806	12	16	89	1	97/94	35	30	29	73	36	48	9	2	1	96	13	100	2
3	4	5	4	IE Business School	Spain	96,076	26	5	93	23	98/88	38	13	46	62	87	84	3	20	1	98	10	26	3
4	8	3	5	Edhec Business School	France	84,180	10	21	88	10	96/77	36	45	35	41	59	82	2	4	1	89	15	100	4
5	5	10	7	MIT: Sloan	US	117,395	32	17	90	29	84/100	21	45	13	39	91	46	12	37	0	100	12	0	5
6	2	2	3	Esade Business School	Spain	81,267	18	1	89	6	92/95	35	20	24	40	90	82	6	7	1	92	12	39	6
7	6	4	6	Essec Business School	France/Singapore	79,021	20	8	90	9	94/86	32	24	10	53	34	50	5	6	1	99	13	100	7
8	10	6	8	University of St Gallen	Switzerland	88,902	3	9	87	14	100/81	15	19	38	80	63	50	22	12	1	100	35	70	8
9	9	8	9	Università Bocconi	Italy	88,692	23	13	85	2	100/34	37	28	15	30	31	65	4	11	1	95	28	100	9
10	6	10	9	Skema Business School	France	69,183	15	28	86	16	100/94	47	37	39	40	77	67	7	5	1	81	12	100	10
11	14	7	11	University of Oxford: Saïd	UK	91,130	28	35	89	13	85/81	17	51	57	58	99	71	10	38	0	100	9	0	11
12	12	12	12	Grenoble Ecole de Management	France/UK/Singapore	63,932	33	24	83	51	96/75	44	46	59	47	88	59	8	1	0	83	24	84	12
13	11	16	13	Imperial College Business School	UK	74,756	37	33	85	12	97/95	29	28	36	92	90	64	15	22	0	100	14	43	13
14	19	19	17	Nova School of Business and Economics	Portugal	56,373	19	38	83	21	92/97	37	23	29	35	75	29	16	3	2	100	20	76	14
15	16	13	15	Peking University: Guanghua	China	93,572	9	7	84	4	100/100	27	39	5	12	14	82	54	28	1	95	22	96	15
16=	12	13	14	Stockholm School of Economics	Sweden	81,354	7	34	87	22	94/78	25	22	15	34	57	0	21	15	0	99	20	64	16
16=	15	15	15	Warwick Business School	UK	68,186	44	11	81	26	93/83	32	59	20	78	89	20	28	47	1	100	14	0	16
18	18	21	19	Kozminski University	Poland	80,393	11	36	89	5	95/87	33	51	20	22	17	60	51	8	1	88	24	47	18
19	24	26	23	Eada Business School Barcelona	Spain	69,468	30	2	87	44	90/84	35	23	39	55	89	43	17	17	1	71	11	40	19
20	21	20	20	Frankfurt School of Finance and Management	Germany	80,772	31	3	84	15	95/87	16	26	24	20	48	12	44	16	1	98	23	26	20
21	25	23	23	HEC Lausanne	Switzerland	72,657	1	37	81	49	81/80	25	25	20	80	66	50	27	21	1	100	24	57	21
22	23	25	23	Rotterdam School of Management, Erasmus University	Netherlands	65,702	5	14	85	47	81/74	24	26	34	49	58	32	11	26	0	100	13	15	22
23	26	24	24	Vlerick Business School	Belgium	62,561	14	19	83	18	95/91	29	25	17	23	37	92	26	10	1	94	11	100	23
24	-	-	-	EMLyon Business School	France	77,949	17	45	82	25	86/85	31	24	11	46	24	89	24	13	1	97	13	100	24
25	22	18	22	Cranfield School of Management	UK	64,829	29	10	83	39	95/62	32	33	17	55	93	39	23	44	1	94	12	11	25
26	20	17	21	City University: Cass	UK	60,642	36	30	88	42	64/89	27	41	46	70	96	54	19	27	0	95	13	3	26
27	29	31	29	Brandeis University International Business School	US	74,234	55	22	83	31	55/96	35	58	20	29	83	28	32	31	0	84	21	66	27
28	-	-	-	Shanghai Jiao Tong University, Saif	China	80,218	2	54	68	11	100/100	29	46	18	50	17	18	49	24	0	100	22	100	28
29	45	-	-	University of Hong Kong	China	74,830	38	31	80	17	90/79	28	52	20	33	10	40	52	39	0	96	12	19	29
30=	40	35	35	Lancaster University Management School	UK	55,223	39	32	86	24	68/47	31	66	38	54	100	50	30	34	0	94	12	0	30
30=	-	-	-	Neoma Business School	France	60,719	24	51	72	38	94/92	44	27	50	57	49	50	13	18	1	88	14	100	30
32	38	-	-	Lund University School of Economics and Management	Sweden	51,096	6	23	83	33	90/55	29	38	24	27	75	18	25	19	0	88	9	0	32
33	28	33	31	University of Strathclyde Business School	UK	52,210	27	39	82	37	95/78	37	49	35	46	97	47	29	25	0	80	12	5	33
34	36	36	35	University College Dublin: Smurfit	Ireland	53,813	21	52	81	41	97/69	35	38	21	50	67	47	18	32	0	100	12	41	34
35=	27	29	30	Washington University: Olin	US	77,705	47	49	85	45	89/92	24	48	13	37	73	1	40	30	0	95	15	0	35
35=	33	27	32	Illinois Institute of Technology: Stuart	US	76,852	50	18	73	54	77/41	26	34	20	33	93	10	20	47	0	92	21	0	35
37	39	-	-	Queen Mary, University of London	UK	52,368	40	12	76	27	69/42	27	42	20	89	88	0	46	35	0	98	12	0	37
38	30	33	34	University of Edinburgh Business School	UK	55,370	49	41	80	40	89/59	39	42	35	58	97	41	33	36	0	91	12	1	38
39	30	37	35	University of Rochester: Simon	US	73,418	54	27	85	43	82/84	17	53	10	31	92	15	37	43	0	81	14	12	39
40=	32	31	34	Henley Business School	UK	48,643	43	26	77	32	95/61	47	52	36	48	99	29	38	47	0	88	10	0	40
40=	35	28	34	Durham University Business School	UK	54,687	34	44	80	48	86/70	34	67	39	65	96	39	34	29	0	98	13	1	40
42	34	-	-	Singapore Management University: Lee Kong Chian	Singapore	64,269	41	42	72	34	60/29	22	61	21	66	90	47	14	47	0	95	12	29	42
43	37	30	37	Tulane University: Freeman	US	65,659	46	4	79	36	26/42	32	55	14	38	95	28	50	47	0	86	15	0	43
44	-	40	-	QUT Business School	Australia	48,981	35	25	76	3	n/a	51	34	27	31	87	13	31	40	0	91	19	14	44
45=	-	-	-	ESC Rennes	France	56,639	25	47	72	52	91/76	33	58	60	85	77	30	42	14	0	82	17	100	45
45=	-	-	-	Ohio State University: Fisher	US	76,570	45	40	77	35	50/100	25	48	17	28	71	4	41	47	0	83	9	0	45
47	42	38	42	Nottingham University Business School	UK	41,210	48	46	78	28	83/85	40	50	8	42	87	8	35	42	0	89	14	0	47
48	41	39	43	Adam Smith Business School, University of Glasgow	UK	38,619	42	20	78	7	100/6	40	56	7	60	97	0	48	47	0	86	12	0	48
49	44	43	45	Tilburg University	Netherlands	51,588	4	29	79	53	43/63	20	30	40	40	36	0	45	33	0	90	16	22	49
50	47	42	46	University of Bath School of Management	UK	33,496	53	48	80	19	94/75	33	78	31	65	97	31	43	41	0	98	12	0	50
51	49	44	48	Universidad Adolfo Ibañez	Chile	50,338	16	15	72	30	82/76	19	22	30	39	20	40	47	23	0	73	15	100	51
52	-	-	-	Lingnan College at Sun Yat-sen University	China	54,633	13	53	65	20	100/100	23	63	21	2	2	26	53	45	1	96	24	99	52
53	48	-	-	Aston Business School	UK	36,906	51	43	78	46	82/25	36	46	21	41	85	29	36	47	0	74	12	0	53
54	-	-	-	University of Utah: Eccles	US	78,574	22	55	72	50	70/100	28	20	15	24	29	6	55	47	0	75	16	21	54
55	-	-	-	University of Liverpool Management School	UK	31,844	52	50	65	55	71/60	37	50	30	42	98	10	39	46	0	89	12	0	55

Footnotes: The FT does not publish scores. *Data in these columns are for information only and are not used in the rankings. Although the headline ranking figures show the relative postions of each institution, the pattern of clustering among the schools is equally significant. Some 195 points separate the top programmes, HEC Paris, from the school ranked number 55. The top 10 participants, from HEC Paris to Skema Business School, form the top group of pre-experience Masters in Finance providers. The second group is headed by Saïd Business School and spans schools ranked from 11 to 26, a range of some 45 points in total. The third goup is headed by Brandeis University International Business School and includes schools ranked from 27 and 45. The remaining 9 schools headed by Nottingham University Business School make up the fourth group.

Judge topples LBS as leading business school

Rankings

HEC Paris retains crown for teaching pre-career students, says *Laurent Ortmans*

After five years at the top, London Business School has ceded first place to Judge Business School at the Cambridge university in the FT's 2016 ranking of finance programmes for students already working in the field.

In the ranking of programmes for students with little or no industry experience, HEC Paris has retained its top place for the sixth consecutive year, ahead of ESCP Europe of France and IE Business School of Spain, both of which moved up by one place.

The FT ranks masters in finance programmes both for those with little or no background in the financial industry (the pre-experience category) and courses for professionals who have already worked in the sector.

The 2016 rankings feature the top 55 pre-experience courses and five post-experience programmes. Only a handful of schools offer post-experience courses.

Using data provided by the business schools and their alumni who graduated three years ago (the class of 2013, see page 4), the rankings are based on criteria ranging from alumni salaries three years after graduation to how much seniority and international mobility graduates achieved.

In the post-experience ranking, Judge Business School moved to the top thanks to strong performance in aiding career progression. The class of 2013 enjoyed the second highest salary three years after graduation at around $130,000 as well as offering the greatest value for money.

The alumni were particularly pleased with the faculty. "The management . . . had the drive, network and reputation to make it a world-class degree," says one graduate.

Although London Business School dropped to second place, its alumni remained the highest earners, making an average of just under $137,000 three years after graduation. The programme also achieved the highest rank for international experience.

In the pre-experience ranking, HEC Paris stayed top with the second highest salary three years after graduation at $96,000, marginally ahead of IE Business School but significantly below MIT's Sloan School of Management at $117,000.

> Hong Kong was the only school with 100 per cent international intake

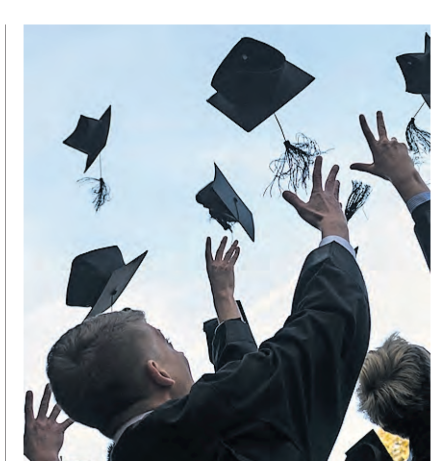
The alumni of the Parisian school also boasted the second highest score for aims achieved and came top for international mobility. One of the school's biggest advantages is the strength of its alumni network. "HEC provides excellent access to a network of people who are in key positions in top companies," reports one graduate.

The University of Hong Kong registered the best progression, climbing 16 places to 29. It saw a significant increase in the salary of its alumni, from $60,000 to $75,000, and it also climbed 17 places in the career rank to 31.

Lancaster University Management School recorded the second best progress, climbing 10 places to 30. It did better thanks to a higher salary, from $43,000 to $55,000, and an improved career rank. It is the only school whose intake is entirely made up of international students.

The pre-experience ranking features a record 55 programmes, up from 50 last year. Four of the schools ranked last year could not be considered this year due to a low response rate from alumni. Eight schools are ranked for the first time, while QUT Business School returned to the ranking after missing out on a place last year. The new entrants include three schools from France, two from the US and mainland China as well as one from the UK.

EMLyon of France is the highest new entrant, at 24, ahead of another new joiner, the Shanghai Advanced Institute of Finance at Shanghai Jiao Tong University. The latter, in 28th place, ranked second overall for value for money, just behind HEC Lausanne.



Interactive business school tables online

Visit the FT's Business Education website to view table key and methodology

rankings.ft.com/businessschool rankings/

Bitcoin hype leads more to ask: what is blockchain?

Technology Finance executives are flocking to courses that cover digital currencies. By *Jane Wild*

Blockchain reaction: Cambridge university plans to launch a course on the technology behind bitcoin Alamy

It is a technology so new that many people in finance cannot explain what it is or what it might be able to do — yet they know they might have to worry about it.

Demand from professionals for learning about blockchain, the technology that powers the virtual currency bitcoin, is so great that Cambridge university plans to offer courses to executives about its disruptive potential this year.

Blockchain has been the subject of a significant amount of hype over the past year as institutions ranging from banks, exchanges, insurers and governments have rushed to work out how blockchain could be used, by them or rivals. The technology deployed is known as a distributed database, which runs from many computers and needs no central authority.

Cambridge's Centre for Alternative Finance, based at its Judge Business School, will be the first in the UK to teach the subject, with demand coming mainly from employees of global banks.

"Nobody wants to be Kodak," says Robert Wardrop, executive director of the school's centre for alternative finance, comparing the film-maker's failure to adapt to the digitisation of photography to the change in the banking sector.

"They [bankers] all know their industry is being digitalised, how you develop a competitive response . . . that is the challenge," Mr Wardrop says. "Do you do nothing, collaborate or compete?"

Advocates believe that though blockchain is at an early stage in its development, it has the potential to disrupt many sectors. This is because it is transparent, indelible and tamper-proof and is jointly run by several parties. It could be used to keep records such as on a person's complete health or insurance history, for example. Or it could be used for cross-border clearing and settlement.

Cambridge's teaching about blockchain and digital currencies will be a core part of its educational programme on fintech, which is being developed by the Centre for Alternative Finance. Professors will also cover peer-to-peer lending, crowdfunding, alternative investments and new forms of credit analytics. The material will be included in the university's master of finance programme this summer.

The introduction of the Cambridge course comes after several US universities that had added bitcoin to their syllabuses in 2014 shifted their attention to blockchain.

David Yermack, a professor of finance at New York University's Stern School of Business, says there is great interest in the quandaries posed by emerging technology to regulators. "There are huge challenges for most governments around the world because they assume the current law will deal with a lot of blockchain issues," he says. "But it is a totally different animal."

Professor Yermack predicts that a technological evolution will shrink the size of the industry's workforce overall, but in doing so it will create many specialist tech jobs.

Stern School will teach its MBA students about digital currencies, blockchains and their growing place in the financial services industry from next spring. It also plans a course for executives. At Duke University's Fuqua School of Business, emphasis has also shifted away from bitcoin. Duke says its innovation and cryptoventures course, which is part of the MBA, has been heavily oversubscribed and is aimed at students who want to create their own blockchain start-ups. Campbell Harvey, finance professor at Fuqua, says: "Now it's the general technology called blockchain. There are apps that go with it, bitcoin is one of them."

Universities are mostly teaching the basics of blockchain: the context of how the technology came about, its mechanics and how people are trying to commercialise and innovate with it.

Garrick Hileman, who teaches blockchain and virtual currencies at Cambridge, says that for more than two years he has seen "tremendous" interest from companies. He has been called in to teach executives informally about bitcoin and other virtual currencies such as ether, and more recently, blockchain. "Many people are still trying to understand the basics," he says.

> '[Bankers] all know their industry is being digitalised. Do they do nothing, collaborate or compete?'

Blockchain's reputation has suffered from its association with bitcoin, which has been tarnished by the collapse of Mt Gox — a prominent exchange, with the disappearance of $500m worth of customers' bitcoins — and the closure by US authorities of the Silk Road website, which facilitated the sale of illegal drugs.

But part of what attracted executives to the potential of distributed databases was seeing how well bitcoin performed as it attracted users around the world. Launched in 2008, bitcoin's market value now stands at more than $10bn, according to Coindesk, which tracks bitcoin data.

While the new Cambridge course will teach key concepts — such as what blockchain is and how it is being experimented with — it will not go in depth into the complex cryptographic processes that would be more suited to a computer science course.

Manfred Alfonso Dasenbrock, an executive at Brazilian co-operative Sicredi, who attended a fintech course at Cambridge in September, says: "The way we do banking business will not be the same in a few years."

Company conflict with activists is played out in the classroom

Hedge funds

Corporate battles are helping academics bring finance theory to life, writes *Owen Walker*

Activist hedge funds have spent the past half-decade disrupting blue-chip companies — winning board seats, bringing down chief executives and dictating corporate strategy. Now their actions are shaking up the way some financial courses are taught.

The exploits of high-profile activist fund managers, such as Carl Icahn and Bill Ackman, have inspired a new generation of would-be investors who are keen to know how activists identify suitable targets and carry out their campaigns.

"I think it's essential to learn about activism," says Niklas Schmuecker, who is undertaking a finance MBA at New York City's Columbia Business School. "If you end up in investment management you need to know how activists work and how their actions could affect your investments.

"If you end up in a corporation you'll need to know how to defend the company from activist attacks. There are many potential careers where what I learnt will be helpful."

Activist investors buy small stakes in companies — typically 5-10 per cent of their stock — and then use their position as a minor shareholder to pressure the companies to make changes. In many situations, such as at Microsoft and Yahoo, activists have won board seats, while at others they have forced their targets to buy rivals, sell business lines and change how they allocate capital.

Between 2009 and 2015, more than 40 per cent of the 500 largest US listed companies were subject to activist scrutiny, with 15 per cent facing such investors in a public stand-off, according to data provider FactSet.

Mr Schmuecker took a new course offered by Columbia this spring that focused on activists. Students were given a potted history of shareholder activism, were taught about hedge fund tactics and discussed the controversies that surround their strategies.

Students heard talks by guest speakers including Jeffrey Smith — an activist investor at Starboard Value who joined the Yahoo board in April — as well as lawyers and investment bankers who help companies defend themselves against activist campaigns.

Wei Jiang, the Columbia professor who designed and ran the course, says she decided to focus on activist investing after receiving requests for more information on the strategy from students on her advanced corporate finance course.

"I don't think that the majority of people who took my course actually wanted to become activists, but they understand that in their future jobs they will get into activist situations and they want to know about it," she says. "They don't feel that the traditional business school curriculum covers that."

Separately, Columbia runs an annual competition in collaboration with hedge fund Pershing Square Capital. First- and second-year students on the school's applied security analysis course are divided into around 40 teams and over three months they work to come up with an investment idea.

The teams are whittled down and the remaining five present their theses to a panel of judges, which is hosted by Mr Ackman, chief executive of Pershing Square, and includes several other hedge fund managers.

At Duke University's Fuqua School of Business, finance professor Alon Brav is aptly restructuring his corporate restructuring course to make activist investors the unifying theme. He will use activist campaigns as case studies to teach his students about topics such as corporate governance, M&A, divestitures and leveraged buyouts.

Columbia Business School student Niklas Schmuecker

Prof Brav, who along with Prof Jiang has studied the effects activists have had on the companies they target, plans to invite investors and consultants to speak to his students. "Using activism is a very easy way for students to understand these issues," he says. "It's a better way to tell stories as it brings [the issues] to life."

He gives the example of teaching about public companies going private by discussing Mr Icahn's ultimately unsuccessful attempts in 2013 to block Michael Dell from buying out the computer company he founded, Dell.

While the majority of activists are based in the US and focus on North American companies, European and Asian companies have also been targeted, by both US and domestic funds.

Julian Franks, finance professor at London Business School, has been teaching students about shareholder activism for the past eight years as part of his elective course on corporate restructuring. He says fewer than 10 per cent of his students are from the UK.

Students at the LBS course receive visits from current and former activist hedge fund executives, though Prof Franks doubts they view it solely as an opportunity to recruit graduates.

"I know of just one case where a hedge fund tried to recruit one of my students. But in the end they didn't accept because the position was going to be based outside the UK," he says. "Hedge funds are very small outfits, so they are probably not regular recruiters."

Mr Schmuecker says what he found most valuable about taking the course was the ability to question investors such as Starboard's Mr Smith about campaigns he was then involved in at Yahoo and pharmaceutical company Depomed.

"If you have one of the top activist investors presenting in class in front of you, it's a lot more tangible than just talking about events in the news," adds Mr Schmuecker.

Owen Walker's new book on activist investors, 'Barbarians in the Boardroom', is published by FT Publishing.

Accountancy receives the 'try before you buy' treatment

Online

ACCA wants to open its programme to a wider audience and boost financial literacy, writes *Maxine Kelly*

A year after its launch, the Association of Chartered Certified Accountants' online-only X programme has enrolled more than 100,000 people from 230 countries. But the success of these vocational courses — which offer a combination of free and "affordable" modules as part of a "try before you buy" approach to entice more students — will be judged on how many graduates secure careers in the accountancy profession.

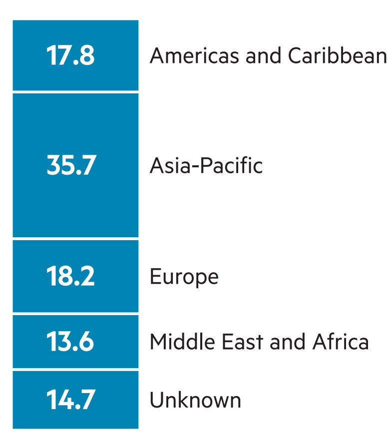
ACCA, the global professional body that supports 178,000 members and more than 400,000 students, launched free introductory and intermediate courses in financial and management accounting in July. Three additional modules for the diploma in accounting and business were then introduced in October, costing $89 each. Exams are an additional cost that varies by country, but most are less than $145 each.

Fatima Patel, a student based in Harare, had been struggling to balance ACCA's classes with other commitments and decided to exchange the classroom for the X programme's online modules. "Not only do I get to work at my own time and pace, the content is incredibly relevant and precise. I will definitely be taking the paid-for courses," the 19-year-old says.

Ms Patel also notes that quality ranked as highly as convenience in her decision. "It is fairly easy to access classroom-based training in Harare but the quality leaves much to be desired," she says, adding that the combined cost of internet access and the paid-for course is still cheaper than attending a college or hiring a tutor.

ACCA tried to find a price for its X programme that was affordable to a large global audience. Yet some still find the

ACCA-X enrollees by region



Source: ACCA-X

$89 cost a barrier. Mir Akib, a 21-year-old from Bangladesh, reports an excellent experience with the free courses but could not afford the paid-for units.

"The price is little bit high for some poor students like me. If it was $50 it would be affordable for me and some other students I know," he says.

Of the more than 100,000 enrolments to the X courses so far, 1,000 are for the paid-for modules. More than 1,500 ACCA exams have been taken by learners on the X programme. The completion rate for the free courses is in line with that of other free Moocs (massive open online courses), which is just 4 per cent, according to a study by Harvard Business Review in September. However, Mark Kenhard, product manager of the programme, says while he does not yet have the data, he anticipates a higher completion rate for the paid-for courses as they tend to elicit a "higher level of commitment" from learners.

The programme's success will inevitably turn on whether it delivers credentials that lead to careers in accountancy. Jeremy Black, partner in the professional services practice at Deloitte, says while the courses are a useful tool for teaching technical aspects of a role, when assessing job applicants there is no comparison between the X courses and a professional course such as the UK's ACA. The ACA is a three-year programme that includes face-to-face learning and on-the-job training, and requires students to sit about 15 exams.

"They're not just about technical accounting but also about ethics that people need to have as part of what they do. I suppose in theory you could teach that online but you'd perhaps have to do other things as well," says Mr Black.

However, the big accountancy firms are looking closely at how they can integrate ACCA-X into their internal training programmes. Tom Hartgill, who leads learning and development at professional services company PwC, says while the courses are unlikely to replace its structured graduate training programmes, they "may be suitable for those in non-finance roles who would benefit from a base level of finance knowledge, and potentially for individuals looking for a change of career path into finance".

Deloitte had the option of going fully online with its own internal training programmes, but it favours a mix of online and classroom-based learning. ACCA is working on a business-to-business model where external providers combine the X courses with face-to-face learning.

"The main reason for that is the research tells us that pass rates for exams are higher if you're using blended learning rather than if you're simply studying alone," says Mr Kenhard.

ACCA-X is trying to take financial literacy to a wider audience. In South Africa, for example, it has teamed up with the regional Gauteng City government to provide financial literacy training to 250 disadvantaged children a year, providing them with free tablets.

In Zimbabwe it has struck a deal to help train about 3,800 unqualified government accounting clerks. The country's largest mobile network provider, Econet Wireless, has agreed not to charge users for data when they access the mobile version of the course from July. Mr Kenhard says more initiatives are on their way for later this year.

Schools strive to produce future fintech entrepreneurs

Start-ups Pressure to repay student debt limits launch of ventures, writes *Jonathan Moules*

Justin Fitzpatrick describes his journey from business school to co-founding one of London's leading fintech start-ups as inevitable.

For Mr Fitzpatrick, the son of bagel bakery owners in Boston, conversations over the dinner table growing up were often about the details of running the business. After university, he was hired by New York-based GLG, an online professional development start-up still run by its founders, which he saw grow from 100 to 1,000 employees in just under five years.

By the time he enrolled on the masters in finance degree course at London Business School, Mr Fitzpatrick had saved enough money from his job at GLG to pay his tuition fees and had the drive to start a tech venture himself.

Barely a year after he graduated in 2011, Mr Fitzpatrick did just that, co-founding Duedil, an online company information database, where he is head of finance and operations.

"In my year most people were interested in going into more traditional roles in finance, either going to work for a bank or private equity firms," Mr Fitzpatrick recalls, adding that fear of failure held back a lot of people from taking the jump into start-ups.

That nervousness among business school students is being replaced by enthusiasm for starting ventures of their own. This is true on many masters in finance courses, but actually launching a company after graduation remains a minority pursuit.

Like LBS, Imperial College Business School is based in London, which hosts the largest grouping of tech start-ups outside the US — in an area known as Silicon Roundabout — as well as being Europe's banking and finance centre.

The university nurtures student-led businesses through Imperial Innovations, a technology commercialisation and investment business, which evolved from an internal project into a publicly listed company traded on London's junior stock exchange, Aim.

Despite this support, just 10-15 per cent of the 450 students graduating from masters in finance courses each year immediately start companies. The vast majority take salaried posts in banks and finance companies, according to Diane Morgan, associate dean of programmes at the business school.

"We get a lot of people who say in their application they would like to run a business," she notes. "The reality, however, is that when they have finished many go to work for banks where they can build a career."

The immediate need to pay off tuition costs is a barrier to many, while others will want to get some experience before striking out on their own, according to Ms Morgan. "People feel the need to pay their fees," she says. "Some have an idea, but they know they are not yet ready to make it a business."

Duedil's Mr Fitzpatrick claims that he still uses skills learned during the masters in finance course at LBS, such as modelling financial statements and funding methods. "It gave me a real grounding in the practical tools of finance," he says.

Although he knows of students on other courses and from other year groups launching companies, Mr Fitzpatrick does not know of any students in his class who started their own business.

However, he says there has been a "cultural shift" since he left LBS, as he is aware of more graduates today considering becoming entrepreneurs.

Adrian Gunadi graduated from the masters in financial management programme at Erasmus University's Rotterdam School of Management in 2003. He became an entrepreneur only in October, when he co-founded the peer-to-peer lender Investree after almost two decades of salaried jobs in banking.

Working in the industry for a long period enabled Mr Gunadi and his co-founders, who were also bankers, to save enough money to fund the first eight months of their company's development. Over the years, Mr Gunadi says he has built a network of industry contacts who have helped him deal with the various hurdles of getting a financial services venture off the ground. "I spent a lot of time learning about banking," he says. "This knowledge is very important in understanding the risks involved in the market we are now operating in."

The need to experience banking before trying to disrupt the business model is important to masters graduates looking to become entrepreneurs, according to Myriam Lyagoubi, head of the specialised master in corporate finance programme at EMLyon Business School in France.

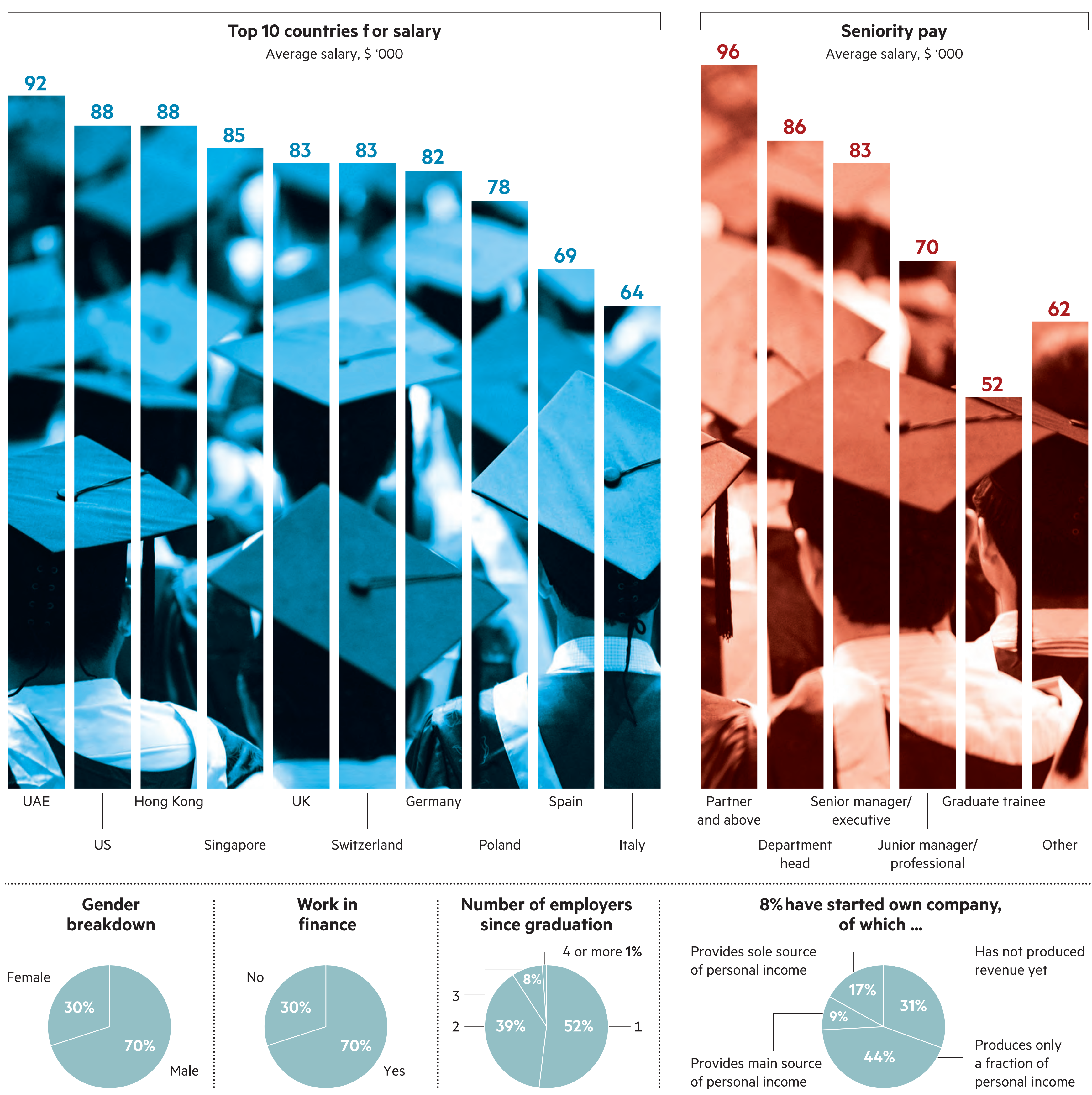
She sees very similar percentages of her masters in finance students going into entrepreneurship as those at Imperial College Business School, but notes that many of these start-ups are not in financial services.

"Those that found companies in the financial services industries tend to have felt the need to gain many years of experience in banking before founding their company," she says.

That said, she believes there is growing interest among masters in finance students in starting a business, not because of a lack of banking jobs, but because it is seen as a more interesting career. "This is a generation that wants pleasure in their professional life and their private life," she says.

> 'People need to pay their fees. Some have an idea, but they know they are not yet ready to make it a business'

Class of 2013: survey of finance course graduates three years on



FT graphic Source: FT research Photo: Dreamstime

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Engineering reborn: MIT Sloan professor Andrew Lo has pioneered the use of modern portfolio theory on drugs research — Shawn G. Henry

Financial theory helps fight cancer and climate change

Derivatives Academics are reviving the discipline's tarnished reputation, writes *Laura Noonan*

The rebirth of financial engineering over the past few years has been every bit as striking as the returns once promised by some of the discipline's more daring adherents.

Not that long ago, it looked like it was game over for the field of study that produced the mortgage backed security, the credit default swap and all manner of other exotic derivatives that exploded so spectacularly in the financial crisis of 2008.

Now, financial engineering theory is being touted by several academics as the key to curing cancer faster, reducing the impact of climate change and imposing better risk discipline on the same banks that were once almost felled by the discipline's creations.

Graduates are flocking to specialist courses in record numbers, with Columbia receiving more than 1,200 applications for a course that has fewer than 90 places, and Cornell attracting more than 1,000 applications for a course with just 55 spots.

"It was Warren Buffett who said derivatives are financial markets' weapons of mass destruction," says Andrew Lo, the MIT Sloan finance professor and hedge fund manager behind pioneering work on how financial theory can help cure cancer.

"Uncontrolled use of these kinds of weapons could be extremely devastating and create nuclear fallout for decades . . . If we use these powerful tools responsibly and in a controlled way, the power they can provide is virtually unlimited."

Mr Lo has spent years looking at how the principles of financial theory can be applied to fighting cancer. "In cancer drug development, because the risks of failure are so high, the probability of success goes up quite dramatically if you create a portfolio," says Mr Lo.

He adds that the historical probability of success for developing a single anti-cancer treatment is about 5 per cent. But the probability of success shoots up to 99.59 per cent in a portfolio of 150 cancer drugs whose successes are statistically uncorrelated. That 99.59 per cent is not just the probability of one drug succeeding, it is the probability that two or more end up approved by the US's Food and Drug Administration.

With financial pay-offs for each successful potentially yielding billions of dollars, Mr Lo believes investing in cancer drugs on a large enough scale is safer than focusing on one long shot. Mr Lo bases his research on binomial distribution — a probability theory that looks at the distribution of outcomes from a repeated test — and basic portfolio theory, which advocates the benefits of holding a group of complementary assets. Mr Lo cites UBS's recently launched $470m oncology fund as a real-life example of portfolio theory.

Another example of financial engineering put to broader use is Bob Litterman's work on climate change. Mr Litterman, Goldman Sachs's former head of risk who now works at hedge fund Kepos Capital, has studied how asset pricing theory can be applied to the true price of carbon.

He has concluded that carbon is massively underpriced, and that we are on course for a sharp, painful correction. He believes more work between climate scientists and financial modellers is needed to understand how carbon should be priced.

> 'In cancer drugs . . . the probability of success goes up if you create a portfolio'

"They [economists] haven't taken the science very seriously in projecting damages and in particular in projecting the full possible distribution of damages [from climate change]," Mr Litterman says. "The bottom line is these economic models can give us the social cost of carbon from $2 a tonne to several hundred dollars a tonne," he adds, citing an Intergovernmental Panel on Climate Change report.

Some investors are already positioning for the correction, including the World Wildlife Fund, of which Mr Litterman is a director. The fund has bought a derivative that swaps the total return on an index of carbon-heavy assets like coal, tar and expensive sources of oil for the total return on an index of the S&P 500. The value of the swap has risen by 73 per cent since it was created by the WWF's advisers, Cambridge Associates, in 2014.

Peter Carr, chair of New York University's Tandon finance and risk department, says financial engineering can be applied to anything systemic or pervasive. He cites the examples of predicting weather patterns and human responses to drugs. His students are using financial engineering to look at banks' systemic risk. "Financial engineers are already well trained to understand what values are going to be in the future," he says. "That's valuable for banks that need to staff up to deal with additional demands [from regulators]."

Victoria Averbukh, director and senior lecturer at Cornell's financial engineering department in Manhattan, says more of her students are considering working in risk management.

"The financial industry comes back for financial engineers where they need to solve their risk management problems and they need to analyse the data," she says. "There was a backlash against engineering . . . Now it's moving on."

Moocs Round-up of the leading free and low-cost business courses available online

Business and Finance Fundamentals — FutureLearn.com
Cost: £1,091 for final assessment, certificates and shipping
Effort: 32 weeks with three hours of work a week, plus 22 weeks of assessment
Certification: Complete 90 per cent of each of the eight Moocs (massive open online courses) in the programme, with a mark of at least 70 per cent on all tests to buy a certificate of achievement, which costs £49.
To note:
A big challenge with Moocs, in general, has been the low completion rates. But in a recent initiative to combat this, students of the programme can earn credits towards an Open University BA (Hons) business management degree, by finishing eight courses. This also involves passing a final assessment — which integrates learning from all the Moocs — with a pass mark of 40 per cent.

Available courses, which are free to access, range from financial services after the banking crisis to investment theory and practice.

Essentials of Corporate Finance — Coursera.org
Cost: $395
Effort: 24 weeks, with four to six hours of work a week
Certification: Participants need to achieve the pass mark of 50 per cent for all the assessments, including quizzes, exams and peer assignments.
To note:
Moocs, such as this programme, can offer students the chance to learn from industry experts. Developed by the University of Melbourne in partnership with Bank of New York Mellon, the programme consists of four courses, each of which can be studied individually. It concludes with a set of assignments, known as a capstone project, which allows learners to apply the skills they have gained.

Students learn how value is created by global markets and the choices companies face when making financial decisions. As of May 2016, there were more than 160,000 enrolments across all four courses.

Introduction to Financial and Management Accounting — edX.org
Cost: Free
Effort: 10 weeks, with a weekly workload of three hours plus one to two hours of self-study
Certification: No award from edX is available, but the course prepares students for assessment leading to the globally recognised ACCA accountancy exams.
To note:
Moocs can also lead to professional qualifications, such as this one, which allows participants to prepare for ACCA's introductory certificate in financial and management accounting. Students obtain the certificate upon passing two online exams and an online professionalism and ethics module. About 108,000 students have enrolled so far. The syllabus covers the banking system, bookkeeping skills and using spreadsheets.

Financial Markets — Coursera.org
Cost: Free
Effort: Eight weeks, with a workload of six to 12 hours a week
Certification: To get a course certificate from Coursera and Yale University, students need to pay $49 and pass all required assignments, with a passmark of 80 per cent.
To note:
This Mooc is taught by Yale University's Nobel laureate and professor of economics Robert Shiller. It covers topics such as risk management, behavioural finance, real estate, futures markets and monetary policy.

With more than 1,800 ratings on the Coursera site, the average score is 4.7 out of five. When the course ran in September 2015, there were about 57,000 active learners — those that have viewed videos or reading material. Among them, about 6,500 completed the entire course with a pass grade in every assignment.

Financial Modeling for the Social Sector — NovoEd.com
Cost: Free
Effort: Seven weeks, with a workload of four to five hours a week
Certification: To obtain a statement of accomplishment, free of charge, students need to complete at least three out of five assignments, within a given timeframe.
To note:
Interested in running a social enterprise? This Mooc shows how to build a financial model for start-up social ventures in order to be sure that the prices and margins set today are financially sustainable once the venture expands.

Launched in 2014, the course has run several times with more than 40,000 enrolments in total. The course was created by Acumen, a non-profit venture fund that tackles poverty, and Erik Simanis, the course instructor.

Financial Programming and Policies, part 1: Macroeconomic Accounts & Analysis — edX.org
Cost: Free
Effort: Six weeks, with a workload of eight to 10 hours a week
Certification: If students achieve a pass mark of 60 per cent across all assessments, they can get an optional verified certificate for $25.
To note:
Taught by economists at the International Monetary Fund, topics include how to interpret and analyse accounts to determine the state and the progress of an economy.

The Mooc is offered in English, French, Russian and Spanish. For the course in English, about 33,000 students have enrolled, of which 4,200 have passed.

There is a follow-up course where learners assess and make policy recommendations for a case study country.

Wai Kwen Chan

Search for free online business courses in the FT's Mooc Tracker: ft.com/mooc

Memories of dark days are good for schools

Continued from page 1
available to other students, including those on the MBA course, according to Sri Zaheer, Carlson's dean.

"Now we have a masters in finance and business analytics it means there are new subjects open for all our students if they have the right background," she says.

Masters in finance courses are often the most international offered by business schools in terms of the percentage of students coming to study from other countries.

This is particularly marked in the UK, where Lancaster University Business School, for instance, records no British students on its masters in finance course this year. Such a heavy reliance on foreign students makes the tightening of immigration controls in many countries a particular concern for business schools.

In the US, visa headaches are one of the main reasons many business schools have sought to ensure that their masters in finance courses are classified as science, technology, engineering and maths (Stem) qualifications.

Courses with this status can offer their non-US students an additional 24 months on their visas to remain in the country.

Course content has also had to adapt to changing demand. This includes the introduction of modules covering entrepreneurship or subjects such as crowdfunding, which may help people seeking jobs at fintech start-ups.

Up until the banking crisis of 2008, a lot of teaching focused on the skills needed for mergers and acquisitions, says Diane Morgan, associate dean of programmes at Imperial College Business School.

"Interest was so high that we had investment banks working with us to create specialist programmes in this area," she says. "Since the crisis, demand has shifted such that asset management is more popular."

Imperial's central London campus is a short cab ride from both Europe's banking capital and Silicon Roundabout, one of the world's densest clusters of technology start-ups, many of which are propagating new models for delivering financial services.

Students who wish to follow an entrepreneurial route can gain substantial amounts of support at the business school, not least through Imperial Innovations, a publicly traded investment and commercialisation business created within the college. Many, however, still prefer to work for established banks, according to Ms Morgan. "Our graduates are focused on brand," she says. "As much as they are interested in start-ups, they say, 'I really need to start here.'"

> 'New challenges require highly trained individuals that only postgraduate courses can develop'

Barclays is one of the biggest employers of Imperial masters in finance students, taking about 30 to 40 each year from the graduating classes, according to Ms Morgan.

Strong demand for financial training creates its own problems in terms of maintaining the quality of teaching while increasing capacity.

At Warwick Business School, applications are up 12 per cent this year for all finance-related masters programmes. Although this is still not a record high for the school, it is a "steady state" where the school can provide a quality of education the employers expect, according to Alex Stremme, assistant dean for Warwick's masters in finance programmes. "Pushing numbers too hard would compromise the quality of the product," he says.

Economic and political uncertainties, increased competition and social pressure have fed greater demand among employers for "well-rounded" candidates who can combine breadth and depth of knowledge, according to Mr Stremme. This might mean explaining the workings of a collateralised debt obligation to a lay person or leading a debate about the pros and cons of quantitative easing.

"It is precisely the new challenges that lie ahead, many of which we have not even begun to understand, that require highly trained individuals with the intellectual maturity and independence that only postgraduate courses can develop," Mr Stremme says.

In an uncertain world, there may never have been a better time for institutions offering financial training.

Diversity Course programmers will have to factor in women's lifestyle patterns, writes *Gabriel Wildau*

Lack of female leaders puts spotlight on Asian schools

Leading by example: student at a recruitment fair at Donghua University in Shanghai — Carlos Barria / Reuters

While dedicated initiatives to develop female talent are firmly entrenched at US and European business schools, they are only just getting off the ground at their Asian counterparts.

One outcome is that women are severely under-represented in leadership positions at finance companies in the region. Just 13 per cent of executives and 14 per cent of board members at Asia-Pacific finance companies are women, according to management consultancy Oliver Wyman. This compares to 21 per cent of executives and 23 per cent of board members at North American finance companies, and 16 per cent and 24 per cent, respectively, in Europe.

Sean Ferguson is associate dean of masters programmes at Hong Kong University of Science and Technology, which draws students from around the region. He contrasts Asian institutions with his previous experience at Texas-based Rice University's MBA programme, which organises a recruitment weekend dedicated to bringing female potential students to campus for an introduction to the school, with partial subsidies for airfares and other expenses.

"In [Asia] there's a sense that if you do something specifically for women you have to do something to help men as well," says Mr Ferguson. "But if you look at the disparities for board directors and senior management, clearly there's a specific issue we need to focus on."

One element in serving women is to design programmes that fit their lifestyles. For MBA and executive MBA programmes, the typical student has between five and 15 years of work experience, a stage of life that for women often coincides with childbearing. Early-career masters programmes tend to draw a higher share of female students.

Despite cultural obstacles, some Asian business schools are setting an example. Gender diversity consultancy 20 First named Hong Kong university a "star performing school" because more than 40 per cent of its students and 30 per cent of its faculty are women. HKU and its Women in Leadership Club have teamed up with Women in Finance Asia, a volunteer group, to organise networking events and discussion forums.

> 'Education perpetuates a work culture that continues to favour men over women'

Kritika Kumar spent four years at credit rating agency Moody's before attending HKU, where she is president of the Women in Leadership Club. "Business schools in certain countries such as France and the US are doing a lot in this regard. Definitely, the push is required in Asia," she says.

In mainland China, the Antai College of Economics and Management at Shanghai Jiao Tong University has an impressive roster of female alumni. Liu Yao, who graduated in 2006, is vice-president of Shanghai Jiayin Financial Services, which operates the Ni Wo Dai peer-to-peer lending platform. Its Chinese name translates as "You and I lend". Ms Liu helped Ni Wo Dai become one of the first online lending platforms to expand into offline branches.

Among more senior female financial executives in Asia, many attended business schools in the west. Teresita Sy-Coson, chair of BDO Unibank, the Philippines' largest lender by assets, attended New York University before returning to her home country. Jeanette Wong, head of institutional banking at DBS Bank in Singapore, received her MBA from the University of Chicago. Today she mentors students there and at the National University of Singapore's undergraduate business programme.

20 First notes that, in general, achieving relative balance among students is easier than among faculty. As a result, business schools often have higher percentages of female students than they do of academics. Ultimately, there are limits to what business schools can achieve without broader social change. At China Europe International Business School's Chinese-language executive MBA programme, which is limited to students in upper management, only 27 per cent of the class is female, compared to 42 per cent for its financial MBA programme, which is geared at younger students.

Zhang Yuan, an MBA student at Renmin University in Beijing, has already experienced discrimination applying for financial internships. "Especially in the financial sector, recruiters will clearly state that they prefer male students," she says. "Or in job announcements, some financial institutions will say things like 'females must be at least 160cm tall . . . and elegant.'"

Women's advocates want business schools to contribute to social change by addressing issues of gender in the workplace. "Business education has a tendency to be gender-blind, and to equate gender blindness with gender equality," says Catherine Ng, a management and marketing professor at Hong Kong Polytechnic University. "I think it's a mistake to do that. By not recognising that women and men are not always treated equitably at work, business education perpetuates a work culture that continues to favour men over women."

Students must learn the purpose of finance

PRINCIPLES

David Pitt-Watson

Shortly after the 2008 financial crisis, Queen Elizabeth visited the London School of Economics. Like most of her subjects, she wanted the answer to a very simple question: "Why," she asked of the assembled economists, "did no one see the crisis coming?" Around the world, hundreds of thousands of students study economics and tens of thousands study finance. Had they not been checking the system was doing its job properly, that it was fulfilling its purpose, and not about to collapse?

The answer, of course, was that had not happened. Everyone was in their own area of specialisation, researching the detail of their own subject. No one noticed that the system was becoming unstable.

Few had spotted other chronic failures in the system; for example, that on the best evidence available, for more than a century, the financial system has created no productivity increase in its task of taking our savings and investing them in productive projects.

That was one of the reasons that London Business School introduced a new required course for its masters in finance, which I teach, called the Purpose of Finance. The inspiration was the recognition that economics, corporate finance, investment theory and accounting are not enough on their own. Financial systems should be designed to fit their purpose otherwise they will not deliver better services and will not avoid financial crises.

Masters of finance graduates need to understand the basic technical subjects, but also other perspectives. The further students seek to progress in their careers, the more important these perspectives will become.

Much like a doctor who needs to learn the disciplines of patient care, not just anatomy and biochemistry, so finance industry professionals need to have at the heart of their training the multifaceted disciplines that allow financial systems to work well.

These include considering behavioural and institutional economics. So, for example, when students investigate the first successful funded pension plan, they discover that it was not just breakthroughs in data collection and statistics that allowed its establishment, but also trust, culture and purpose. That pension plan was created in the 1740s by Robert Wallace and Alexander Webster, two Church of Scotland ministers, for the widows of their fellow ministers. In a world that remembered the scandals of the South Sea Bubble in the early 18th century, the integrity of these two men engendered enough trust that subscribers could be confident their money was safe and the pension promise was sound.

My course avoids trying to preach ethics, but it makes sure students know that many economists and economic historians emphasise that the culture of a society seems to be at the heart of economic success. And that economic relations simply cannot exist without some degree of trust. Before we launched the course, I researched what other masters in finance degrees taught. I could not find a single one that is explicit in teaching about purpose. That seemed a huge missed opportunity.

Queen Elizabeth II asked economists at the LSE why no one had seen the 2008 financial crisis coming

When the Queen asked her question, she suggested an answer for the embarrassed economists. Perhaps "things had got a bit lax"? Yet that was not what had happened. Financial disciplines are quite rigorous — but as with many things, before you apply that rigour you need to ask what the purpose of the study is in the first place.

David Pitt-Watson is executive fellow of finance at London Business School and an author of What They Do With Your Money