

THE BUSINESS TIMES

WEEKEND

businessimes.com.sg | fb.com/thebusinessimes | @BusinessTimes | A SINGAPORE PRESS HOLDINGS PUBLICATION | CO REGN NO 198402868E | MCI (P) 052/12/2017 | S\$1.20 | JANUARY 13-14, 2018

INVESTING & WEALTH

**ROCKEFELLER FOUNDATION
STEPS UP TOWARDS GOAL
TO REDUCE POVERTY / 19**



**WHY THE SINGAPORE STOCK
MARKET IS NOT OVERHEATED
VALUE INSIGHT 20**

**HOW AI IS CHANGING THE GAME
FOR WOMEN INVESTORS
CFA SINGAPORE INSIGHTS 21**

CUBICLE FILES Is pay transparency the way to go? / 43

SATURDAY SOAPBOX Will Hurricane Harvey bring true winds of change? / 33

THE VIRTUOUS CIRCLE

ETHICAL INVESTING COMES INTO ITS OWN

BRUNCH 9-11

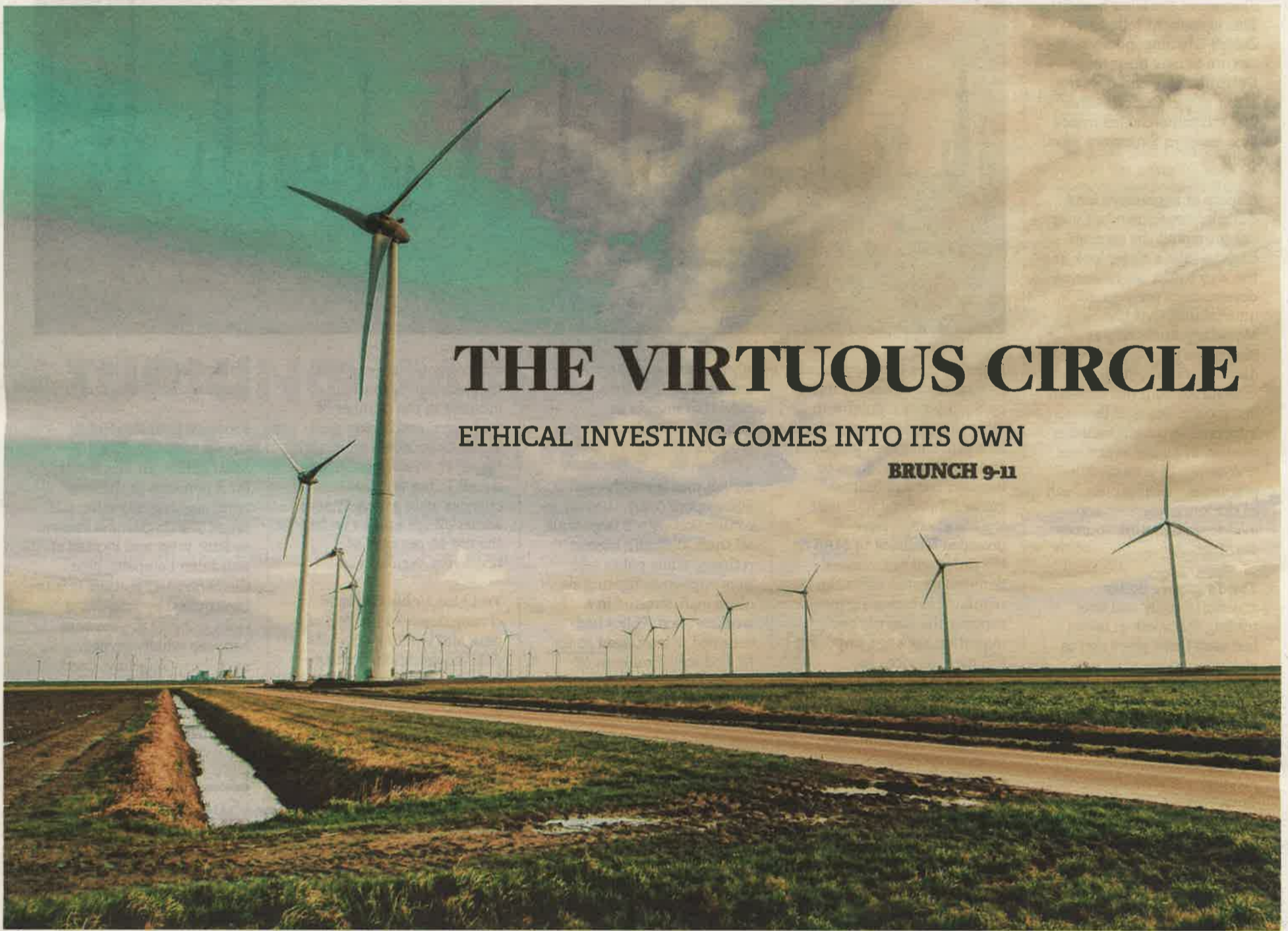


PHOTO: PEXELS.COM

UPFRONT

**Retail sales in Nov highest
in almost two years**

Retail sales surged in November, reversing course from October's slump, possibly due to the launch of the iPhone X and improved consumer sentiment. **3**



RAFFLES CONVERSATION

**John Bittleston,
career coach
and mentor
extraordinaire**

12-13

COMPANIES

**Tat Hong CEO, Stanchart arm
to take crane supplier private**

There are no plans for now to make major changes to Tat Hong's business or its deployment of fixed assets, beyond the ordinary course of business. **14**

SINGAPORE MOTORSHOW 2018

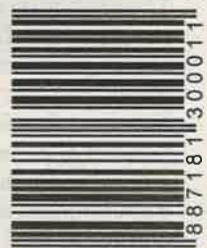
The changing shape of luxury

How a new Audi will pay you back

The rise and rise of Korean marques

Stunt driver kills tyres for fun

A BT supplement / 34-40





CFA SINGAPORE INSIGHTS

By Barbara Stewart

Machine learning: Changing the game for women in 2018

As women are becoming more prominent as wealth holders, machine learning will help financial institutions to better serve women customers

HOW can we use machine learning to better understand our clients? Specifically, our new target customers – women? Companies know that women are becoming more prominent as wealth holders, are directing more wealth investing than before, and are often their largest consumers.

Yet they are still underserved. Most financial services firms have optimised themselves to communicate with and serve male as opposed to female customers. And as my research shows, women think and communicate about investments differently.

In *Fintech: Revolutionizing Wealth Management*, Marguerita Cheng wrote: "Machine learning and other types of AI (artificial intelligence) technology can analyse client behaviour and use the data to deliver individualised advice based on their investing, saving, and spending habits."

I have found that women prefer to invest in the causes and concerns that matter to them. They seek out those securities that best reflect their core values about gender equality, diversity, the environment, and the developing world.

Machine learning will make this information easier to access. Conducting the research on specific investment products will soon take minutes instead of days, and it will be as easy as "point and click" to start investing in a cause.

Crunching data, seeing behaviour patterns

Deloitte recently released their Technology, Media and Telecommunications Predictions for 2018. One of the key forecasts is *Machine learning: things are getting intense*. According to Duncan Stewart, director of Tech Research for Deloitte Canada and author of the report, there are five factors powering a tipping point for machine learning: "Chip improvements, automating data science, reducing the need for training data, explaining the results of machine learning, and better deploying local machine learning."

Stewart noted: "These improvements will double the intensity with which enterprises are using machine learning by the end of 2018."

Jon Suarez-Davis, CMO and CSO of data management platform Krux, said: "Machine learning can crunch data quickly, which marks a major shift from marketers combing through spreadsheets to unlock their own insights. Marketing is an art and a science. The art is about connecting with humans. The science is spinning up all these insights we could never do on our own and allowing us to ask smarter questions and see these patterns — and now I can activate all these events and start to predict what behaviour is. These are all elements we could only dream about a couple of years ago."

Nishant Kumar, in *How AI will invade every corner of*

Wall Street, discussed the potential: "The Boston-based firm Acadian is investing in AI and big data to better forecast metrics, such as sales, that are key to a company's performance. If Acadian could wager on sales data before it's publicly released, the firm would gain an edge."

What about bias in data?

Will machine learning capture only the stereotypical data about women and investing? In *Machines taught by photos learn a sexist view of women*, Eric Horvitz, director of Microsoft Research, discusses biases, pointing out: "Away from computers, books and other educational materials for children often are tweaked to show an idealised world, with equal numbers of men and women construction workers, for example."

As Horvitz says: "It's a really important question — when should we change reality to make our systems perform in an aspirational way?"

According to Stewart: "As banks and wealth firms start using machine learning for better customer insights, they will need to 'train' their models on historical data.

"That legacy data is likely to be dominated by male investors, and any biases in that data set will not only be reflected in the new AI models but may even be exaggerated by the training process. This will lead to the wrong answers when women start representing 50 per cent or more of new business.

"The solution will be to run separate machine learning training on female-only data sets. This will be harder than just using all data from men and women, and it could be slower. But the algorithms that result are almost guaranteed to offer better insights about female customers."

How will women invest in 2018?

Machine learning will allow us to capitalise on evolving investment behaviour patterns. Anna Svahn, manager of Feminvest in Sweden and an author and investor, is a case in point: "I started the Economista network on Face-

book with Isabella Löwengrip a year and a half ago and we now have 87,000 members. This is the largest financial social community in Europe. In January this year, I also took over Feminvest, a female investor network with about 15,000 members. In Economista, the members discuss both private economics and investing on a basic level and Feminvest is for those who are more experienced investors.

"We will launch a new fund this spring in collaboration with Arabesque Partners. Through machine learning and big data, Arabesque S-Ray™ systematically combines over 200 environmental, social, and governance (ESG) metrics with news signals from over 50,000 sources across 15 languages. Rather than deciding ourselves on the name and focus of the fund, we will show our members which factors are available and we will ask them to vote. If it turns out that gender equality is the most popular factor, we will tweak the fund accordingly.

"Companies want to advertise on the Feminvest platform so that they have access to female investors. They can buy space in our newspapers or on our podcasts and blog. When it comes to marketing to women, investing and networking walk hand in hand. Customer insights drive progress so the faster we can have access to this data (via new technologies such as machine learning) the faster we reach world domination."

What's the bottom line on machine learning for female investors?

Globally we are in the midst of a radical shift in socialisation. We are seeing explosive growth in the number of social trading platforms and social media communities directed at women.

The world is now one giant investment club, thanks to all the new apps and platforms available to investors. Digital investing has opened up the floodgates, and we are on the cusp of a global social movement for women investors. This will have major implications for both the makeup and activity of the stock market.

Technologies that accelerate our ability to understand women's investment behaviours are of great interest to all financial institutions. Female-focused machine learning, powered by new hardware and software, will be a key trend for 2018 and beyond.

✉ The writer is a CFA charterholder who researches and writes on the issue of women and finance. Previously, Stewart worked as a partner and portfolio manager with Cumberland Private Wealth Management.

This column was first published on the Enterprising Investor blog of CFA Institute (<https://blogs.cfainstitute.org/investor/>) and is reprinted here with permission from the author and CFA Institute.

CFA Singapore Insights is a new weekly column helmed by the local member society of CFA Institute, the global association of investment management professionals. Published every Saturday, this series by CFA Singapore will discuss issues pertinent to the smart Singapore investor with an eye on global developments. There will be insights on local and Asian investment trends, as well as some of the most exciting changes reshaping the world's financial landscape. Each month, the column will also introduce a deep-dive analysis into a different industry to help investors ask the right questions to understand how well management of a company in that sector is executing its business model. Finally, the column will highlight ethical issues and important principles that every investor should be aware of, understand, and demand of his or her financial advisor. All articles will be penned by holders of the Chartered Financial Analyst (CFA) designation, experienced investment professionals drawn from CFA Singapore and the wider network of over 145,000 members of close to 150 CFA societies around the world.