

The Good Life

Ideas, advice, beliefs and perspectives for the enjoyment and education of our clients and friends

Period ending April 2017

May 2017

What We Are Thinking

Fixed Interest					
Years	1	2	3	10	YTD
One-year	2.3	2.3	2.5	4.3	0.8
Two-year	2.5	2.7	2.9	4.8	1.1
Five-year	2.7	3.7	4.4	6.4	1.7
Long Term					
Australian Shares					
Large	19.6	6.5	7.9	4.9	6.5
Value	28.4	9.5	9.1	4.3	4.7
Small	13.3	8.4	6.9	2.6	2.6
Global Shares					
Large	17.8	7.9	13.6	5.3	4.9
Value	20.9	7.0	11.6	4.0	2.1
Small	21.1	11.1	14.8	7.0	3.7
Emerging Markets	23.4	3.4	9.8	3.6	10.2
Real Estate	6.1	10.8	15.6	0.4	2.5

Description of Indexes	
One-year FI	DFA Short-Term FI
Two-year FI	DFA Two Yr Div. FI
Five-year FI	DFA Five Yr Div. FI
Long-Term FI	Bloomberg Aus Treas. 10+
Australian Large	DFA Aus Large Co
Australian Value	DFA Aus Value
Australian Small	DFA Aus Small Co
Global Large	DFA Global Large Co
Global Value	DFA Global Value
Global Small	DFA Global Small Co
Emerging Markets	DFA Emerging Markets
Global Real Estate	S&P/ASX 300 REIT Index
	Data presented may be based on a combination of simulated and actual returns.
	Past performance is not indicative of future performance.

Dear Reader,

Welcome to the May edition of *The Good Life*.

This month, Jim Parker writes about the difficulties in picking winners and so called 'hot' sectors. You won't get burned with our investment philosophy.

The May Federal Budget has come and gone. Winners are the NDIS, Gonski and infrastructure in western Sydney. The losers include infrastructure spending everywhere else. Keep an eye on the details of bank tax! As always clients will receive separate, specific information if something in the Budget affects them.

Good News ... confident about the future

We're continually blown away by what's happening in what we call the EXPONENTIAL WORLD for a *faster, easier, cheaper and better future*. These advances will make many existing companies obsolete. Expect to see a substantial fall in the cost of living and more people accessing services that once were only the preserve of the rich.

This month, we have a broad collection of ideas and inventions changing our world: In healthcare, a UK self-taught AI beats doctors at predicting heart attacks and at MIT, an amazing solar-powered device draws water from dry air. In the energy sector, Brooklyn, blockchain is helping to build a new kind of energy grid while Germany hit a record 85% renewables.

Elsewhere, an 18-year-old Mexican student has designed a bra that can detect breast cancer and Chinese web company Baidu used AI to help reunite an abducted child with his family. In the US, a gene-editing strategy eliminated HIV-1 Infection in live animals.

Numbers – Tax Freedom Day

Tax Freedom Day in Australia fell on 13 May. Last year, it was 9 May. Look how it has changed.

With the recent French election gaining much attention, I thought I would have a look at France from an economic point of view. How

does it compare with Australia across a number of economic measures? So many tourists, so much to see !! This time last year, we were there.

Picking Winners

OUTSIDE THE FLAGS

Jim Parker,
Vice President
DFA Australia Limited



May 9 2017

The media occasionally locks in on a particular ‘hot’ sector. In the late 1990s, it was technology. In the mid-2000s, it was mining. Writing about fashionable sectors is one thing. Building sustainable investment strategies around them is another.

Finance journalists tend to write lots of articles about particular industries or sectors because these stories fit into a current narrative. In the tech stock boom, it was the information revolution. In the mining boom, it was the rise of China.

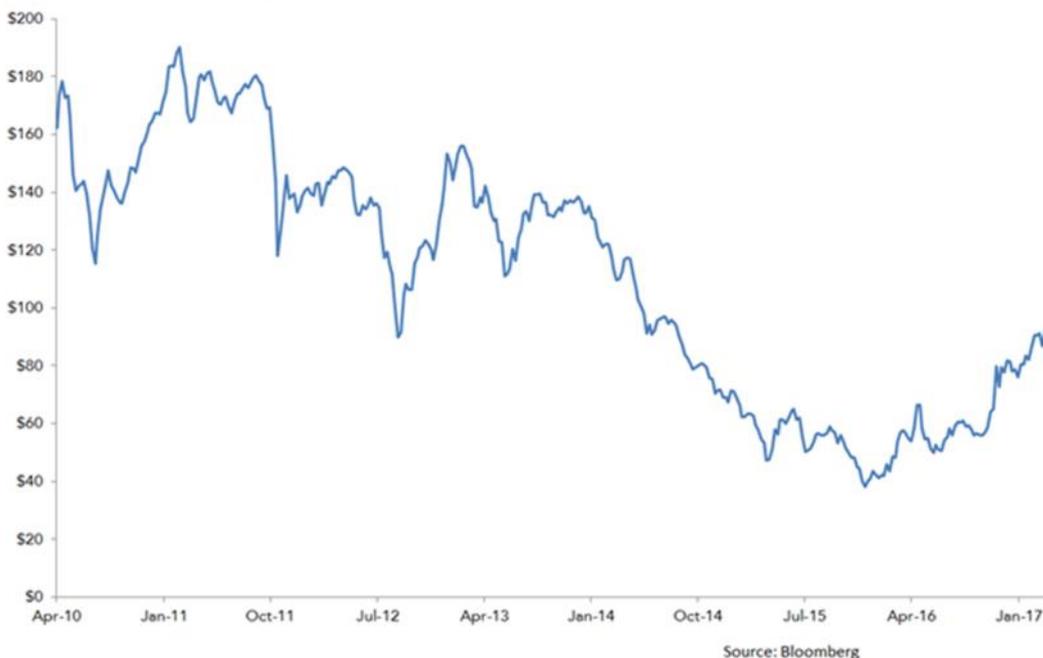
Of course, the changes in the global economy brought about by innovations in digital technology and communication is a real story, as is the impact of China due to its rapid industrialisation and global integration of the past 15 years.

The big question for investors is what information about those trends can you act on that is not already reflected in share prices? Too often, people end up trying to jump on a train that has already left the station.

In the Australian share market, for instance, mining stocks boomed last decade amid voracious demand for coking coal and iron ore from steelmakers in China, the world's largest producer and consumer of steel.¹

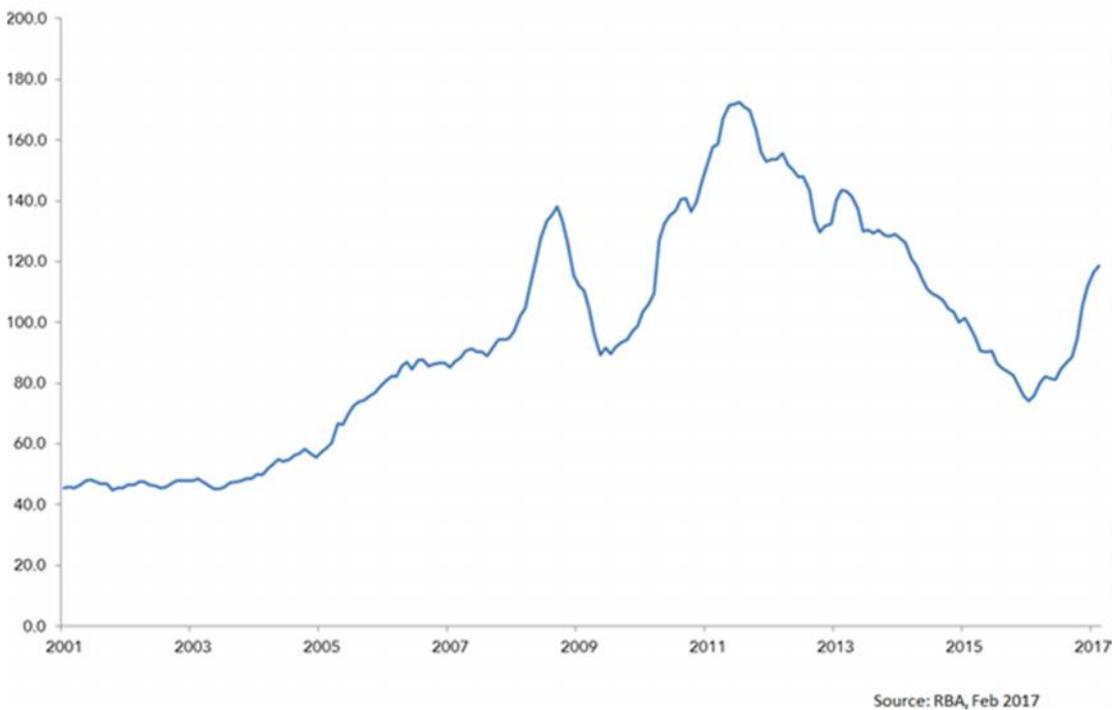
The performance of stocks like Fortescue Metals Group mirrored what was going on in commodity markets. From mid-2003 to mid-2011, the Reserve Bank of Australia's index of commodity prices roughly quadrupled in value. (Chart 1)

Chart 1: RBA Commodity Price Index



By 2012, new iron ore supply was coming online just as China's expansion started to slow and steelmakers' demand moderated. Spot iron ore prices fell by nearly 80% from a record \$US180 a tonne in 2011 to around \$40 by late 2015. (Chart 2)

Chart 2: Spot Iron Ore Prices (\$US a tonne)



The market prices of mining stocks followed suit. On the Australian market over the four years from 2012-2015, many of the worst performing stocks were either iron ore miners or companies that serviced that market.

While iron prices recovered a little since then to near \$80 as at March 2017, bringing mining stocks with them, many of these stocks still lagged the wider market's performance over the past six years. (See Table 1)

Table 1

IRON ORE STOCKS, March 2011 - March 2017	Performance
Atlas Iron	-99%
Sundance Resources	-99%
BC Iron	-92%
Mount Gibson Iron	-79%
Broad Market (S&P / ASX-300)	20%

This story is a powerful argument for the virtues of diversification. The more concentrated the portfolio, the more it is exposed to these idiosyncratic events beyond the control of an individual investor. Diversification involves spreading risk and diluting the influence of sector-specific themes. Just as materials stocks struggled from 2012-15, other sectors such as healthcare and telecoms and financials did well. Resources bounced back in 2016, while healthcare, telecoms and financials lagged.

The fact is that trying to forecast the best performing sector or industry from year to year is a mug's game. Observing that commodity prices are rising again is not useful information for you as an investor because that's already reflected in the market.

But diversification does not just apply to sectors. We can also manage it by using all the information about expected returns that is available to us. Academic research has identified certain dimensions that point to differences in expected returns. To meet this definition, they must be shown to be sensible, persistent across different periods, pervasive across markets and capable of being cost-effectively captured.

The four dimensions are the degree to which the portfolio is exposed to stocks versus bonds, to small companies versus large companies, to low relative price stocks versus high relative price and to high versus low profitability firms.

In the small cap end of the Australian market, we can manage company specific idiosyncratic risk by holding a well-diversified portfolio. Furthermore, we can improve expected returns by overweighting stocks with higher profitability.

Of course, this does not mean a portfolio will be completely immunised against idiosyncratic risk. But it is a way of diluting those influences and ensuring a balance between improving expected returns and achieving appropriate diversification.

So we've learnt that chasing "hot" sectors and industries is a good way of getting your fingers burnt. But through diversification, discipline and maintaining a level of flexibility, we can help ensure that a single sector doesn't have a disproportionate influence on your investment outcome.

We hope you enjoyed this issue and would like to receive your feedback on articles you would be interested in or ways we can improve our newsletter. We have a lot more information on our website at www.integratedwealthsolutions.com.au where you can register to receive this free monthly newsletter.

John McMorrow

Editor

Disclosure & Disclaimer

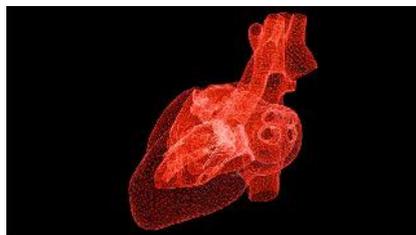
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[Self-Taught Artificial Intelligence Beats Doctors At Predicting Heart Attacks](#)



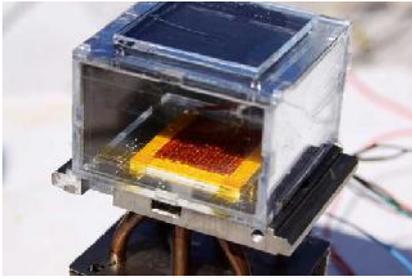
What it is: University of Nottingham epidemiologist Stephen Weng and his colleagues have created an algorithm that can outperform standard methods at predicting heart attacks. The team tested four AI algorithms (random forest, logistic regression, gradient boosting and neural networks) against the American College of Cardiology / American Heart Association (ACC/AHA) guidelines for predicting a patient's risk of experiencing a cardiovascular event in the next decade. All 4 algorithms outperformed these standard guidelines with neural networks correctly predicting 7.6% better than the ACC/AHA method. Interestingly, several factors the

algorithms identified as strong predictors were not on the list of the ACC/AHA guidelines (ie, oral corticosteroid use) while top 10 risk factors under the ACC/AHA like diabetes were not considered.

Why it's important: More evidence of the scientific breakthroughs we're about to make thanks to AI's ability to evaluate significantly larger datasets and incorporate more complex variables faster, better, cheaper and easier than current methods. Time will only tell what discoveries or contrarian insights will come as more doctors leverage machine learning to amplify their decision making abilities. [Join the Discussion](#)

Spotted by Gaetan Soltesz / Written by Jason Goodwin

[Device Pulls Water From Dry Air, Powered Only by the Sun](#)



What it is: A team of scientists at the Massachusetts Institute of Technology recently constructed a solar-powered harvester using a metal-organic framework (MOF) to suck water from dry air. When sunlight hits the water harvester, it heats up the MOF, driving water vapour toward the condenser, where it condenses into liquid water and falls into a collector for later use. Under conditions of 20% - 30% humidity, the prototype successfully pulled 2.8 litres of water from the air over a 12-hour period, using just 1kg of MOF. This work provides a far more efficient way to harvest water from air at low humidity than current technologies.

Why it's important: This prototype generates water from thin air -- more evidence that technology makes scarce resources abundant. Imagine how humanity would

transform if every family on the planet had access to a solar-powered device like this one, giving them the ability to produce enough water to meet their entire household's needs. [Join the Discussion](#)

Spotted by Aryadeep S. Acharya / Written by Sydney Fulkerson

[Blockchain is Helping to Build a New Kind of Energy Grid](#)



What it is: LO3 Energy has developed a system called the Brooklyn Microgrid that enables people to buy and sell locally generated solar energy within their communities using the blockchain. The peer-to-peer energy transaction system was developed by ConsenSys using Ethereum, a blockchain-based distributed computing platform. LO3 Energy chose the blockchain because it enables people to self-organise at the "edge" of the power grid.

Why it's important: The Brooklyn Microgrid sheds light on how a blockchain-based, peer-to-peer system could dematerialise and demonetise the energy grid. It's a case

study to watch as it may accelerate public support for renewable energy, decentralised local infrastructure and even 'buy local' initiatives. [Join the Discussion](#)

Spotted by Marissa Brassfield / Written by Sydney Fulkerson

[18-Year-Old Mexican Student Designs Bra That Can Detect Breast Cancer](#)



What it is: Rios Cantu, an 18-year-old student from Mexico, recently won the top prize of \$20,000 at the Global Student Entrepreneur Awards (GSEA) for inventing a bra that can help detect breast cancer. The bra is made with about 200 biosensors, which map the surface of the breast to monitor changes in temperature, shape and weight. These biosensors can also determine thermal conductivity by specific zones. For example, heat can sometimes indicate more blood flow which in turn signals blood vessels 'feeding' on something (often some type of cancer).

Why it's important: This invention is a deceptively simple, discreet way to integrate health sensors in everyday clothing – women need to wear the bra only 1 hour per

week. At scale, it could play an important role in enabling early cancer detection. [Share on Facebook](#)

Spotted by GaetanSoltesz / Written by Sydney Fulkerson

[Baidu Uses AI Technology to Help Abducted Child Find Family](#)

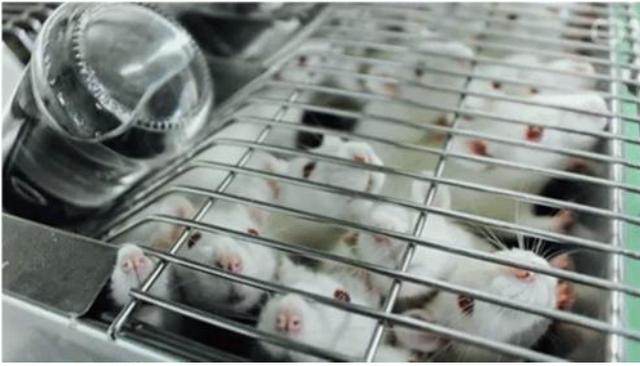


What it is: Chinese web company Baidu successfully used its cross-age facial recognition program to reconnect 33-year old Fu Gui with his family 27 years after he was abducted. The AI works by analysing photos of abducted children uploaded by the victims and their birth families on [*baobeihuijia.com*](#). Fu Gui registered in 2009 while his family registered in early 2017. The AI then identifies potential matches based on the comparison of selected facial features. Baidu has roughly 200 million sample pictures that it uses to help improve the accuracy of its AI which has the potential to be over 99% accurate.

Why it's important: AI systems such as facial recognition have incredible potential in identifying and locating missing children. As we continue to improve the accuracy of these systems, the number of families around the world that would have the ability to reunite with their loved ones increases exponentially. [Share on Facebook](#)

Spotted by Marconi Pereira / Written by Sydney Fulkerson

Gene Editing Strategy Eliminates HIV-1 Infection in Live Animals



What it is: Using CRISPR/Cas9, a team at the Lewis Katz School of Medicine at Temple University (LKSOM) and the University of Pittsburgh have excised HIV-1 DNA from living animals. Building on their prior research published last year in which they proved that their method could remove targeted DNA fragments from most tissues, the team added 2 additional animal models, "... one representing acute infection in mouse cells and the other representing chronic, or latent, infection in human cells." Here, they succeeded in removing HIV-1 in both models, not only excising the targeted DNA in the latent state but also preventing the spread of infection. The team will next look to replicate these results in primate models which are more suitable where HIV infection induces disease.

Why it's important: This is a huge step forward in eradicating HIV-1 infections and AIDS but it also illustrates the power of CRISPR/Cas9 to provide new, precisely targeted methods of attacking disease of all types. What other chronic and acute diseases can we expect to cure when we combine DNA computing techniques, CRISPR, biocompatible nanosensors and precisely targeted drug delivery? [Share on Facebook](#)

Spotted by Gaetan Soltesz / Written by Jason Goodwin

Germany Hits a Record 85% Renewables



What it is: According to data provided by Agora Energiewende Initiative, Germany hit a new record level of serving 85% of its energy needs with renewables on April 30, part of the May 1 long weekend. The country had a significant boost in wind and solar output, with biomass and hydro nearly sidelining hard coal plants. Most of Germany's coal-fired power stations weren't even operating when the country hit its new record.

Why it's important: We recently saw that California is on track to meet its 50% clean energy target by 2030 with ease, and Germany's new record high provides us with more proof that the global potential for operating on renewables by 2030 is increasingly feasible. Given the exponential growth in solar

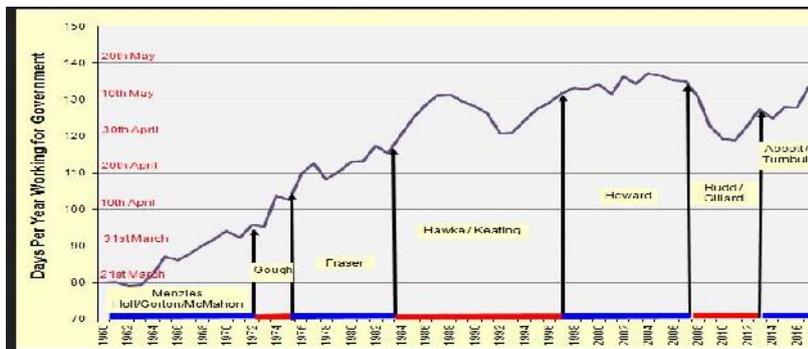
worldwide and the coming innovations in battery technologies, we're rapidly heading towards a major energy transition.

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Spotted by Khaled Salih / Written by Sydney Fulkerson

Tax Freedom Day

by Phil Anderson EIS



This year, Tax Freedom Day fell on **13 May**. Last year, it was 9 May. From the start of 2017, it's been a long 133 days working for the government.

Tax Freedom Day is occurring later and later in the year. In other words, every year you are paying more and more taxes to the government.

It's even worse in many other countries. In the UK, TFD falls on 3 June. In France, TFD is 29 July. In the US, it's a little leaner with TFD falling on 23 April (but from personal experience, I can assure you that you see a lot more for your tax euros in the French social system and infrastructure than anywhere else I have ever lived)

Country Comparison

Country	Australia	France
Inflation	2.1%	1.2%
GDP - USD Billion	\$1,340	\$2,419
Government Debt to GDP	41%	96%
Private Debt to GDP	223%	229%
Household Debt to GDP	123%	57%
Gasoline Prices - USD/liter	\$0.98	\$1.51
Population - Million People	24.13	66.63
Tourist Arrivals - Annual Million	9.1	84.5
Military Expenditure - USD Million	\$27,793	\$60,747

