

Integrated Wealth Solutions

The Good Life

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

*period ending March 2018

April 2018

What We Are Thinking

Dear Readers

Welcome to the April 2018 edition of *The Good Life*. This month, we have a story from Jim Parker about average equity returns across 21 developed countries over the past 20 years.

What can we learn? As with rainfall, market returns are rarely evenly distributed either across time or place.

We put it more bluntly – diversify or die – and we've included a table for you to see for yourselves the staggering differences in returns year-to-year and country-to-country.

Good News ... we're **ALWAYS** 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 our ***That Bit Extra (Abundance Insider)*** section includes 3D printed sushi; launching a Starlink satellite constellation; applying AI and computational methods to teach chemistry and cancer-fighting superblood.

Numbers

Abundant Energy – Plummeting Solar Costs

"Energy is a US\$6 trillion per year industry and it's ripe for disruption."

If humanity could capture just one part in 6000 of available solar energy, we could meet 100% of our energy needs. It has been predicted that the price of solar will further plummet while efficiency and accessibility will dramatically improve.

Over the past 40 years, the cost of solar-panel materials has dropped **250 times** as a result of innovations in materials science.

Some major price milestones over the past year were noted:

- | | |
|----------------------------------|-----------------------------|
| 1. Where: Tucson, Arizona | Cost: 4.3 cents/kWh |
| 2. Where: Chile | Cost: 2.91 cents/kWh |
| 3. Where: Mexico | Cost: 2.7 cents/kWh |
| 4. Where: Abu Dhabi | Cost: 2.42 cents/kWh |

Fixed Interest					
Years	1	2	3	10	YTD
One-year	1.8	2.0	2.1	3.8	0.4
Two-year	1.2	1.8	2.1	4.2	0.0
Five-year	1.5	1.9	2.8	5.9	-0.3
Long Term					
Australian Shares					
Large	2.3	11.9	4.0	6.0	-3.8
Value	2.5	18.7	7.3	5.9	-5.2
Small	11.1	13.7	9.8	4.3	-2.3
Global Shares					
Large	14.8	15.6	8.7	8.2	0.9
Value	14.4	18.6	8.5	7.4	0.2
Small	15.2	17.6	10.5	10.7	1.4
Emerging Markets	18.8	21.3	9.4	4.9	3.8
Real Estate	-0.1	3.1	5.8	3.3	-6.2
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.				

The 2.42 cents/kWh deal signed in Abu Dhabi is the lowest unsubsidised cost per kWh ever signed anywhere in the world.

Not convinced! There's lots more evidence including:

1. Peabody, the largest private-sector coal company on Earth, went bankrupt in 2014, about 3 years after its peak;
2. In 2017, China cancelled plans for 151 coal power plants, about US\$80 billion of planned projects now shelved;
3. India cancelled almost US\$9 billion of coal plants in a single month (June 2017);
4. Shell Oil predicts that peak oil demand will occur sometime between 2021 and 2029.

Watch this short 1:21 video about Abundant Energy.

<https://www.youtube.com/watch?v=aKK->

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Rainy Day Investing



March 27, 2018

Australia, earth's driest continent, experienced national rainfall in 2017 that was 8% above the historical average. The year was the 30th wettest on record according to the Bureau of Meteorology.¹ But the story is more complicated than that.

While rainfall on a national basis was much higher than normal, the downfalls were concentrated in the west of the country. In much of eastern Australia, including many normally fertile farmland areas, rains last year were well below average.

Like farmers planning a harvest, investors pinning their expectations on statements about arithmetical 'average' returns can be disappointed. As with rainfall, market returns are rarely evenly distributed either across time or place.

Of course, one could take one's cues from the financial news, which tellingly is normally scheduled just before the weather forecast on the nightly TV news bulletin. But there isn't much evidence of anyone being able to consistently and reliably forecast market returns one year to the next, never mind one day to the next.

For instance, going all the way back to 1926, the US share market index, the S&P 500, has had an annualised compound return of 10.2% in US dollar terms. Yet, on only six occasions in the intervening nine decades has the individual calendar year return been within two percentage points of that result.

As a single number, an average result ignores the distribution of possible outcomes. For example, the S&P 500 has been up or down by more than 20% in a calendar year on 40 occasions in this nine-decade period.

In Australia, from 1980 until the end of 2017, the benchmark S&P/ASX 300 index has had an annualised return of 11.3% in Australian dollar terms. Yet only in 5 years of that near 4-decade period have individual calendar year returns been within two percentage points of that average. Individual year performances range from as low as -38.9% during the year of the GFC in 2008 to +66.8% in 1983!

Just as precipitation varies across place, so too do market returns. For example, developed equity markets in 2015, as measured by the MSCI World index, returned 11.5% in AUD terms in 2015. But at an individual country level, returns extended from as high as +38.8% for Denmark to as low as -14.7% for Canada.

Guess what happened in 2016? Canada vaulted from worst to best performing market, with a return of 25.2%. But Denmark slid all the way from top to bottom, with a return of -15.4%. Overall, developed markets gained just over 8% in 2016.

It's hard to pick, isn't it? Perhaps there's a lesson from farmers here. Faced with climate variability and unpredictable patterns in precipitation, some farmers diversify from single crop agricultural systems to several different crops, or they rotate from crops to grazing livestock. Others build completely new businesses on their land, such as poultry farming, tourism or renewable energy.

Likewise, for investors, an expectation of 'average' returns every year is likely to lead to disappointment. But if they accept that they do not know when or where the 'rains' will fall, they can focus instead on building structured, diversified strategies.

This way, they are more likely to capture the returns wherever they happen to occur in markets around the world.

Following is the table Jim refers to in his article. There are lots more stories and lessons to learn from being aware of the bigger picture across the world. Look at Finland in 1998 and 1999... 135.4%!!

Equity Returns of Developed Markets - 21 Countries in AUD Annual Return (%)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Australia	9.2	12.7	10.2	6.0	10.4	-10.3	11.7	25.3	24.0	21.8	15.2	-37.9	36.8	0.5	-11.0	20.5	20.9	5.6	1.3	12.0
Austria	23.8	6.6	-14.8	3.7	2.4	5.9	17.3	64.9	33.2	27.1	-8.3	-60.2	11.0	-3.6	-36.4	24.3	31.6	-23.2	16.4	11.8
Belgium	38.4	78.2	-19.6	-2.1	-3.3	-22.7	1.1	38.0	16.5	27.2	-12.7	-57.8	22.1	-12.6	-10.6	37.8	48.1	13.8	26.1	-7.1
Canada	37.5	-0.3	44.1	24.0	-13.6	-21.1	15.5	17.5	37.1	9.6	16.3	-31.4	21.1	5.7	-12.7	7.7	22.6	11.0	-14.7	25.2
Denmark	64.0	15.8	5.0	21.8	-7.5	-23.7	11.5	25.7	33.0	29.1	12.7	-34.0	5.9	14.7	-16.0	29.6	45.3	16.1	38.8	-15.4
Finland	43.0	135.4	136.8	1.0	-32.9	-36.7	-10.8	2.0	24.7	20.9	33.4	-43.5	-13.8	-3.2	-31.9	13.1	69.5	8.5	14.7	-4.2
France	36.5	50.4	21.2	12.7	-15.7	-28.3	4.8	13.9	17.4	25.2	1.6	-28.6	2.2	-15.9	-16.9	19.8	46.6	-1.5	12.4	5.4
Germany	51.8	37.5	12.5	-0.6	-15.8	-39.3	22.4	11.7	17.5	26.6	21.4	-31.8	-3.0	-4.9	-18.1	29.3	52.4	-2.0	10.4	3.2
Hong Kong	-6.5	3.1	49.5	0.4	-11.7	-25.3	3.2	20.1	15.8	21.3	26.8	-38.6	24.2	8.1	-16.0	26.7	28.9	14.9	11.9	2.8
Ireland	41.2	43.8	-18.1	2.8	5.5	-32.9	7.5	37.5	4.4	36.6	-28.3	-64.6	-13.0	-28.2	13.7	4.4	63.8	11.8	31.0	-6.6
Italy	65.2	62.0	-6.5	16.2	-20.3	-15.8	3.0	27.3	8.9	23.3	-4.8	-37.0	-1.9	-25.4	-23.2	11.1	39.8	-1.1	15.1	-10.0
Japan	-7.0	11.6	51.4	-15.4	-23.4	-18.4	1.6	11.4	34.1	-1.1	-14.0	-10.8	-17.6	1.3	-14.3	6.8	47.6	4.9	23.2	2.9
Netherlands	50.9	30.9	0.2	12.9	-15.4	-28.0	-4.3	7.9	21.7	22.3	8.3	-34.8	10.3	-10.7	-12.1	19.1	52.4	5.5	14.0	5.3
New Zealand	4.7	-17.8	5.8	-21.7	17.7	12.9	16.2	29.9	8.7	8.5	-2.2	-41.8	16.6	-5.0	5.5	27.6	29.1	17.4	5.4	18.9
Norway	29.5	-25.7	23.4	16.7	-4.7	-15.7	10.7	47.3	32.8	35.1	18.0	-55.0	45.0	-2.7	-10.0	17.2	27.0	-14.8	-4.4	13.8
Singapore	-14.7	-7.4	86.9	-14.9	-16.9	-19.1	2.8	17.5	22.2	36.5	15.2	-33.7	34.9	7.2	-17.9	29.3	18.0	12.6	-7.4	1.9
Spain	52.9	59.2	-1.7	-0.9	-3.8	-23.0	18.4	23.9	11.6	39.0	11.3	-25.2	11.2	-31.5	-12.3	1.7	52.4	4.2	-5.1	-0.6
Sweden	37.6	21.1	68.5	-7.3	-21.0	-36.8	23.0	31.0	17.9	33.4	-9.7	-36.9	27.3	17.4	-16.0	20.4	44.5	1.1	6.8	1.1
Switzerland	75.8	31.2	-12.8	24.7	-14.7	-18.5	0.2	10.5	24.3	18.6	-5.5	-12.5	-2.9	-1.9	-6.8	18.8	46.9	9.2	13.0	-4.4
UK	49.5	25.1	5.4	4.2	-6.7	-22.9	-1.3	14.9	14.7	21.6	-2.7	-34.9	11.1	-4.6	-2.6	13.8	40.0	3.4	4.0	0.4
US	62.6	38.2	14.3	2.6	-4.9	-30.1	-4.0	5.9	12.4	6.7	-5.3	-21.4	-2.1	0.7	1.3	13.9	52.9	23.2	13.3	11.4

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

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That Bit Extra...

More Amazing Research Happenings in the EXPONENTIAL WORLD to Make Our Lives Better...Faster, Easier, Cheaper, Bigger Futures

The future is almost here –

From Peter Diamandis and the team at



[Open Meals is teleporting 3D-printed sushi to the ends of the earth](#)



What it is: Japanese startup Open Meals recently debuted its 3D-printed food at SXSW, starting with sushi designed in Japan and printed in Texas. Currently, its technology prints 5mm blocks of water-based gels, which gives the finished product an 8-bit feel. A robotic arm and specialised cartridges inject nutrition, flavor and color directly into the blocks.

Why it's important: Open Meals sees its technology as a critical way to deliver specialised nutrition to sick patients, the elderly and elite athletes. Imagine high-end chefs (or grandmothers) sending digital instructions to astronauts or remote exploration teams, enabling them to print

memorable meals in remote locations. [Share on Facebook](#)

Spotted by Marissa Brassfield / Written by Marissa Brassfield

[Biotech startup creating genetically engineered 'superblood' to battle cancer](#)



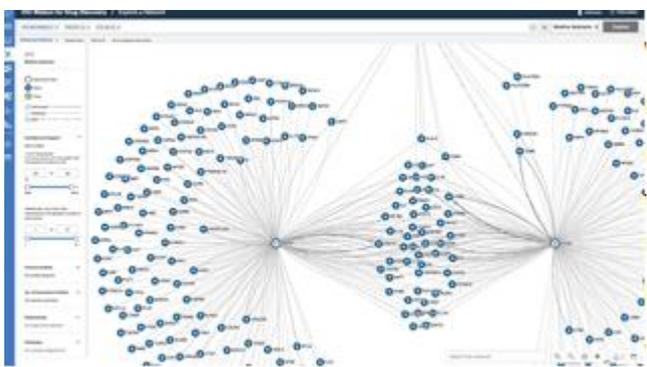
What it is: Rubius Therapeutics, a biotech startup creating a 'superblood' to treat a wide range of diseases, just raised another US\$100 million, bringing its total funding to almost US\$250 million. In an approach called red-cell therapeutics, or RCT, Rubius is developing enucleated (without a nucleus) red blood cells that can be loaded to carry essentially any therapeutic protein throughout the body. Because these cells are enucleated, they escape detection by the body's immune system and very likely will not need to be personalised for each patient. Rubius's first products will focus on treating enzyme deficiencies, cancer and autoimmune disease.

Why it's important: RCT could solve a major challenge in engineered drug delivery solutions to date. With so many approaches coming online, it's time to seriously think about where opportunity lies beyond healthcare. What changes will we see in social structures when life expectancy increases of 2 or 3 times are commonplace? [Share on Facebook](#)

Spotted by Morgan McDermott / Written by Jason Goodwin

[Need to make a molecule? Ask an AI for instructions](#)

What it is: Marwin Segler, a University of Münster organic chemist and AI researcher, has developed a tool to identify the steps needed to create new molecules. Using deep-learning neural networks to learn essentially all known single-step organic-chemistry reactions, the AI predicts chemical reactions that can be used in any single step. Iteratively applying these networks to the multi-step synthesis, the AI essentially reverse-engineers the molecule to arrive at the



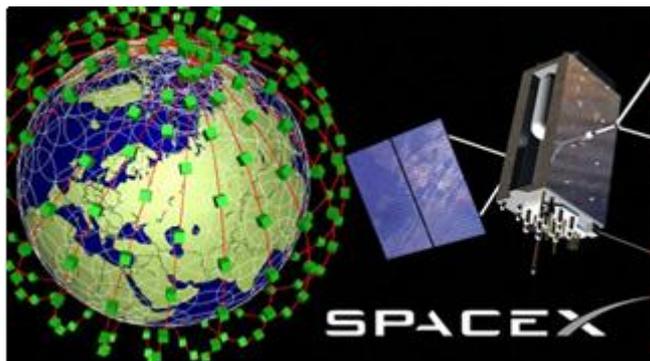
transformation of the entire field of materials science. [Share on Facebook](#)

starting reagents. After attracting the interest of pharmaceutical companies, Segler's tool has the potential to dramatically accelerate drug discovery and increase the efficiency of organic chemistry overall.

Why it's important: Attempts to apply AI and computational methods to chemistry have been made since the 1960s. New algorithms, combined with massive increases in computing power, puts us on the precipice of new drug discovery and a

Spotted by Jason Goodwin / Written by Jason Goodwin

[FCC approves SpaceX Plan for 4425-satellite broadband network](#)



What it is: The FCC has approved SpaceX's application to launch its Starlink satellite constellation, designed to deliver high-speed internet access to rural areas around the world. As part of the agreement, half of the proposed 4425 high-altitude satellites must be launched by 29 March 2024.

Why it's important: The growing commercial space industry will force governments all over the world to address outdated regulatory frameworks. As the Rising Billion come online, and millions of people around the world gain access to high-speed Internet, we'll see an entirely new wave of opportunity, creativity and disruption. [Share on Facebook](#)

Spotted by Michael Bloxton / Written by Marissa Brassfield

[Blockchain agriculture will change farming and food](#)



What it is: The Louis Dreyfus Company recently teamed up with ABN Amro and ING Groep to conduct the first blockchain agriculture commodity trade. Selling 60,000 tons of US soybeans to China's Shandong Bohi Industry Co., the use of the blockchain reduced the total time for logistics by 80% and cut the transaction from 2 weeks to less than 1 week. The combination of digital documents and automatically matching data in real time circumvented a largely manual, error-prone and paper-intensive process.

Why it's important: From blockchain-enabled smart contracts and new sensors that verify authenticity and quality of products,

look for this technology to disrupt and decentralise an industry currently dominated by large multinationals. [Share on Facebook](#)

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