

## TURNING INTELLIGENCE INTO MAGIC

'Big data' is the future for finance. Until recently, most processes needed predictable data structured in regular ways, stored in relational databases. Simple, but limiting. Then quietly, about a decade ago, advances in computing driven by a convergence of technologies – with vast amounts of data collected on the internet meeting hugely enhanced processing power and cloud storage, together with machine learning (ML) algorithms – opened the door to a new world. But ML and its twin, artificial intelligence (AI), for all their power for good, open up challenges for skills, ethics, consumer protection, and systemic risk.

'History does not repeat itself, but it rhymes.' Often misattributed to Mark Twain, this neat aphorism nonetheless sums up much of life. In this issue of *RoFM*, we are honoured to have two distinguished contributions, from Dr Oonagh McDonald CBE and Sheriff Michael Mainelli, Chartered FCSI(Hon), on two key history lessons: one recent, one relatively ancient, but both highly valid today. Peering through the looking glass into the future, we consider measuring impact in investments – one of the hottest of hot topics for 2020 and beyond – and generating decent retirement income for clients.

AI and ML will be two of the biggest themes for CISI members in all walks of our sector through the 2020s. These technological innovations paired with big data are creating more rapid business evolution and disruption than ever before.

Not only must senior managers understand these complex and opaque new digital offerings, but as a sector we must ensure that this data and technology are used responsibly to benefit our clients and wider society.

Education, including the CISI world of professionalism, is no slouch when it comes to deploying new technologies. The CISI for instance, remains way ahead of the pack when it comes to delivering continuing education to its worldwide membership electronically. In the AI and ML domains, most initial educational developments have been, almost inevitably, in the worlds of computer science and more broadly the STEM subjects – science, technology, engineering and maths. Now the worlds of economics, business and finance are catching up, with four widespread initial

applications in educational support services: profiling and prediction; assessment and evaluation; adaptive systems and personalisation; and intelligent tutoring systems.

We'll be covering these in *RoFM* in the course of 2020. If you have experiences of AI and ML in education or beyond – particularly if you are a recent recruit to our global students ranks – then please give us your views.

While technology marches ahead ever faster, a little poetry still goes a long way. We are privileged to count some of the best and brightest brains in the world of finance amongst our membership. One such is Nigel Pantling, Chartered FCSI, an

officer in the British Army of the Rhine during the Cold War (and in Northern Ireland during the Troubles).

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Later, he served British Home Office ministers, including Leon Brittan, as private secretary. Now, he brings this and subsequent experience in finance, gained as an investment banker at Schroders and Hambros (whose corporate finance department he headed), to advise chief executives of major businesses. And to our events he brings his pen, as a poet. His fourth poetry collection will be published in September 2020. We are delighted to welcome him therefore as Poet-in-Residence here at *RoFM* with his first contribution, on page 63, on operational risk.

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# IMPACT MEASUREMENT IN PRIVATE EQUITY – CUTTING THROUGH THE COMPLEXITY

**JIM TOTTY AND RICHARD BURRETT** OF EARTH CAPITAL CONSIDER THE THEORY AND PRACTICE OF MEASURING IMPACTS AND OUTCOMES FROM PRIVATE EQUITY INVESTING, BASED ON A 'WHOLE LIFE' SCORECARD APPROACH

As global capital markets embrace the urgent need for impact investing, private equity is at the forefront of this dramatic change. However, there is currently a wide range of bespoke approaches to impact measurement, and the lack of standard methodologies in private equity is hindering capital inflows. In this paper, the authors set out a straightforward framework for impact measurement in the private markets.

At Earth Capital, we believe a 'whole life' scorecard is the approach that delivers consistent and robust impact measurement in private markets. It is easy and quick to implement and allows comparison and aggregation across portfolios.

## DRAMATIC MARKET GROWTH IN IMPACT INVESTING

There has been a rapid increase in impact investing in recent years. At the end of 2018, Morgan Stanley Wealth Management commented that 84% of investors say they are interested in impact investing or putting their money behind companies that make a positive difference in the world.<sup>1</sup> In April 2019, the Global Impact Investing Network (GIIN) assessed the size of the global impact investing market to be US\$502bn.<sup>2</sup> Nonetheless, this still remains a small subset of environmental, social and governance (ESG) integration and responsible investment. The Principles for Responsible Investment membership represents assets under management in excess of US\$80tn.<sup>3</sup> A key question is whether a simple framework for impact and its measurement is needed to promote positive impact investing, as opposed to investment that is merely doing 'less harm' through ESG integration.

<sup>1</sup> <https://www.morganstanley.com/access/impact-investing-why-it-matters>

<sup>2</sup> <https://thegiin.org/research/publication/impinv-market-size>

<sup>3</sup> <https://www.unpri.org/pri/about-the-pri>

## KEY DIFFERENCES BETWEEN IMPACT INVESTING AND ESG INTEGRATION

Both the agreement of climate goals in the Paris Agreement in December 2015, and the broader delivery of the 17 UN Sustainable Development Goals (SDGs) from earlier that year, have done much to increase the flow of capital into the low carbon, sustainable and 'just' economy, particularly galvanising new investor focus in impact investing. With this impetus has come a clear recognition of the distinction between traditional ESG integration and the new impact investing market.

Impact investing involves making investments with the conscious 'forward looking' intention to generate positive, measurable, social and environmental impact, alongside a financial return.

This goes beyond ESG integration which is only a 'backwards-looking' reporting of ESG performance, and which may still permit investment in industries that can have negative environmental and social outcomes. In contrast, impact investing looks to anticipate future societal and environmental needs and deliver positive returns for people, planet and profit.

An ESG integration strategy identifies companies in a sector that perform better than peers in ESG metrics, and implements tilts, exclusions, or active engagement to weight and improve portfolios' ESG performance. If this is not combined with some form of exclusion based screening, it may leave portfolios with significant residual exposure to a range of fossil fuel intensive industries, or sectors such as tobacco. An impact investing strategy, on the other hand, takes concrete action by investing in 'pureplay' investments focused on actionable positive environmental and social outcomes. Both strategies seek to improve outcomes, but impact investing allows investors to make more focused and measurable contributions. ESG is often seen as changing finance, but only impact investing is consciously financing change.

## IS PRIVATE EQUITY THE KEY TO IMPACT INVESTING?

ESG integration in large-cap listed equity and fixed income tends to focus on larger long-established businesses with significant inertia and long capex cycles. Although ESG data is becoming available, improvements in environmental and social performance may be slow, long-term projects. In contrast, private equity, unlike these other asset classes, is

the best approach for impact investing by giving exposure to 'pureplay' sustainable business models in technology and services. These offer transformational

// ESG IS OFTEN SEEN AS CHANGING FINANCE, BUT ONLY IMPACT INVESTING IS CONSCIOUSLY FINANCING CHANGE //

environmental and social impact from the outset, with fast moving business models and nimble market penetration.

## IMPACT MEASUREMENT IN PRIVATE EQUITY – THE STORY SO FAR

A successful impact strategy must include robust measurement, and to date, most private equity general partnerships (GPs) have evolved their own measurement methodologies, either entirely in-house or with the help of sustainability consultancies. Unfortunately, this wide range of bespoke methodologies is not helpful to capital markets, which seek standardisation. For both limited partnerships (LPs) and investee companies, significant time has to be invested in educating, explaining and implementing each GP's approach. Further impact measurement shortcomings can include unclear objectives, poor data collection and analysis, inconsistent reporting and a lack of clear standards for what qualifies as an impact investment.

The urgency to exploit the investment opportunities in impact investing means that confusion over standards must not be allowed to impede inflows of capital. The current wide number of bespoke

**FIGURE 1. IMPACT MEASUREMENT IN PRIVATE EQUITY – CUTTING THROUGH THE COMPLEXITY**

	<b>Deep dive vertical quantitative analysis</b>	<b>Horizontal scorecard analysis</b>
<b>Consistent (whole life) total impact parameters</b>	<p><b>Quant impact</b> Quantitative impact-driven analytic assessment across a range of impacts.</p> <p>Pros: Can provide rich analytic insight and describe linkage to financial performance.</p> <p>Cons: Requires data-rich, well-parameterised datasets more readily found for large-cap listed equities.</p>	<p><b>Whole life impact scorecard</b> Holistic measurement.</p> <p>Pros: Allows comparison across all investments in a portfolio and is not onerous to implement for management teams, avoids survey fatigue, consistency allows for aggregation at fund and fund manager level.</p> <p>Cons: Not intended to deliver a deep quantitative assessment but this can be completed where it is of value.</p>
<b>Selective choice of impact parameters</b>	<p><b>Impact return on investment</b> Quantification of impact in monetary terms such as an impact multiple of money invested.</p> <p>Pros: Neat parameterisation in monetary terms makes it easy to understand.</p> <p>Cons: May require changes in methodology for each investment. Limited ability to make comparisons across different investments. Can be laborious and hard to audit. Calculations are only as good as the data that feeds them. May not include 'whole life' impacts of a business other than local measures. There may be limited reporting on negative impacts.</p>	<p><b>Mission alignment and measurement</b> Selective bespoke KPIs are identified for each investment to align between mission and measurement.</p> <p>Pros: Straightforward to implement by choosing easy to measure KPIs for a given investment.</p> <p>Cons: Tendency not to choose the harder to measure metrics, and report only positive impact and not negative. May not include supply chain and end of life impacts. Limited ability to make comparisons across different investments as metrics may differ, hampering the ability to aggregate at fund and fund manager level.</p>

approaches now needs to coalesce rapidly around a small number of consistent and understandable impact measurement standards. This pressure is analogous to the development of accounting standards from the 1930s onwards in response to events such as the 1929 stock market crash. Although there may be longer-term improvements of impact standards in parallel, there is no time to wait for this to make investments.

We cannot let the 'perfect' be the enemy of the good. Time is pressing to make impact investments.

**CUTTING THROUGH THE COMPLEXITY IN PRIVATE EQUITY IMPACT MEASUREMENT**

We have reviewed the approaches currently used by private equity funds and have identified key themes that characterise different approaches taken. These are set out in Figure 1, 'Impact measurement in private equity – cutting through the complexity', which is defined by two key questions for an impact measurement approach in private equity.

- 1. Do you attempt to measure all investments with the same set of consistent whole life measures and data sets, or do you select bespoke sets for each situation?**
- 2. Do you do 'deep dive' 'vertical' quantitative analysis, or do you apply a shallower 'horizontal' scorecard approach?**

Although the 'quant impact' approach is normally only used for listed equity strategies, the other three methodologies are in current use in impact private equity.

Quantitative analysis such as the 'return on investment' can neatly parameterise in dollar terms, but it is only as good as the data it is fed, and can be complex to implement and hard to audit. If data is poorly parameterised or incomplete, its analysis risks becoming spurious. While the advent of blockchain or 'big data' approaches may assist in these, this remains a future development for private equity.

Selective 'self-certified' choices of KPIs bespoke to each investment are appealing from an ease of adoption

perspective but have significant drawbacks. These 'mission alignment and measurement' scorecards may choose only metrics that are easily measurable and look good. This can go hand in hand with a tendency to report only positive impact and avoid negative impact. It is especially vital to include supply chain and end of life impacts in measurement. The 2017 GIIN survey *The state of impact measurement and management practice* reveals that two-thirds of the impact investment sector only reports positive impact, and only 18% measure negative and/or net impact for all of their investments. Even if this is addressed, bespoke KPIs will limit the ability to make a comparison of impact across different investments or to consolidate at fund and fund manager level.

There are a number of further approaches used in impact investing.

- Social impact measurement often uses 'theory of change' models, however in a 'live' investment environment, the goal setting and measurement this involves is effectively the same as the mission alignment and measurement selective scorecard above, ie, identify KPIs bespoke to each investment, and then measure against them.
- Control groups are an academic approach to compare investment outcomes against a randomised control group. This can be challenging to implement in many real-world impact investment situations, as a duplicate potential investment has to be identified and then kept 'uninvested' and measured for the lifetime of the actual investment.
- Additionality is also studied in impact investing but its quantification in real investment situations has to be through either:
  - 'Full measurement' approaches which require control groups with the inherent difficulties explained above, or
  - a KPI scorecard 'low, medium or high' which is a subset of the KPIs in the 'mission alignment and measurement' discussed above.
- SDG based labelling of impact strategies can be used for high level sector mapping, but the SDGs do not lend themselves easily to quantitative holistic impact measurement. They can, nonetheless, help to define impact metrics for specific target areas.

At Earth Capital, we believe a ‘whole life’ scorecard is the approach that delivers consistent and robust impact measurement in private markets.

Key performance indicators are selected across ESG tests. The scorecard is easy to implement and is not onerous to complete with portfolio companies. Start of life and end of life impacts are included, and negative impacts are considered and measured. The ‘whole life’ scorecard allows portfolio company improvement to be measured over time,

comparisons can be made between investments, and it allows aggregation at both the fund and fund manager level.

**MARKET DEVELOPMENTS**

Impact investing methodologies will continue to evolve for many years to come, with ongoing improvements in the choice and range of metrics in impact scorecards. The IFC’s Impact Management Framework<sup>4</sup> and the Impact Management Project<sup>5</sup> are invaluable initiatives in this evolution process.

What is clear however, is that the global urgency of environmental and social needs means that impact investment must press ahead at speed. The simple measurement approaches set out in this paper provide the measurement framework to enable this. Private market asset owners and asset managers will benefit from quick and straightforward impact approaches across both existing portfolios and new investments.

**CONCLUSIONS**

Impact investing is growing rapidly in response to rising demand for strategies that go beyond ESG integration to produce measurable societal benefits and support a transition to low carbon and sustainable and just economy. Private equity is at the forefront of this transition. The ability to effectively measure and manage desired impacts is critical to ensuring that impact investments fulfil their stated objectives. Reliable metrics are needed to avoid the

**// THE GLOBAL URGENCY OF ENVIRONMENTAL AND SOCIAL NEEDS MEANS THAT IMPACT INVESTMENT MUST PRESS AHEAD AT SPEED //**

potential risk of ‘impact washing,’ and using the impact label primarily for marketing and asset gathering purposes. Impact measurement and management

should be embedded in all phases of the investment process, from initial due diligence and project selection to investee company performance management and reporting.

Quantitative analysis such as the return on investment can neatly parameterise in dollar terms; however, it is only as good as the data it is fed and can be complex to implement. Although this lends itself

to large cap public market securities where high quality market data might support robust ‘quant’ analysis, it will remain challenging to implement this in the private equity space.

Selective ‘self-certified’ ‘mission alignment and measurement’ choices of KPIs bespoke to each investment are appealing from an ease of adoption perspective but currently have a tendency to only report positive, not negative, impact and ignore whole life impacts. They limit the ability to make a comparison of impact across different investments or to consolidate at fund and fund manager level.

As a result, we believe a ‘whole life’ scorecard is the approach that delivers consistent and robust impact measurement in private markets. It is easy to implement, and allows comparison and aggregation across portfolios.

**ABOUT EARTH CAPITAL**



Jim Totty, managing partner, Earth Capital



Richard Burrett, chief sustainability officer, Earth Capital

Earth Capital, a pioneer in impact investing since 2008, is a growth capital private equity investment manager totally focused toward sustainability – investing capital into sustainable technologies for resource efficiencies and renewable clean energy infrastructure opportunities. It invests globally in companies and infrastructure which address the challenges of sustainable development, such as climate change, energy, food and water security. It focuses on the commercialisation and deployment of proven, sustainable technologies in various industries including agriculture, clean industry, energy generation, resource and energy efficiency, waste and water.

Its Earth Dividend™ impact measurement methodology is a ‘whole life’ scorecard developed for the private markets, based upon net environmental, social and governance (ESG) impacts

and benefits. The Earth Dividend™ provides an annual measure of an investment’s sustainable development impact. It has been developed by Earth Capital’s in-house sustainable development specialists following a review of international best practice approaches to the assessment, reporting and assurance of ESG issues and performance.

The Earth Dividend™ is established as part of the due diligence process and reported annually. The sustainability team works to identify improvements in each area where they add value and make commercial sense. The plan targets annual improvements in the investment’s contribution to sustainable development to enhance the underlying commercial performance of the asset and help to maximise value on exit. The Earth Dividend™ enables a holistic understanding of the risk and impact of sustainable development; an understanding of where investments make a positive or negative impact; identifies those areas where a business may be made more resilient and from where more value can be extracted; and is subject to external assurance annually.

[www.earthcapital.net/sustainability/earth-dividend](http://www.earthcapital.net/sustainability/earth-dividend)

<sup>4</sup> [https://www.ifc.org/wps/wcm/connect/Topics\\_Ext\\_Content/IFC\\_External\\_Corporate\\_Site/Impact-Investing](https://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/Impact-Investing)

<sup>5</sup> <https://impactmanagementproject.com/>

# RATIONAL INCOME INVESTING IN A POST-QE ENVIRONMENT – LET THEM EAT CAKE

DOUG BRODIE AND COLLEAGUES FROM MASTER ADVISER TAKE A CLOSE LOOK AT THE INTRICACIES OF GENERATING INCOME FROM CASH POTS IN CHALLENGING TIMES

A major challenge in wealth management, financial planning and financial advice today is advising clients on how to generate retirement or other long-term income where the objective is reliability of income, not capital growth. Determination of the risk profile of clients is a particular challenge in an increasingly tightly-regulated market – a theme which has been developed by Keith Robertson, Chartered FCSI, in recent editions of *RoFM* (Q3 2018 and July 2019). Here, Doug Brodie CFP™ Chartered MCSI and colleagues tackle the subject from a different angle in an excerpt from a thought-provoking paper on “rethinking risk and techniques for income investors, pension drawdown and trust investment in today’s markets”.

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This paper considers the solutions available to income investors, chiefly trusts and those using self-invested personal pensions (SIPPs) in drawdown, to generate long-term income in 2019/20 – a post-QE environment with interest rates at record lows, UK gilt yields below 1% and more than US\$12tn in negative yield accounts. This is a unique investing environment requiring new thinking on suitable solutions. It cannot be just ‘unfortunate’ for 65-year-olds to be retiring with ultra-low yields, it is the adviser’s job to source current solutions for current investors applicable to trusts, drawdown pensions and investors.

This paper examines equity funds as bond proxies and naturally focuses on investment trusts due to their ability to support dividends with balance sheet reserves.

£0.5tn is a wall of purchase pension money in DC workplace schemes and in SIPPs that is peeling off each year. The expectation is that pensioners

themselves will convert the accrued lump sum into a monthly pay cheque. UK demographics show the problem is increasing every year, and the collapse in the UK annuity market means bond proxies are necessary: this means that suitable equity income funds should not be risk graded as high risk and therefore unsuitable for pensioners. We examine and analyse why today’s income seekers should not be steered away from equity solutions.

## VOLATILITY OF EQUITY CAPITAL HAS LITTLE CORRELATION WITH THAT OF EQUITY INCOME

It is clear that academic definitions of risk and how to reduce it in portfolios play an important role in determining how clients’ money is invested.

In an increasingly tightly regulated market, advisers must determine the risk profile of clients before they can handle their money. This leads to regulated advisers widely using computer-based risk-profiling programs to ascertain the level of risk to which a client’s portfolio should be exposed by attempting to quantify the client’s attitude to risk. However, the risk profiling software typically uses standard definitions of risk and diversification which may not coincide

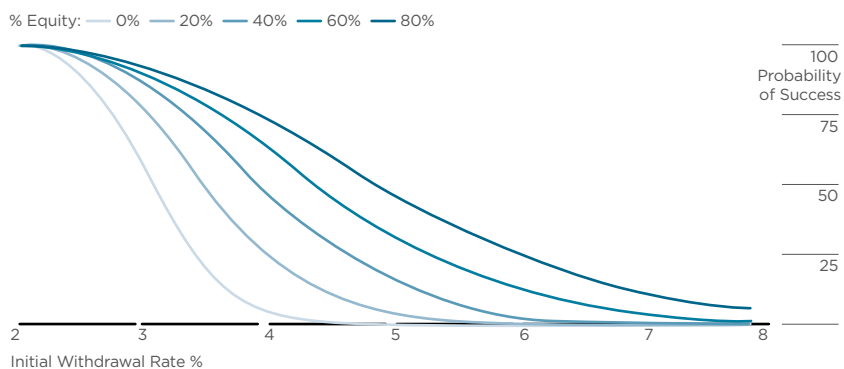
with people’s own view of risk, with the result that they may be often pushed in the wrong direction when it comes to seeking a long-term, secure income. If the output of the software is unchallenged, by an adviser perhaps, then the original software programmer’s interpretation of risk wins.

The software typically works by assessing the answers an investor gives to questions based on different scenarios where their money is subject to different levels of uncertainty. It then matches the answers to a risk score. This is meant to ascertain the investor’s mental attitude towards risk.

One mainstream profiling tool states, for instance, that it is developed by “an independent team of leading psychology academics”. The problem is that, however expert the developers of these programs, a standard set of questions cannot possibly extract the information necessary to meet the investment needs of very different individuals. That can only be done in a person-to-person discussion.

One standard question exemplifies the issue, asking investors if they prefer their money “safe from risk” without finding out what risk means to that person, or indeed if that person’s understanding is correct.

**GRAPH 1: SUCCESS RATES FOR VARIOUS INITIAL WITHDRAWAL RATES AND PORTFOLIOS (30-YEAR RETIREMENT PERIOD)**



Source: Morningstar

In isolation, everyone would like their money to be safe from risk, but if it was explained that this would still leave it subject to the vagaries of inflation or unable to provide an income for the rest of their likely life, that their income could stop in their 70s or 80s, many might give different answers to those currently being recorded. Investors would certainly seek more clarification.

In reality, those displaying a dislike of uncertainty are steered towards low volatility, cautious assets, and away from equity income, because the characteristics of the stock market make a heavily equity-based investment 'risky'. The truth, we would argue, is that the stability of an equity-based investment is often the income solution with the least risk. This is illustrated in research conducted by Morningstar, the data provider.<sup>1</sup> It examined mixed equity/bond portfolios, using differing proportions of equity ranging from 0% to 80%. Traditionally, the 0% equity portfolio would have been seen as the least risky and the 80% equity-heavy portfolio the higher risk, yet this is not borne out by the historical results.

Graph 1 is an extract from Morningstar's research. It shows the probability of success of meeting withdrawals over a 30-year period using different proportions of equity within a drawdown portfolio. It is striking that in every case shown, the highest equity allocations display the least risk of the money running out: in other words, the least risk to long-term income.

The 80% equity dark line has the highest probability of success with all withdrawal rates. This suggests that standard investment advice applied to reduce risk in equity income is incorrect. The attempts to reduce the risk to the capital simply increase the risk to the longevity of the income.

When investing for drawdown income, there is indeed a risk created by the equity part of a portfolio, but the risk is that there is too little equity in the portfolio, not too much.

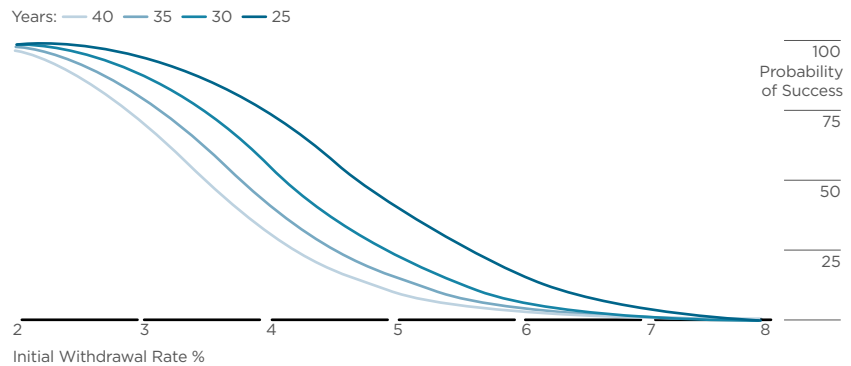
The issue goes back to our definition of risk – as advisers on regulated

<sup>1</sup> *Safe withdrawal rates for retirees in the United Kingdom, May 2016*

<sup>2</sup> *Barclays Gilt Equity Study 2019*

**How long before the investor dies? Would you like to select 25 or 30 years? It matters.**

**GRAPH 2: SUCCESS RATES FOR VARIOUS INITIAL WITHDRAWAL RATES AND RETIREMENT PERIODS (50% SHARES & 50% BONDS)**



Source: Morningstar

investments, we define risk as the likelihood that an investment will fail to do what an investor expects. It is only when the asset is sold that the loss is made permanent. The drawdown payments on which graph 2 above is based are achieved by combining income with capital realisations, that is, selling assets. The only way investors can mitigate the effects of those sales is by owning other 'risky' assets able to generate the returns needed to swim strongly against this outflow of funds. Typically, that means equities. It seems clear to us that – generally – the higher the proportion of equity in a portfolio, the higher the probability of success (for each given withdrawal rate) in generating long-term income using drawdown.

Morningstar runs the same scenario again but using a portfolio that is 50/50 shares and bonds and comparing not the different percentages of equity but the number of years of required income. One can see the jump where a 4% withdrawal for 30 years has a c.60% probability of success, whereas for just 25 years the probability jumps by 25% to a 75% success rate.

If one is to consciously reject crystal ball gazing when planning an investor portfolio for 20+ years, it would be wrong to ignore the evidence that over the past 119 years, UK equities have outperformed inflation by 4.9% per annum,<sup>2</sup> whereas gilts were at 1.9%. Finally, in that study Barclays uses its

**TABLE 1: EQUITY PERFORMANCE AND THE PROBABILITY OF EQUITY OUTPERFORMANCE**

	Number of consecutive years				
	2	3	4	5	10
<b>Equities v cash</b>					
outperform cash	81	83	85	87	100
underperform cash	37	34	31	28	10
total number of years	118	117	116	115	110
<b>Probability of equity outperformance</b>	<b>69%</b>	<b>71%</b>	<b>73%</b>	<b>76%</b>	<b>91%</b>
<b>Equities v gilts</b>					
outperform cash	80	87	87	83	85
underperform cash	38	30	29	32	25
total number of years	118	117	116	115	110
<b>Probability of equity outperformance</b>	<b>68%</b>	<b>74%</b>	<b>75%</b>	<b>72%</b>	<b>77%</b>

Source: Barclays gilt equity study 2019

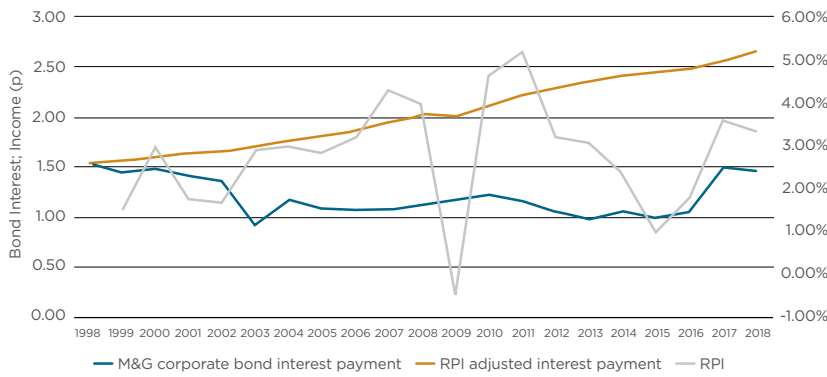
**‘NATURAL’ INCOME FROM A CORPORATE BOND FUND**

Inflation has fallen in recent years, but not enough to offset the fall in interest rates. To see how a real investor might have experienced this change in circumstances, we compared the natural income provided by M&G’s £3.5bn Corporate Bond fund over the past 20 years with inflation over that period. Note that is not to say that a combination of natural income and selling down units would have failed to deliver required income; however, that directly injects sequence risk into the portfolio, it increases the income seeker’s risk of an unwanted outcome.

We have included the cost of inflation in discrete years to match annual income, which is paid in pence, and only displayed as a % yield. Fund distributions are not calculated nor paid as a percentage of the fund.

It is clear that an income investor seeking safety in fixed income has not been well served over the past 20 years. While both bond income and rates of inflation have fluctuated, the latter has generally remained stubbornly higher in recent years, resulting in bond income not having kept up over all three periods we examined.

**GRAPH 3: M&G BOND INCOME VS M&G BOND INCOME X RPI 1998-2018 (CUMULATIVE)**



significant resources and human capabilities to calculate table 1.

**SEEKING NEW SOURCES OF SECURE AND SUSTAINABLE INCOME**

We can only invest in today’s assets with today’s returns – yesterday’s income is all gone. As we have said, the

Morningstar research assumes that a drawdown recipient will have to rely on both the annual income provided by their investment portfolio, as well as regular realisations of capital from it. There are clearly two elements to this: ‘natural’ income provided by interest from bonds and/or

dividends from equities, on the one hand, and capital provided by regular sales of the underlying asset, a bond and/or an equity portfolio, on the other. To assess the value of these two elements, we need to look at each in turn.

The box on the left shows how the natural income provided by M&G’s £3.5bn Corporate Bond Fund over the past 20 years compares unfavourably to inflation over that period.

How then would an equity portfolio measure up? For this, we chose 30 household-name investment trusts offering broad global equity diversification. The reason for selecting active trusts as the real-life equity proxy is evident in table 2:

Comparing the bond proxy to our equity proxy – a basket of investment trusts – a similar picture emerges, although, in graph 4, page 61, the rising nature of a managed dividend income is visible.

As we saw before, the bond fund income has tended to fluctuate, leaving a broadly flat trend. What is notable about the investment trust income is its remarkably smooth progression upwards. In fact, not only has this annual income growth beaten that from bonds, but it has also comfortably surpassed inflation in all three periods we examined, summarised in table 3 below.

We can also cherry-pick trusts with long histories of dividends that have focused on dealing with inflation over the long term (as opposed to selecting those with greatest annual increases or lowest income volatility). A simple example is the world’s oldest mutual fund, Foreign & Colonial (which commenced eight years before General

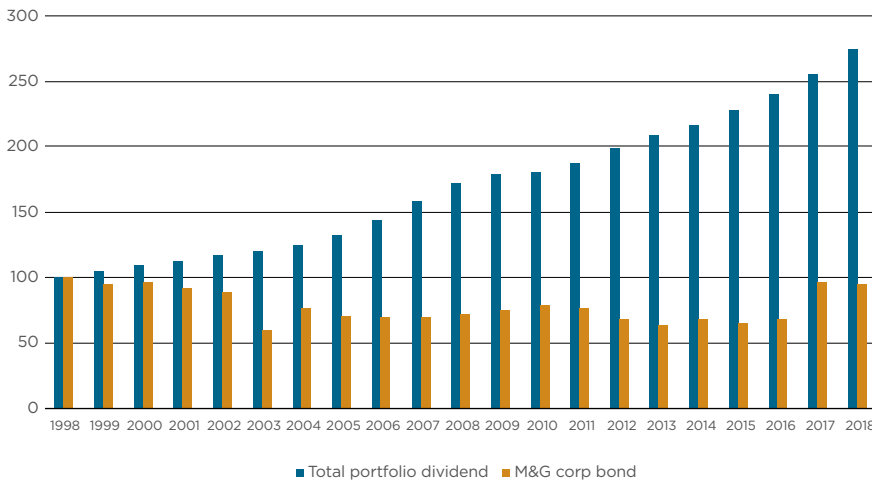
**TABLE 2: TOTAL RETURNS 1999-2018**

Total return, 1999 to 2018, inclusive of all fund charges	Charge: ocf	
Murray International	466.35%	0.69%
F&C	406.87%	0.65%
PIGIT	400.57%	0.72%
Temple Bar	351.21%	0.47%
City of London	243.29%	0.41%
Merchants	214.98%	0.58%
FTSE All-Share Index	167.80%	0.00%
FTSE 100 Index	128.47%	0.00%

**TABLE 3: AVERAGE ANNUAL INCREASES IN DIVIDEND INCOME FROM THE PORTFOLIO ACROSS THE DIFFERENT PERIODS, COMPARED TO THE AVERAGE ANNUAL INFLATION**

	Trusts	Inflation	
1987-2018	32 years	6.47%	3.31%
1999-2018	20 years	4.21%	2.78%
2009-2018	10 years	5.31%	2.76%

**GRAPH 4: M&G CORPORATE BOND INCOME V PORTFOLIO DIVIDEND INCOME 1998-2018 (1998=100)**



**IN TRUSTS WE TRUST**

Our research looked at 30 mainstream investment trusts over the period since 1974, one of the most volatile periods in the equity and bond markets since 1929. Not all trusts have been in existence that long, and some that have do not have full records. In total, however, the research analysed 1,236 annual consecutive annual payments. (See Appendix C in the full paper for further information on how we selected our trusts.)

This analysis found that:

- A dividend payment was never missed by any trust.
- The payment was the same or higher than the prior year in 98% of cases.
- In 91% of cases it was increased.

The reasons for this consistency are not hard to find. Like the underlying company holdings, the dividends from investment trusts are set and controlled by the directors, and are based on actual cash receipts and liabilities. The directors have a legal responsibility to advise investors throughout the year how the profits and likely dividends are progressing via stock market announcements. Shares in the trusts tend to rise and fall in line with the value of the underlying holdings. However, analysis shows that dividend volatility has no correlation to share price volatility.

Investment trusts maintain revenue and capital reserves on their balance sheets and use these to support a smoothed dividend stream. As listed companies, the balance sheets are available to us for analysis and to monitor progression of items such as dividend/reserve cover.

By example, the City of London Investment Trust has increased its dividend every year for 52 years, with a further 15 trusts having increased their annual payments for longer than the 28-year life expectancy calculated by Aviva, the UK insurer, for a 60-year-old male.

It is therefore clear that the record of income increases from mainstream investment trusts has demonstrated the ability to far outstrip the likely number of years needed by a retiree in drawdown.

Custer fell out with Crazy Horse at the Battle of Little Big Horn). In graph 5, the blue line shows the annual dividends and the orange line takes the first dividend in 1972 and then grows it each year by RPI.

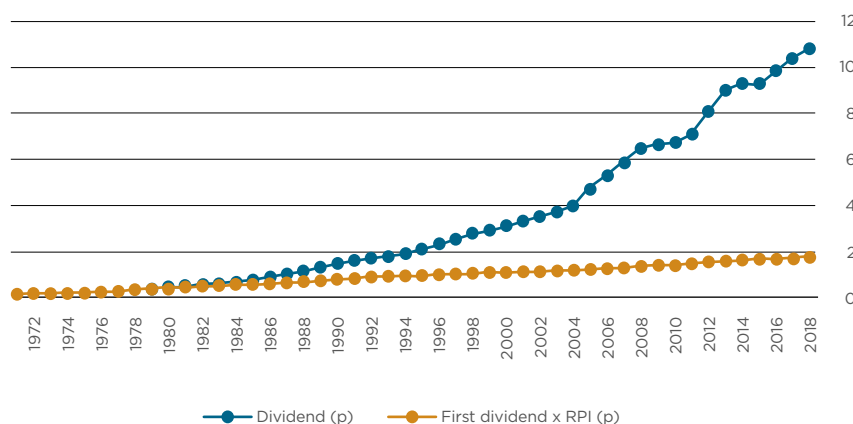
We look at income this way because this is precisely the scenario an investor will encounter when commencing drawdown of a pension from their early 60s.

Expanding the F&C example to build a portfolio of trusts, it becomes evident that a well-researched 'buy and hold' equity trust portfolio can produce a

pretty solid lifetime income that can outperform inflation. In fact, leaving aside the extreme inflation experienced in the 1970s, our core portfolio of investment trusts has defeated inflation by a factor of almost 2:1 since 1987. We comment in the box to the right about why investment trust income has become so reliable.

*Doug Brodie ran a masterclass for CISI Fellows and Chartered members on this theme in London in January 2020. For details please visit [cisi.org/events](http://cisi.org/events).*

**GRAPH 5: F&C INVESTMENT TRUST**





## HOLDING SENIOR MANAGERS IN FINANCE TO ACCOUNT

REGULATION GURU **DR OONAGH MCDONALD** CONSIDERS THE RECENT HISTORY OF SENIOR MANAGEMENT SUPERVISION, IN A NEW BOOK ANALYSING A DECADE OF REGULATORY REFORMS



As the Senior Managers & Certification Regime (SMCR) takes effect in the UK to bring much of the original Senior Managers Regime (SMR) into our sector, we take a

look at the background to SMR through the perceptive and wise eyes of Dr Oonagh McDonald CBE, an international financial regulatory expert and former British MP and frontbench Treasury minister, now resident in Washington, DC. In her latest book, *Holding bankers to account*, she provides probably the most comprehensive account yet written of the scandals that emerged from the 2007 to 2008 financial crisis. In this excerpt, she probes the background to SMR and its development, and considers the important roles of independent directors, particularly the chair of the board and of the audit and risk committees.



As the fines imposed on banks for their part in the manipulation of LIBOR, the foreign exchange market and the Gold and Silver Fixes have mounted up, the question posed by the public both in the UK and in the US is: why have so few senior bankers gone to jail? The public saw a handful of traders tried and jailed (and sometimes set free on appeal) and a few senior bankers resigned or were asked to resign, while retaining comfortable pensions and even bonuses. The UK and EU regulators considered that reforming the methods of provision of the benchmarks and reforming their governance were vital but insufficient on their own. The behaviour of banks and their senior management is crucial for the operation of the benchmarks and for the restoration of trust.

The UK Parliament, the government and the regulatory authorities sought ways of ensuring that senior bankers are accountable. The Financial Services and Markets Act 2000 was amended by the Financial Services (Banking Reform) Act 2013 and the Bank of England and Financial Services Act 2016. Both Bills were introduced by government after extensive discussions between Treasury civil servants, staff of the Financial Services Authority (FSA) and then the Financial Conduct Authority (FCA), and the Bank of England. These Acts, like their predecessors, provide the legislative framework for financial regulation, granting powers to the regulatory authorities to make all the necessary rules and regulations within the scope of the legislation. This excerpt explores the reasons for the new powers and for introducing the SMR. The conclusion is that the SMR [and its successors] will not only provide a means of holding senior bankers to account but may well also promote higher standards of diligence and responsible management.

Under the regulations available at the time, the FSA/FCA's fines on the banks were made on the basis of the banks breaking its 'Principles for Businesses' and for the US Commodity Futures Trading Commission on the basis of the US Commodities Exchange Act. The CEA specifically makes it unlawful to deliver false or misleading information, and to manipulate or attempt to manipulate the price of any commodity in interstate commerce. Sections 6(c), 6(d) and 9(a) of the CEA clearly prohibit acts of attempted manipulation. Two elements are required to prove an attempted manipulation: an intent to affect the market price and an overt act in furtherance of that intent. [In 2012] the CFTC was able to fine Barclays for collusion in attempted manipulation. Barclays was guilty of collusion under the CEA section 13(a). Liability as aider and abettor requires proof that the CEA was broken, that the aider and abettor knew about the wrongdoing underlying the

breach of the law, and that the aider and abettor intentionally assisted the primary wrongdoer. The CFTC had at its disposal not only the frequently amended Act but also considerable case law. The CFTC made Barclays pay a fine of US\$200m based on detailed legal considerations. The CFTC was also in a position to hold Barclays responsible for the activities of its agents under section 2(a) of the Act, and the Commission's own rules impose strict liability on principals for the actions of their agents. Lacking the legislation and regulations now in force in the UK and the EU, neither the FSA nor its successor the FCA had such grounds, but was able to rely on the 'Principles for Businesses', which provide the framework and the overarching principles from which detailed rules may be derived. There may be advantages in the latter approach, since the detailed and extensive laws and regulations which apply to financial institutions may not cover an actual situation and provide considerable scope for legal challenges. As the FCA Handbook notes:

"Since the Principles are also designed as a general statement of regulatory requirements applicable to new or unforeseen situations and in situations where there is no need for guidance, the FCA's other rules and guidance or EU regulations should not be viewed as exhausting the implications of the

Principles themselves." I begin by arguing that the huge fines imposed on banks failed both in terms of

### // THE FINES DID NOT PUNISH THE INDIVIDUALS RESPONSIBLE FOR THE OFFENCES //

justice and in terms of bringing about changes in culture and behaviour. Moreover, those fines did not punish the individuals responsible for the offences. The practice was roundly condemned by Judge Jed Rakoff in the US after the financial crisis, who described the whole process in the following terms:

"Just going after the company is also technically and morally suspect because,

under the law, you should not indict or threaten to indict a company unless you can prove beyond reasonable doubt that some managerial agent of the company committed the alleged crime; and if you can prove that, why not indict the manager? And from the moral standpoint, punishing a company and its many innocent employees and shareholders for the crimes committed by some unprosecuted individuals seems contrary to elementary notions of moral responsibility.”

It should be noted that ‘shareholders’ does not refer to a few wealthy individuals, but pension funds and mutual funds, investing on behalf of many small savers. The size of the fines and the reputational damage affect not only the share price with the knock-on effects on people’s investments, but threatens the viability of the bank itself, especially when a bank is faced with separate fines from multiple agencies.

With regard to the boards of banks, according to UK regulations the role of the chair is separate from that of the chief executive officer. The chair is subject to the ‘fit and proper’ requirements, as are all other members of the board. The non-executive chair’s responsibilities are set out in detail in the supervisory statement, but they include both chairing and overseeing the development of the board and leading the development of the firm’s culture by the board. In addition, the board has four committees – audit, risk, remuneration and nomination – each headed by a non-executive member of the board.

The chair of the audit committee is responsible for ensuring and overseeing the integrity and independence of the internal audit function, including the head of internal audit. The chair of the risk committee is responsible for overseeing the independence of the firm’s risk function, including the independence of the chief risk officer.

A bank’s finance, internal audit and compliance departments can discuss matters of concern with the chair of the audit committee, and the head of the risk management department can bring any such issues to the chair of the risk committee. The chair of the bank is in contact with all four committees of the

board and, through the chairs of these committees, together with any informal discussions with heads of departments, has the means to be fully informed about every aspect of the bank’s operations.

The role is a demanding one, taking up to three days a week, and is designed to enable the board to oversee the bank’s strategy on the basis of full information and agree the bank’s strategy, within its risk appetite and with a sustainable

## // PUNISHING A COMPANY SEEMS CONTRARY TO ELEMENTARY NOTIONS OF MORAL RESPONSIBILITY //

business model, to meet its regulatory objectives. Such a structure may have enabled senior managers to identify the risks involved in the behaviour of their traders and their managers, but it would not have been enough on its own.

How did the Senior Managers Regime in the UK evolve, following not only the financial crisis but the widespread manipulation of benchmarks? The new regime will help to ensure that senior management carelessness, negligence, or worse, is prevented by the implementation of a clear managerial structure and proper systems and controls. This is much more than setting ‘the tone at the top’, which involves

statements of management’s leadership, commitment to openness, honesty, integrity and ethical behaviour. The trouble is that public statements by CEOs, articulating the standards they want others to work by, are not regularly measured or evaluated and are often undermined by their own leadership teams’ behaviour. CEOs are not necessarily seen as role models. Setting the ‘tone at the top’ is not by any means enough on its own and may well be viewed with a certain degree of cynicism by staff. Much more than that is required to ensure proper standards of behaviour throughout the firm, and the advantage of the new structure for senior management is that it provides a managerial framework for that to be carried out. The new structure does provide a means of holding senior managers accountable, since they have to set out exactly what their responsibilities are in the bank.

This extract was taken from *Holding bankers to account: A decade of market manipulation, regulatory failures and regulatory reforms* by Oonagh McDonald (Manchester University Press, 2019). See [cisi.org/rofm-jan2020](http://cisi.org/rofm-jan2020) for a fuller extract. CISI members can get a 40% discount by using the code **bankers40** at [cisi.org/bookdiscount](http://cisi.org/bookdiscount)

## Operational risk

It’s not like credit risk, market risk or liquidity risk, it’s not a permissive risk, where you can say, ok, we will take an acceptable level of exposure, in pursuit of a quantifiable reward.

No, it’s a different risk, it’s related to inherent factors, factors you can’t control, measure or predict, like the risk a systems programmer misses a key stroke and curdles the coding of your Black and Scholes model, or someone doesn’t do the Know Your Counter-Party checks, or an invisible glitch in your website turns away customers, or like the time your most trusted employee met the competition in a Morrison’s car park and handed over confidential information for a brown paper bag of fifty pound notes.

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# WHAT IS GRESHAM'S LAW AND WHY DOES IT MATTER?<sup>1</sup>

ALDERMAN **MICHAEL MAINELLI**, CHARTERED FCSI(HON), ALDERMANIC SHERIFF OF THE CITY OF LONDON AND EMERITUS PROFESSOR OF COMMERCE AT GRESHAM COLLEGE

Alderman Professor Michael Mainelli, Chartered FCSI(Hon) has made a special study over many years of the life and work of Sir Thomas Gresham, founder of the eponymous college and subject of a vibrant new biography by Tudor historian John Guy.

In this masterly overview of the origins and development of Gresham's Law, he paints a vivid picture of the intellectual spirit and verve that has guided economics, the supposedly 'dismal' science, over the centuries.

Professor Mainelli has long been at the forefront of stimulating constructive debate around the City, not least in his role at Gresham College, and brings fresh and important present-day insights to conundrums of the past.

Colloquially expressed as 'bad money drives out good', Gresham's Law was attributed to Sir Thomas Gresham in 1858 by Scottish economist Henry Dunning Macleod. In Tudor times, governments sometimes issued silver coins adulterated with lead, so that people traded in these coins while hoarding the more valuable pure silver coins, saving them up for better times, or exporting them to get their full value. The Nobel economist Robert Mundell rephrased Gresham's Law more accurately as "cheap money drives out dear money only if they must be exchanged for the same price".

Gresham's Law applies in any situation where two or more goods of varying quality are being sold for the same price. People are shrewd. They try to get the better quality items first. So why the confusion? Some points on Gresham's Law: it (a) goes back to Aristophanes, (b) is incorrectly expressed by most people, and (c) is falsely attributed to Sir Thomas. *Encyclopaedia Britannica* helps a bit.

<sup>1</sup> <https://www.mainelli.org/?p=1431>

<sup>2</sup> <http://www.columbia.edu/~ram15/grash.html>

## Gresham's Law

Observation in economics that 'bad money drives out good'. More exactly, if coins containing metal of different value have the same value as legal tender, the coins composed of the cheaper metal will be used for payment, while those made of more expensive metal will be hoarded or exported and thus tend to disappear from circulation. Sir Thomas Gresham, financial agent of Queen Elizabeth I, was not the first to recognise this monetary principle, but his elucidation of it in 1558 prompted the economist HD Macleod to suggest the term Gresham's Law in the 19th century.

The elegiac poet Theognis, writing in the late 6th and early 5th century BC, wrote a few lines suggesting Gresham's Law: "Nor will anyone take in exchange worse when better is to be had." Aristophanes expresses the Law in his 405 BC play *The Frogs*. But these express more that 'good money drives out bad'.

From Robert Mundell's 'Uses and abuses of Gresham's Law in the history of money',<sup>2</sup> Columbia University, August 1998: "Cheap money drives out dear, if they exchange for the same price", rather than the misleading and overly terse, 'bad money drives out good'. Put more generally, 'a cheap measure drives out a valuable measure, if they exchange for the same price'.

## 'Good money drives out bad?' - excerpt from section 3 of Mundell's paper

The usual expression of the law, 'bad money drives out good' is a mistake. Schumpeter refers to this common definition as "not quite correct". But as the statement stands, it is not just "not quite correct"; it is quite false. The opposite is true!

Standing by itself, the general statement, 'good money drives out bad', is the more correct empirical proposition. Historically, it has been good, strong currencies that have driven out bad, weak currencies.

Over the span of several millennia, strong currencies have dominated and driven out weak in international competition. The Persian daric, the Greek tetradrachma, the Macedonian stater, and the Roman denarius did not become dominant currencies of the ancient world because they were 'bad' or 'weak'. The florins, ducats and sequins of the Italian city-states did not become the 'dollars of the Middle Ages' because they were bad coins; they were among the best coins ever made. The pound sterling in the 19th century and the dollar in the 20th century did not become the dominant currencies of their time because they were weak. Consistency, stability and high quality have been the attributes of great currencies that have won the competition for use as international money.

If Gresham's Law could be rendered coherently as 'bad money drives out good' it would have no claim to our attention as a serious proposition of economics. On the contrary, it is a completely false generalization, and an invalid rendering of Gresham's Law.

Perhaps the closest Gresham himself comes to expressing his eponymous law is in a letter to Queen Elizabeth around 1560:

Ytt may please your majesty to understande, thatt the firste occasion off the fall of the exchange did growe by the Kinges majesty, your latte ffather, in abasinge his quoyne ffrome vi ounces fine too iii ounces fine. Wheruppon the exchange fell ffrome xxvi\*. viiirf. to xiii\*. ivrf. which was the occasion thatt all your ffine goold was convayd ought of this your realme.

In an 1857 essay, Henry Dunning Macleod touches on Sir Thomas:

At last, Sir Thomas Gresham explained to Queen Elizabeth that allowing base and degraded coin to circulate along with good coin caused it to disappear;

that bad coin and good coin cannot circulate together; but that the bad coin invariably and necessarily drives out good coin from circulation, and alone remains current.

Macleod starts the statement problem when he tries in 1860 to express things more completely in his *Theory and practice of banking*, p.216, where he appears to contradict himself a bit:

These considerations lead us to a fundamental and universal law in Political Economy, which has been found to be true in all countries and ages – that bad money drives out good money from circulation; or, as it is expressed in an anonymous pamphlet *A reply to the defence of the bank*, setting forth the unreasonableness of their slow payments, London, 1696, “When two sorts of coin are current in the same nation of like value by denomination, but not intrinsically, that which has the least value will be current, and the other as much as possible will be hoarded,” or exported, we may add. The fact of the disappearance of good coin in the presence of bad, was noticed by Aristophanes; and was long the puzzle of financiers and statesmen, who continued to issue good coin from the Mint, and were greatly perplexed by its immediate disappearance, till Sir Thomas Gresham explained the cause, whence we have called it Gresham’s Law of the Currency.

Macleod is clearly aware that Aristophanes mentions the law in *The Frogs* (405 BC):

This law is of such fundamental importance in Political Economy, viz., That good and bad coin cannot circulate together, but the bad coin will drive out the good, that it may be interesting to quote the passage which contains the earliest notice, that we are aware of, of the phenomenon. Aristophanes, *Frogs*, 765, says: “The State has very often appeared to us to be placed in the same position towards the good and noble citizens as it is with regard to the old currency and the new gold; for we make no use at all, either at home or abroad, of those which are not adulterated, but the most beautiful of



all money, as it would seem, which are alone well coined and ring properly, but of this base copper, struck only yesterday, and recently of a most villainous stamp. And such of the citizens as we know to be well-born and prudent and honorable gentlemen, and educated in the palaestra, and chorus, and liberal knowledge, we insult. But the impudent and foreigners, and the base born, and the rascals, and the sons of rascals, and those most recently come, we employ.” This law, thus first noticed by Aristophanes, has been found to be true in every age and country. It is also from the same principle that a paper currency is invariably found to expel a metallic currency of the same denomination from circulation. And to show the generality of the principle, it was found in America that when a depreciated paper currency had driven coin out of circulation, and a still more depreciated paper currency was issued, the more depreciated drove out the less appreciated from circulation.

Gresham would never have said baldly, “bad money drives out good”. Macleod provides a number of explanations in close proximity, any of which could be his Gresham’s Law – “bad money drives out good”, “when two sorts of coin are current in the same nation of like value by denomination, but not intrinsically, that which has the least value will be current, and the other as much as possible will be hoarded”, “disappearance of good coin in the presence of bad”, “good and bad coin cannot circulate together, but the bad coin will drive out the good”. The last, rather ambiguous one, seems

to be the explanation driving the subsequent century and a half of schoolyard trivia. If only Macleod had said “good and bad coin cannot be forced to circulate together, but the bad coin will drive out the good”, we would have had a useful statement for everyday use.

As Mundell concludes: “Schumpeter’s comment points up a paradox: the law is trivially easy to understand, but then why does everybody get it wrong?”

So this year, Z/Yen has struck a coin that pokes fun at Gresham’s Law reversibility by having one phrase on the obverse and the other on the reverse. Perhaps the 500th anniversary of Sir Thomas Gresham’s birth will help return attention to this 2,500-year-old law, and reverse 160 years of recent confusion brought on by Macleod. Hopefully over time “good law drives out bad” as “good money drives out bad”.



**Professor Michael Mainelli, Chartered FCSI(Hon), is executive chair of Z/Yen Group. Z/Yen is the renowned creator of the Global**

**Financial Centres Index among other things. Michael’s book, *The price of fish: a new approach to wicked economics and better decisions*, written with Ian Harris, won the 2012 Independent Publisher Book Awards Finance, Investment & Economics Gold Prize.**

**Read his profile at [cisi.org/polymath](http://cisi.org/polymath)**