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ORIGINAL ARTICLE

For financial illiteracy

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Abstract

Financial literacy is a dangerous illusion. The article builds on existing critiques, notably the work of Lauren Willis, to show that the discourse of financial literacy education raises fundamental epistemological issues about the nature of financial markets and financial behaviour. The difficulties of achieving financial literacy are ill conceived simply as the outcomes of market imperfections. Instead, structural inequalities, financial reform, and the nature of financial assets preclude consumers from achieving adequate levels of financial competence and the claim that they can do so diverts attention from the causes of unequal economic outcomes.

Keywords: financial literacy; inequality; uncertainty

JEL codes: G00; G41; G10

Introduction

This paper acknowledges Willis's (2008) remarkable arguments *Against financial literacy education* and draws out some profound conceptual issues that they raise. Willis argues there are insurmountable barriers to achieving adequate levels of financial literacy. The attempt may prove costly but also counterproductive, as people overestimate their abilities. The argument here goes further. There are not just practical problems, which undermine the apparently obvious advantages of a little learning, but fundamental ontological and epistemological difficulties. Finance is understood as a broad terrain across which ideas of 'market imperfections', implicitly shared by advocates and trenchant critics, are slippery. It is more appropriate to recognise that financial markets are inherently imperfectible and that adequate financial literacy is intrinsically unattainable. Discourses of financial literacy should be reinterpreted as not simply misleading but also as a political project, blaming individual victims for exploitative financial practices.

The argument is developed in three sections. First, it is very briefly shown that modern mainstream economic understandings of financial markets implicitly deny the need for financial literacy. Efficient markets have already taken care of this. The second section introduces arguments around financial literacy. It begins with a brief exposition of the ostensibly powerful arguments for financial literacy education, arguments that began long before, but became particularly resonant in the aftermath of, the mis-selling of sub-prime mortgages in the United States and the subsequent global financial crisis. Scholars have shown low levels of mathematical and financial skills in the general population in many countries and a positive association between wealth acquisition and financial literacy. The section then turns to the criticisms made by Willis and others. The empirical evidence for

any gains is slight, and there are good reasons why this might be anticipated. Individual consumers face an unequal struggle against a sophisticated industry while any potential gains are outweighed by the costs and particularly opportunity costs of acquiring the necessary education.

While this should be sufficient to reject the apparently intuitive claims that putting more resources into financial literacy education will lead to better consumer outcomes, the substantive argument developed in section three is that finance and its failings are better understood not in terms of 'market imperfections' but in terms of unequal wealth and income distribution, processes of inegalitarian privatising reform, and the fundamental epistemological uncertainty involved in valuing financial assets. Claims of imperfect but perfectible markets contrast with the realities of profound inequalities. The lines of causation run from income and wealth to financial behaviour and financial literacy rather than in the opposite direction, while processes of privatisation transform what were calculable actuarial risks into incalculable individual responsibilities. The discourse of financial literacy accordingly misallocates the blame away from structural inequalities and economic restructuring onto the victims. Many, perhaps most, financial risks are incalculable, making adequate literacy a wholly implausible and unachievable goal. This recognition prompts reflections on financial education in the broader sense, including what we do in universities. The conclusion cautions against over-confident assertions of heterodox knowledge in favour of a starting point that acknowledges the limitations of understanding of money and finance.

Efficient markets would not require additional education

An influential mainstream view holds that markets are already efficient, or at least somewhere close to efficient, disturbed only by exogenous stochastic shocks. According to Fama (1970, 384) 'in an efficient market, prices "fully reflect" available information'. He acknowledges that such frictionless markets are not found in practice and that the hypothesis is not 'literally true' (1970, 388). Nevertheless, if sufficient numbers of investors have access to sufficient information, the real world produces something close to a 'fair game'. Empirically, 'the efficient market model stands-up well' (1970, 383). There are winners and losers but the market equilibrates.

More prosaically, financial instruments are 'substitutes', an old argument confirmed by any good textbook (Dymski and Pollin, 1994; Hoover, 2012). Insiders make different valuations to establish the different products' prices with the implication is that the market already factors in risk and return.

For example, the disclosure approach to financial regulation sees market incentives inducing firms to meet customers' needs (Nier and Baumann, 2006). The market self-corrects as customers withdraw funds from assets deemed too risky, prompting the institutions to raise interest rates appropriately. Of course, in practice, some individuals face short-term losses while others gain. Further, in practice, some individuals fall victim to outright fraud. But, in general, consumers are already the best judges of their own utility maximisation. This is implicit in Lusardi and Mitchell's (2014) model advocating financial literacy education, in which people weigh the costs and benefits of acquiring financial knowledge, enabling them to join the market on fair terms. But, in general, there seems little need for additional education (Cull and Whitton, 2011). To expect any substantial improvements in the financial outcomes of lay participants would appear to ask financial literacy to enable outsiders to systematically beat the market or to become their own financial ombudsmen. If markets are efficient, we buy according to taste and there seems little need for financial literacy education.

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The case for financial literacy education and its critics

No attempt is made here to review a vast literature on the need for financial literacy education. The brief characterisation that follows no doubt misrepresents important contributions. The work of Lusardi, often with collaborators, has been particularly influential and is taken to exemplify important claims (Lusardi, 2008; 2019; Lusardi and Mitchell, 2014; Lusardi et al., 2017; Klapper and Lusardi, 2020; Kaiser et al., 2022). In brief, modern finance presents great opportunity. It has increased access to consumer credit, mortgage borrowing, and property ownership. It has increased pension choices and access to traditional stock markets and the newest products. Small investors can pool assets in mutual funds to acquire instruments that were once the preserve of the super-rich. Those with the requisite abilities can prosper. Unfortunately, so the argument goes, modern finance is a complicated world and low levels of mathematical skills and knowledge of financial instruments leave many consumers behind. The answer lies in improving financial literacy education.

Finance has 'proven difficult for financially unsophisticated people to master' (Lusardi and Mitchell, 2014, 6). Underpinned by technological innovation, the financial world has been transformed. A greater array of instruments and institutions means choice and opportunity but it also presents difficult choices and missed opportunities. Decisions once made by states or corporations, for example in terms of pension coverage, are now left to individuals. Innovative firms seek ways to profit from the financially naïve. The US subprime crisis of 2007–09 underscored these difficulties. Vast numbers of people were missold mortgages, with the collapse also revealing how some social groups were particularly vulnerable (Sassen, 2008). We move, in Dymski's phrase, from 'financial exclusion to exploitative financial inclusion' (2013, 418). Lusardi writes that:

> Increasingly, individuals are in charge of their own financial security and are confronted with ever more complex financial instruments. However, there is evidence that many individuals are not well-equipped to make sound savings decisions ... Those with low education, women, African-Americans, and Hispanics display particularly low levels of literacy. (2008, 1)

A vital remedy is sought in financial literacy, defined as the 'ability to process economic information and make informed decisions about financial planning, wealth accumulation, debt and pensions' (Lusardi and Mitchell, 2014, 6). For Lusardi 'it is not possible to live in today's world without being financially literate' (2011, 2). This may be rare hyperbole. Even for most of the financially unsophisticated, life goes on. There is nevertheless an important, influential, and powerful claim that a lack of financial knowledge is disempowering, and that effective strategies might remedy this.

Already in the 20th century, several studies investigated how individuals' financial competence fared in the face of an increasingly complex financial system (Hastings et al., 2013, 352). Jump$tart, a coalition founded in 1995 to increase financial literacy, surveyed mathematical abilities and knowledge of financial instruments, finding alarmingly low levels. Numerous subsequent studies confirmed that many people could not perform simple calculations or evaluate different products. Lusardi and Mitchell (2014) reported that many people in the US did not understand the meaning of interest rates, could not calculate the effects of inflation on real interest rates, and did not understand the relative risks of buying single stocks against investing in mutual funds. An absolute minority understood all three of these issues. The OECD has also sponsored studies of financial literacy, which from 2012 has been routinely evaluated alongside mathematics, science, and reading. Similarly, poor results are reported across rich countries and even worse results in poorer countries (Klapper and Lusardi, 2020; OECD, 2020). Marked

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difference across demographics have been confirmed, notably with women often reported to possess lower levels of financial literacy than men (Lusardi, 2019; Klapper and Lusardi, 2020), although the OECD (2020) cross-country survey finds the overall gender differences to be small and not statistically significant.

Such survey results encouraged the perception that it was necessary to do more to equip people to deal with the many new challenges they faced, and considerable resources have been devoted to improving financial literacy. The OECD deems it a 'core life skill', which 'should start as early as possible, ideally from the beginning of formal schooling, and carry on until the end of the students' time at school' (2012, 2, 6). Legislation in the US in the Dodd-Frank Act combines consumer protection with attempts to 'develop a strategy to improve the financial literacy of consumers' (cited in Hastings et al., 2013, 348). It is understood that greater financial literacy 'empowers people to craft their finances … [to] impel better financial inclusion' (Goyal and Kumar, 2021, 80).

Simulations even show financial literacy is the key determinant of wealth and income inequality, accounting for 30–40% (Lusardi, 2019), or even half the differences (Lusardi and Mitchell, 2014). Many empirical studies also claim positive if usually less dramatic support (Fernandes et al., 2014). Allgood and Walstad (2016, 679–680) identify a long list of behaviours understood to be positive. The discussion below will interrogate some of these behaviours but the authors consistently find that the more financially literate are more likely to make the right decisions. Other studies take different indicators (e.g. Cull and Whitton, 2011; OECD, 2020) but most affirm the benefits (see for example Chu et al., 2017; Xiao and Porto, 2017; Carpena and Zia, 2020; Kaiser and Menkhoff, 2020; Klapper and Lusardi, 2020; OECD, 2020; Mountain et al., 2021). The more financially literate tend to have more financial assets, and their better financial decisions include those to seek advice from others (Calcagno and Monticone, 2015). The substantial meta-analysis conducted by leading advocates (Kaiser et al., 2022) confirms, to their own satisfaction, statistically significant positive effects. It is acknowledged that different forms of education may be more or less effective (Cull and Whitton, 2011; Mountain et al., 2021; Kaiser et al., 2022) and that financial literacy education is not costless, but it is maintained that it is cost-effective (Kaiser et al., 2022). In short, there is a powerful case that levels of financial literacy are low and that remedying this pays dividends.

In this respect, to contest the need for greater financial literacy can seem profoundly counter-intuitive. The anecdotal evidence of people making poor decisions that they live to regret, is legion. However, even treated on its own terms, the empirical evidence may be weaker than supporters claim. Hastings et al. report that '[s]tudies … have often found almost no relationship between financial education and individual performance on financial literacy tests … The evidence … is best described as contradictory' (2013, 359). The meta-analysis by Fernandes et al. (2014, 1861) of 168 studies reports that 'interventions to improve financial literacy explain only 0.1% of the variance in financial behaviours studied'. The figure was found to be lower still for those on low income (2014, 1872). The subsequent meta-analysis by Kaiser et al. (2022) identifies many studies that report negative effects even as it concludes that the overall balance is positive. McKenzie (2022) continues to doubt whether reporting of the positive statistical significance is itself meaningful and even where there is statistical significance, the effects being reported are usually rather small.

One immediate problem is that while the rich indeed tend to have higher levels of financial literacy than the poor (Klapper and Lusardi, 2020), the line of causation, as some supporters of financial literacy education acknowledge, can be ambiguous (Hastings et al., 2013; Allgood and Walstad, 2016; Goyal and Kumar, 2021). Increased financial literacy may increase income and wealth but it also pays to invest time and money in financial literacy the more assets one possesses. There are also likely to be processes of learning-by-doing. Those with financial assets to manage are likely to know more about financial asset

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management. Guiso and Viviano (2015) acknowledge such problems – and ambiguities discussed below in determining what constitutes better outcomes – but still find gains for greater financial literacy, although these are very small and their cohort is restricted to already relatively wealthy asset holders.

Willis, who maintains that those with school financial education 'tend to do a little worse than those who do not' (2008, 208), finds a possible reason in that financial education leads to increased confidence, without a commensurate improvement in ability, so that people do not seek the help they need. Conversely, Allgood and Walstad (2016) argue that confidence, even in the absence of competence, produces better results. Either way, the benefits of financial literacy as such become questionable.

There are more fundamental reasons to question the empirical claims. Certainly, promoters can 'marshal "evidence" to prove the need for financial education' (Lazarus, 2016, 27), and the next section will consider whether some of the claims for positive behaviour and positive outcomes withstand critical scrutiny, as to whether they are actually measuring increased utility. More immediately, there are reasons to question whether the opportunity costs of inculcating financial literacy are justified (Willis, 2008; McKenzie, 2022), including Willis (2008) who provides a detailed exposition of why financial literacy education fails to deliver. It is impossible here to capture the richness of her huge paper but several points bear repetition. She identifies four overlapping insurmountable barriers to obtaining adequate knowledge.

First, there are informational asymmetries between sellers and consumers. Financial information and financial products are complex. Unfortunately, the amount of financial education needed to confront the complexities of modern finance would be huge:

> The price to individuals in time spent on education – rather than, for example earning more income – would be enormous, such that financial education might decrease wealth ... We do not ask people to be their own doctors, lawyers, automechanics, or food safety inspectors. Given the current marketplace, we should not ask them to be their own financial advisors. (Willis, 2011, 431)

The financial world is at least as complex as those of medicine, law, automechanics, and food safety. It is also changing more rapidly, and therefore harder to master. Even allowing that the evidence of financial literacy improving financial outcomes is mixed rather than negative, it becomes deeply questionable that it is 'cost-effective' (Hastings et al., 2013, 361). Here, the gender differences seem germane. Hsu interprets women's lower financial literacy as a rational choice within the household (cited in Lusardi and Mitchell, 2014, 19) but this leaves unexplained why women should be assigned this role. For more than 40 years, women have consistently received more education in the US than men, with higher levels of college enrolment (World Bank, 2023). Perhaps there is an implicit awareness that the marginal gains from remedying financial knowledge forgone are not worth the effort.

Second, there are almost insurmountable knowledge, comprehension, and numeric skill limitations extending beyond the technical complexity. Even the most financially literate outsider confronts a profit-seeking industry with 'substantial resources with which to outmanoeuvre education' (Willis, 2011, 430). The industry can create complex instruments and measure risk and return far beyond most individuals' capabilities. The industry not only creates but actively sells. 'Computer-driven modelling allows financial firms to develop an array of niche offerings, each consisting of a cocktail of terms' (Willis, 2008, 213). This complexity goes beyond anything strictly financial, with the (English) language in which credit agreements are written itself far beyond most people's comprehension (Willis, 2008, 219). Hastings *et al.* similarly question 'the extent to which a competitive market provides incentives for firms to educate consumers or to offer products that

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facilitate informed choices' (2013, 347). Posited more actively, 'many firms exploit rather than offset consumer shortcomings' (2013, 363). Individuals confront a sophisticated industry manufacturing complexity. At the same time, a parallel industry grew up which could provide financial advice. Unfortunately, it was not always possible to disentangle the two, with advisors often aligned with the firms whose products they were assessing. Calcagno and Montione acknowledge that 'non-independent advisors are not sufficient to alleviate the problem of low financial literacy (2015, 363). But even honest and disinterested financial advice comes at a cost. It may be worth paying for tax advice but only if enough money is at stake. And, as will be argued below, even expert and impartial financial advice is imperfect.

Third, the industry utilises psychological weaknesses and the 'prevalence of biases in personal-finance decision-making' (Willis, 2008, 226). For Willis, this has many dimensions. There is an 'intractable-transaction-costs schematic' in which, faced with one-off, life-changing decisions, or decisions about one's own life and death, people fall back on 'heuristics' or rules-of-thumb. There is 'overwhelming information' in the face of which people are often unable to make a decision or simply opt for the policies or practices that are best known and best advertised. Financial decisions often involve 'high financial and emotional stakes'. Buying a house or securing a comfortable retirement can be traumatic and firms are adept at selling their products as 'quick and easy' or 'painless'. Faced with 'discomforting thoughts', not least about our mortality, people tend to be over-optimistic. Faced with 'future uncertainty', there is an inherent difficulty weighing different claims and a tendency to defer or underplay the more distant ones. Giving the example of flood insurance, Willis continues that financial products have 'opaque attributes and incommensurate trade-offs'. Risks are hard to evaluate at an individual level, making people fall back on personal or prominent newsworthy experiences. Financial products have different attributes, so reports of historical returns may be made a selling point, while fees remain in the small print and not subject to comparison. There is a tendency to 'passivity and default to experts'. People stick with existing plans and bank accounts. There are 'difficulties debiasing', which no amount financial literacy can address because the biases are unconscious (Willis, 2008, 226–253).

Fourth, this allows the industry to reach 'consumers at teachable and vulnerable moments', for example as we reappraise life insurance at times of death or divorce. Being forced to make potentially life-changing decisions in difficult circumstances becomes something close to the opposite of the autonomy enhancement claimed by advocates of financial literacy (Willis, 2011, 432). Fortunately, people are not utility-maximising machines, but this also makes them vulnerable.

In sum, markets are 'imperfect', a truth acknowledged by the New Keynesian economic tradition, often with the ambition of perfecting them. Financial markets are more profoundly imperfect than most. There are structural asymmetries that mean consumer literacy cannot keep up with the complex, changing and volatile financial environment. Supporters implicitly claim that market imperfections can be overcome by a little learning. Willis's account seems more plausible. A little learning can be a dangerous thing while the costs and opportunity costs of acquiring knowledge remain high.

Money, uncertainty, and the impossibility of financial literacy

This section extends the pragmatic criticisms of arguments for financial literacy education discussed above, to suggest there are deeper problems. As Mott (1989) argues, the economy's most fundamental imperfections are those of wealth inequality, compelling most people to work for capital on conditions of capital's choosing. With this insight as its cue, it is first emphasised that the language of imperfections becomes highly

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questionable because it measures the world against a wholly imaginary and implausible ideal of market perfection. The emergence of markets for financial products itself emerged in conditions of increasing inequality while pre-existing inequalities of wealth and income engender differences in financial literacy and financial behaviour, largely sufficient to account for the statistical associations. The grounds for remedying any failures of individual financial literacy become vanishingly small. It is then argued that the nature of financial assets often renders them unknowable in a deeper ontological and epistemological sense, undermining any hope of redemption through improvements in financial literacy and also throwing into question the sorts of knowledge we should seek and seek to inculcate. The discussion draws on several examples from Allgood and Walstead's (2016) authoritative and much-cited paper on financial literacy and financial behaviour to illustrate the problems.

For example, Allgood and Walstad 'expected that adults with more financial literacy would be more likely to own a home because it is one means to building household wealth' 688 ,2016)). But, of course, prior levels of wealth or income are at least a necessary condition to enter the housing market without expensive mortgages. Similarly, financial illiteracy is reckoned to lead to 'inefficiently low participation in the stock market' (Calcagno and Montione, 2015, 363). Again, the ability to buy shares is predicated on existing wealth. Despite recent increases in (direct and indirect) shareholding, ownership remains highly skewed. For example, in the US the top 10 per cent of households by wealth owned 84 per cent of the stocks in 2016 (Wolff, 2017). Conversely, as Lazarus notes, 'poverty is never evoked as a reason for people having to pay late fees or missing payments' (2016, 30). People taking out payday loans and making trips to the pawnshop may know they are paying dearly but be driven by dire necessity. Such inequalities and behaviours are hardly anomalous 'imperfections'.

Any association of good *ex post* outcomes with good financial decision-making becomes questionable. No doubt there is complex causation, but it becomes more plausible to see pre-existing levels of wealth and poverty dominating our financial behaviour rather than low financial literacy leading to poor financial outcomes. If this is elementary Marxist common sense it is also acknowledged by the broader classical and neo-classical traditions. Inequalities of income and wealth lead individuals to make decisions which are likely to vary profoundly.

The marginalist tradition acknowledges that the marginal utility of money, and therefore people's attitudes towards money, varies with levels of wealth and income. Fisher's (1907) discussion of interest rate determination hangs on the point. There is a rational preference for present over future consumption and therefore present over future income. There is immediately a stark contrast with the OECD, where to answer positively survey question 'I find it more satisfying to spend money than to save it for the long term' (2020, 27) is to demonstrate an unsound negative financial attitude. Fisher also maintains the preference for the present is greater for the poor. At or near subsistence, this assumption is surely justified. If we do not eat today, there is no tomorrow. Beyond subsistence, the argument becomes problematic because it may instead make sense for the poor to save more aggressively while they are able to work, given their likely future inability to work and concomitant expectations of very low income. Fisher adds some questionable socially conservative assumptions about the poor's weak will and fecklessness and generally considers saving to be wise. But the point here is that different marginal utilities of money produce a neo-classical interest rate theory which hangs on people reasonably making different evaluations of future against current consumption. It becomes rational for the poor borrow from the rich. More broadly, it is impossible to specify what constitutes rational financial behaviour without controlling for wealth and income.

Allgood and Walstad (2016) provide another example, which usefully highlights how decision-making varies with wealth. They depict holding various forms of insurance as

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evidence of financially literate behaviour. Yet, in aggregate, the insurance industry profits from consumer premiums (and by their successful reinvestment). If insurers are profiting, the insured are, in net, losing money and utility. Knowing this, many ideally financially literate, rational individuals, might prefer to retain or to spend their money. In some situations, the consequences of being uninsured are so catastrophic that most people accept that a responsible, cost-benefit, analysis comes down in favour of individual insurance. But such trade-offs vary according to wealth. Already in the 18th century, Bernoulli showed that because the marginal utility of (a given amount of) money decreases with wealth, the point at which individuals rationally gamble or insure will vary. Bernoulli posits that people intuitively reach conclusions, which his marginalist assumptions and calculus derive mathematically (Ciecka, 2010). The conclusions and the mathematics already go far beyond the suggestions of supporters of financial literacy education but it becomes impossible to assume a single objectively 'correct' position. More prosaically, it is eminently possible to be over-insured. I suspect that most advocates of financial literacy education decline the salesperson's extra warranty on the latest electronic junk. Beyond such overt deceptions, there are innumerable grey areas. For the poor, the cost of insurance requires real sacrifices and to assume that not taking out any particular policy is a poor financial decision becomes hard to sustain.

In other areas, the behaviour judged financially literate seems to become entirely conventional and even harder to justify. Importantly here, the fundamental, and in a sense prior, point is that money itself is a means to an end. Holding financial assets is not, in itself, welfare-enhancing. As Adam Smith argued, '[i]t would be too ridiculous to go about seriously to prove that wealth does not consist in money, or in gold and silver, but in what money purchases, and is valuable only for purchasing' (1999, 14). Real wealth and money are not synonymous. Again, there is a stark contrast with the OECD who deem it a negative attitude to believe that '[m]oney is there to be spent' (2020, 27). The shift from Smith and the classics to thoroughgoing methodological individualism and assumptions of individual utility maximisation would endorse, even exaggerate, the view that money is at most a means rather than an end. No one outside a lunatic asylum would hold money for its own sake (Keynes, 2012, 115–6). Once the purpose of augmenting income is 'what money purchases', it becomes impossible to assert with confidence that someone with more financial assets enjoys or has enjoyed greater real wealth than someone with fewer. At least some of the things claimed as financially literate behaviour in terms of asset accumulation become profoundly questionable.

For example, Allgood and Walstad (2016) take the propensity to hold life insurance as evidence of positive financial behaviour. Understood in the strict sense as death benefits, individuals bear the costs but never enjoy the fruits. Alternatively with perfect foresight, the ideal, utility-maximising, individual might spend their last penny simultaneously with their last breath. Or better, in a world with credit, it would be individually rational to maximise borrowing and die as heavily indebted as possible. Of course, people want to behave 'responsibly', to bequeath their wealth, to provide for households, families, friends, communities, and donkey sanctuaries, and such concerns need to be wrapped into a proper moral philosophy. Of course, in reality, the future well-being of others features in our felicific calculus. But notions of utility-maximising individualism crumble.

Of course, advocates of financial literacy education are under no more obligation to subscribe to the precepts of marginalism than to those of Marxism. But if not these, the reader might reasonably ask on what basis does the putative educators' education sit? Without any such obvious foundation, it is hard to escape the conclusion that success is simply being reckoned on the basis of whether more assets are being funnelled towards an already predatory financial industry. From the point of view of consumers, even with perfect foresight, many of the putative measures of positive financial behaviour become deeply problematic.

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The difficulties escalate as soon as it is acknowledged that the future is unknowable and people lack such foresight. There are profound problems even in areas like life expectancy and health care needs, where the risks can be calculated quite accurately in an actuarial sense, over a large population. Risks which are knowable in a probabilistic sense cannot be known to individuals and processes of privatisation put financial consumers into positions that no amount of education can redeem. Here, the perceived need for financial literacy seems better understood as part of a process of 'risk shifting' (Hacker, 2006), as strategies of de-collectivisation abnegate state and corporate responsibilities.

Pension reform and the shift to private coverage presents perhaps the clearest example. In private, defined contribution, schemes, *ex ante*, there cannot be one 'right' course of action for a hypothetically rational individual. With apologies for a personal illustration, my superannuation plan tells me that if I retire at 67, I can live comfortably until the age of 82. It does not elaborate that if I act on this assumption but fail to die at exactly 82, I fail to maximise my welfare. If I die at 70, my savings are utility forgone. Alternatively, if I live to 90 having acted on the assumption of dying at 82, the savings are (mis)spent and my last years are lived in poverty. Fearing this, I suspect that like most people in a similar situation, I will try to save something more, to work longer or live more frugally. But, statistically, we die at 82 and therefore, in aggregate, experience real welfare loses. Conversely, in practice, most rich-country economies have only part-privatised their pension coverage, maintaining some residual 'safety net'. With this typically means-tested, it creates the opposite problem, disincentivising saving for many people with relatively low incomes (Spies-Butcher and Stebbing, 2011; Dunn and Webb, 2019). There would be aggregate utility and efficiency savings in collectivising such pension decisions. Public provision can adjust to anticipated life expectancies and incorporate their variation in ways that is simply impossible for individuals. Positing effective private pension management as a skill obtainable through financial literacy education is a delusion. Private health insurance presents similar difficulties, albeit now across a complex array of possible insurance coverage and health outcomes.

Life expectancy and health risks are probabilistic risks, known unknowns, in the sense that collectively they can be estimated quite accurately while individuals, even with access to the data, even if they know the probabilities, are left with impossible choices. It becomes impossible to identify clear, utility-maximising behaviours.

The politics and inequities of pension reform and private health insurance are well rehearsed but the point can be broadened. In the long run, we are all dead. Keynes's (1923) famous statement becomes pertinent in at least two senses. First, it is impossible for individuals to judge the premium that should be attached to present over future wealth because we cannot predict our needs. Many people engage in high-risk activities because they enjoy them, and it is not intrinsically irrational to do so. Even teaser rates on a subprime mortgage might reasonably be attractive because they increase current utility in exchange for future disutility. Their selling often involved a deplorable scam but many individuals could gain; if asset values did appreciate, if other sources of income materialised, and if the recipients failed to live to experience the long run. Second, institutional structures themselves change. The consequences of 'prudent' savings acquisitions or a spendthrift disregard for the future can be undone, for example by taxation or pension reform. There is no 'objectively' correct decision. In the context of the individualising and privatising agenda of recent decades, the discourse of financial literacy education ceases to be benign. It blames the poor for their own exploitation. It tells the rich their wealth is reward for shrewd investment in their own human capital.

The advocacy of financial literacy is also supported by powerful vested interests. For example, Jump$tart's board of directors serve three-year terms but at the time of writing includes representatives of American Bankers Association Foundation, Bank of America, Fidelity Investments, MassMutual Foundation, Visa Inc, and Wells Fargo

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Foundation (Jump$tart, 2021). This is not to impugn the good intentions of those involved. But if a similar coalition was sponsored by the betting industry to advocate resources be spent providing school children training in turf accountancy, we might be sceptical. The discourse of financial literacy education normalises what de Goede (2004) calls a 'depoliticisation of risk'. It serves ideological ends, exonerating the structures, institutions, and individuals who gain from an exploitative financial system.

All this suggests that there are reasons to find the path to financial literacy untrustworthy. But there may be still more profound reasons for thinking it is unsustainable. The outcomes of many financial decisions are inherently unknowable. Now the ground for strategies of financial literacy education disappears entirely.

The future value of many, perhaps most, financial assets is not even susceptible to probabilistic calculation. This is a core claim of Keynes and much of the post-Keynesian tradition. The value of financial assets need not be determined by any 'underlying' or 'real' economy properties but by what other people think (other people think ...) the values should be (Keynes, 1973). Financial markets are unlike commodity markets where repetition of supply and demand relations can (roughly) equilibrate. Instead, decisions become mutually reinforcing and the economic world becomes 'non-ergodic', in the expression Davidson (2007) uses to characterise how the future is not the statistical shadow of the past. Therefore, basing financial decisions on past experience is fundamentally unreliable. There are 'stronger' and 'weaker' versions of this thesis. In some accounts, we quickly shade off into analytical nihilism (Shackle, 1972; Coddington, 1983). There is no basis for rational action, let alone choosing one set of financial assets over another. Softer versions allow reasonably knowledgeable guesses and appropriate 'rules-of-thumb'. Either way, there are substantial problems imagining that financial literacy can provide consumers with a reliable guide.

For example, as above, shareholding is deemed evidence of positive financial behaviour (Allgood and Walstad, 2016) and it again provides a useful illustration. The ability to hold shares is predicated on pre-existing wealth. But, at a given level of wealth, holding shares appears wise. Share ownership entitles holders to a claim on corporate profits, the fundamental source of economic growth. Historically, share prices and stock indices have tended to rise, although whether or to what extent the risk-weighted returns mean they are undervalued in relation to other assets remains a moot point. In any case, share prices have risen spectacularly in recent decades. But share prices are also highly volatile, and it is impossible to assert that recent experience anticipates the future. Anyone buying at the height of the Japanese boom around 1990 would still be out of pocket decades later. The asymmetrical character of markets in recent years, in which money-market funds and pension funds became net buyers and corporations engaged in systematic buy-backs, added to the upward momentum, while potentially also adding to the bubble-like characteristics. Minimally, holding shares increases consumer risk and contrasts with insurance principles. Again, only *ex post* does the rational, optimum, shareholding position become apparent. This, of course, is acknowledged by modern portfolio theory, where sophisticated, highly financially literate insiders advocate investing in a complex mix of assets. It is regarded as rational to hedge. For individuals too, it intuitively makes sense to hold diversified portfolios and at least one influential study of financial literacy includes tests whether behaviour matched a formal Capital Asset Pricing Model (Guiso and Viviano, 2015). But risk minimisation is an inherently imperfect guessing game because we only know the risks *ex post,* and it also compromises utility maximisation. It will always turn out that it would have been better to bet on a single, best-performing product. Similarly, while home ownership indeed seems likely to foster greater wealth (as well, surely, as being the product of greater wealth), Allgood and Walstad (2016) acknowledge that the sub-prime cash and recession may have weakened the relationship. That experience highlights the conditional benefits of holding mortgage debt. We place our bets but can only celebrate our financial literacy when these pay out.

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Allgood and Walstad (2016) also take a relatively frequent 'changing or rebalancing' of retirement income as evidence of positive financial behaviour. Again, this would be the case if investors had perfect foresight or lived in an ergodic world in which the past could reliably anticipate the future. Even when performed by knowledgeable insiders, the evidence for rebalancing strategies is, at best, ambiguous. Several studies suggest that 'passive' investment, involving long-term strategies or rule-based index trading, outperforms active strategy (Anadu et al., 2020; Crane and Crotty, 2018). I am not competent to adjudicate what remains complex debates. But if active investment funds' managers also take a higher cut for their activity, further militating against such investments, there are again opportunity costs involved for individuals who would attempt to change and rebalance their portfolios, with or without professional assistance. Conceptually, there are reasons to believe people misjudge the lessons of past experience, of loss and gain, in any re-appraisal (Kahneman, 2012). Knowing this, it may conceivably be possible to produce more subtly informed decisions, to make bets with a better chance of winning. But this would seem to require an algorithm incorporating a sophisticated psychology and a knowledge of how to anticipate others' behaviour better than that of other market participants. Not only is this practically beyond the ambition of most financial literacy educators but it also implies the logical absurdity that most people can be taught to do all this better than the average.

Uncertainty in the Keynesian sense is inescapable. This raises a final reflection on higher levels of financial education. The argument shifts away from one of plebeian incompetence, which might be overcome by sufficiently sophisticated experts. A strong empirical case can be made that nobody understands money and finance.

The most powerful institutions and most sophisticated insiders fail to anticipate, let alone control, their financial fates. The central banks of leading states set broad inflation targets and fail to hit them. It seems worth noting in this context that an extensive literature claims that financial innovation now overwhelms state capacities (Frieden, 1991; Strange, 1998). These claims need to be treated cautiously but they are not obviously ridiculous. The financial system can implode spectacularly, as in 2007–09, in ways that almost nobody predicts. In the aftermath of the sub-prime crisis, it was often claimed that even institutional insiders could not calculate their exposure to toxic assets (see e.g. Rude, 2013). There is a powerful case that global elites have little idea of what is going on. It is tempting to insist that these elites and policy-makers should receive more financial literacy education. But it then becomes necessary to regress the question and to ask 'what education?'

Readers of this journal will need little persuasion that much of what is taught as mainstream economics is profoundly misleading. We do, however, also find heterodox theorists asserting their financial truths with a confidence that is in tension with claims of uncertainty and often in contradiction with each other. Mathematical formalism recurs, in tension with a recognition of the always socially contested nature of money. Eminent scholars dispute almost every part of the terrain. They dispute whence money comes, from the state or the market. They dispute what money is, a medium of exchange or unit of account. They dispute what money does, next to nothing if we take monetary neutrality seriously, or dominate all aspects of social and economic life if others are to be believed. Critical readers may insist these binaries are too crude and that creative syntheses are now available (Mehrling, 2012). Historical narratives allow temporal shifts and questions of degree (Chick, 1992; Moore, 1996; Wray, 1990). But the institutions and rules of the game governing finance and its relations to the wider economy continue to change, and there is little consensus on how these should be understood. Perhaps, *pace* Shackle (1972) and the post-modern tradition he anticipates, a recognition of the fragility of financial knowledge should be the summit of our aspirations. Of course, we aim to do better, but we should proceed with caution. The negative, Socratic, truth that we are all financially illiterate

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would at least provide a useful warning against the hubris of the mainstream and the industry marketing shills. No doubt, those of us who teach money and finance at universities believe we are delivering something more useful than anything the OECD envisages teaching five-year-olds. Our students accordingly give up more of their time and money. Sadly, it is again far from self-evident that the market allocates resources efficiently and that time and money in education are well spent.

To argue for financial illiteracy can seem counter-intuitive and philistine. Is not any knowledge better than none? Is it not better to understand compound interest rates and the difference between fixed and variable-rate mortgages? It is necessary to repeat that the empirical evidence suggests that any consumer gains are at best slight and cannot be reckoned to outweigh their opportunity costs. Perhaps more fundamentally, even if it were true that, in the abstract, any knowledge is worth acquiring, arguments for financial literacy education are far from abstract. They are a practical, social discourse, with implications for action. They misdirect attention from the causes of financial inequality, putting responsibility onto individuals when the inequalities can only realistically be addressed by social and political change. I struggle for a suitable analogy, but perhaps imagine that the enemy tanks are approaching. We are told to sharpen our sticks to repel them. No doubt a sharper stick is, in the abstract, a better weapon than a blunt one. But tanks cannot be fought with sticks. We need alternative solutions, collective, and systemic rather than individual solutions.

In short, invocations of financial literacy cannot be justified on their own terms. Any adequate level of financial literacy remains out of reach and to posit increasing financial literacy as a strategy to more equitable outcomes misrepresents the nature of our financial world.

Conclusions

Few would dispute that most consumers lack the skills needed to grapple successfully with the complex world of modern finance. Sadly, the claims made for the benefits of redressing this by improving financial literacy are misleading. Any gains from higher levels of financial literacy are marginal; at best, and the opportunity costs are considerable. Even if we reckon financial literacy (mis)education relatively benign, to advocate it, from primary school onwards, as the OECD (2012) does, is to posit this as more important that other things school children might be learning. Attempts to inculcate higher levels of financial literacy are at best an ideologically loaded misuse of resources.

More fundamentally, an adequate understanding of finance is intrinsically illusive. To posit the need for financial literacy implicitly acknowledges that consumers cannot trust the market. But there are insuperable difficulties which make it unreasonable to expect individual financial consumes instead to beat the market, except occasionally and accidently. The most financially literate people in the world, central bankers, commercial bankers, fund managers, and leading academics can hold radically different views about money. Their predictions fare poorly. Yet individual consumers are expected to meet the challenges, to somehow achieve what states and sophisticated insiders cannot. As Willis writes, 'it is difficult to believe that mortgage-backed securities investors or Lehman Brother's top brass would have benefitted from more financial education' (2011, 429). Financial literacy education fails to improve wealth and well-being because financial illiteracy is not the cause of poor financial outcomes. The inherent uncertainties of economic life (and of life itself) mean that it is impossible for individuals ever to gain adequate knowledge.

This raises non-trivial questions about the broader political economy of money but it surely means we should be cautious about what individual consumers can hope to achieve.

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If financial literacy education does not work and cannot work, it is better seen as a strategy justifying an inherently asymmetrical system, placing the blame onto individuals rather than the policies and institutions that actually reproduce poor financial outcomes. The discourse of financial literacy education is harmful to those it claims to help, harmful in terms of the costs of acquiring the education and more broadly because, consciously or otherwise, it misdirects attention from the underlying sources of the financial system's failures. It is supported in practice by powerful financial institutions and implicitly supports those powerful institutions in perpetuating financial exploitation.

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