

## DOCTOR OF PHILOSOPHY

### Development of personal finance as an academic discipline

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**DEVELOPMENT OF PERSONAL  
FINANCE AS AN ACADEMIC  
DISCIPLINE**

**K. J. REDHEAD**

**PhD**

**2011**

**DEVELOPMENT OF PERSONAL  
FINANCE AS AN ACADEMIC  
DISCIPLINE**

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**ATHESIS SUBMITTED IN PARTIAL  
FULFILMENT OF THE UNIVERSITY'S  
REQUIREMENTS FOR THE DEGREE  
OF DOCTOR OF PHILOSOPHY**

**2011**

**COVENTRY UNIVERSITY**

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## **DEVELOPMENT OF PERSONAL FINANCE AS AN ACADEMIC DISCIPLINE**

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## **THE DEVELOPMENT OF PERSONAL FINANCE AS AN ACADEMIC DISCIPLINE**

### **Abstract**

Personal finance is developing as an academic discipline, but has some way to go before it is generally accepted as such. The thesis reviews five contributions, from other authors, to the development of personal finance as an academic discipline (dating between 2002 and 2008). Those contributions emphasise the need for a generally agreed body of theory for an academic discipline of personal finance. My publications, in particular *Personal Finance and Investments: A Behavioural Finance Perspective*, have sought to establish a body of theory and knowledge for an academic discipline of personal finance. That body of theory and knowledge is multidisciplinary, and much broader than the bodies of theory suggested by the five previous contributions. It is also much broader, and based more on academic research, than the curricula of professional bodies such as the Chartered Insurance Institute (which reflects the curriculum set out by the Financial Services Authority) for the training of financial advisers. The greater breadth is illustrated by means of comparisons of threshold concepts covered by my publications with those covered by the previous five contributions, and by professional training programmes. Consideration of the objectives and processes of personal financial advice suggests that an academic curriculum should be more multidisciplinary than the existing curricula of professional bodies. In particular the curriculum should include behavioural and relationship dimensions. It is suggested that attention to the psychology of clients should be included in the education and training of financial advisers. This could take the form of using behavioural finance to gain insights into how clients might perceive financial products and services. Some of my publications being considered here (those published in the *Journal of Financial Planning* and the *Journal of Financial Service Professionals*) provide behavioural finance perspectives on client perceptions of financial products and financial advice (and their providers). Incorporation of behavioural dimensions

into the education and training of financial advisers would help to develop a subjectivist<sup>1</sup> dimension to their analyses of client financial problems. Existing professional training programmes focus on objectivist<sup>2</sup> factors such as portfolio management and regulatory issues. There is a need to incorporate a subjectivist, client focused, dimension.

Behavioural perspectives on financial products, financial advice, and the providers of financial services are not my only contribution through the medium of refereed academic journals. Another aspect of the proposed curriculum has been addressed through that medium, namely time diversification. Time diversification, that leads to the relative risk of stocks declining as the investment horizon extends, was shown to be dependent on the rate of investment growth and the level of stock return volatility. The approach entailed computer simulation based on the Black-Scholes option pricing model. Implications for personal financial advice, and for behavioural perspectives, were drawn.

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<sup>1</sup> The subjectivist view is that phenomena arise from the perceptions and consequent actions of people. For example, personal finance may mean different things to different people because they perceive it differently.

<sup>2</sup> The objectivist view is that entities exist in a reality external to, and independent of, the people concerned with those entities. For example the principles of investment management may be developed and applied independently of how investors perceive them.

## **THE DEVELOPMENT OF PERSONAL FINANCE AS AN ACADEMIC DISCIPLINE**

### **1.0 INTRODUCTION**

One objective of this work is to derive a curriculum for the education of personal financial advisers<sup>3</sup>. The curriculum is distilled from existing academic publications across a range of disciplines, and is thus multidisciplinary in nature. The curriculum is broader, more multidisciplinary, and based more on academic research than existing professional qualification programmes (such as those offered by the Chartered Insurance Institute, which is based on the curriculum indicated by the Financial Services Authority). The broader nature of my proposed curriculum is illustrated by means of the use of threshold concepts<sup>4</sup>; my proposed curriculum covers a larger number, and range, of threshold concepts than professional qualification programmes. Particular areas in which current professional qualification programmes are deficient relate to psychological and relationship dimensions.

The client is central to the financial advice process. If the client feels part of the decision-making process the client is likely to have a stronger commitment to the recommendations than if the client is a passive recipient of recommendations. The adviser needs to be able to see personal finance, and retail financial products, as the client sees them; and to be able to understand what meaning the client assigns to personal finance and financial products. To enhance the ability of advisers to achieve such empathy with clients, the education and training of advisers should include education in subjectivist methodology. Existing professional training programmes emphasise objectivist methodologies, particularly with regard to portfolio management and the regulatory context. Subjectivist methodology could be enhanced by including behavioural finance, plus other psychological, social, and relationship dimensions, into the education of financial advisers. Behavioural finance can provide perspectives with respect to client trust, saving, the perception of risk, and feelings towards retail financial products. Financial advisers need knowledge and understanding of behavioural traits in order to better execute advice to members of the public; this point is a major focus of this critical overview. It is to be

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<sup>3</sup> The focus is on the education and training of financial advisers. The education of their clients, or of members of the public, is not the primary focus of this overview.

<sup>4</sup> Threshold concepts are discussed in section 5.



emphasised that my proposal to add to the curriculum for the training of financial advisers does not suggest that any of the existing content of professional training courses should be displaced; the suggestion is to add to existing content.

Whilst the production of a curriculum for the education and training of financial advisers is the dominant theme of my work, some of the contributions relate to the development of aspects of the curriculum. Behavioural perspectives on personal finance and retail financial products have been referred to above. Another dimension of the research portfolio has been work on time diversification. The principle of time diversification suggests that the relative risk of investing in stocks declines as the investment horizon extends. The research has used the Black-Scholes option pricing model, in computer simulations, to ascertain the significance of investment growth and volatility for the existence of time diversification. A high investment growth rate, and low volatility, increases the likelihood of time diversification. It is noted that one implication is that index funds may be more likely to show time diversification than actively-managed funds. The relationship of the findings to behavioural perspectives was examined.

Personal financial management entails the management of personal, or family, finances in order to achieve specified objectives. This includes not only financing day-to-day living expenses but also longer term objectives such as the provision of retirement income, education funding, and housing. Personal financial management entails the management of income and expenditure flows, the management of wealth, and the management of debts. The processes of personal financial management are influenced by not only financial circumstances but also the social environment; together with the personalities, thought processes, and attitudes of the people concerned.

In relation to wealth management institutional investments are typically of great importance. Institutional investments include pension funds, insurance funds, unit trusts and investment trusts. Institutional investment funds hold non-institutional instruments such as shares, bonds, commercial property, money market investments, and derivatives. Non-institutional instruments may be held

directly by individuals and households, and residential property is often a major part of the wealth portfolio. Institutional investors are likely to use principles of investment analysis and portfolio management in their management of assets. Such principles may be employed by individuals and households, particularly if financial advisers are consulted.

Pension provision is a particularly important dimension of personal financial management. Since the 1980s there has been a marked shift in responsibility for pension provision from the state and the employer to the individual. Langley (2004, 2006) has referred to this as an individualisation of responsibility. Along with the individualisation of responsibility there is an individualisation of risk, since it is the individual who now bears the risks arising from pension provision (for example the risk of stock market falls prior to retirement). The state may retreat from pension provision because of the high cost, and employers are abandoning final-salary pensions because of the risks (stock market risk, annuity rate risk, longevity risk<sup>5</sup>) and replacing them with money-purchase schemes in which the employee bears risks.

In this new environment people have much greater personal responsibility for their financial well-being, and consequently are in need of good financial advice. Financial advisers must be competent, and that competence will depend upon effective performative education<sup>6</sup> of prospective personal financial advisers. Effective performative education requires agreement on suitable curricula. A major focus of my work has been the provision of a curriculum for the performative education of prospective personal financial advisers.

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<sup>5</sup> Longevity risk arises from uncertainty about how long pensioners will live.

<sup>6</sup> Performative education is distinguished by a strong vocational, or 'use value', orientation. It is not only the subject content that has a vocational orientation but also the mode of delivery, which is likely to be relatively problem-based and experiential with a focus on learning-by-doing. Performative education is to be found in areas such as medicine, engineering, law, and accountancy.

### **1.1 Aim, Objectives, and Contribution**

The work in aggregate, and in particular in the book entitled “*Personal Finance and Investments: A Behavioural Finance Perspective*” (2008), achieved the following three significant and original contributions to knowledge.

1. It extends model and paradigm development from several fields to another (personal finance) and shows how its use refines, deepens and changes our understanding of personal finance. The fields include finance, economics, and psychology (a complete list is provided in appendix 4).
2. It has opened up personal finance as a new field of academic study and it indicates a topography<sup>7</sup> for later researchers to do in-depth work on aspects of personal finance.
3. The development of the research has added progressively to understanding the complex phenomenon and professional practice of personal financial planning by a series of linked studies using a multidisciplinary approach.

The aim of the thesis and its accompanying portfolio is to contribute to the process of defining personal finance as a multi-disciplinary academic subject area and simultaneously to contribute to the development of personal finance as a subject of serious academic study.

The objectives of the thesis can be summarised as:

1. to construct a multi-disciplinary personal finance curriculum that can be used to develop educational programmes in personal finance, and which provides a topography for research into personal finance.

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<sup>7</sup> Topography/Topology. Topography refers to the detailed mapping of an area (e.g. a geographical area). In the context of curriculum design it refers to the detailed mapping of the domain of an academic subject area. Topology can refer to anatomical mapping of areas of the body. In the context of curriculum design it has a similar meaning to topography.

2. to contribute to specific lines of research indicated by the topography.
3. to inform the practice of personal financial advice, and thereby to improve the quality of financial advice given by practitioners to their clients.

In addition to the above there is a secondary set of objectives designed to show that what is presented here is worthy of PhD equivalence. The remainder of this document will indicate that the candidate is capable of;

- providing evidence that he is capable of carrying out research on a specific topic on a sustained basis;
- demonstrating that the research illustrates that the candidate has more than sufficient knowledge of the subject matter;
- showing that the candidate is able to apply appropriate research methodologies in pursuing the aims and objectives of the research;
- demonstrating that the work presented is original in nature, as evidenced by his publications in books, peer reviewed journals, articles etc.;
- demonstrating that the candidate is capable of exercising critical judgement throughout the work to arrive at the conclusions drawn.

An objective of this overview is to show that the book *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) provides a multi-disciplinary personal finance curriculum that is much broader and more comprehensive than existing curricula (both academic and professional). It extends theories and models from other disciplines (such as economics and psychology) to personal finance. In doing so the book broadens the definition of 'personal finance'. This extends personal finance as a field of academic study and provides a research agenda. The new curriculum is coherent, and that coherence can be expressed in relation to six inter-relating themes (see figure 1, page 29). The other outputs presented play a role in developing aspects of the new curriculum, and in demonstrating the multi-disciplinary nature of the content.

The contribution of my research has been to advance the integration of principles from academic finance, and other academic disciplines, into the study and practice of personal financial advice. This has been achieved by means of applying principles developed in the academic literature to the analysis of personal finance. The effects have been to enhance substantially the understanding of personal financial planning and to clarify directions for future research. It also informs providers of education, training and assessment for financial advisers as to how the understanding of personal financial planning can be developed and assessed. It also helps to move the practice of personal financial planning to a more analytical and evaluative level. Personal finance is not yet established as a widely recognised academic discipline (unlike corporate finance). My research aims to further the process of demonstrating that personal finance can be regarded as an area of serious academic study.

The remainder of this document will review the existing contributions to the definition of personal finance as an academic discipline in order to demonstrate the need to address the aims and objectives, and as a means of contextualising my contributions. This leads on to a consideration of possible subject content, and how my work has expanded the scope of personal finance as an academic and profession-based discipline in terms of its subject content. The expansion of subject content is illustrated by means of a comparison of threshold concepts covered by my contributions with the coverage of threshold concepts by other authors and by professional bodies.

## **2.0 PUBLICATIONS TO BE CONSIDERED**

### ***Books***

Redhead, K. (1999). "Risk Management with Futures and Options", Prentice Hall.

Redhead, K. (2008). "Personal Finance and Investments: A Behavioural Finance Perspective", Routledge.

### ***Refereed Journal Articles***

Redhead, K. (2009). "A Behavioral View of How People Make Financial Decisions", Journal of Financial Planning (Between the Issues) , November.

Redhead, K. (2010). "Behavioral Perspectives on Index Funds", Journal of Financial Service Professionals, 64, 4, pp. 54-61.

Redhead, K. and S. Shutes (2010). “Option Theory Does Not Refute Time Diversification”, Journal of Investing , 19, 3, pp. 65-71.

Redhead, K. (2011). “Behavioral Perspectives on Client Mistrust of Financial Services”, Journal of Financial Service Professionals , 65, 6, pp. 50-61.

Redhead, K. and J. Niklewski (2011). “Option Theory, Time Diversification, and Index Funds”, Journal of Index Investing , 2,2, pp. 48-58.

### ***Professional Publications***

Redhead, K. (2010). “All in the Mind”, Money Management , June, pp. 41-42.

Redhead, K. (2010). “Income for Life”, Money Management , July, pp. 55-56.

## **2.1 Reasons for Selecting the Publications Above**

*Risk Management with Futures and Options* (1999) was the final contribution in a series of publications on financial derivatives. It had a particular emphasis on the use of derivatives in fund management; an aspect that made a direct contribution to *Personal Finance and Investments: A Behavioural Finance Perspective* (2008), which presented those fund management conclusions in a personal finance context. *Risk Management with Futures and Options* (1999) presented option pricing models, some of which were also included in the later book *Personal Finance and investments: A Behavioural Finance Perspective* (2008), and which also provided tools of analysis for the *Journal of Investing* (2010) and *Journal of Index Investing* (2011) articles.

*Personal Finance and Investments: A Behavioural Finance Perspective* (2008) was the final contribution in a series of books on investments and personal finance. It presented a multidisciplinary curriculum for personal finance in book form. It incorporated lines of thought from disciplines such as finance, economics, and psychology. It is the most substantial of my contributions. It was a development upon my previous books on investing and personal finance (*Introduction to Financial Investment 1995; Introducing Investments: A Personal Finance Approach 2003*). The following articles were chosen partly because they developed from ideas explored in *Personal Finance and Investments: A Behavioural Finance Perspective* (2008).

The *Journal of Financial Planning* (2009) article presented a model of financial decision-making focused on personal finance and personal financial advice. Its novelty lay in (i) adding perception and motivation stages to the cognitive stage that tends to be the main focus of behavioural finance, and (ii) drawing out the implications for personal financial advisers. It drew upon *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) in relation to the cognitive<sup>8</sup> and motivational stages, and added the perception stage.

The article in the *Journal of Financial Service Professionals* (2010) was written because whereas there had been considerable financial analysis and statistical analysis of index funds, there had not previously been any behavioural analysis. The behavioural analysis of the article investigated the interaction of the investors with index funds rather than looking at index funds in isolation from their investors. The article in the *Journal of Financial Service Professionals* (2011) used behavioural finance concepts to analyse an aspect of personal finance that had previously been addressed primarily in the marketing literature, namely client trust. The two *Journal of Financial Service Professionals* articles added a new dimension to the analysis and development of personal finance issues, namely a behavioural finance dimension.

*Risk Management with Futures and Options* (1999) and *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) presented option pricing models and the latter book elucidated the issue of time diversification and its implications for asset allocation. The *Journal of Investing* (2010) article used the Black-Scholes option pricing model in a computer simulation to show that time diversification was dependent upon the rate of return on stocks. The asset allocation recommendation of holding stocks for long-term investment horizons was shown to be justified if stock returns proved to be sufficiently high. It was also shown that the implications for the risk-return trade-off was consistent with findings from behavioural finance, but contradicted a basic assumption of

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<sup>8</sup> Cognitive relates to cognition, which concerns the mental activities involved in acquiring and processing information.

capital market theory that high expected return entails high risk. The *Journal of Index Investing* (2011) article was a development on the *Journal of Investing* (2010) article. It demonstrated that the presence of time diversification was influenced by both stock returns and the volatility of those returns. This has implications for personal financial strategy, and the article drew the implications for the decision of whether to include index funds in retail investor portfolios.

The *Money Management* (2010) publications are included to indicate that my work informs practice. They discussed annuities and introduced the concept of longevity annuities to a UK professional audience. There was an impact as revealed by subsequent contributions, on the subject of longevity annuities<sup>9</sup>, in subsequent issues of the same publication.

### **3.0 LITERATURE REVIEW**

The purpose of this engagement with the literature surrounding my work is to help to contextualise my work within its developmental setting. It had only been in recent years that there had been discussion of personal finance as an academic subject and so the available literature is somewhat limited.

*Personal Finance and Investments: A Behavioural Finance Perspective* (2008) can be seen as a multidisciplinary curriculum for personal finance in book form. The need for such a multidisciplinary curriculum is revealed by the contributions considered in this literature review, which also indicate the need to address the aims and objectives of this thesis (see pages 2-3, section 1.1).

#### **3.1 Definitions of Personal Finance**

A consensus has yet to emerge about the definition of personal finance. Over the past decade there have been a number of contributions that have tried to arrive at an identification of the possible contents that could be included in a working definition of personal finance, as an academic discipline. These include Altfest (2004); Black, Ciccotello and Skipper (2002); Overton (2008); Schuchardt, Bagwell, Bailey, DeVaney, Grable, Leech, Lown, Sharpe, and Xiao (2007), and Warschauer (2002). This set of contributions could be seen as the genesis of personal finance as an academic discipline.

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<sup>9</sup> Longevity annuities are deferred annuities.



Although prior to 2002 there had been academic research relevant to personal finance, there had been no attempt to synthesise that research into an academic discipline of personal finance. There had also been books bearing titles related to personal finance, but those books did not draw on academic research but instead focused on household budgeting at a mechanical level. In consequence such books tended to be both narrow in scope and shallow in treatment. The five contributions mentioned (Altfest, Black et al., Overton, Schuchardt et al., Warschauer) appear to have been the first to have considered personal finance as a potential academic discipline. Indeed, as far as I am aware, they are the only researchers to have done so.

In the search for such a definition of personal finance Schuchardt et al. (2007), who included “Interdisciplinary Profession” in the title of their article, stated:  
 “Consensus on defining the interdisciplinary profession of personal finance is important to all members.” (Page 68)

The above quote highlights the absence of a generally accepted definition of personal finance. Suggested definitions have tended to reflect views of possible subject content. There is not even unanimity about its title. Schuchardt et.al devoted considerable attention to the title and chose “Personal Finance”. Other authors covered by this review have used “Financial Planning” or “Personal Financial Planning”.

Emphasis on different underlying theories is accompanied by differing definitions of personal finance. Warschauer (2002) offered the following definition of financial planning:

“Financial Planning is the process that takes into account client’s personality, financial status and the socio-economic and legal environments and leads to the adoption of strategies and use of financial tools that are expected to aid in achieving the client’s financial goals.” (Page 204)

Schuchardt et al. (2007) suggested a more wide ranging definition:

“Personal Finance was viewed as an application of the principles of finance, resource management, consumer education, and the sociology and psychology of decision making to the study of the ways that individuals, families, and households acquire, develop, and allocate monetary resources to meet their current and future financial needs.” (Page 67)

More recently Overton (2008) advocated that:

“...financial planning is the value and goals driven application of strategic management to the client’s financial and economic resources, and that the financial planning process is an adaptation of the strategic planning process to the client’s financial and economic goals. Furthermore, the theoretical body of knowledge of financial planning represents the integration into a comprehensive whole of a variety of theories from multiple disciplines.” (Page 35)

A common feature of the definitions is that personal finance (alias financial planning) is seen as a multi-disciplinary subject. However, as stated earlier, there is not yet a consensus on which disciplines are included. It is probably the case that the academic backgrounds of the contributors have influenced their definitions of personal finance.

I contend that my work has clarified the range of disciplines that can contribute to a personal finance curriculum, and why they are relevant to personal finance. A generally agreed definition of personal finance, as an academic discipline, is probably some time away. Moreover, it could be argued that my work, in particular *Personal Finance and Investments: A Behavioural Finance Perspective* (2008), makes a substantial contribution to determining an academic curriculum and topology<sup>10</sup> of research. As far as I am aware it is the first attempt to provide a curriculum for, and topology of, personal finance as an academic discipline.

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<sup>10</sup> Topography/topology. Topography refers to the detailed mapping of an area (e.g. a geographical area). In the context of curriculum design it refers to the detailed mapping of the domain of an academic subject area. Topology can refer to anatomical mapping of areas of the body. In the context of curriculum design it has a similar meaning to topography.

### **3.2 The Need for Foundational Theory**

The five articles mentioned above have suggested definitions of personal finance. They have also indicated topic content of a curriculum for the academic study of personal finance. In each case the article pointed out that a defined body of theory was required if personal finance was to attain academic respectability. Correspondingly it was suggested that the attainment of recognition as a profession at the level of law and accountancy required the establishment of a research and theory based body of knowledge.

Professions such as medicine, engineering, law, accountancy, and education have clearly defined theories with which practitioners are expected to be familiar. In other words there is a set of threshold concepts that constitutes a common intellectual base for practitioners (threshold concepts are discussed in more detail later in this review). This common intellectual base results in a shared approach to analysis such that practitioners think like an engineer, think like an accountant, etc. Likewise personal finance practitioners need a set of theories, or threshold concepts, that become seen as essential for their analysis. There is consensus that there should be such a set of theories, or threshold concepts, amongst the five contributions on the nature of personal finance as an academic discipline (Altfest, Black et al., Overton, Schuchardt et al., Warschauer). This consensus is evidenced by the quotes that follow.

An early contribution was that of Black, Ciccotello, and Skipper (2002). They referred to personal finance as ‘Personal Financial Planning’ and abbreviated it to PFP. To quote from page 2:

“...the PFP field has evolved largely devoid of a theoretical foundation.....the continuing omission of conceptual underpinnings is hindering the development of PFP as a distinct profession.”

“Few disciplines achieve recognition and respect without a strong theory base, particularly within higher education. We believe that PFP will prove no exception. Thus, unless PFP can articulate a conceptually sound basis on which to build, its study will remain largely outside mainstream academia.

The consequences of this exclusion cannot be forecast with precision, but they would seem to be negative. We know of no respected profession without academic underpinnings and recognized academic standing.”

Warschauer (2002) made strong complementary points, positing the need for university support:

“It is clear that universities can have a significant role to play in the development of the financial planning profession; in creating decision models through research; in disseminating that research in a way that is meaningful to practitioners; in helping the profession define the domain of the field and evaluating it from a cognitive level; and, to provide educated, and client-dedicated planners to provide competent advice to their clients.” (Page 213)

“It is the intent of this article to demonstrate that financial planning has become a legitimate profession, but that its content and decision processes are in the early stages of theoretical development.” (Page 214)

Two years later Altfest (2004) also emphasized the need for a theory of personal finance:

“A theory of PFP would validate the individuality of its characteristics, lead to further academic research, and enhance the stature of the profession. It would result in such things as broadening academic finance, now almost exclusively focused on financial assets, providing further linkage of the parts of the financial plan for financial practitioners, and helping the public better understand why personal financial planning is performed.” (Page 58)

The five contributions surveyed tended to agree that the theory base should be multidisciplinary (none disagreed). For example Overton (2008) stated:

“Furthermore, the theoretical body of knowledge of financial planning represents the integration into a comprehensive whole of a variety of theories from multiple disciplines.” (Page 35)

It is not just opinions that indicate the need for a multidisciplinary approach. Empirical evidence is also supportive of such a view. The complicated nature of the factors that affect the accumulation of debt has been highlighted in a study conducted by Stone and Maury (2006). They developed a model capable of predicting indebtedness. The factors used in the prediction included demographic, financial, economic, psychological and situational aspects.

### **3.3 Possible Subject Content**

The most limited article, in terms of suggested subject content, was Black et al. (2002). It was limited in the sense that only one foundational theory was proposed. Their suggestion was that ‘modern portfolio theory’ (mean-variance diversification) was the foundational theory of personal finance. This is a theory of portfolio construction taken from finance theory. ‘Modern portfolio theory’ treats expected return and risk as the most salient features of investments, and suggests that combining assets with low correlations into portfolios can reduce risk without reducing expected return. The suggestion of Black et al. (2002) was that a version amended to incorporate all assets, not just financial assets, would provide a theoretical basis for personal finance.

Warschauer’s (2002) approach was different in that he suggested the use of household accounting ratios, particularly ratios involving debt, as a theoretical basis. This was presented as an example of possible theoretical bases rather than as the single dominant theoretical basis.

Two years later, Altfest (2004) provided a broader range of theories from which personal finance could draw. As with Black et al. ‘modern portfolio theory’ was suggested. The capital asset pricing model (CAPM) was suggested. CAPM is a model of asset allocation and is a central theory of finance. It embodies the view that higher expected return requires the acceptance of greater risk. Another pillar of finance theory, the efficient market hypothesis (EMH), was also suggested. One form of the EMH proposes that people behave rationally and that market prices of assets accurately reflect all relevant information. Altfest also saw economics as providing foundational theories for personal finance.

Becker's 'new home economics', wherein time spent working within the family is allocated monetary value, was seen as foundational as was the life cycle hypothesis (and by extension the permanent income hypothesis). Life cycle theory sees consumption as being determined by lifetime average income rather than by current income. Altfest introduced psychology in the form of behavioural finance, but provided little detail beyond pointing out that behavioural factors can prevent the portfolio construction recommended by 'modern portfolio theory'.

Schuchardt et al. (2007) suggested a number of theories relevant to personal finance, although without much detail about their content or application. Two were from economics. Life cycle theory as mentioned by Altfest was one (this appears to have been proposed independently of Altfest (2004) since no awareness was shown of the contributions of Altfest (2004), or of Warschauer (2002), or of Black et al. (2002)). The other economic theory was utility maximization, which is a mainstay of microeconomics. Behavioural finance was also mentioned. The other suggested theories were from psychology and sociology: the human ecological model, the theory of planned behaviour, and the transtheoretical model of change. A common feature of some of these theories is that they model a process of choice. However there was little attempt to structure the set of theories into a coherent pattern. Schuchardt et al. (2007) appeared to approach personal finance from a social science perspective in contrast to the more finance and economics orientation of Black et al. (2002), Warschauer (2002) and Altfest (2004).

Overton (2008) provided the most substantial set of theories that could be regarded as foundational to personal finance. Some of those theories had been covered by the previous authors (in fact she made reference to Altfest, 2004, and to Black et al., 2002) but others had not been mentioned by the other authors. From economics she took 'new home economics', life cycle theory, and theories relating to financial institutions and monetary policy. From finance she took 'modern portfolio theory', CAPM, EMH, the time value of money, types of financial risk, and time diversification. From management theory she took the concepts of strategic planning and strategic management, and gave them a central role as models of the financial planning process. From accounting she took the use of personal

financial statements. Insurance concepts such as the law of large numbers were included. Investment mathematics was considered in the form of Monte Carlo simulation. Behavioural finance received a mention, as did communication and counselling. Although Overton provided a long list of contributing theories, little attempt was made to provide a structure into which the theories could be fitted.

A book on the history of financial planning which devoted a chapter to academic theories that had influenced financial planners (Brandon and Welch 2009) mentioned ‘modern portfolio theory’, asset allocation, Monte Carlo simulation, and behavioural finance. It also discussed life planning and interior finance, which entail the advice and planning process going beyond finance and being applied to other aspects of the client’s life. Despite following the contributions of Black et al. (2002), Warschauer (2002), Altfest (2004), Schuchardt et al. (2007), and Overton (2008) the book from Brandon and Welch (2009) showed no awareness of those other contributions. Amongst the authors only Overton (2008) showed awareness of other contributions. It appears that a number of researchers (including myself) independently realised the need for the development of personal finance as an academic discipline.

My book *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) was contemporaneous with the articles of Overton (2008) and Schuchardt et al. (2007) and stemmed from a shared realisation about the need for personal finance as an academic discipline. My book provided much greater depth and breadth than any of the other contributions, as is indicated by the list of threshold concepts provided in this overview (see appendix 2). It also provided a structure for a personal finance curriculum and so pointed a way forward for the future development of the subject. The provision of a curriculum structure was in contrast to the above five contributions, which tended to simply list possible foundational theories. I contend that the provision of a curriculum structure was an original contribution of *Personal Finance and Investments: A Behavioural Finance Perspective* (2008).

My publications discussed here have shown the relevance of a large number of theories and concepts, from various disciplines, to personal finance. My work, and in particular *Personal Finance and Investments: A Behavioural Finance Perspective*, has considerably expanded the range of theories and concepts that can be seen as relevant to personal finance. This can be seen by comparing the theories listed by the other authors with the list of threshold concepts in appendix 2 (these are threshold concepts covered by my work). My work has not only extended the list of theories but has also shown how they inter-relate in a multidisciplinary approach to personal finance. Appendix 1 provides examples of how topics in personal finance should be analysed from a multidisciplinary perspective. From these aspects of my work it can be argued that my contribution has included the provision of a personal finance curriculum that is a guide to study and is a topography for future research. It has also demonstrated the need for a multidisciplinary approach by bringing a number of disciplines together in the development of an academic approach to personal finance issues (examples are illustrated by appendix 1).

The later section on threshold concepts uses the principle of threshold concepts to demonstrate how the curriculum provided by *Personal Finance and Investments: A Behavioural Finance Perspective* (plus my other publications) considerably expands upon the range of concepts covered by the other contributors and by a professional training programme.

#### **4.0 METHODOLOGY**

An attempt to define personal finance by means of a curriculum could be based on;

1. Professional practice, i.e. what personal financial advisers do defines personal finance.
2. The content of the courses and assessments, determined by professional institutes, as indicators of what knowledge is expected of personal financial advisers.
3. Academic literature relevant to personal finance.

The third approach has been chosen on the grounds that the researcher believes that academic literature from a variety of disciplines (not just finance but also psychology, economics, statistics, and a number of other disciplines) has much to contribute to the study and practice of personal finance. The findings



of the research indicate that professional institutes have omitted considerable contributions when developing their courses and assessments.

Defining personal finance by curriculum could take the form of either a set of subject headings, or a book. Appendix 4 illustrates a set of subject headings (for a QCF level 6 programme of study<sup>11</sup>). The book *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) provides a curriculum in the form of a book.

Curriculum development could be either resource-based or backward design. The methodology for *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) was resource-based in that it entailed a literature search using academic journals, and books, from a number of disciplines in order to identify lines of thought that have relevance to personal finance. Typically these are pieces of research that addressed questions in other disciplines, but which have relevance to personal finance. The ideas and information were then assembled in order to produce a coherent curriculum for personal finance education and research. The resource-based approach to curriculum development was used rather than the ‘Backward Design Method’ of curriculum development (Wiggins and McTighe, 2005). In other words the available resources (mainly academic journal articles) were identified and a curriculum was designed around those resources as opposed to the backward design approach of identifying learning outcomes and working backwards to establish what learning resources are needed. A risk of using the backward design method is that it may produce a curriculum that cannot be delivered because of a lack of resources. For example the backward design method would have produced a curriculum in which debt is much more prominent than in *Personal Finance and Investments: A Behavioural Finance Perspective* (2008). However the academic journal resources relating to debt are much less than those relating to assets (which is why the word ‘investments’ appears in the book title).

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<sup>11</sup> QCF is the Qualifications and Credit Framework for England and Wales. Level 6 is equivalent to an undergraduate honours degree.

The methodology of the *Journal of Financial Planning* (2009) and the *Journal of Financial Service Professionals* (2010 and 2011) articles was one of behavioural analysis of personal finance issues (drawn largely from psychology). The objective entailed seeking behavioural perspectives; the articles generated hypotheses without attempting to test them empirically. The achievements of the articles included the revelation of new perspectives on personal finance and the demonstration that behavioural principles could be used for the analysis of personal finance issues. The new perspectives served to inform practice in relation to the advice given to clients of personal financial advisers; and the hypotheses pointed the way for future research.

The methodology of the *Journal of Investing* (2010) and *Journal of Index Investing* (2011) articles entailed computer simulation based on the Black-Scholes option pricing model (using software package ‘R’). The generation of three-dimensional surfaces indicated the effect of variations in growth rates, and variations in volatility, on the relationship between risk and investment horizon. One aspect of their originality lay in them being the first investigations of time diversification to use three-dimensional surfaces. The conclusions differed from those of previous researchers. The findings help to resolve a controversy in the academic literature, and thereby inform practice in relation to financial advice on asset allocation.

All of these contributions are discussed in more depth later in this review.

#### **4.1 Multi-Disciplinary Versus Inter-Disciplinary**

It is appropriate to distinguish between multidisciplinary and interdisciplinary. Harden (2000) suggested eleven steps in an integration ladder. At the bottom is ‘isolation’ where education is discipline-based and each discipline is taught in isolation from other disciplines. At the top of the ladder is the ‘trans-disciplinary’ curriculum where individual disciplines have disappeared completely. ‘Multidisciplinary’ and ‘interdisciplinary’ are rungs nine and ten respectively. To quote from Harden: “The characteristic of multidisciplinary integration is that, whatever the nature of the theme, it is viewed through the lens of subjects or disciplines. The theme or problem is the focus for the student’s

learning but the disciplines preserve their identity and each demonstrates how their subject contributes to the student's understanding of the theme or problem.” (p.554)

“In the interdisciplinary course there may be no reference to individual disciplines or subjects,..... Implicit in the move from a multidisciplinary to an interdisciplinary approach may be the loss of the disciplines' perspectives.” (p. 555)

Both multidisciplinary and interdisciplinary curricula are based on themes (e.g. saving, portfolio construction, structured products – see appendix 1). In the case of a multidisciplinary curriculum the contribution of individual disciplines is explicit (that is, it is clear what contributions come from finance, psychology, economics, etc.). In the case of an interdisciplinary curriculum there may be no obvious contribution from individual disciplines (although there may be implicit contributions).

A multidisciplinary approach was chosen for the book *Personal Finance and Investments: A Behavioural Finance Perspective* (2008). This was in the belief that, whereas the simultaneous application of disciplines to themes is highly desirable, the absence of disciplines risks losing the insights and resources (e.g. books and articles) associated with those disciplines. Retention of discipline links also renders delivery of a curriculum easier since academics tend to be discipline based. The division of the personal finance curriculum into six themes (see figure 1, page 25) facilitates delivery since five of the themes have approximate correspondence to one or two disciplines (for example 'Personality, environment and thought processes of the client' sits comfortably with psychology and sociology, whereas 'Principles of retail portfolio construction' is largely based on finance and economics). However 'Personal financial management', the theme into which the other five feed, might be taught using an interdisciplinary or trans-disciplinary approach; perhaps by teaching staff who see 'Personal Finance' as their discipline. All of this contrasts with the current professional training, which appears to be close to the bottom rung of Harden's curriculum ladder (isolation from other disciplines).

## **5.0 HOW MY WORK HAS EXPANDED THE SCOPE OF PERSONAL FINANCE AS AN ACADEMIC AND PROFESSION-BASED DISCIPLINE**

My research presented here has expanded the scope of personal finance beyond the academic boundaries on which professional training is currently based (see appendix 2). It has moved the subject to a multidisciplinary basis, and may even have set the scene for an interdisciplinary or transdisciplinary approach. In order to demonstrate this point a set of threshold concepts is derived from my work, and compared with sets of threshold concepts derived from the five contributions covered in the literature review, and compared with threshold concepts derived from professional training documents.

### **5.1 Threshold Concepts**

Threshold concepts are ideas that transform a person's thinking (Meyer and Land, 2005). When a threshold concept is successfully communicated to someone that person acquires a new way of understanding, interpreting, or viewing something. Threshold concepts are transformative, in that they occasion significant shifts in the perception of a subject. They are also likely to be integrative, in that they expose relationships between subjects. The process of developing an understanding of a threshold concept gives the person a new way of interpreting events and situations. Arguably education should aim to communicate threshold concepts.

Every discipline has its own threshold concepts that are essential for students to understand.

Understanding the threshold concepts is necessary if someone wants to be able to think like a professional. There is a distinction between learning engineering and thinking like an engineer, or learning economics and thinking like an economist. When a person is able to think like an engineer or think like an economist then that person is capable of being an engineer or an economist. A student first learns about personal financial advice, then develops the ability to think financially, and then can become an effective personal financial adviser. Threshold concepts are more than just learning; they transform a person's way of thinking and significantly change the person. It is not necessarily easy to identify the threshold concepts of a discipline. The identification of threshold concepts may require the

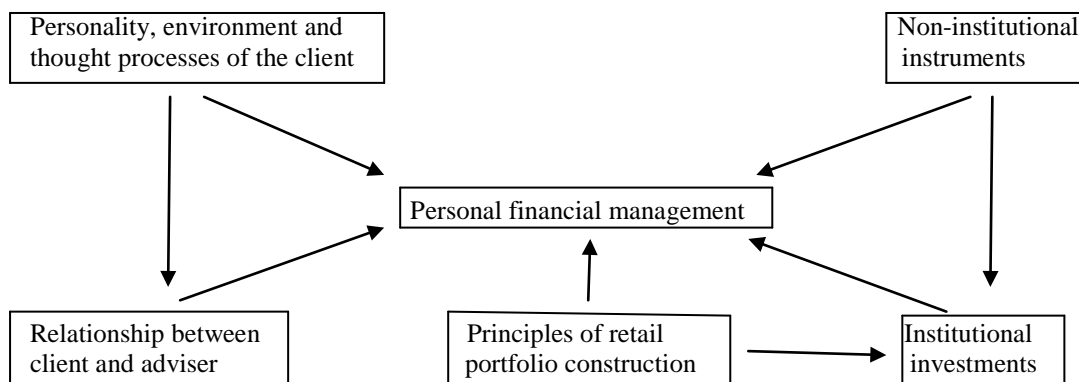
assessment of a consensus opinion, for example by means of questionnaire-based surveys as used by Shea and West (1996) in relation to topical areas in industrial engineering. Since personal finance is not yet widely taught (beyond professional training programmes) such a consensus is not yet available.

People can be resistant to changing the way they think, and can therefore be resistant to threshold concepts. Threshold concepts change the way a person looks at matters, and thinks about those matters. This can be disconcerting, particularly if it leads to the person questioning previous practice or is inconsistent with strongly held beliefs. Confirmation bias causes people to be unwilling to accept new ideas if those ideas conflict with existing opinions. For these reasons people who have earned a living from financial advice for many years may be reluctant to engage with threshold concepts. Resistance to a threshold concept may be stronger if the student has to work hard to understand it. For such reasons threshold concepts are often regarded as troublesome knowledge. The articles in the *Journal of Financial Planning* (2009) and the *Journal of Financial Service Professionals* (2010 and 2011) show the relevance of behavioural concepts to personal financial advice and hence demonstrate that it is worth the effort (and perhaps mental trauma) of acquiring some threshold concepts that arise from psychology (such as the illusion of control and the confirmation bias). The articles in *Money Management* (2010) showed the usefulness of threshold concepts from psychology, economics, and mathematics for personal financial advisers. *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) showed the relevance of many threshold concepts to personal finance.

An attempt is made here to identify the twenty-five most significant threshold concepts in the curriculum presented within my publications, grouped according to theme. Most of these threshold concepts are covered in the book *Personal Finance and Investments: A Behavioural Finance Perspective* (2008), whilst others are covered in my articles (in particular the 2009 article). In the absence of an established consensus on the relevant threshold concepts my proposed list of threshold concepts inevitably reflects personal opinion (as does the curriculum), however it constitutes a significant step in the process of identifying the threshold concepts relevant to personal financial advice.

The list of threshold concepts is presented in a framework based on the six themes of figure 1. A contribution has been the identification of foundational theory and suitable subject content in the form of threshold concepts. Subject content from other disciplines has been refocused on issues with which personal finance is concerned. This process has led to a definition of personal finance, as an academic discipline, in terms of the six themes of figure 1. Within those themes threshold concepts can be identified. The flow chart of figure 1 indicates that five themes feed into the theme of personal financial management.

**Figure 1 – Personal Finance Themes**



**Source – own construction**

The ‘Institutional Investments’ theme is included because institutional investments such as pension funds, insurance funds, unit trusts and investment trusts are major components of the portfolios of retail investors. One reason for their importance is that they allow exposure to a diversified portfolio of investments with a relatively modest outlay. The degree of diversification is usually much greater than could have been achieved by means of direct investment in non-institutional instruments. The ‘non-institutional instruments’ theme is included because it is possible that retail investors’ portfolios could include direct holdings in shares, bonds, bank deposits and property. ‘Principles of retail portfolio construction’ is included as a theme because a financial adviser should use portfolio management

principles when advising a client. One notable principle of portfolio construction is the mean-variance diversification of ‘modern portfolio theory’. These three themes (Institutional Investments; Non-Institutional Instruments; Principles of Retail Portfolio Construction) receive some attention in professional training courses, such as those of the Chartered Insurance Institute (discussed later).

‘Personality, environment and thought processes of the client’ is included because the client is at the centre of the financial advice process. An adviser needs to have insight into the thinking of, and influences upon, a client. The theme ‘Relationship between client and adviser’ is included because personal finance decisions arise from an interaction between a client and an adviser. These two themes receive little, or no, attention in professional training programmes leading to financial adviser qualifications.

There is no objective methodology for the identification of threshold concepts. They can only be established by ascertaining a consensus of opinion as to which concepts can be described as threshold concepts. There is no such consensus available for personal finance. As far as I am aware there has been no previous attempt to identify a set of threshold concepts for personal finance. The idea of threshold concepts has arisen in the education literature within the past decade and has not previously been applied to personal finance. I have attempted to identify threshold concepts for personal finance by distilling concepts from existing literature relating to various disciplines. This is predominantly the literature upon which *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) was based. The list of threshold concepts, classified according to the themes of figure 1, is:

#### *Theme 1.*

(The personality, environment, and thought processes of the client.)

1. Selectivity, interpretation and closure in the process of perception.
2. Heuristic simplification and its associated psychological biases.
3. Self-deception.
4. Social influences on thinking and behaviour.

*Theme 2.*

(The relationship between the client and an adviser.)

5. Framing effects.
6. Conflicts of interest and motivated reasoning.

*Theme 3.*

(Principles of retail portfolio construction)

7. Life cycle analysis.
8. Human capital.
9. Monte Carlo simulation.
10. Mean-variance diversification ('modern portfolio theory').
11. Risk-return trade-offs and asset allocation.
12. Time diversification and asset allocation.
13. The efficient market hypothesis.
14. Types of financial risk.
15. The measurement of risk.
16. Probability theory.
17. Household financial ratios.

*Theme 4.*

(Institutional investments)

18. Stock indices and index funds.
19. Agency problems and asymmetric information.
20. Financial engineering with derivatives (structured products).

*Theme 5.*



(Non-institutional instruments such as deposits, stocks, bonds, real estate, mortgages, derivatives, and state-funded benefits.)

21. Real versus nominal interest rates.
22. Present value calculations, projections of future value, and average compound rates of return.
23. The mortgage and endowment equations.
24. Pricing assets by discounting expected cash flows.
25. Pricing assets by demand and supply.

It might be noted that some threshold concepts could be present in more than one theme (e.g. concept 13 in theme 4, and concept 19 in theme 2).

## **5.2 Threshold Concepts and Professional Training**

If it were accepted that the list of twenty-five threshold concepts is approximately correct (in the sense of being the most important twenty-five for personal finance professionals), the question would arise as to whether current professional training programmes provide those threshold concepts. The specific comparison here will be with the certificate and diploma programmes of the Chartered Insurance Institute (CII), which is arguably the dominant professional body for financial advisers in the United Kingdom.

From an examination of the documents “Certificate qualifications for the financial services sector” (2010), “Diploma/Advanced Diploma qualifications for the advice sector” (2010) and the syllabus for “Investment principles, markets and environment” (2010), which are all published by the Chartered Insurance Institute, the threshold concepts from the list above that appear to be covered are:

10. Mean-variance diversification (‘modern portfolio theory’).
11. Risk-return trade-offs and asset allocation.
12. Time diversification and asset allocation.
13. The efficient market hypothesis.

14. Types of financial risk.
15. The measurement of risk.
18. Stock indices and index funds.
20. Financial engineering with derivatives (structured products).
22. Present value calculations, projections of future value, and average compound rates of return.

All nine, of the threshold concepts covered, are within the themes ‘Principles of retail portfolio construction’, ‘Institutional investments’ and ‘Non-institutional investments’. The training programme appears to ignore the threshold concepts from the other themes, and even the other threshold concepts from the themes ‘Principles of retail portfolio construction’, ‘Institutional investments’ and ‘Non-institutional investments’. It is thus seen that the book *Personal Finance and Investments: A Behavioural Finance Perspective* (together with my other publications) explains a much larger number of threshold concepts than the CII professional training programmes. (The book explains 23 of the threshold concepts, although ‘household financial ratios’ were not adequately covered. Concepts 1 and 9 are covered in two of my articles.)

The CII professional training programmes fail to give coverage to the psychological and social influences on clients, and to the dynamics of the client-adviser relationship. These dimensions are covered in my proposed curriculum, as indicated by threshold concepts 1 to 6. Many other threshold concepts covered in my work are not included in the professional training programme; such as life cycle analysis, Monte Carlo simulation, human capital, asymmetric information, and asset pricing.

The existence of similar gaps (with respect to psychological and social dimensions and the client-adviser relationship) in financial adviser training in the US are suggested by Van Zutphen (2007). To quote:

“...certification and licensing require the planner to pass exams on the rules, regulations, and technical aspects necessary to conduct business. Thus, practicing financial planners have achieved and demonstrated a base level of technical expertise. But there’s a gap in our training and testing: it’s in

social and emotional intelligence, understanding human motivations, emotions, and the development of interpersonal communication skills.”

Van Zutphen suggested that an absence of good interpersonal skills would adversely affect plan implementation and compliance with recommendations. It was pointed out that, in the US, medical professionals are required to pass an examination relating to the establishment of rapport with patients on the grounds that good interpersonal communication results in greater patient compliance with the doctor’s instructions. In addition, clients of financial advisers frequently need help with the clarification of their goals and objectives.

The Financial Planning Association in the United States listed basic subject fields covered in the financial planning process, as designated by the three main US financial planning credentialing bodies for their courses and examinations (Financial Planning Association, 2011). The coverage was similar to that of the UK’s CII except that financial statement analysis was included in the coverage required by the CFP<sup>12</sup> Board of Standards. This additional item is within factor 3: ‘Principles of retail portfolio construction’. As in the UK, the required training omits the psychological, social, and relationship dimensions (themes 1 and 2).

Johnson and Grayson (2005) concluded that investors’ trust in their financial advisers was influenced by both cognitive and affective factors. Cognitive trust is based on perceptions of technical competence and reliability of service whereas affective trust is based upon care, concern and familiarity. The client wants the adviser to be competent and efficient technically but also to be concerned about the client as a person; to have the client’s best interests at heart.

Bejou, Ennew and Palmer (1998) suggested that developing satisfactory customer relationships can help to reduce the client’s perceived risk. From the perspective of the client the determinants of a satisfactory relationship include customer orientation, trust and technical expertise. Customer

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<sup>12</sup> CFP: Certified Financial Planner.

orientation contrasts with sales orientation. A customer orientated adviser focuses on the needs of the client rather than focussing on selling financial products to the client.

Appendix 2 compares the threshold concept coverage of my publications with the coverage of the CII professional training programmes and the coverage of the five contributions, to the definition of personal finance, discussed in earlier sections of this review (Altfest, Black et al., Overton, Schuchardt et al., Warschauer). It may be noted that my list of threshold concepts excludes some theories mentioned by Schuchardt et al. (2007), although two of their proposed theories have a strong case for inclusion. They are the transtheoretical model of change<sup>13</sup> and the theory of planned behaviour<sup>14</sup> and could be included in theme 2, which concerns the relationship between client and adviser. Those two theories are mentioned by no other authors (and do not appear in professional training programmes) and are reflective of the social science orientation of the Schuchardt et al. (2007) contribution.

Ultimately the list of threshold concepts must be determined by a consensus of many people working in personal finance (practitioners, educators, and researchers). The list presented in this review (and reflected in my publications) should be seen as an early contribution to the process of establishing a consensus.

### **5.3 This Contribution and the Current Regulatory Environment.**

#### ***Comparison of the Proposed Curriculum with the Financial Services Authority RDR<sup>15</sup> (QCF level***

#### ***4) Indicative Contents.***

The core RDR<sup>15</sup> units are those that are mandatory for a course to be included on the Financial Services Authority ‘Appropriate Qualifications List’ as meeting the requirements of a QCF level 4 qualification. From 01/01/2013 this will be the minimum (floor) level of qualification required of a financial adviser. Of the three core RDR units only Core – 2 (Investment Principles and Risk) makes any reference to concepts that would fall within the themes ‘Personality, Environment, and Thought

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<sup>13</sup> The transtheoretical model of change is a psychological model of the stages of making a decision.

<sup>14</sup> The theory of planned behaviour concerns the psychological conditions necessary for a decision to be made.

<sup>15</sup> RDR is the Retail Distribution Review.

Processes of the Client’ and ‘Relationship between Client and Adviser’ (see appendix 5 for details of this RDR unit). Even there the links are tenuous and partial. One of the nine learning outcomes of RDR Core – 2 is ‘The merits and limitations of the main investment theories’, and one of the three sections within that learning outcome is ‘Basics of behavioural finance – market and individual behaviours’. The fact that the only mention of behavioural finance is in relation to its role in investment theories, rather than in relation to the psychology of the client, suggests that the RDR Core – 2 does not pay attention to behavioural finance in the context of the themes ‘Personality, Environment, and Thought Processes of the Client’ and ‘The Relationship between Client and Adviser’.

Another of the nine learning outcomes is ‘The investment advice process’, and one of the sections within that learning outcome is ‘Know your client requirements’. One of the eight subsections within that section is ‘Determine and agree risk profile – objective and subjective factors’. This is the only subsection within the RDR Core – 2 indicative content that relates to the themes ‘Personality, Environment, and Thought Processes of the Client’ and ‘The Relationship between Client and Adviser’, and relates to just a fraction of the psychological and relationship issues indicated by my proposed curriculum.

The conclusion is that the QCF level 4 qualification indicative contents of the Financial Services Authority pay very little attention to the psychological, social, and relationship dimensions of personal financial advice. In total the threshold concepts from my proposed list of twenty-five (see pages 30-32) that are omitted from the three core RDR units of the Financial Services Authority are:

Selectivity, interpretation and closure in the process of perception.

Heuristic simplification and its associated psychological biases.

Self-deception.

Social influences on thinking and behaviour.

Framing effects.

Conflicts of interest and motivated reasoning.

Life cycle analysis.

Human capital.

Monte Carlo simulation.

Time diversification and asset allocation.

Types of financial risk.

The measurement of risk.

Probability theory.

Household financial ratios.

Agency problems and asymmetric information.

The mortgage and endowment equations.

Pricing assets by discounting expected cash flows.

Pricing assets by demand and supply.

It might be noted that none of these threshold concepts are covered in optional (non-core) units. It might also be noted that it is not only behavioural aspects that are omitted by the FSA (Financial Services Authority); a number of the omissions are non-behavioural.

The curriculum of Appendix 4, which covers all twenty-five of the suggested threshold concepts, would correspond to a QCF level 6 programme of study.

My proposed curriculum is superior to the training programme required by the FSA (Financial Services Authority) in three ways.

1. The FSA programme omits a number of technical issues that are relevant to personal finance advice in relation to investment management, debt management, and retirement planning; for example life cycle analysis, human capital, Monte Carlo simulation, and household financial ratios. My proposed curriculum includes these elements.
2. The FSA programme omits the subjectivist dimension to the process of personal financial advice. The FSA required training focuses on financial products, financial strategies, and

regulatory constraints. This produces a product-focused bias at the expense of a client-focused orientation. It is not being argued that the FSA content is unnecessary; it is being argued that it is incomplete.

3. In terms of the processes of financial advice as indicated in Box 2 on page 42 , and as accepted by the International Organization for Standardization (and by professional bodies), the training required by the FSA does not fully reflect the element of ‘Gather client data, including goals’. Whilst paying attention to the dimensions of financial circumstances and financial objectives, it ignores the issue of how the client perceives and thinks about personal finance. The fact find should include finding out how the client perceives and thinks about personal finance (and products and strategies) and what meaning the client attaches to them. Knowledge of behavioural finance (on the part of the adviser) would help in this subjectivist dimension to the fact find. A financial adviser with knowledge of behavioural finance should be more successful in the subjectivist fact find. My proposed curriculum (unlike the FSA curriculum) includes relationship dimensions such as interviewing techniques. The adviser gains information by interviewing the client. Training in interviewing techniques should enhance the effectiveness of the fact find, particularly in relation to how the client perceives and thinks about personal finance, financial products, and financial strategies (McGuigan, 2011).

#### *What Might Deter the FSA from Introducing My Proposed Changes?*

It is possible that the FSA would be deterred by hostile opinions, expressed by members of the financial advice profession, from introducing additions to the required education and training; particularly if there were a risk of causing many advisers to leave the profession. There is anecdotal evidence that considerable hostility has been shown to the introduction of the RDR level 4 training requirement: as illustrated by contributions to the ‘Your Letters’ section (and an editorial) in *Money Management* , some of which are reproduced in appendix 6. However appendix 6 also presents material from *Money Management* indicative of support and acceptance of the RDR level 4 enhancement to training introduced by the FSA. Furthermore there are reasons to suppose that many

financial advisers would welcome the behavioural dimension to training. A survey on trends in the financial planning industry in the United States found that financial planning professionals rated ‘People/Communication Skills’ as the most important contributor to planner success (College for Financial Planning, 2011)<sup>16</sup>. This is consistent with a Merrill Lynch study, which reported that 42% of clients stated that the most important factor giving them confidence in their financial plan was their relationship with their adviser (Merrill Lynch 2011). It is also supported by a study under the auspices of Advisor Impact that found that the most engaged clients (those most likely to recommend their advisers and thereby provide referrals) were distinguished by strong personal relationships with their advisers (Littlechild 2008). (These findings further reinforce the case for a behavioural and relationship dimension to the education and training of financial advisers.)

The negative reaction of many financial advisers to the FSA’s increase in training and examination requirements under the RDR could deter the regulator from further extensions to training requirements. However the reaction of financial advisers depends upon their perceptions of the benefits as well as the costs. In the legal profession the introduction of relationship courses (referred to as humanizing legal education) has met with positive responses (Rosenberg, 2004). The benefits have been seen as going beyond the improvement of interaction with clients, to improving relationships with colleagues and leading lawyers to be happier in their work (Schiltz, 1999). If there were similar benefits to financial advisers, there should be little negative reaction for the FSA to be concerned about.

The FSA could also be concerned that advisers, equipped with knowledge of behavioural factors, might use that knowledge to their own advantage rather than for the benefit of clients. The psychological processes involved in conflicts of interest can occur without any conscious intention to indulge in corruption (Moore, Tetlock, Tanlu and Bazerman 2006). Montier (2007) has referred to the notion that people are able to exclude self-interest in decision-making as the illusion of objectivity. However the prohibition of commission payments under the RDR (from 01/01/13) and the ‘Treating

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<sup>16</sup> The other contributing factors to success covered by the questionnaire were ‘Referrals from Clients’, ‘Having a High Level Professional Qualification’, ‘Educational Background’, ‘Continuing Professional Development’, and ‘Specialization’.



Customers Fairly'<sup>17</sup> initiative should counter the possibility of unethical use of knowledge of behavioural factors.

To the extent that the use of knowledge of behavioural finance on the part of financial advisers leads to increased levels of saving for retirement, the central government might be expected to be supportive of such a development. If central government is favourably disposed to such a positive outcome to the employment of the enhanced expertise of financial advisers, it is to be expected that the Financial Services Authority would also be supportive of a programme of educating financial advisers in behavioural finance. There are reasons for supposing that the use of behavioural concepts could enhance rates of saving for retirement (Benartzi and Thaler 2004, 2007; Chuah and Devlin 2011). It is also to be expected that the Financial Services Authority would be supportive of a programme that educates financial advisers in behavioural finance if such a programme were to enhance trust in financial services; my 2011 article in the *Journal of Financial Service Professionals* indicates that behavioural finance provides insights into the determinants of the level of client trust in financial services and products.

## **6.0 THE OBJECTIVES AND PROCESSES OF FINANCIAL ADVICE**

My research, particularly *Personal Finance and Investments: A Behavioural Finance Perspective* (2008), embodies a curriculum for education and research in personal finance. It is informative to contextualise this curriculum by examining the problems addressed by personal financial advisers, and the recommended processes for dealing with those problems. The problems are presented in the form of ten objectives, listed in box 1 (this list was developed by the present author on the basis of distillation from existing literature). The list of six processes in box 2 is taken from Warschauer (2002).

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<sup>17</sup> The 'Treating Customers Fairly' initiative aims to ensure that financial advisers conduct their business in such a way that consumers achieve a fair deal..

## 6.1 The Objectives of Personal Financial Management

Personal financial planning encompasses the ten elements of box 1.

### **Box1: Problems Addressed by Personal Financial Advisers**

1. Risk management; particularly insurance.
2. Cash flow management; particularly saving.
3. Wealth management; particularly investing.
4. Liability management; particularly debt management.
5. Liquidity management; particularly ensuring that payments can be made.
6. Retirement planning; particularly pensions.
7. Estate planning; particularly inheritance.
8. Tax planning; particularly tax avoidance.
9. Financing major purchases; particularly housing and education.
10. Succession planning; particularly the transfer of businesses.

**Source: own construction**

Warschauer (2002) distinguished between ‘slice’ financial planning and ‘comprehensive’ financial planning. Slice financial planning entails a subset (perhaps just one) of the ten areas. Comprehensive financial planning entails all relevant areas. Whereas the ten areas in box 1 provide a comprehensive list of potential problems, it is not necessarily the case that a particular individual will have problems relating to all ten areas. Comprehensive financial planning for a specific individual will relate to all the problem areas that are relevant to the individual (or family or household).

The goals of a client might be seen in specific terms; for example achievement of a particular level of retirement income or a specific level of payment to dependents in the event of death. Alternatively the more general goal of financial satisfaction could be pursued (Joo and Grable, 2004). Financial satisfaction refers to clients’ contentment with their financial circumstances. Aspects that contribute to financial satisfaction include levels of wealth and debt, the ability to meet regular financial commitments, preparedness for emergencies, preparedness for future needs, financial stress (financial difficulties), financial management skills, and financial behaviour (such as regular saving). Financial satisfaction is a dimension of general well-being.

The financial adviser is simultaneously performing broader social roles. One such role is the encouragement of saving; particularly saving for retirement. Also advisers would steer clients towards productive forms of financial investment; such as balanced portfolios in preference to bank deposits.

## **6.2 Processes Underlying the Relationship between Client and Adviser**

Financial planning, when facilitated by a financial planner (adviser), can be seen as a six-step process; as reported by Warschauer and presented in box 2 (this six-step process has been accepted by the International Organization for Standardization).

### **Box 2: The Process of Personal Financial Planning**

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### **Source: Warschauer (2002)**

Drawing a medical analogy, the ten dimensions of box 1 are equivalent to parts of the anatomy and the six steps of box 2 correspond to the process of examination, diagnosis, treatment, and prognosis.

Professional training programmes (such as the Chartered Insurance Institute programmes referred to previously) tend to focus on the contents of box 1 rather than box 2. However it is box 2 that emphasises the interaction with the client. It might be expected that use of the 'Backward Design Method' of curriculum development (Wiggins and McTighe, 2005), starting from the six steps of box 2, would result in a curriculum that draws on behavioural disciplines, particularly psychology.

Backward curriculum design starts with the desired results, such as desired learning outcomes. The six

steps of box 2 might be seen as indicating such required learning outcomes. Working backwards from those desired learning outcomes should lead to a curriculum that provides the concepts that are essential to achieving those learning outcomes. It is hard to imagine that a set of learning outcomes that focus on the adviser's interaction with a client would lead to a curriculum that is limited to investment analysis concepts, and excludes behavioural concepts. However professional training programmes do seem to exclude behavioural concepts. (A backward design approach starting from learning outcomes based on box 1 would also lead to some behavioural components; particularly in relation to saving, investment, and debt management. This would highlight deficiencies in professional training programmes.) My proposed curriculum embodied in *Personal Finance and Investments: A Behavioural Finance Perspective* (2008), and in other contributions, includes behavioural dimensions (such as those covered by threshold concepts 1 to 6 in appendix 2).

## **7.0 PERFORMATIVITY**<sup>18</sup>

The content of *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) is performative in nature. Such a vocational orientation renders the curriculum, provided by the book, comparable to a professional training curriculum and to the curricula suggested by the five authors covered in the literature review (Black et al. 2002; Warschauer 2002; Altfest 2004; Schuchardt et al. 2007; Overton 2008). A non-performative curriculum could not be compared with performative curricula so comfortably since it would have been developed for a different purpose. The themes of figure 1 (page 25) are performative; each theme indicates an area of expertise that a personal financial adviser needs in order to be as effective as possible.

The treatment of the subject matter in *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) tends to be issue-based rather than concept-based and task-based rather than knowledge-based. This is not to say that there is an absence of concept-based and knowledge-based

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<sup>18</sup> Performative education is distinguished by a strong vocational, or 'use value', orientation. It is not only the subject content that has a vocational orientation but also the mode of delivery, which is likely to be relatively problem-based and experiential with a focus on learning-by-doing. Performative education is to be found in areas such as medicine, engineering, law, and accountancy.

material; it is a matter of relative emphasis. A performative curriculum has a relative emphasis on 'doing' rather than 'knowing'. Examples of performative degree curricula are business studies and nursing. They are orientated towards their use-value to society and the employability of their graduates.

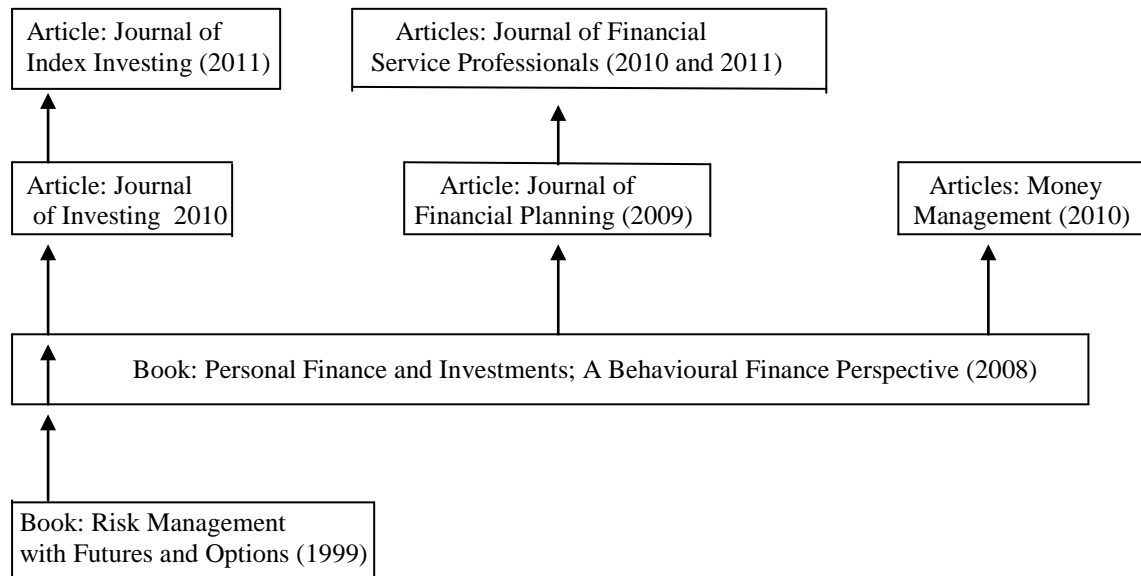
*Personal Finance and Investments: A Behavioural Finance Perspective* (2008) focuses on the financial decision-making problems faced by people and their financial advisers. In doing so it recognizes that a multidisciplinary approach is required since the decision-making has multiple dimensions. In a similar vein Walker et al. (1998) argued that marketing curricula should be multidisciplinary since much business decision-making requires a cross-disciplinary approach. Barnett et al. (2001) suggested that professional subjects such as business studies and nursing (and personal finance would be regarded as professional) have a relatively high emphasis on the 'action' domain of an educational programme. The 'action' domain includes competencies acquired through 'doing'. In professional subjects the 'action' domain may be as important as the 'knowledge' domain whereas discipline-based curricula emphasize the 'knowledge' domain. *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) has a large 'action' domain component in the form of problem-solving examples.

In relation to degrees in business studies there has been debate as to whether educational programmes should be 'for business' or 'about business' (Macfarlane 1997). In relation to personal finance there is a similar question as to whether a text (or educational programme) should be 'for financial decision-making' or 'about financial decision-making'. The former provides decision-making tools, whereas the latter provides understanding of the context and processes. There has been a tendency for study programmes aimed at professional qualifications to be focused on the former, whereas academic research has been primarily concerned with the latter. My book covers both dimensions on the grounds that a book written 'for' financial decision-makers should provide the existing thinking and evidence 'about' financial decision-making. The academic world has produced much that is of direct relevance to practitioners.

Barnett et al. (2001) suggested that higher education (at least in the UK) was moving towards greater performativity. There is an increasing emphasis in higher education on use-value as opposed to knowledge for its own sake. This is currently evidenced by a focus on employability in UK university degree programmes. My book fits within this increasing focus in that it has a greater emphasis on application than most academic finance texts.

## **8.0 CONTRIBUTION OF SELECTED OUTPUTS**

The rationale for output selection has already been discussed in section 2.1 and what follows is a more in-depth discussion of those specific outputs. Figure 2 illustrates how some of my publications have drawn upon others. The book *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) drew upon the book *Risk Management with Futures and Options* (1999). It also drew upon three more of my books (*Introduction to Financial Investment*, 1995; *Financial Derivatives*, 1997; *Introducing Investments*, 2003), but those three are not being considered in this review. *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) influenced my subsequent work and the articles shown in figure 2 have their origins in that book. *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) is potentially the basis for more research in the future. My ongoing research focuses on the application of behavioural concepts to personal financial planning (*Journal of Financial Planning* 2009; and *Journal of Financial Service Professionals* 2010 and 2011), and on time diversification (*Journal of Investing* 2010; and *Journal of Index Investing* 2011). Figure 2 is followed by a discussion of the role of each of the publications in the profile of my research outputs.

**Figure 2: The Evolution of My Research**

### **8.1 Risk Management with Futures and Options. Prentice Hall, 1999**

This book provided a detailed account of how derivatives can be used in fund management. In particular it considered the use of derivatives in the structuring of institutional investments aimed at retail investors. It was shown that derivatives can be used to reduce risk, or increase returns, by means of financial engineering. Financial engineering uses derivatives, along with conventional investments, to produce investment products that aim to meet the precise needs of retail investors. Institutional investments, by using financial engineering, can provide means of structuring personal portfolios to meet the specific requirements of individual retail investors. In particular option funds can reduce risk or enhance income yields, whereas futures funds can provide exposures not otherwise easily available (e.g to precious metals). Some of the financially engineered investments were identified by examining funds offered by financial institutions, others were my own developments (such as the controlled-risk index fund). In some cases my own analysis identified embedded derivatives (options) within existing retail investments, for example within split capital investment trusts.

Another original contribution of the book was the use of option theory to explain the returns from constant asset allocation investment strategies.

At this juncture, it needs to be pointed out that several key aspects of this book such as hedging and financial engineering were carried forward into *Personal Finance and Investments: A Behavioural Finance Perspective* (2008). Option pricing models were also carried forward into that book, and then into the articles published in the *Journal of Investing* (2010) and the *Journal of Index Investing* (2011). However *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) was much broader than *Risk Management with Futures and Options* (1999).

## **8.2 Personal Finance and Investments: A Behavioural Finance Perspective. Routledge. 2008**

This book attempts to approach personal finance in a different way to that of other books on the subject. It draws on academic work to a much greater extent, and is far more multidisciplinary. In these ways it seeks to present personal finance as an academic discipline on a par with other finance areas such as investments and corporate finance. Appendix 3 provides examples of personal finance books that make less use of the academic journal literature, and are less multidisciplinary, than *Personal Finance and Investments: A Behavioural Finance Perspective* (2008).

The book brought together perspectives from several disciplines; particularly finance, psychology and economics. The book provided emphases on institutional investments designed for personal finance needs. These developments were needed as a basis for the analysis of personal finance. The book brought to bear the results of empirical research (distilled from the academic literature), in particular research from the finance literature and from the recently developing area of behavioural finance (which draws from psychology and sociology). The principles of behavioural finance have major implications for the operation of capital markets and for personal financial decisions (for example overconfidence causes investors to exaggerate their stock picking skills resulting in excessively concentrated portfolios; and mental accounting prevents them from seeing their portfolios as a whole and causes them to focus on individual investments with the result that portfolios are unbalanced). Most of the sources used (there were about 1,000 sources) were written to answer questions that were not directly related to personal finance. The book drew out the implications of those sources for



personal finance, and brought them together to form a coherent body of personal finance theory. As far as I am aware, this was the first substantial and coherent presentation of theory and evidence relating to personal finance.

Investment is concerned with the achievement of high return without unacceptable risk. Capital market theory looks at the achievement of return/risk combinations using portfolios of investments.

Derivatives allow the process to be taken a step further in terms of enhancing return or reducing risk.

Integration of capital market theory and financial derivatives was achieved by demonstrating the use of financial derivatives to expand the investment alternatives available from portfolios of investments (entailing structured products).

A further contribution was provided by expressing this integration within the context of personal finance, and by exploring the impact of behavioural biases (such as loss aversion and mental accounting) on the process of personal financial management. Personal finance needs were used to justify the use of structured products<sup>19</sup>, and this justification made use of behavioural concepts (in particular loss aversion and mental accounting). Structured products (primarily products that protect against loss or enhance income yield) have been discussed in derivatives and investments books with little or no contextualisation. My work has presented structured products within the contexts of personal finance and behavioural finance in order to clarify the purpose of structured products. For example an index fund (capital market theory) combined with an options cylinder<sup>20</sup> (derivatives) reduces the risk of loss at the cost of foregoing some of the potential gain thereby achieving consistency with prospect theory (behavioural finance) which indicates that the emotional impact of a loss is more than twice the emotional impact of a gain of equivalent size.

Consider the two themes (see figure 1, page 29):

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<sup>19</sup> Structured products are discussed in appendix 1.

<sup>20</sup> The options cylinder would entail buying a put option with a low strike price (to provide protection against a fall in the market) and selling a call option with a high strike price (to pay for the put option at the cost of forgoing some potential gain).

1. The personality, environment, and thought processes of the client.
2. The relationship between the client and an adviser.

These two themes have been ignored by other books on personal finance, despite being of central importance. *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) discussed the impact of a wide range of psychological and social factors on saving behaviour and investment decisions. The psychological factors include inaccurate perceptions, self deception, heuristic simplification, and emotions. Personality, attitudes, thought processes, and feelings were shown to influence financial behaviour. It was also recognized that people do not act in isolation and that the behaviour, attitudes and moods of other people have an influence on an investor. All these perspectives were drawn from the academic literature on psychology and behavioural finance. They provide uniqueness to the book as a text on personal finance.

In relation to the theme (see figure 1, page 29):

3. Institutional investments such as unit trusts, pensions, and insurance-related investments.

The focus on the role of derivatives in the construction and management of institutional investor portfolios was a distinctive feature of the book, and formed a continuation of the attention to such matters in my previous books such as *Risk Management with Futures and Options* (1999). Another distinctive feature was the incorporation of behavioural perspectives on institutional portfolio management. An original insight that combined derivatives theory (and empirical research) with behavioural finance was the suggestion that prospect theory could explain the high demand for, and high price of, deep out-of-the-money options that are used to protect portfolios against stock market crashes.

As well as presenting the subject of personal finance in a new way, as a multidisciplinary academic discipline, the book provided a number of original insights. Examples of those original insights are (i) development of a behavioural rationale for technical analysis, (ii) a behavioural analysis of the Sandler report, (iii) an analysis of the implications of behavioural finance for the short-termism debate, (iv) provision of a behavioural explanation for the backward-sloping demand curve used in catastrophe theory explanations of stock market bubbles and crashes, (v) the extension of Pepper and Oliver's (2006) division of stock trades between liquidity and portfolio trades to incorporate herding and noise trading, (vi) the demonstration of the difficulty of optimization of retail portfolios in the sense of improvement on a  $1/N$  strategy<sup>21</sup>, (vii) a measure of portfolio performance paralleling Jensen's alpha but using the capital market line rather than the security market line, (viii) the application of option theory to the analysis of split-capital investment trusts, (ix) the use of futures to maintain market exposure of institutional portfolios when experiencing net inflows/withdrawals by retail investors, (x) analysis of the effects of institutional investment liquidity on returns in unstable markets, (xi) the extension of the analysis of characteristics of bonds to the characteristics of mortgages, and (xii) the endowment effect as an explanation for reluctance to buy annuities.

*Personal Finance and Investments: A Behavioural Finance Perspective* (2008) provided a much more complete search for subject content than the five contributions covered in the literature review (Altfest, Black et al., Overton, Schuchardt et al., Warschauer), and in doing so added new dimensions to the academic scope of personal finance. It can be argued that *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) has led the way forward in the search for subject content and new dimensions. The five contributions covered in the literature review left many gaps in proposing curricula for personal finance. *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) has filled many of those gaps, as indicated by the comparison of threshold concepts in appendix 2.

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<sup>21</sup> A  $1/N$  strategy entails equal distribution of an investment between available funds. For example if four funds were available, each of the four funds would receive a quarter of the investment.

On a more self-critical note, although *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) has provided much more structure to a personal finance curriculum than the five contributions discussed in the literature review, that structure could be improved. On reflection I could have explicitly used the structure of figure 1 (page 29). Such a thematic (and modular) presentation would make the coherence of the underlying theory clearer.

**8.3 Option Theory Does Not Refute Time Diversification. *Journal of Investing*, Fall 2010, vol. 19, issue 3, pp 65-71. (with Karl Shutes)**

A number of ideas that are accepted without question by most personal finance professionals have been questioned by academics. The critical evaluation of such ideas should fall within the scope of an academic discipline of personal finance. One of those ideas is the view that investment in stocks is relatively less risky when a long investment period is considered. The theoretical basis of that idea is known as time diversification.

Bodie (1995) used the Black-Scholes option pricing model to refute the concept of time diversification, and thereby argued that the risk of investing in stocks increased as the investment horizon lengthened. This view conflicted with the generally held view amongst personal financial advisers, and also with empirical evidence (Siegel 2002). These matters were discussed in *Personal Finance and Investments: A Behavioural Finance Perspective* (2008). Upon reading Bodie's (1995) article I came to the view that the Black-Scholes model had been used in an excessively restrictive way. Bodie had not allowed for growth in the value of investments. By making allowance for investment growth our article produced results that differed from those of Bodie (1995).

Our article used option pricing models from *Risk Management with Futures and Options* (1999) and *Personal Finance and Investments: A Behavioural Finance Perspective* (2008), and the concept of time diversification from the latter book. Time diversification relates to the issue of whether stocks become less risky as the investment horizon lengthens (risk in the sense of probability of loss or

underperformance relative to other assets). If time diversification leads to such a decline in risk, the implication is that investor portfolios should be more heavily weighted towards stocks if the investment is expected to be long term. Asset allocation should be increasingly biased towards stocks as the prospective holding period increases. The article used the Black-Scholes option pricing model to show that the existence of time diversification depends on the return on stocks. There appeared to be a tipping point, in terms of return, at which time-diversification becomes effective. The discovery of the tipping point provided part of the originality of the article. This helped to reconcile the view (generally favoured by personal finance practitioners) that time diversification occurs, with the view that risk increases with increases in investment horizon (favoured by some academics).

The results also have implications for behavioural finance in that they provide a rationale for a negative risk/return relationship consistent with behavioural finance (but contradicting the capital asset pricing model). The article shed light on asset allocation in personal (and institutional) portfolios, and helped to clarify an issue of central importance for financial advisers and planners.

I was the main author of this article. I needed the assistance of Karl Shutes in relation to the application of computer software.

**8.4 Option Theory, Time Diversification, and Index Funds , *Journal of Index Investing*, Fall 2011, vol. 2, issue 2, pp. 48-58 (with J. Niklewski)**

Option theory, time diversification, and index funds were three issues covered in *Personal Finance and Investments: A Behavioural Finance Perspective* (2008). There is substantial empirical evidence that the relative risk of stocks declines as the investment horizon extends (Siegel 2002). Personal financial advisers have also believed that the relative risk of equity investments declines as the period of the investment increases, because of time diversification (good periods tending to offset poor periods). However some academics have suggested that stock market risk increases as the investment horizon lengthens, thus refuting the concept of time diversification (Bodie 1995). That argument has been based on an apparent increase in the cost of hedging stock price risk as indicated by theoretical

put option prices, which appear to increase when the investment horizon extends. The present article argues that those views are based on a restrictive use of the Black-Scholes option pricing model. When the model is used less restrictively put option prices are found to decrease as the investment horizon lengthens so long as investment growth is sufficiently high and/or volatility is sufficiently low. Risk, as measured by the cost of hedging, may decline as the holding period lengthens. Dependent upon investment growth and volatility, option theory supports time diversification rather than refuting it.

This research was a direct development on the *Journal of Investing* (2010) article. That article considered only variations in investment growth, whereas the new article considers variations in volatility as well as variations in investment growth. Both papers have concluded that there is an inverse relationship between risk and return in the long term, which contradicts the basic assumption of capital market theory that high expected return entails high risk. The next step may be to employ a binomial option pricing model in place of the Black-Scholes model in order to test the robustness of the findings.

One implication is that index funds may be more likely to provide time diversification than actively-managed funds. On average index funds offer higher returns because of their lower costs, and offer lower volatility because of the absence of active risk. The consideration of the implications for index funds provides valuable information for personal financial advisers and links with my other publications (particularly the *Journal of Financial Service Professionals*, 2010, article and the book *Personal Finance and Investments: A Behavioural Finance Perspective*, 2008).

I was the main author of this paper. I needed the assistance of Jacek Niklewski in relation to the application of computer software. Jacek took the same role that Karl Shutes had taken in relation to the *Journal of Investing* (2010) article. Since Karl Shutes had left the university, I asked Jacek to assist me with the computer simulation.

**8.5 A Behavioral View of How People Make Financial Decisions. *Journal of Financial Planning* (Between the Issues) November 2009**

An academic discipline of personal finance should show its relevance to the work of personal finance professionals. This article demonstrated the relevance of behavioural finance concepts for the theory and practice of personal finance. It showed how theories taken from psychology have a place in the academic study of personal finance, and relevance for the work of personal financial advisers.

Smith (2008) provided a model of financial decision-making based on a flow chart. That model considered cognitive processes only. My *Journal of Financial Planning* (2009) article extended the analysis to incorporate not only the cognitive stages but also the motivation and perception stages. The motivation stages were based on ideas covered in *Personal Finance and Investments: A Behavioural Finance Perspective* (2008). The perception stages were based on ideas presented by Ricciardi (2008).

My *Journal of Financial Planning* (2009) article provided a model of the financial decision-making process using insights from psychology. In particular it showed that decision-making can be biased by distortions at the perception, cognition and motivation stages. It relates directly to the “Personality, environment, and thought processes of the client” theme (figure 1, page 25). The article makes recommendations about how personal financial advisers can offset the adverse effects of client misperceptions and psychological biases, and thereby relates to the “Relationship between client and adviser” theme (figure 1, page 25). It also considers the psychological biases of advisers, including in relation to how such biases could adversely influence the ethical standards of the advisers; for example the unconscious presence of motivated reasoning<sup>22</sup> could cause the personal interests of the adviser to influence advice to a client even when the adviser is consciously trying to avoid such influence.

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<sup>22</sup> Motivated reasoning refers to a self-serving bias in thought processes that leads to decisions that are advantageous to the thinker. The self-serving bias is not necessarily something of which the person is conscious.

The novelty of this article was the integration of the three psychological stages into a unified process, establishing the relationship of the process to personal financial management, and drawing out the implications of the process for the relationship between client and adviser. Originality also arose from resultant recommendations to financial advisers (for example in relation to the optimism bias and the self-serving bias), which informed practice.

The next two articles (unlike the others) were not in a peer-reviewed journal. They were in a publication aimed at practising financial advisers and are included as examples of informing practice.

#### **8.6 All in the Mind. *Money Management*. June 2010**

This investigated reasons for the reluctance of many people to buy an annuity at retirement. It applies concepts used in the *Journal of Financial Planning* (2009) article and in *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) to the issue of annuity purchase. Part of the focus is on psychological dimensions such as framing, familiarity and hyperbolic discounting. The framing and familiarity perspectives suggest that purchases are increased by marketing annuities as insurance rather than as investments. An economic perspective was also provided based on the relationship between annuity rates and expectations of inflation, showing that low annuity rates may not be a good reason for eschewing annuities. The aim of the article was that of informing practice, rather than seeking original insights.

#### **8.7 Income for Life. *Money Management*. July 2010**

This article compared annuities with drawdown; these being the alternative means of individually funding retirement. The issue of estimating drawdown rates was considered. The Monte Carlo approach was explained; and the problems of drawdown were evaluated by reference to sources of uncertainty such as longevity risk. Longevity annuities were suggested as a compromise solution for people who are reluctant to buy conventional annuities. Longevity annuities reduce expenditure on annuities by delaying them. The purpose of the discussion of longevity annuities was to inform practice by introducing a UK practitioner readership to an instrument recently introduced in the US.



The impact of the article was revealed by the presence, in subsequent issues of the same publication, of other contributions on the subject of longevity annuities. The article was timely in the light of changes in pension regulation announced by the UK government in December 2010, allowing drawdown beyond the age of 75.

**8.8 Behavioral Perspectives on Index Funds, *Journal of Financial Service Professionals*, 64, 4, (July 2010) pp. 54-61**

*Personal Finance and Investments: A Behavioural Finance Perspective* (2008) gave substantial attention to the issue of investment in index funds, which are often a central component of the portfolios of retail investors. The book covered the very large finance literature relating to index funds, in particular their performance relative to actively-managed funds. Index funds aim to track a stock market index as opposed to actively-managed funds, which attempt to outperform a stock market index. However, despite the extensive finance literature on the relative merits of index funds and actively-managed funds there appeared to be no behavioural analyses of the issue.

My *Journal of Financial Service Professionals* (2010) article applied concepts from the *Journal of Financial Planning* (2009) article and from *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) to the issue of investment in index funds. The article identified a number of behavioural advantages of index funds, when compared with actively-managed funds. Index funds have advantages with respect to the perception of loss, realism of expectations, appropriateness of choice criteria, diversification, net dividend income, and the emotional attachment to investments. Index funds may also have benefits for relationships between financial advisers and their clients. Concepts used included loss aversion, disappointment aversion, regret aversion, overconfidence, outcome bias, hindsight bias, illusion of control, illusion of knowledge, representativeness, availability, familiarity bias, ambiguity aversion, default option bias, mental accounting, choice bracketing, and the status quo bias.

**8.9 Behavioral Perspectives on Client Mistrust of Financial Services , *Journal of Financial Service Professionals*, 65, 6, (November 2011), pp. 50-61.**

Subsequent to attending a presentation by a colleague from the marketing department on the subject of trust in financial services, I was unable to find a behavioural finance analysis of client mistrust. So I decided to write one. It drew on ideas from *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) and from my *Journal of Financial Planning* (2009) article.

One purpose of this paper was to show that the problem of trust relates to all three levels of financial engagement by a retail investor. (1) Engagement with the adviser who advises on financial products and strategies. (2) Engagement with the financial institutions that provide the financial products. (3) Engagement with the asset markets in which the financial products are invested. A second purpose was to show that mistrust can have both rational and irrational sources.

This article developed in parallel to the article ‘Behavioral Perspectives on Index Funds’ (*Journal of Financial Service Professionals* 2010). Both articles were based on issues identified in *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) and employed theoretical approaches covered in that book. They also drew upon ideas developed in my *Journal of Financial Planning* (2009) article. Little previous work had been done on behavioural aspects of personal finance. Shefrin and Statman (1993) considered behavioural aspects of structured products and Statman (1995) analysed dollar-cost averaging from a behavioural perspective. This left most dimensions of personal finance without a behavioural analysis. There are therefore many gaps; my published articles (*Journal of Financial Planning* 2009 and *Journal of Financial Service Professionals* 2010) and forthcoming article in the *Journal of Financial Service Professionals* seek to partially fill those gaps. Much remains to be done.

## **9.0 FURTHER RESEARCH**

The direction of, and approach to, further research has been influenced by the width of study entailed in writing *Personal Finance and Investments: A Behavioural Finance Perspective* (2008). By covering a wide, and multidisciplinary, range of subject areas I have been able to identify relationships between subjects that point to potentially fruitful research opportunities. The use of behavioural finance concepts to analyse issues in personal financial management, and personal financial advice, is one research direction. This has already resulted in three (refereed academic journal) articles and a fourth, a behavioural analysis of saving, is in progress (and will soon be submitted to a journal). Time diversification is another prospectively fruitful line of development. This has resulted thus far in two articles published in refereed academic journals. This line of research uses option pricing models to generate implications for portfolio management, and provides interesting comparisons with suggestions from behavioural finance. Further developments could entail the use of option pricing models other than the Black-Scholes model.

It has become apparent to me that the subject of personal finance is under-researched, and under-developed academically. My work, particularly *Personal Finance and Investments: A Behavioural Finance Perspective* (2008), indicates that opening up personal finance as an academic discipline requires a multidisciplinary approach.

## **10.0 THE CONTRIBUTIONS OF MY RESEARCH TO KNOWLEDGE, THEORY, METHODOLOGY, AND PRACTICE**

### *Knowledge*

Arguably personal finance, as an academic discipline and corresponding body of knowledge, did not exist before 2002. The five contributions discussed in the literature review [Altfest (2004); Black, Ciccotello and Skipper (2002); Overton (2008); Schuchardt, Bagwell, Bailey, DeVaney, Grable, Leech, Lown, Sharpe, and Xiao (2007), and Warschauer (2002)] provided the beginnings of a body of knowledge that could be described as personal finance. My research, in particular *Personal Finance and Investments: A Behavioural Finance Perspective* (2008), furthered the process of identifying a

body of knowledge that can be regarded as the academic discipline of 'Personal Finance'. Prior to 2002, although knowledge relevant to personal finance existed (albeit often not produced with reference to personal finance), it had not been assembled into a coherent curriculum that was identifiably the body of knowledge that constituted 'Personal Finance'. I contend that my work has been very important to the process of constructing that curriculum. My work has entailed the identification of relevant existing knowledge from various disciplines, and showing its relevance to personal finance, as well as the generation of new knowledge. Both processes serve the purpose of creating a body of knowledge for personal finance as an academic discipline. The need for the creation of such a body of knowledge is apparent from the limited scope of professional qualification programmes (discussed earlier in this review). Arguably the multidisciplinary nature of my work is a further contribution to knowledge to the extent that focusing various disciplines on a topic to produce a multidisciplinary perspective on the topic constitutes a contribution to knowledge; appendix 1 provides some illustrations of multidisciplinary perspectives.

My research on time diversification has indicated that both of the previously existing positions (time diversification exists versus it does not exist) may be incorrect. The research has demonstrated that the existence of time diversification is dependent on investment returns and the volatility of those returns. In particular high returns and low volatility were shown to be favourable to time diversification. One implication is that index funds may be more likely to demonstrate time diversification than actively-managed funds.

### *Theory*

The considerations relating to knowledge are also applicable to theory. By assembling a body of knowledge relating to personal finance, a body of theory is simultaneously constructed. The theories covered within the proposed personal finance curriculum become the body of theory of the discipline of personal finance. Examples of such theories include mean-variance diversification (modern portfolio theory) from finance, life cycle theory from economics, and future time perspective from psychology.

Figure 1 (page 29) provides a theory of personal finance practice and education based on the curriculum within *Personal Finance and Investments: A Behavioural Finance Perspective* (2008). In particular figure 1 (and the curriculum) suggests that the body of knowledge relating to personal finance can be analysed in terms of six themes, including themes incorporating psychological and relationship dimensions.

My *Journal of Financial Service Professionals* articles have extended the theory of index funds by analysing them from the perspective of how investors perceive them; in other words index funds are no longer analysed in isolation from their investors. The approach of analysing the issue of client trust in terms of a matrix of six cells (rational versus irrational as one dimension; adviser, product provider, and asset market as the other dimension) has provided a theoretical framework for the analysis of client trust.

### *Methodology*

I would contend that I have demonstrated that literature developed for old disciplines can be distilled for the purpose of informing a new discipline, and for the purpose of establishing a curriculum for that new discipline. Also, points relating to knowledge and theory also apply to methodologies. The application of other disciplines to personal finance entails the simultaneous transfer of the methodologies of those disciplines to personal finance.

The introduction of ‘Personality, environment and thought processes of the client’ and ‘Relationship between client and adviser’ as themes within a personal finance curriculum (see figure 1, page29) suggests additional methodological dimensions to the education and training of personal financial advisers. Conventionally training programmes have emphasised the objectivist methodology.

Investment instruments and principles of portfolio management are elements that present a reality that is separate from the adviser and client, and lend themselves to a quantitative approach (albeit with qualitative and judgemental dimensions). ‘Personality, environment and thought processes of the client’ and ‘Relationship between client and adviser’ introduce a subjectivist dimension to the

education and training of personal financial advisers. The adviser needs to attempt to see personal finance and financial instruments through the eyes of the client, and to understand the meaning assigned to them by the client. Empathy is required. Attempts to force a client to see personal finance as the adviser sees it may be inhibiting to the client's engagement with the process of personal financial management. A well-trained adviser should appreciate the need to attempt to see the world of personal finance as the client sees it. So a subjectivist methodology needs to be taught alongside an objectivist methodology (Saunders, Lewis and Thornhill 2009).

### *Practice*

It is to be expected that the establishment of personal finance as an academic discipline will inform the practice of personal financial management, and the practice of personal financial advice. The personal finance curriculum provided by my research, in particular *Personal Finance and Investments: A Behavioural Finance Perspective* (2008), constitutes a basis for designing programmes for the education and training of personal financial advisers. Simultaneously the curriculum indicates directions for research into personal financial management, and personal financial advice.

## **11.0 CONCLUSION AND CLAIM FOR PHD EQUIVALENCE**

I contend that my research has achieved the following:

1. Developed a multidisciplinary curriculum for (and thereby definition of) personal finance, as an academic discipline, in the form of a book.
2. Demonstrated the relevance of theories from various disciplines for personal finance.
3. Highlighted the need to consider psychological, social, and relationship dimensions in the practice of personal financial advice, and in the education of personal financial advisers.
4. Developed understanding of index fund investment, and client trust, by using behavioural finance concepts.
5. Demonstrated that the existence of time diversification is dependent on investment returns, and their volatility.

On the basis of the above, it is argued that I have achieved my aim of presenting a multidisciplinary curriculum for personal finance. This has taken the form of a book (*Personal Finance and Investments: A Behavioural Finance Perspective*, 2008). This curriculum serves to define personal finance as an academic discipline. Developing personal finance in these ways lays the foundations for considerably enhanced education and training of financial advisers, and thereby informs the practice of personal financial management and personal financial advice. The aim of contributing to the development of personal finance as an academic discipline has also been achieved, particularly by way of developing behavioural perspectives on personal finance issues and by way of providing new insights into the issue of time diversification.

My work, particularly *Personal Finance and Investments: A Behavioural Finance Perspective* (2008), indicates an ability to carry out a sustained research project and reflects a detailed body of knowledge of the subject matter.

My research has developed sequentially over time. Much of this is not apparent from the publications cited in this report/thesis. *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) followed not only *Risk Management with Futures and Options* (1999) but also a number of other books in the investments and derivatives fields (including *Introduction to Financial Investment*, 1995; *Financial Derivatives*, 1997; *Introducing Investments*, 2003). *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) was both the culmination of previous books and the platform for subsequent research. My 2009, 2010, and 2011 articles described in this overview were based on material covered in *Personal Finance and Investments: A Behavioural Finance Perspective* (2008).

There is a high level of originality in the work. In the cases of the *Journal of Investing* (2010) and *Journal of Index Investing* (2011) articles the originality took the form of investigating the implications of investment growth, and returns volatility, for time diversification; and the form of using computer simulated three-dimensional surfaces as a research methodology. In the cases of the *Journal of*

*Financial Planning* (2009) and *Journal of Financial Service Professionals* (2010 and 2011) articles the originality took the form of exploring behavioural dimensions of personal finance issues. The originality of *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) primarily took the form of the novel personal finance curriculum that it represented. That curriculum was much broader and more multidisciplinary than any previous personal finance curriculum; and was more thoroughly based on academic literature. Even this review has original features, for example the framework represented by figure 1 (page 29) is a structure that constitutes an original approach to the organisation of personal finance practice, education and research.

I would describe the research paradigm of *Personal Finance and Investments: A Behavioural Finance Perspective* (2008), and of the *Journal of Financial Planning* (2009) and *Journal of Financial Service Professionals* (2010 and 2011) articles, as radical structuralist (Burrell and Morgan 1982). The data source was existing academic literature (hence the research was objectivist) and radical change was suggested for the education and training of financial advisers. The research approach was inductive. In the case of *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) existing literature was observed and a curriculum (rather than a theory) was formulated. In the cases of the *Journal of Financial Planning* (2009), and *Journal of Financial Service Professionals* (2010 and 2011), articles ideas were generated and many of those ideas could be turned into testable hypotheses (a subsequent working paper, *Behavioural Determinants of Client Saving for Retirement*, has generated hypotheses that are being tested by means of questionnaires).

The *Journal of Investing* (2010), and *Journal of Index Investing* (2011), articles were functionalist in that they were objectivist (they used existing option pricing models) and they had a regulatory perspective in that they modified the existing knowledge of time diversification and index investing. The approach was deductive in that hypothesised relationships between investment growth, and returns volatility, and time diversification were tested by means of computer simulation.



Critical judgement has been required in the process of deciding what theories and evidence are relevant to personal finance. The formulation of the framework of figure 1 (page 29) entailed an inductive approach. The framework of figure 1 might be seen as a theory of personal finance practice, education and research derived from evidence in the form of academic literature. Decisions relating to the allocation of knowledge and theories to the themes of figure 1 required critical judgement.

In sum it can be considered that my research is equivalent to that of a traditional PhD.

## **APPENDIX 1**

At a number of points in this overview I have suggested that personal finance as an academic subject requires a multidisciplinary approach, and that my research has provided a multidisciplinary approach. The purpose of this appendix is to illustrate the necessity of a multidisciplinary approach by demonstrating the multidisciplinary nature of analyses of specific personal finance topics.

### **Examples of Multidisciplinary Approaches to Personal Finance Topics**

#### ***Saving***

In order to have funds to invest most people need to save. A number of disciplines have implications for saving behaviour. Research based on demography has suggested that demographic features such as age, gender, marital status, culture, ethnicity, religion and education are associated with differences in saving and borrowing behaviour (Stone and Maury 2006; Wakita, Fitzsimmons and Liao 2000).

Psychology has identified a number of variables that influence saving. There is evidence for a link between personality and saving, for example introverts tend to save more than extraverts (Olson 2006; Tice, Bratslavsky and Baumeister 2001; Puri and Robinson 2007; Arabsheibani, de Meza, Maloney and Pearson 2000; Perry 2008; Perry and Morris 2005; Webley and Nyhus 2001) . An internal locus of control appears to be associated with a greater tendency to save (Perry 2008; Perry and Morris 2005). Many people exhibit poor future time perspective and high procrastination, with the result that they fail to save adequately (Rabinovich and Webley 2007; Benartzi and Thaler 2007; Andreou 2007; Lusardi and Mitchell 2007; Ameriks, Caplin and Leahy 2003; Gollwitzer 1999; Deaves, Veit, Bhandari and Cheney 2007; Mandell and Klein 2007; Bernheim, Garrett and Maki 2001; Mann, Beswick, Allouache and Ivey 1989). It has also been found that there is a link between materialism and saving (Watson 2003). Materialistic people are less likely to save. Other psychological theories such as the transtheoretical model of behaviour change and the theory of planned behaviour can also be used to analyze attitudes and behaviour towards saving (Ajzen 1991; Prochaska, DiClemente and Norcross 1992; Gutter, Hayhoe and Wang 2007).

Sociology has highlighted the role of socialization in the formation of attitudes to saving. Sources of socialization include the family and school (Clarke, Heaton, Israelsen and Eggett 2005). The discipline of marketing has identified influences on saving behaviour. For example distrust of financial institutions can deter people from saving (Neukam and Hershey 2003). Negative images of old age can inhibit retirement saving by reducing focus on the future (Harrison, Waite and White 2006). Financial education that improves financial literacy may also increase saving (Bernheim, Garrett and Maki 2001; Mandell and Klein 2009; Peng, Bartholeme, Fox and Cravener 2007; Duflo and Saez 2003; de Meza, Irlenbusch and Reyniers 2008).

Economics makes a contribution. Life cycle theory helps to explain saving behaviour (Modigliani and Brumberg 1954, Friedman 1957). Expenditure is seen as determined by expected lifetime average income rather than by current income. If a person expects rapid income growth, expectations of lifetime income are raised. In consequence current expenditure rises and the rate of saving falls. Another insight from economics is the role of the expected rate of return on investments. For example the relationship between saving and interest rates depends on the relative size of the wealth and substitution effects of changes in interest rates (expected rates of return)(Redhead 1976).

Financial mathematics is of value to a financial adviser who seeks to explain the consequences of saving to a client. The endowment equation enables an adviser to demonstrate the effects of delaying the commencement of saving for retirement, and the effects of choosing investment vehicles that are tax-advantaged. The endowment equation can also illustrate the advantages of choosing investments with low charges (Redhead 2008), and could possibly be used to overcome exponential growth bias (Stango and Zinman 2009).

This discussion of saving has shown that a number of disciplines are relevant to the issue. My work on the subject of personal finance has demonstrated the multidisciplinary nature of personal finance, in particular *Personal Finance and Investments: A Behavioural Finance Perspective* (2008) draws

together the contributions of a number of disciplines to the analysis of personal finance, including saving.

### ***Portfolio Construction***

‘Modern portfolio theory’ (mean-variance diversification) is central to the issue of portfolio construction (Markowitz 1952, 1959). The three major contributions of this model are (i) attention should be given to risk as well as prospective return, (ii) it is not the risk of an investment, but its contribution to portfolio risk, that is important, and (iii) correlations between expected returns of investments are relevant to portfolio construction. The capital asset pricing model provides analytical tools for asset allocation (Sharpe 1964; Lintner 1965; Mossin 1966; Fama and French 1993, 1996). The efficient market hypothesis has significance for the choice between index funds and actively managed funds (Malkiel 2003, 2003a). These three contributions come from finance theory.

Other contributions from finance theory include the use of derivatives in portfolio management (Redhead 1999), evaluation of fund performance (Treynor 1965, Sharpe 1966, Jensen 1968), time diversification (Bodie 1995, Redhead and Shutes 2010, Redhead and Niklewski 2011), and the distinction between capital risk and income risk.

Psychology has pointed out that investors exhibit mental accounting, wherein they fail to see the portfolio as a whole but focus on individual components (Kahneman and Tversky 1982, Thaler 1985).

‘Modern portfolio theory’ requires investors to consider the entire portfolio as a single entity, rather than focus on individual assets within it. If investors focus on individual assets they may fail to consider correlations between assets when constructing portfolios. Goals-based investing may be a better description of how people actually construct portfolios than the prescriptive ‘modern portfolio theory’ (Shefrin and Statman 2000, Brunel 2003, Nevins 2004, Chhabra 2005, DeBrouwer 2009).

Psychology has also provided evidence that investors do not perceive risk as the standard deviation of returns used by ‘modern portfolio theory’ and most finance theory as the measure of risk (Olsen 1997, Jia, Dyer and Butler 1999, Klos, Weber and Weber 2005, Vlaev, Chater and Stewart 2009).

As for the choice between index funds and actively-managed funds, most of the research has come from traditional finance but there are psychological (behavioural) considerations that suggest that retail investors may prefer index funds (Redhead 2010). The discipline of statistics is relevant, for example by providing alternative measures of risk and an evaluation of the procedures whereby index funds are constructed.

*Personal Finance and Investments: A Behavioural Finance Perspective* (2008) brought the various discipline perspectives together in the discussion of portfolio construction.

### ***Structured Products***

Structured products are financially engineered investments that provide risk-return profiles that are not available from simple investments. Institutional investors provide structured products for retail investors. The funds typically make use of bonds, index funds, and derivatives (particularly options). The financial engineering used to construct structured products applies principles from finance and investment mathematics (Redhead 1999).

The rationale for structured products comes from behavioural finance (particularly psychology). Guaranteed capital funds provide a guarantee that the original investment value is safe, and that the investor can be sure of receiving a specified rate of interest. In addition they provide a return linked to the stock market. Some funds sell options and are able to provide payouts based on the receipt of option premiums. Prospect theory, through the concept of loss aversion, provides a strong case for the provision of a guarantee of capital (Kahneman and Tversky 1972, 1973, 1982). Disappointment aversion and regret aversion strengthen the case (Ang, Bekaert and Liu 2005; Fielding and Stracca 2007; Shefrin and Statman 1984; Michenaud and Solnik 2008).

Dividing returns into capital growth, interest, and option premiums maximizes investor satisfaction according to mental accounting and prospect theory (which are theories from psychology). Mental

accounting entails investors separating cash flows in their minds, rather than aggregating them. According to prospect theory subjective value increases at a declining rate with the effect that separating sources of gain maximizes the total satisfaction (Lim 2006).

Another effect of mental accounting is the separation of money in the form of capital from money in the form of dividends or interest (Statman 1997). The 'never touch the capital' view sees capital as untouchable since its erosion would reduce the future source of income (Shefrin and Statman 1984a). Only dividends or interest can be spent. High income funds, by adding receipts from sales of options to dividends, provide an enhanced cash flow that may not appear to erode capital.

**APPENDIX 2****Threshold Concepts Relevant to Personal Finance**

1. Selectivity, interpretation and closure in the process of perception.
2. Heuristic simplification and its associated psychological biases.
3. Self-deception.
4. Social influences on thinking and behaviour.
5. Framing effects.
6. Conflicts of interest and motivated reasoning.
7. Life cycle analysis.
8. Human capital.
9. Monte Carlo simulation.
10. Mean-variance diversification ('modern portfolio theory').
11. Risk-return trade-offs and asset allocation.
12. Time diversification and asset allocation.
13. The efficient market hypothesis.
14. Types of financial risk.
15. The measurement of risk.
16. Probability theory.
17. Household financial ratios.
18. Stock indices and index funds.
19. Agency problems and asymmetric information.
20. Financial engineering with derivatives (structured products).
21. Real versus nominal interest rates.
22. Present value calculations, projections of future value, and average compound rates of return.
23. The mortgage and endowment equations.
24. Pricing assets by discounting expected cash flows.
25. Pricing assets by demand and supply.

**Mention of the Threshold Concepts in Publications**

	<b><u>Black</u></b>	<b><u>Warschauer</u></b>	<b><u>Altfest</u></b>	<b><u>Schuchardt</u></b>	<b><u>Overton</u></b>	<b><u>Redhead</u></b>	<b><u>Brandon</u></b>	<b><u>Professional Programme</u></b>
1.						*		
2.						*		
3.						*		
4.						*		
5.						*		
6.						*		
7.			*	*	*	*		
8.						*		
9.					*	*	*	
10.	*		*		*	*	*	*
11.					*	*	*	*
12.					*	*		*
13.			*		*	*		*
14.					*	*		*
15.						*		*
16.						*		
17.		*						
18.						*		*
19.						*		
20.						*		*
21.						*		
22.					*	*		*
23.						*		
24.						*		
25.						*		



### **APPENDIX 3**

#### **Personal Finance Books**

*Personal Finance*, Kapoor, Dlabay and Hughes, McGraw-Hill (various editions).

*Personal Finance*, Keown, Prentice-Hall (various editions).

*Personal Finance*, Madura, Pearson (various editions).

*Personal Financial Planning*, Harrison, FT Prentice Hall, 2005.

*Personal Financial Planning*, McRae, Chapman and Hall, 1995.

*Personal Finance*, Callaghan, Fribbance and Higginson (eds), Wiley, 2007. \*

\*This text makes some use of academic literature, and has a sociological element.

## **APPENDIX 4**

### **A personal finance curriculum in the form of subject headings**

#### **Theme 1: The personality, environment, and thought processes of the individual retail client.**

##### **Demography**

The association of demographic features such as age, gender, marital status, culture, ethnicity, religion, education and income with differing attitudes to saving, financial products and services.

##### **Psychology**

1. Perception; selectivity, interpretation and closure.
2. Self-deception; self-enhancement bias, overconfidence, illusion of control, illusion of knowledge, outcome bias, hindsight bias, cognitive dissonance, escalation bias, confirmation bias, assimilation bias.
3. Heuristic simplification. Bounded rationality. Intuition versus reasoning, cognitive reflection, exponential growth bias. Paradox of choice, default option bias, extremeness aversion, 1/N bias. Mental accounting, choice bracketing. Framing effects, persuasion bias. Normalcy bias, conservatism, anchoring, status quo bias, endowment bias, familiarity bias, ambiguity aversion. Availability bias, vividness, recency bias, narrow framing. Representativeness, law of small numbers, gambler's fallacy, conjunction fallacy.
4. Prospect theory. Loss aversion. Disappointment aversion. The disposition effect. Hedonic editing. Myopic loss aversion. Cumulative prospect theory.
5. Social influences. Normative and informational social influence. Herding, information cascades, socionomics, memes, contagion.
6. Moods and emotions. Affect heuristic. Attachment bias, ego-involvement, sunk costs. Misattribution bias. Social mood. Market sentiment.
7. Personality. Personality types. Personality and financial decisions. Attachment theory.

8. Motivation. Financial activation and financial inhibition. Emotion and motivation. Regret theory.
9. The transtheoretical model of behaviour (and thought) change. Stages in decision making.
10. Future time perspective, procrastination, hyperbolic discounting, and propensity to plan.
11. Determinants of risk aversion/risk tolerance and measurement of risk aversion/risk tolerance.  
Risk tolerance and risk capacity. Stability of risk aversion/risk tolerance. Projection bias.  
House money and snake bite effects. Betrayal aversion.
12. The theory of planned behaviour. The roles of attitude, subjective norms, and perception of control.
13. Human needs theory. Hierarchy of needs. Needs based investing.
14. Motivated reasoning and the illusion of objectivity.
15. External versus internal locus of control.

## **Sociology**

1. The role of socialization in the formation of attitudes to money, saving, financial self-discipline, risk-taking, dependence, personal responsibility, and the capability of exercising control over personal finances. The importance of the family, school and other agencies in socialization.
2. The implications of social networks for the sources, spread and quality of information relating to personal finance and investments.
3. Consumerism, materialism and saving. The relationship between materialism and saving.
4. The human ecological model and the financial planning process. The microsystem, the mesosystem, the exosystem, and the macrosystem.
5. Social norms in investment preferences. Socially responsible investing.
6. The role of the media in transmitting information, forming attitudes, and creating social mood.
7. The generation and influence of rumours.

**Theme 2: The relationship between the client and an adviser.****Communication, Counselling and Education**

1. Relationship building; interviewing techniques, creating rapport, recognizing resistance, unconditional positive regard, empathy, listening skills, nonverbal communication, client orientation.
2. The power and influence dynamics in an adviser/client relationship.
3. Financial education; educating clients, the association between financial education and financial behaviour.

**Ethics**

1. Due care and good faith, disclosure of information, management of conflicts of interest.
2. The issue of whether the influence of conflicts of interest can be entirely removed from adviser/client relationships.
3. Ethics as a means of building reputation.
4. Ethics as a means of building market confidence.
5. Ethics as a constraint versus ethics as an objective.

**Law and Regulation**

1. The legal position with respect to the adviser/client relationship.
2. Law in relation to financial products and services.
3. Law of contracts, liability, negligence, torts, and consumer protection.
4. The rationale of regulation, the costs of regulation, alternative approaches to regulation, theories of regulation.

**Marketing**

1. Financial activation and financial inhibition. For example positive and negative affect relating to saving for retirement.

2. Framing effects. For example presenting past investment returns over long periods in order to avoid the revelation of short-term periods of loss, or presenting annuities as insurance rather than as investments.
3. The need to create client trust in the adviser, the product provider, and the markets into which investments are made.
4. The influence of mood on financial decisions. The roles of personal service and ambience.
5. Classification of clients according to personality, preferences and behaviour.

### **Theme 3: Principles of retail portfolio construction**

#### **Accounting**

1. The construction of household accounts in the form of a balance sheet, profit-and-loss account, and cash flow statement.
2. Ratio analysis; liquid assets/monthly expenses, savings/income, non-mortgage debt payments/after-tax income, total debt payments/after-tax income.
3. The capital accumulation ratio as an indicator of how well a household is prepared for retirement.
4. The ratios of total assets to total debt, liquid assets to disposable income, and debt to disposable income as predictors of household insolvency.

#### **Economics**

1. The life-cycle and permanent income hypotheses. Reservation wealth.
2. Inter-temporal utility maximization. Optimizing versus satisficing. Maximin and minimax.
3. Human capital theory. Expenditure on education and health as forms of investment.
4. Inflation-protection. The case for index linking.
5. Real and nominal interest rates. Inflation and debt. Implications for mortgages.
6. Exchange rate risk. Implications for foreign currency assets and liabilities.
7. Interest rate determination and interest rate risk.

8. The relationship between interest rates and saving. Wealth and substitution effects.
9. The relationship between annuity rates and bond yields, and the relationship between bond yields and interest rates.
10. Should personal finance decisions use forecasts? Can interest rate changes be forecast? Is there a relationship between economic cycles and stock market cycles, and can either be forecast?

### **Financial Mathematics**

1. Projected growth of lump sum investments.
2. Present value calculations of expected cash flows.
3. The endowment equation for estimating the accumulation from regular investments.
4. The mortgage equation for calculating periodic mortgage payments.
5. Calculation of annuity rates.
6. Estimation of drawdown rates of financial assets during retirement.
7. Scenario analysis using Monte Carlo simulation.

### **Investment Analysis**

1. 'Modern portfolio theory' (mean-variance diversification). The 1/N strategy.
2. Behavioural portfolios, goals-based investing and needs-based investing as alternative portfolio strategies to mean-variance diversification and 1/N.
3. Guaranteed capital (floor) funds. High-yield funds. Use of options.
4. Actively-managed funds versus index funds.
5. The use of derivatives in the structuring of index funds.
6. The use of derivatives in fund management. Risk management with derivatives.
7. Style investing. Value stocks and growth stocks. Style rotation.
8. Life-styling.
9. The relationship between expected return and risk. Capital market theory; the capital asset pricing model.
10. Evaluation of fund performance. Ascertaining risk-adjusted rates of return.

11. The effects of expenses and taxation on the long-term accumulation of funds.
12. Asset allocation and the extent to which it should depend on the investment horizon. Time diversification.
13. The relative merits of dollar cost averaging and lump sum investments.
14. The efficient market hypothesis and the adaptive market hypothesis. Should personal financial decisions use forecasts? Is it possible to time market peaks and troughs? Is it possible to select stocks that will out-perform the market? Momentum and contrarian strategies.
15. Types of risk; capital risk, income risk, market risk, diversifiable risk, non-diversifiable risk, active risk, inflation risk, currency risk, liquidity risk, default risk, political risk, world-event risk.
16. The behaviour of investors during market bubbles and crashes.

### **Statistics**

1. The difference between risk and uncertainty.
2. The measurement of risk; variance, standard deviation, skewness, kurtosis, semi-variance, probability of loss, value-at-risk.
3. Probability, e.g. estimating the likelihood that a succession of out-performances could be the result of chance rather than investment management skill.
4. Construction of the stock indices that are used as performance benchmarks and as the bases of index funds.
5. Price (inflation) indices.
6. The presentation, and interpretation, of descriptive statistics.
7. Actuarial statistics. Life expectancy estimates.

### **Strategic Management**

1. SWOT. Strengths, weaknesses, opportunities, threats.
2. CORE. Circumstances, objectives, risk, expenditure.

3. Models of financial planning. Needs-based and problem-based planning. Consultant planners, product planners, slice planners, and comprehensive planners.

#### **Theme 4: Institutional investments such as mutual funds and pension funds.**

##### **Financial Institutions**

1. Banks, mutual funds, closed-end funds, insurance companies, pension schemes, hedge funds, and the other institutions with which individuals interact.
2. Agency problems, asymmetric information, economies of scale, the provision of liquidity.
3. Quality assurance in financial services.

##### **Insurance**

1. Insurance as the transfer of risk. The meaning of insurable risk.
2. The significance of asymmetric information, adverse selection and moral hazard for the provision and pricing of insurance.
3. Property insurance, life insurance, medical insurance, accident insurance, unemployment insurance, liability insurance, long-term care insurance.
4. Annuities as insurance.

##### **Taxation**

1. Taxation of individuals and of investment funds.
2. Tax-advantaged investment schemes.
3. Annual tax versus deferred tax; implications for investment outcomes.



**Theme 5: Non-institutional instruments such as deposits, stocks, bonds, real estate, and government-funded benefits.**

**Political Economy**

1. The division of personal finance provision between the government, employer and individual; the individualization of responsibility.
2. Population ageing, welfare provision, public expenditure and taxation.
3. The issue of whether the individual has a moral and social responsibility to avoid dependence on the government (the taxpayer).
4. Government policy towards personal finance and saving.
5. Financial exclusion.

**Investment markets and financial instruments**

1. The nature of interest rates. Simple interest and compound interest. Money market investments. Average compound rates of return.
2. Stock markets and share issues.
3. Stock pricing models. Pricing assets by discounting expected cash flows.
4. Bonds: bond markets and bond issues; bond pricing; bond characteristics including duration and convexity; credit rating.
5. Human capital. Human capital as a bond.
6. Real estate as an investment class. Buy-to-let. REITs.
7. Mortgages as liabilities.
8. Mortgage-backed securities, including CMOs.

**APPENDIX 5**

**Financial Services Authority RDR (QCF Level 4) Core Unit 2 ‘Investment Principles and Risk’**











## **APPENDIX 6**

### **Illustrations of industry discontent with the FSA's proposed changes to qualification requirements**

The following editorial and letters are from *Money Management*, which is a publication targeted at financial advisers. The purpose of including these items is to illustrate the opposition amongst financial advisers to the enhancement to qualification standards required by the FSA, and the feeling that the additional examination requirements will result in advisers leaving the industry. The underlining indicates the most relevant passages. It is to be emphasised that the present author does not necessarily agree with the views expressed in the editorial and letters.

An article from *Money Management* (entitled 'A complex conundrum') is also included in this appendix to illustrate that there is also support amongst financial advisers for the FSA's required enhancement to qualification standards under the RDR (Retail Distribution Review). The sections entitled 'Topping up' and 'IFA feedback' on the second page of the article are of particular relevance.

It has been reported that the Head of the FSA predicted, in 2011, that about 20% of advisers would leave the industry because of the RDR whilst a survey of advisers suggested that around 10% would leave ('What advisers want', *Money Management*, October 2011 pp. 32-36).















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## UNIT TITLE: INVESTMENT PRINCIPLES AND RISK

Attainment Level	Learning Outcome	Indicative Content
Demonstrate an ability to analyse:	The characteristics, inherent risks, behaviour and correlation of asset classes	<ul style="list-style-type: none"> <li>• Cash and cash equivalents:             <ul style="list-style-type: none"> <li>– Main types, costs and charges</li> </ul> </li> <li>• Fixed interest securities:             <ul style="list-style-type: none"> <li>– Main types</li> <li>– Running and redemption yields, interest rates and yield curves</li> <li>– Markets and indices</li> <li>– Transaction costs – purchase and sale</li> </ul> </li> <li>• Equities:             <ul style="list-style-type: none"> <li>– Main types, private equity</li> <li>– Valuation measures – Price/Earnings (P/E) ratio, dividend yield and cover, Net Asset Value (NAV)</li> <li>– Stock markets – indices, listings</li> <li>– Transaction costs</li> </ul> </li> <li>• Property:             <ul style="list-style-type: none"> <li>– Main types, residential and commercial, income profile and gearing</li> <li>– Valuation</li> <li>– Performance benchmarking</li> <li>– Transaction and on-going costs</li> </ul> </li> <li>• Alternative investments such as commodities, and physical assets.</li> <li>• Pricing, liquidity and fair value</li> <li>• Correlation of asset classes – relevance to asset allocation</li> </ul>

<b>Demonstrate an understanding of:</b>	The macro-economic environment and its impact on asset classes	<ul style="list-style-type: none"> <li>• Main long term UK and global socio-economic trends</li> <li>• Overview of world economies and globalisation of markets</li> <li>• Economic and financial cycles – predictability, regional economy differences</li> <li>• The key economic indicators – trends and their interpretation</li> <li>• Significance of monetary and fiscal policy</li> <li>• Relevance of money, inflation, deflation, interest rates and exchange rates</li> <li>• Balance of payments and international capital flows</li> <li>• The role of financial investment in the economy</li> </ul>
<b>Demonstrate an understanding of:</b>	The merits and limitations of the main investment theories	<ul style="list-style-type: none"> <li>• Key features of the main investment theories: <ul style="list-style-type: none"> <li>– Modern portfolio theory</li> <li>– Multi factor model</li> <li>– Efficient market hypothesis</li> <li>– Capital asset pricing model (CAPM)</li> </ul> </li> <li>• Portfolio theory, diversification and hedging <ul style="list-style-type: none"> <li>– Correlation between asset classes</li> <li>– Total return and an awareness of beta and alpha</li> <li>– Risk adjusted returns</li> </ul> </li> <li>• Basics of behavioural finance – market and individual behaviours</li> </ul>
<b>Demonstrate an ability to apply:</b>	The principles of the time value of money	<ul style="list-style-type: none"> <li>• Compound interest and discounting</li> <li>• Real returns and nominal returns</li> </ul>
<b>Demonstrate an ability to analyse and explain:</b>	The nature and impact of the main types of risk on investment performance	<ul style="list-style-type: none"> <li>• Liquidity and access</li> <li>• Income and capital growth, including shortfall</li> <li>• Short term volatility</li> <li>• Long term performance</li> <li>• Gearing</li> </ul>



		<ul style="list-style-type: none"> <li>• Currency</li> <li>• Inflation</li> <li>• Interest rates</li> <li>• Systematic and non-systematic, including fraud and counterparty, institutional, market timing</li> </ul>
<b>Demonstrate the ability to analyse:</b>	The characteristics, inherent risks, behaviours and relevant tax considerations of investment products	<ul style="list-style-type: none"> <li>• The advantages and disadvantages of direct investment in securities and assets compared to indirect investment through collectives and other products</li> <li>• The main types and use of indirect investment products: <ul style="list-style-type: none"> <li>– Investment structures: <ul style="list-style-type: none"> <li>◦ Collective investment funds – onshore and offshore</li> <li>◦ Exchange Traded Funds (ETFs) and Exchange Traded Commodities (ETCs)</li> <li>◦ Closed ended funds/investment companies – onshore and offshore</li> <li>◦ Individual Savings Accounts (ISAs) and Child Trust Funds (CTFs)</li> <li>◦ National Savings and Investments</li> <li>◦ Life assurance based investments – onshore and offshore</li> <li>◦ Defined contribution (DC) pension arrangements</li> <li>◦ Real Estate Investment Trusts (REITs) and other property based products</li> <li>◦ Venture Capital Trusts (VCTs) and Enterprise Investment Schemes (EISs) – basic structures and uses</li> <li>◦ Broker funds and distributor influenced funds (DIFs)</li> </ul> </li> <li>– Derivatives: <ul style="list-style-type: none"> <li>◦ Basic structure, main types and uses</li> </ul> </li> <li>– Investment strategy based products - <ul style="list-style-type: none"> <li>◦ Hedge funds and funds of hedge funds</li> <li>◦ Absolute return funds</li> <li>◦ Structured products – income and capital growth, structure and analysis</li> <li>◦ With profit funds – main principles</li> </ul> </li> </ul> </li> </ul>

<p><b>Demonstrate an ability to apply:</b></p>	<p>The investment advice process</p>	<ul style="list-style-type: none"> <li>• Know your client requirements:             <ul style="list-style-type: none"> <li>– Explain the investment process</li> <li>– Establish client relationships, capability and circumstances including assets and debts</li> <li>– Agree and prioritise needs and wants</li> <li>– Agree investment objectives, growth, income, time horizons, debt and credit management and repayment</li> <li>– Determine and agree risk profile – objective and subjective factors</li> <li>– Assess affordability and other suitability considerations, ethical, social responsibility and religious preferences</li> <li>– Agree strategy and rationale to achieve the objectives</li> <li>– Agree benchmark/performance measures and review process</li> </ul> </li> <li>• Asset allocation:             <ul style="list-style-type: none"> <li>– Alignment with client risk profile and requirements</li> <li>– Diversification and correlation benefits</li> <li>– Accumulation and decumulation</li> </ul> </li> </ul>
<p><b>Demonstrate an understanding of:</b></p>	<p>The principles of investment planning</p>	<ul style="list-style-type: none"> <li>• Asset allocation             <ul style="list-style-type: none"> <li>– Stochastic modelling</li> <li>– Strategic and tactical asset allocation</li> </ul> </li> <li>• Portfolio construction:             <ul style="list-style-type: none"> <li>– Stock and fund selection</li> <li>– Diversification by sector, geographical area and currency</li> <li>– Main fund management strategies and styles</li> <li>– Costs, charges, Total Expense Ratios (TERs), Portfolio Turnover Ratios (PTRs)</li> <li>– Selection of products, tax wrapper and services</li> <li>– Provider selection and due diligence</li> <li>– Recommendations and suitability</li> </ul> </li> </ul>

		<ul style="list-style-type: none"> <li>• Wrap and other platforms:             <ul style="list-style-type: none"> <li>– Concept and uses</li> <li>– Benefits and risks</li> <li>– Costs/charges</li> </ul> </li> </ul>
<b>Demonstrate an ability to analyse:</b>	The performance of investments	<ul style="list-style-type: none"> <li>• Portfolio performance:             <ul style="list-style-type: none"> <li>– Methods of evaluating portfolio performance</li> <li>– Selection and use of benchmarks</li> <li>– New money and timing factors</li> </ul> </li> <li>• Portfolio review and administration:             <ul style="list-style-type: none"> <li>– Changes in client circumstances</li> <li>– Changes in financial environment</li> <li>– New products and services available</li> <li>– Maintenance of products and services</li> <li>– Use of external services/benchmarking</li> <li>– Rebalancing</li> </ul> </li> </ul>

## **Appendix 6 – Illustrations of industry discontent with the FSA’s proposed changes to qualification requirements**

The following editorial and letters are from *Money Management*, which is a publication targeted at financial advisers. The purpose of including these items is to illustrate the opposition amongst financial advisers to the enhancement to qualification standards required by the FSA, and the feeling that the additional examination requirements will result in advisers leaving the industry. The underlining indicates the most relevant passages. It is to be emphasised that the present author does not necessarily agree with the views expressed in the editorial and letters.

An article from *Money Management* (entitled ‘A complex conundrum’) is also included in this appendix to illustrate that there is also support amongst financial advisers for the FSA’s required enhancement to qualification standards under the RDR (Retail Distribution Review). The sections entitled ‘Topping up’ and ‘IFA feedback’ on the second page of the article are of particular relevance.

It has been reported that the Head of the FSA predicted, in 2011, that about 20% of advisers would leave the industry because of the RDR whilst a survey of advisers suggested that around 10% would leave (‘What advisers want’, *Money Management*, October 2011 pp. 32-36).

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