

March 2011

*Learning how to invest: using reflective practice to understand how a
Malaysian fund manager makes decisions*

Samsukri Glanville bin Mohamad¹
Chad Perry²

Abstract

At the core of successful asset management firms is a competent fund manager who makes investment decisions. However, the training and education of a fund manager goes beyond what is taught in the finance departments of business schools at universities. How might asset management firms build employee fund management competencies within their firms and how might prospective fund managers learn their trade? This question is important for me as an investment manager and for other investors and their firms. This research is about how reflective practice was used by a fund manager over a 29-month period, from August 2005 to January 2008, to build an understanding of his investment decision making process. This report notes background decision literature and the research setting of Malaysia, identifies four research issues about how fund managers make decisions, describes its reflective practice methodology in some depth and analyses the collected data. Its contributions to the finance literature centre on its findings about how a Malaysian investment manager learnt that his experience and non-quantitative methods were a core part of his investment decision making. It also contributes to the reflective practice literature through its detailed description of a reflecting manager's development and his use of the dialectic soft systems process.

Key words: investors, investing, behavioural finance, reflective practice, equities, Malaysia, stock exchange

¹ Research Fellow at Gibaran Graduate School of Business

² Professor at Gibaran Graduate School of Business

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Introduction

At the core of successful asset management firms is a competent fund manager who makes investment decisions. Decision making is a central theme in several academic fields including economics, psychology, administrative studies, social sciences, anthropology and medicine (Garro 1998; Matlin 2002). However, the adoption of ideas from these fields into finance has been slow. The aim of this research by a fund manager in Malaysia was to use reflective practice to explore and improve his practices. That is, this article is about how reflective practice was used by a fund manager over a 29-month period, from August 2005 to January 2008, to learn and build an understanding of his investment decision making process. A conceptual framework was built and four steps in the decision making process were made more explicit than before. Reflective practice has not been used by an investor in a rigorous way before and so this research contributes to the investment literature. Its careful description of the unusual reflective practice methodology, including its dialectic soft systems process and its reflecting manager perspective, are also noteworthy.

The article has six sections. The first provides some background from the decision making literature. The second briefly describes the research setting of Malaysia. Next, a conceptual framework and related research issues are developed. Then the methodology is justified and described in some detail. Distinctive features of the analysis are noted, that is, its contributions to the finance and the methodology literatures. Then implications for policy and practice are provided before limitations and further research are outlined.

Because this research endeavours to merge theory and practice, the following definition was developed to include both the theory of investment (Zvi Bodie & Marcus 1995) and the practice of speculation (Graham 1949): *An investment is the current commitment of money or other resources in the hope of reaping future benefits and is based on a through analysis of market price and intrinsic value.* For the same reason, this study of decision making in financial markets defines decision making in this comprehensive way (incorporating, for example, Kahneman & Tversky 2000): *A process of understanding, both consciously and subconsciously, a complex environment in order to take investment action.*

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Background

Much finance literature is grounded in neoclassical theory. The *neoclassical* finance theory paradigm of many business schools assumes that conclusions must be proven by mathematical logic, thus the adoption of non-mathematical models and concepts into finance theory has been slow. However, these non-mathematical models and concepts may apply in finance because financial market-based decisions occur in a complex environment (Beinhocker 2006). The environment is complex because of its multivariable dynamic nature and because decisions are often based on assumptions about the future. This limitation of normative decision making theories like neoclassical finance is enforced by the limited computational optimization capacity of the human mind. Even if values of preferences and probability are quantified, the computer processing required to compute the optimization and thus solve the decision problem of, say, expected utility, is an unrealistic assumption about the computational ability of the neoclassical economists' economic human mind (Simon 1955; Quinn 1978; Kahneman 1981) – an assumption about the human mind that is not real (Abelson 1976). That is, the minds of 'real' humans do not process and calculate information like computers.

Another limitation of normative decision making theories is that normative models do not effectively deal with the future for investment decision making, for two reasons. The first reason is that normative based theories are limited in their understanding of human decision making processes. The normative ethos that the underlying unit of investigation should not be affected by the investigator is consistent with the positivism scientific paradigm used in the natural sciences (Yin 2003). In contrast, management theories of action, such as action research, reflective practice and espoused theory are not limited to positivism style theory building (Argyris 1980; Schon 1983; Dick 1999). The second reason that normative models do not effectively deal with the future with regard to investment is that normative models do not make accurate predictions over time (Fama 1970; Taleb 2007). Normative models do take risk and its associated probabilities into account, but cannot take uncertainty (which is not quantifiable) into account.

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

However, human minds can deal with complexity and the future for the human mind can deal with social situations, culture and emotion (Garro 1998). The human mind can also project into the future either intuitively or consciously (Klein 1998; Gladwell 2005). *Descriptive* models of human decision making have little interest in neoclassical rationality, instead, these models focus on discovering how an actual decision was made (Klein 1998, 1994; Salas 2001) and the cognitive process involved (Klein 1994; Stein 1996). Descriptive models have the capacity to deal with complexity and rich situations, and investment models should deal with complexity and projection, and incorporate richness in both data collection and analysis. Thus, for behaviour to be predictable and rational, an understanding of how the heuristics are structured must be formed. The nature of a heuristics structure will be a function of the heuristics owner's psychology as a perceiving thinking and learning entity (Simon 1957), or in other words, their perception of rationality. This issue of a frame of rationality leads into how the decision maker frames the decision (Tversky & Kahneman 1974). Laboratory experiments have shown that if the same situation is framed in different ways, different decisions are made. Thus, framing may be seen as a step in dealing with complexity.

Another approach to decision making is the *naturalistic* one. Naturalistic decision making is the descriptive modelling of decision making by studying decisions in naturalistic or real world settings. Naturalistic models are based in rich real situations and related methods of data collection and resulting models are required to incorporate rich situational specific factors. The studies have analysed experts in their field and how important decisions were made, including airline crews, naval officers and fire fighters (Klein 1998). Experts such as airline crews make 'recognition reflexive' decisions based on recognized conditions and then spend their time and effort verifying them (Klein 1998). Mathematical reduction and optimization are not used, confirming previous positions that argued against the expected utility theory and economic humans (Simon 1955; Tversky 1969; Allias 1987). Indeed, the crews spent little time comparing options and instead spent time on achieving situational awareness (Mosier & Chidester 1991).

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Naturalistic studies also found that decision makers made 'gut' choices and then rationalized them by comparing alternatives after the event (Klein 1998). For example, expert fire fighters do not 'choose' from several courses of action but they do what they feel is the obvious course of action. This reliance on gut feeling is similar to the descriptive account of practitioners' investment decision making processes (Schwager 1989; Rogers 2004). Based on the way these experts decide, it is clear that intuition grows from experience (Klein 1998). Rigorous analysis could not be used in these naturalistic settings.

In brief, there are several possible approaches to financial decision making. Which one is or would be appropriate for a Malaysian investment manager, or would a combination of approaches be best?

Research setting

Consider the research setting of the Malaysian capital market. Before the founding of modern day Malaysia, Malaya was a British colony like Singapore, Australian and New Zealand. Thus, unlike many other countries in South East Asia, most business transactions in Malaysia are based on English common law (Salleh 1993). This history means that regulation of the financial industry is also influenced by other common law-based countries. For example, the 2002 compliance examination study guide for compliance officers was drafted with the assistance of the Securities Institute of Australia.

Despite these similarities with other countries, investing in equities in Malaysia has special characteristics that make it worthy of this study. The economy has its own currency, and fiscal and monetary management. Since 1970, the allocation of resources based on private investment decision making and public policy has helped Malaysia to grow into a middle income country (Central Intelligence Agency 2008). Going forward, the government has a target to reach developed country status by 2020 (Sarji 1993). The gross domestic product for 2008 was US\$214 billion, placing Malaysia as the 31st largest economy in the world by purchasing power (Central Intelligence Agency 2008).

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

In Malaysia, one of the main tools for price discovery for securities is the Bursa Malaysia Stock Exchange. After the financial crises of the late 1990s the regulatory infrastructure shifted towards a disclosure based system (Securities Commission 2002). Regulation of the capital markets in Malaysia is conducted by the Securities Commission of Malaysia and five frontline regulators. But how does an asset manager decide which of the 1000 companies listed on the exchange to invest in?

The researcher (the first author) is a junior fund manager for eAsset management, a licensed asset management company in Malaysia that carries out the business of fund management. In this capacity as a fund manager, the researcher has been involved in the analysis, purchase and sale of stocks on the Kuala Lumpur stock exchange since April 2001.

Conceptual framework

Now that the decision making and the Malaysian setting have been examined, a conceptual framework to guide data collection and analysis can be formulated. *A priori*, the framework has four steps: understanding the economy, investment strategy, fundamental analysis, and decision.

Step 1: Understand the economy. The first step of understanding the economy involves sense making about the current state of the economy in order to predict future security prices. This sense making may be seen as a type of situation construal (Ross 1987) or more broadly as situational awareness (Klein 1998). Is this understanding of the general economy needed when making investment decisions? Some practitioners do not regard an accurate forecast of the macro economic environment important in making investment decisions (Hagstrom 2005). However, other investors base their investment decisions on forecasting macroeconomic events (Soros 1995; Rogers 2004). Research in a Malaysian context has not concluded a position on whether or not a view of the economy is necessary.

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Moreover, if an understanding of the economy is a first step, is neoclassical economics used by investors for that understanding in Malaysia? It was noted above that economic models of understanding based on these reductionist and probabilistic inferences retard predictive capabilities (Fama 1970; Malkiel 1973; Taleb 2007). However, these methods are still taught in investment courses in Malaysia.

Given these concerns about whether and how to understand the economy, the first research issue is: *How do I understand the economy for investment decision making?*

Step 2: Form an investment strategy. The second step in the decision making process is constructing a strategy consistent with the economic view built in step one, that is, aligning specific security transactions with this economic understanding. How does an investor organize action related to those security transactions? Are the strategies top down or bottom up? Top down investment strategies are examined and defined in the investment literature (Zvi Bodie & Marcus 1995). The top down view is consistent with cognitive psychological findings on the way the brain process information. The processing of information that leads to perception can be described as top down, meaning that the higher level processes in the brain of concepts, memory and expectations influence object recognition (Matlin 2002). Stimuli are processed faster by past knowledge or, put another way, we recognise elements in context faster than when they are alone. This faster processing has been demonstrated by the word superiority effect (Reicher 1969; Cattell, 1886). The word superiority effect concludes that subjects recognise a letter in a word faster than when it is by itself (Matlin 2002). This superiority effect may explain why experts with vast stores of concepts and memories have the ability to leverage, that is, focus on the information (or parts of the problem) that is most relevant, discarding irrelevant noise (Klein 1998).

Alternatively, bottom up processing could be used. Bottom up processes focus on the importance of stimuli in object recognition (Matlin 2002). Bottom up processing for security investment may approximate value investing, where there is no focus on the macroeconomic environment and thus no top down strategy (Benjamin & Dodd 1934; Graham 1949; Hagstrom 2005). However, the process of recognising the value proposition may be seen as

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

the strategy in this case. This process may be seen as the embedded strategy in the certified financial analysis syllabus but no research about investing considers it a strategy.

Thus research issue 2 is: *How do I form investment strategies?*

Step 3: Identify securities. This strategy of step 2 leads into step 3, which is the analytical process of identifying target investment securities. This research centres on ascertaining the value of an investment security in order to estimate the future price of that security.

However, studies have found a gap between the use of basic fundamental analysis methods such as discounted cash flow, and practice (Block 1999). The main problem with fundamental analysis for equity securities is defining the firm's income stream and how this future stream should be discounted to the present (Graham 1949). Neoclassical theoreticians did not provide methods to estimate future income or the risk of whether or not that income will materialize (Markowitz 1952). Neoclassical theoreticians quantified risk as variance. Especially troublesome for American practitioners was the relevance of an estimation of risk that was defined by historical price movements (Graham 1949). In addition, risk factors are non quantifiable, such as the evaluation of management ability (Benjamin and Dodd 1934). Thus, the question arises: how does an investor in Malaysia deal with risk? Is risk quantified and if so, what meaning would investors give that quantification?

Value investment practitioners have established methods to approximate a firm's future income stream (Benjamin and Dodd 1934). It is not known if investment decisions in Malaysia are based merely on these valuations or if other more complex factors are involved. If valuation models are used, exactly how a numeric value for future cash flows and discount factors is found in Malaysia is unknown. Alternatively, quantitative, rule-based models of stock picking like stochastic modelling of price and risk can be used to make direct price predictions. It is not known whether Malaysian investment practitioners employ these stochastic models in order to invest.

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

All the uncertainty above leads to research issue 3: *How do I estimate the future price of securities for investment decision making?*

Step 4: Make the investment decision. Step 4 in the investment decision making process is making the actual decision. Neoclassical finance sees this decision as rational, however, decision theorists from other fields describe decisions as including complex factors that lie outside of this rational processing model. For example, factors such as emotion, intuition and gut feel are omitted by the economic human perspective (Klein 1998; Simon 1955; Kahneman 2002).

Indeed, all such decisions occur in a *complex* multivariable dynamic environment (Beinhocker 2006). Human minds have to deal with complexity and the future (Matlin 2002). Hence, models of decision making should deal with complexity and projection, and incorporate richness in both data collection and analysis, unlike neoclassical theories. The most sophisticated artificial intelligence cannot begin to match our perception skills (Matlin 2002; Tarr 2003) but do I use computer based models such as artificial intelligence? If not, how does the deductive logic and inductive pattern recognition (Beinhocker 2006) occur? More specifically, how might inductive reasoning produce analogies (Mitchell 1993) for investors? Emotional functions are seen as being enmeshed in the bastion of reasoning (Pfister 2008). Moreover, since cultural understanding influences perception, culture must play a role in the construction of our decision rules (Fjellman 1976; Holland & Quinn 1987). A descriptive study of choice that does not preclude cultural reasons (Sahlins 1976) may provide a platform for the consideration of the importance of culture. Descriptive accounts of US investment practitioners have identified how an intuition or a feeling that the market is not acting like it should, is a base for investment decisions (Schwager 1989). However, how does intuition apply to Malaysian investors?

Thus the fourth research issue is: *How do I make investment decisions?*

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Steps 5, 6 and 7: Execute entry, monitoring and exit. There are three more, later steps of the investment process that are made *after* the investment decision has been made: execution, monitoring and exiting. Because this research seeks to investigate the core investment decision making processes, these final three steps that flow from the four core steps above will not be included here. However, the final three steps may interest future researchers. In brief, the core of this investigation and thus the focus of the research issues is the investment decision making processes.

Methodology

This research's methodology was *reflective practice* (Schon 1983) in which the reflection method used was dialectic soft systems (Checkland 1999; Wilson 2001; Dick 2000). This reflective practice stage was used to clarify the research issues that were developed above. Reflective practice is a qualitative methodology that can be used to build theory from experience (Schon 1983). Reflective practice can access tacit knowledge by employing reflective conversations, frame analysis or other reflection methods that are the core of practice for experienced professionals (Nonaka et al. 2000).

Justification for using reflective practice in this research. Using reflective practice to investigate the research problem of how investment decision making occurs is justified for four reasons: the gap between theory and practice that it can address, its ability to extract tacit knowledge, its focus on practice, and it can access data that is rarely available. The first reason why reflective practice was used to investigate the research issues is the theory/practice gap that exists in investment decision making. Technical rationality underlies many undergraduate and professional education degrees, however, missing from the teaching of that technical rationality is a theory of how to act out or apply that technical competence (Schon 1983). For example, few investment professionals used discounted cash flow as an investment decision making model (Block 1999).

The second reason for using reflective practice to investigate the research problem is that reflective practice can extract tacit knowledge (Nonaka et al. 2000; Schon 1983). A part of

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

some decision making process is tacit or intuitive (Klein 1998; Kahneman 2002), as noted above. Thus a method of analysis that recognises this tacit intuitive element may provide a broader understanding of the investment process.

Another reason for using reflective practice is that reflective practice focuses on action to derive theory (Argyris & Schön 1978), and this research is about a professional's practice. This action emphasis is important because experts learn by doing (Klein 1998). Experts learn by deliberate practice, practice that can be measured and evaluated with specific goals and objectives (Klein 1998), and this model of learning is consistent with reflective practice (Schon 1983). Experts also learn by compiling an experience bank and obtain accurate, diagnostic and timely feedback (Klein 1998). Experts also enrich their experience with review and reflection. Experience itself is insufficient to become an expert - feedback of the nature described above is required as well as experience. I wanted to become more expert.

A final justification for reflective practice is that data needed to study investment decision making is rarely accessible to academic researchers and this inquiry gave a window on to an essential part of that decision making (Yin 2003). The data on investment decision making was available to the researcher because as a fund manager I was immersed in the research problem as part of my daily work, and that provided some understanding of the situation.

Paradigms. Before proceeding further with a description of the methodology, consider the scientific paradigm within which this research can be positioned because a first step in a research project should be the choice and justification of a scientific paradigm (Phillips & Pugh 1987). Three paradigms to consider are positivism, constructivism and realism (Perry, Riege & Brown 1999), with constructivism being the appropriate one for this research.

Most of the literature of finance and decision making is based on the scientific *positivism* paradigm (Yin 2003; Schon 1983); it is the default epistemology of both economics and business administration research (Beinhocker 2006; Yin 2003). The positivism epistemology

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

of investment decision making is that the researcher exists separate from the decision making process. Thus, the researcher has no effect on the underlying reality of the study. This epistemology was not appropriate for this study because reflective practice, the researcher is the creator of the investment decisions under investigation and thus had significant influence over the underlying reality of the study.

Moreover, there is another issue related to the application of finance theory using the usual positivism scientific paradigm – it is completely ignored by some practitioners. There is a growing body of evidence built on practitioner accounts (Taleb 2007; Taleb 2005; Hagstrom 2005; Rogers 2004), and practitioner interviews (Schwager 1989) of investment reasoning and decision making that suggest much of the investment knowledge built on the positivism paradigm is ignored in practice. Many references made to the application of neoclassical economic positivism based knowledge by practitioners suggests it is wrong as well as useless (Taleb 2007; Graham 1949).

Next, consider the *constructivism* paradigm. The ontology of the constructivism paradigm is that reality is a mental construct based on an individual's belief system at a specific time and place (Healy & Perry 2000). Instead of looking solely at price and volatility as the defining ontology of market decisions like positivism does, the constructivism ontology of a market decision could be defined by the underlying influences upon market price and volatility. These underlying influences are mental constructs that have no objective 'truth' (Miyachi 2002) - the underlying influences can not be measured or proven. That is, under the constructivism ontology, the individual investment decision process exists in soft individual specific factors that may be solely constructs of the individual decision maker's mind, *beyond* specific transaction buy and sell points.

However, although this research about the perceptions of an investor may appear to be constructivism, this research is not pure constructivism for it incorporates an external world *outside* of an individual's mind, in three ways. The accuracy of investment decisions that

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

predict market prices can be tested after a time period, for example, one year after the decision has been made. As well, an investment decision has links to an external world that allocates real financial resources to real companies that themselves allocate and organize real assets. That this 'real' world is beyond the constructs of the decision maker's mind has been summed up by Gummesson (2000, p. 105):

... the company's external environment is always more important than the internal. The real decisions are made in the world outside – among consumers, middlemen, competitors, politicians, legislators and trade organisations... The external environment is neither particularly knowledgeable nor interested in the company and its development [or in an investment decision maker's mind.

In brief, the investment decision appeared to be primarily a constructivism construct about my internal world but it was also about a real external world.

Indeed, because an external world is involved, it was worth considering if the *realism* paradigm was more appropriate for this research. Similar to positivism, the ontology of the realism paradigm is that reality does exist objectively. However, unlike in positivism, that reality is not perfectly knowable because of human limitations and environmental complexity (Guba & Lincoln 1994; Perry, Riege & Brown 1999). Reality consists of abstract things that are born of people's minds but exist independently of any one person ... 'it is largely autonomous, though created by us' (Popper quoted in Magee 1985, p. 61), for example, a legal system. Thus, under realism, a universal picture of investment decision making is not achievable and so models can only move closer to that underlying truth (Aronson, Harre & Way 1995). Under realism, individual investment decisions exist not only in a quantifiable measurable price but also in soft factors that are the bases for that price. These soft factors can not be fully understood because the human brain has limited processing capacity to fully comprehend the complexity of all the factors that underlie market prices (Shiller 2006; Simon 1959).

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

The decision maker impacts and is part of the investment decision making process. But the existence of the investment decision making model created under realism can exist independently of the researcher, like the legal system can exist independently of a lawyer (Perry 1998a). Under the same rationale, the economy which is a construct of the human mind can exist outside of one person's mind. However, for this reflective practice research, the model being developed exists more closely to the researcher than independently of him. Thus, constructivism was considered to be somewhat more appropriate for this research than realism. Realism may be appropriate for later research that tests the findings of this research.

The process of reflective practice. The starting point of this reflective practice research was developing a rich picture of investment decision making process. A rich picture of this process was developed in the mind of the researcher and in his database, through immersion in managing funds. Over a 29-month period, from August 2005 to January 2008, the researcher gathered data in logs, journals, reports and reflection reviews about his decision making process. Keeping qualitative data records meant that this research could record rich time and situational specific elements such as the feelings, moods and gut feelings of the researcher. In addition, the practice of investing was captured by transaction records and the dialectic soft systems analysis outlined next. All the information is available in the reflective practice database maintained by the researcher, and is available to a reader on request. Only a small part of that entire database could be shown here to illustrate its processes.

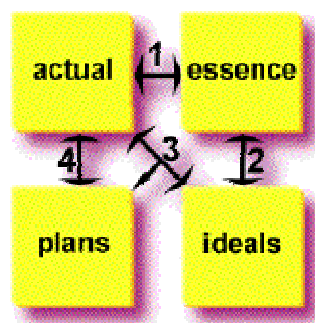
Reflection process: Dialectic soft systems. One way of going through the steps of the reflective practice cycle described above is the soft systems method (Dick 2000; Checkland 1999). The soft systems method is a way of building models and theories of the world using systems concepts. That is, the soft systems method portrays events as input / output systems. From this portrayal, understanding is gained to reframe new and possibly better ways of achieving the output. Once a new way of achieving a planned output is tested in action, reflection and a future level of understanding can be accomplished. This is in essence what this research accomplished.

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

This research used a particular soft systems method called dialectic soft systems (Dick 2000). Dialectic soft systems use four dialects to extract meaning and insights from a system, and they were useful in this research and their use is described below. These four dialects are illustrated in Figure 1. The first dialect is between the actual reality and a conceptual or essential model of that reality. The second dialect is between that conceptual model and an ideal model of achieving the systems' purpose. The third dialect is between that ideal model and reality; in some cases the ideal model maybe constrained by the reality of the situation. From that comparison between that ideal model and reality, the fourth dialect results in a plan of action.

Figure 1 **The dialectic soft systems model and its four dialectics**



Source: Dick (2000).

Dialectic soft systems has four characteristics that are particularly appropriate to structure the following discussion of the first, reflective practice stage of this research about my own investment decision making process. The first characteristic that makes dialectic soft systems appropriate is that it adds a rigorous method about how to progress through the reflective practice cycle (Dick 2000). Reflective practice is an over arching methodology which despite using reflective conversations or a chain of whys, leaves open details of how to progress through a cycle of reflection. Furthermore, dialectic soft systems can be used to break down reality into informational processes which is in essence what an investment decision making process is (Dick 2000).

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

The next characteristic that makes dialectic soft systems appropriate is its ability to provide insight into the framing processes of the steps of reflective practice. Drawing models of the investment decision model process includes the bias and values of the model maker, and so can be a limitation of qualitative research. However, these biases and values can provide information on how the researcher perceives and thus frames the situation (Kahneman 1981). Framing in decision making is comprised of heuristics or simplifying rules. Thus analyzing the modelling of the situation may lead to conclusions about the heuristics that were used to simplify and understand my decision making process. The use of normative methods would not give insights into framing because normative methods are generalisations (Mill, 1874; von Neumann & Morgenstern 1944).

An additional characteristic of dialectic soft systems is the distinction it makes between theory-in-use and espoused theory (Argyris & Schön 1978). Difference between one's theories-in-use and espoused theory provided insights in this study about what I think is a good investment process and what I actually do. Studying theory-in-use was done by looking at action, while identifying new theories about actions was done by reflecting on action.

The final characteristic that justified using dialectic soft systems in this research is its incorporation of complex factors. Cognitive anthropologists identify the interdependence of complex factors such as emotion, cognition and motivation (Garro 1998) that are involved in a decision making process. In contrast, normative methods of modelling decision making processes do not include these complex factors.

In brief, using dialectic soft systems was an appropriate procedure for this research.

Now, briefly consider how the process was used. The first concerns were describing the actual situation and then its essence or purpose. The next concern was creating an idealized transformation of the security investment process. My idealized transformation process developed in August 2006, is (sourced from the reflective practice database: word file: 2006 08 30 0 DSSM IDM overview):

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Transformation Idealfrom inputs into outputs

Strategy / Idea to find value created or mined from contacts

Comprehensive Analysis done systematically, Analyst called, exit and entry prices decided

Market View (current perception of reality) created, in a systematic manor from market and economic analysis using current information, top analysts and economists

Market View (picture of reality) tested in a systematic way against, analysts, economists info agents potential co investors

Strategy / Idea tested against Market view.

Decision to transact or not made including Entry and exit strategy, Portfolio decisions on how much to buy made

Broker contracted final check sort

Monitor position, monitor price, monitor price sensitive information

Exit position at a profit

The elements of the standard CATWOE technique (customers, actors, weltanschauung, owner, environment) were then examined and idealized (Dick 2000). To illustrate that process, the idealized conception of the economist from among all the actors in the research database is (sourced from the reflective practice database: word file: 2006 08 30 0 DSSM IDM overview):

*Economists; Work with the best economists and economists with contradicting views.
The economists economic models or perception of reality take into account accurate and relevant facts.
The economists are independent thinkers.
Understand the economists' perceptions, assumptions and impact on asset market prices*

This phase identified seven steps/transformations/processes in my ideal decision making that confirmed the a priori steps used to construct the conceptual framework: understand the economy, form a strategy, identify securities and make the decision, as shown in Figure 2.

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Now reflection on what had gone before was required. This reflection process had three phases. Phase one was a gap analysis between the ideal and practical environmental constraints (Dick 2000); those environmental constraints are restrictions on the implementation of action that derived from the reality of the situation in which the researcher was immersed. The researcher did not identify any constraints deriving from the reality of the situation in this phase. The second phase had two segments. The first segment was a gap analysis between the current decision making transformations and the ideals. This analysis was done to ascertain how much change was needed in the investment decision making process. The second segment was a gap analysis between the other CATWOE elements created in the idealized frame and the elements present in the current frame. The third phase was an explicit plan of action to execute the new and improved investment decision making process. Now, I was in a position to do what I had planned to do in the processes above, and then to reflect upon that execution of the plan in a re-cycling of the reflective process above. For example, the planned investing decision making process was executed. From this it could be ascertained how well the planned investment decision making process matched reality.

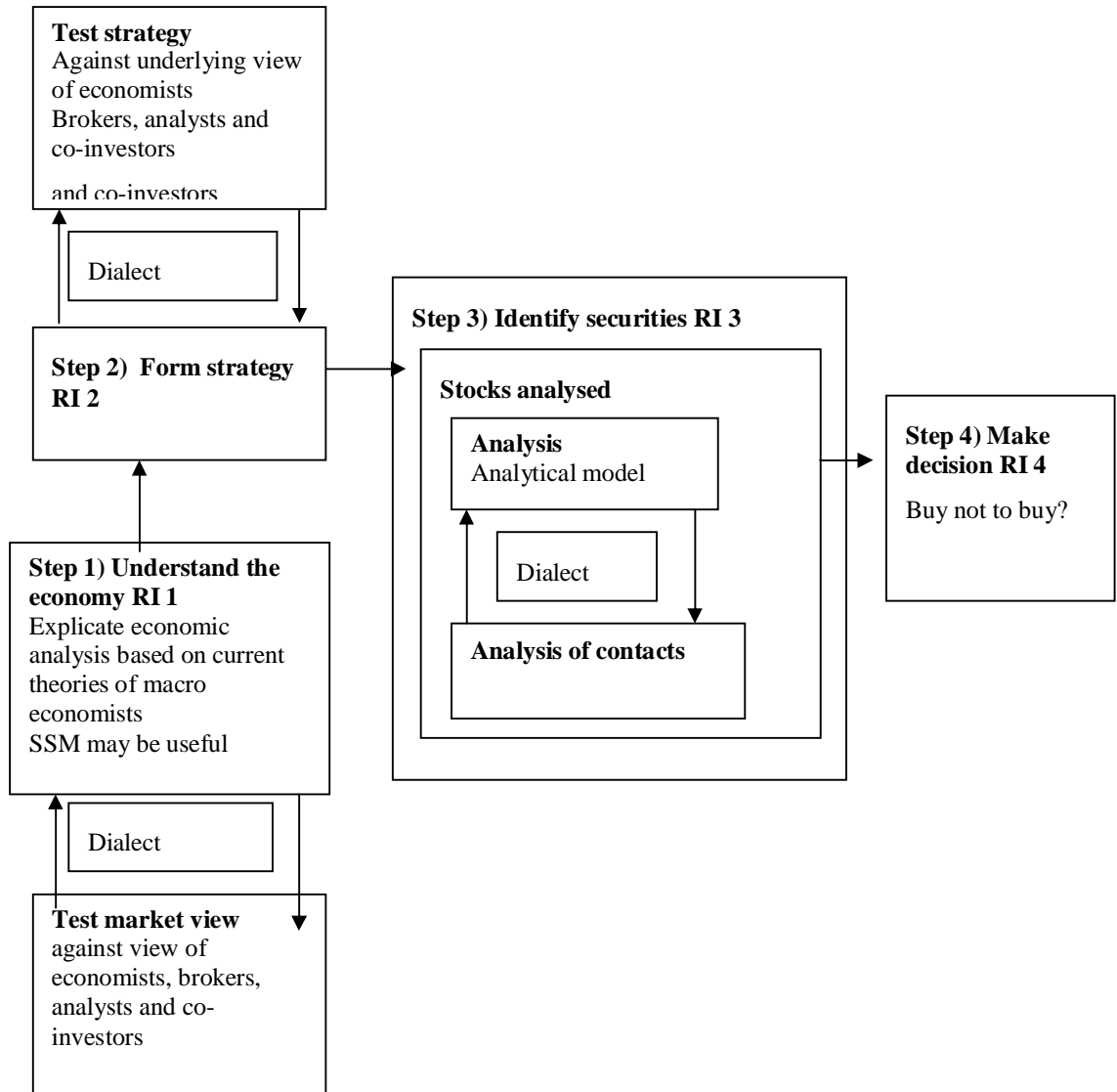
All the details of these processes are available on request. Let us turn to their outcomes relevant to the four research issues of this project.

\

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Figure 2 **Idealised frame of four transformations involved in a medium term decision making process**



Note: 'RI' stands for research issue developed above.

Source: the reflective practice database: word file: 2006 08 30 0 DSSM IDM overview.

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Research issue 1: How do I understand the economy for investment decision making?

There are four research issue activities in the conceptual framework of Figure 2. I gained an understanding of them from 2004 until 14 August 2008. As an example of how this was done, Table 1 lists actions and reflections for research issue 1. (Details like this table were developed for all research issues but are not provided for the other issues because of space limitations; these and other details of the whole reflective practice process are available on request.) Records of practice actions initially came from daily logs and then from explicit forecasts (shown in the five items in the action column in Table 1). Reflection on these practice actions was recorded in a journal that was also kept almost daily, with bigger reviews done quarterly or half-yearly. Then I reviewed the content and accuracy of forecasts over a period of time (shown in the Reflection column of Table 1.) That is, did market prices and news that followed the economic forecasts provide confirming or disconfirming evidence? How I understood the economy had become far more explicit after these steps.

Data in Table 1. Consider each of the four research issues starting with research issue 1 about understanding the economy. Table 1 has details of how the research issue was addressed. The start of comprehending how I understood the economy was recognizing and defining how it was currently being done. That is, I recognized I had a perception of the economy and that perception affected my investment decision process, as illustrated in my logs, journals, implicit forecasts and reviews journals. These records were written for two purposes. Firstly, to understand why I had made transactions, in order to gauge the logic of past investment processes; in addition, these journals kept an account of the actions and relationships that occurred pertaining to investments over this period. These records were revised almost daily and did not provide in-depth analysis. In addition to these records, I also had investing contracts dating back to 1999. There is no recorded evidence that I knew how I understood the economy before 25 February 2007, that is, this activity had been implicit. How my understanding of the economy developed since then is shown in the initial and final dialectic soft systems models of my understanding in Figures 3 and 4.

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Reflecting on the progress shown in Figures 3 and 4 indicates that my understanding of the economy came from three areas. Firstly, as an equity investor, my perception of the economy came from an experience of being involved in the five investing activities of: private equity, mezzanine, initial public offering, medium term and trading. These investing experiences included the 1997 Asian bubble (Hashim 2006) and the subsequent bust and dotcom bubble and bust. Secondly, understanding came from the macro economic experiences of living in Asia and Brazil during the Asian crisis and its large currency devaluation. Without those macroeconomic experiences, I would probably have not decided that understanding the economy is an important part of the investment process. The third way I gained an understanding of the economy was from reading explanations of financial crises in economic literature (for example, Shiller 2006; Krugman 2006).

Table 1 Data of actions and reflections about understanding the economy

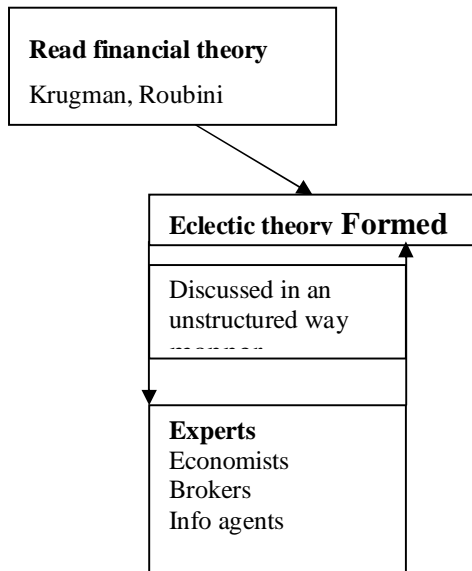
Action	Reflection recorded in journals and other documents
4.1.0) Logs, journals, implicit forecasts and reviews from 2004 to February 2007	4.1.1) Dialectic soft systems methodology analysis of the investment decision process (done July 2006) 4.1.2) Dialectic soft systems methodology analysis of activity one: understanding the economy (done August 2006) 4.1.3) Review of logs and journals from 2004 to February 2007
4.1.4) Forecast 25 February 2007	4.1.5) Second dialectic soft systems methodology analysis of activity one 4.1.6) Review forecast 25 February 2007 / Start to use mental simulation (done 19 October 2007)
4.1.7) Forecast 7 November 2007	4.1.8) Reflection of forecast method 7 November 2007 (done 11 December 2007) 4.1.9) Review of forecast 7 November 2007 (done 14 January 2008)
4.1.10) Forecast 16 January 2008	4.1.11) Merger of my dialectic soft systems methodology of activity one for trading and medium term investing (done 23 May 2008) 4.1.12) Review forecast 2008 (done 13 August 2008)
4.1.13) Forecast 14 August 2008	

Source: Compiled from the research database.

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Figure 3 **Initial frame of the transformations involved in a medium term investment decision making process**



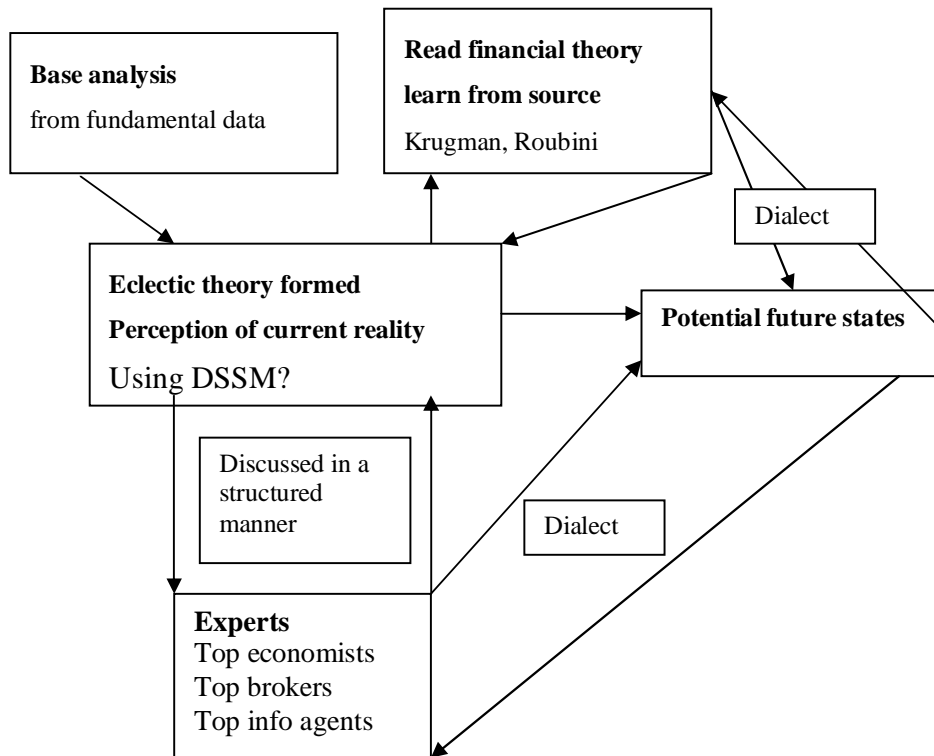
Source: research data base.

Research issue 2: How do I form investment strategies? The second research issue is about building an investment strategy. An investment strategy was defined in an overall way in my early dialectic soft systems analysis of 30 August 2006: An analytical methodology used to build a plan of action that can identify specific transactions that capitalize expected future outcomes. Again, this research issue about strategy was addressed by using the reflective practice method. The processes used for this activity were much the same as for the first activity described above and so the descriptions of them are not as detailed as the descriptions above. In brief, for research issue 2, the strategic records and reflection found that only *fundamental value investing* was used for medium term equity investing. As noted above, more details of the reflective practice processes are available on request.

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Figure 4 **Idealised frame of the transformations involved in security decision making process**



Source: research data base.

Research issue 3: How do I estimate the future price of securities for investment

decision making? Now that the strategy of value investing had been identified as central to my security investment decision making, I needed to find how fundamental analysis was being done. As before, records of practice came from journals, notes and fundamental analysis reports. Reflection on those actions started with *how* finding value was taking place. The next part of reflection was reviewing the content and accuracy of these fundamental

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

analyses over a period of time. For example, did the underlying business perform as expected and did market price reflect that state of performance?

I began my journey towards explaining research issue 3 in 2003 by analysing the *Global Carriers* company and the analysis was quantitative and anchored in the present and the past, rather than the future. For example, there are three points to note about my initial fundamental analysis of the stock on 3 October 2003. Firstly, it was a discounted cash flow valuation. The second point was that the current earnings and assets were broken down into details; however, the estimation of future earnings was general. The final point is that this file is an Excel file which demonstrates my early reliance on the reduction of concepts to numbers and formulas in order to arrive at a valuation, without a detailed description of the underlying assumptions of that reduction.

In turn, the second activity was to read a business description of all the stocks on the main and second board of the Kuala Lumpur stock exchange in the Stock Performance Guide (2005). This analysis was a bottom up qualitative activity that compared the business model of the companies with my economic forecasts developed in research issue one. Subsequent to this sweeping analysis, I did a more detailed written analysis of firms that were potential investments, like *Quest* (21 February 2006). By this time, most of my analysis had become qualitative.

For example, the analysis of *Thong Guan*, a packaging and plastics products manufacturer, showed that there is a connection between the economic forecast and the business, and this led to an increased understanding of cash flow. This cash flow analysis was the centre of investigation used in the first analysis of 2003. It can be noted from the analysis of *Thong Guan* industries that a stock may be monitored for years in order to understand the business by the reflective dialectic between forecast earnings and actual earnings, before it is eventually purchased. Indeed, I did not buy this stock in 2005 (or since).

On reflection, the analytical process described above was simply a search for value or cheap assets and can be viewed as a *four level process*. At the first level, a quantitative discounted

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

cash flow valuation model is done. For example, this was the core of the analysis fundamental analysis of *Global Carriers*. This level is an example of the technical rationality taught in finance courses and can be learnt with relative ease. However, this quantitative level is actually built on three, more complex levels of thought.

The second level is recognising that the quantitative model used is a function of the future earnings of a firm discounted by some risk factor - both of which are estimates. In this analysis of *Global Carriers* that risk was quantified by beta, however, in more recent analyses like *Thong Guan*, riskiness was imputed into the clarity of earnings and the discount factor became secondary. In turn, the third level is analysing a firm's earnings as a function of the profitability of a company in its economic environment. To do this required an understanding of how the firm operated. For *Dialog*, I used a revenue model, Porter's (1980, 1985) five forces and value chain, with a regard for management ability and historical accounting performance, to determine the internal nature of the firm. This internal knowledge was then evaluated against my perception of the economy. For example, for *Thong Guan*, I believed that the price of oil would continue to be strong. In turn, I thought that this would impact this company's profitability and thus earnings, because a major component of plastic product manufacturing is petroleum products. In addition, I saw the Malaysian ringgit continuing to be strong; a stronger ringgit would make the product more expensive and that would affect export sales. Thus, for the current earnings of the firm and its potential earnings, I did not perceive value in this company at that time. The final level of thought that the entire fundamental analysis is rooted in, was the understanding of the economy that was made explicit in the first step. The analysis of *Thong Guan* just described could not be done without this understanding of the economy.

In conclusion, the experience of making forecasts about companies and reviewing those assumptions after a period of time strengthened both my understanding of the companies and my understanding of the process of fundamental analysis. These actions and reflections show fundamental analysis is a four step process that is mostly qualitative and is based on the experience of comparing forecasts with reality.

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Research issue 4: How do I make investment decisions? The three research issues above lay the groundwork for the final issue of how the decision is made. This research issue 4 was again answered by reflective practice on records of practice came from journals, notes, personal transaction records and company transaction records from 2003 to 2008. Reflection was done using the reflection methodology of dialectic soft systems methodology discussed above.

The initial decision making actions were recorded through journals, logs and transaction records from 2003 to 30 August 2006. These transactions are far fewer than the analyses and journals detailed in the first three research issues because only a small fraction of companies analysed was bought, that is, an investment decision was made only for them. The first step was understanding how investment decisions had been made before 30 August 2006– these experiences provided a rich picture. From the rich picture of experiencing of making investment decisions, an explicit initial frame was created. The first phase in creating the initial frame was defining the purpose of the system. For example, the dialectic soft systems analysis suggested the purpose was deciding to buy a security or not:

A process used in order to decide whether or not a transaction should take place.

Internal reflection of data in order to ascertain whether a transaction has a high probability of success.

Once the purpose of the system was defined, a second phase of describing the fundamental analysis processes as a series of transformations was done. A drawing of this transforming process is shown as Figure 5.

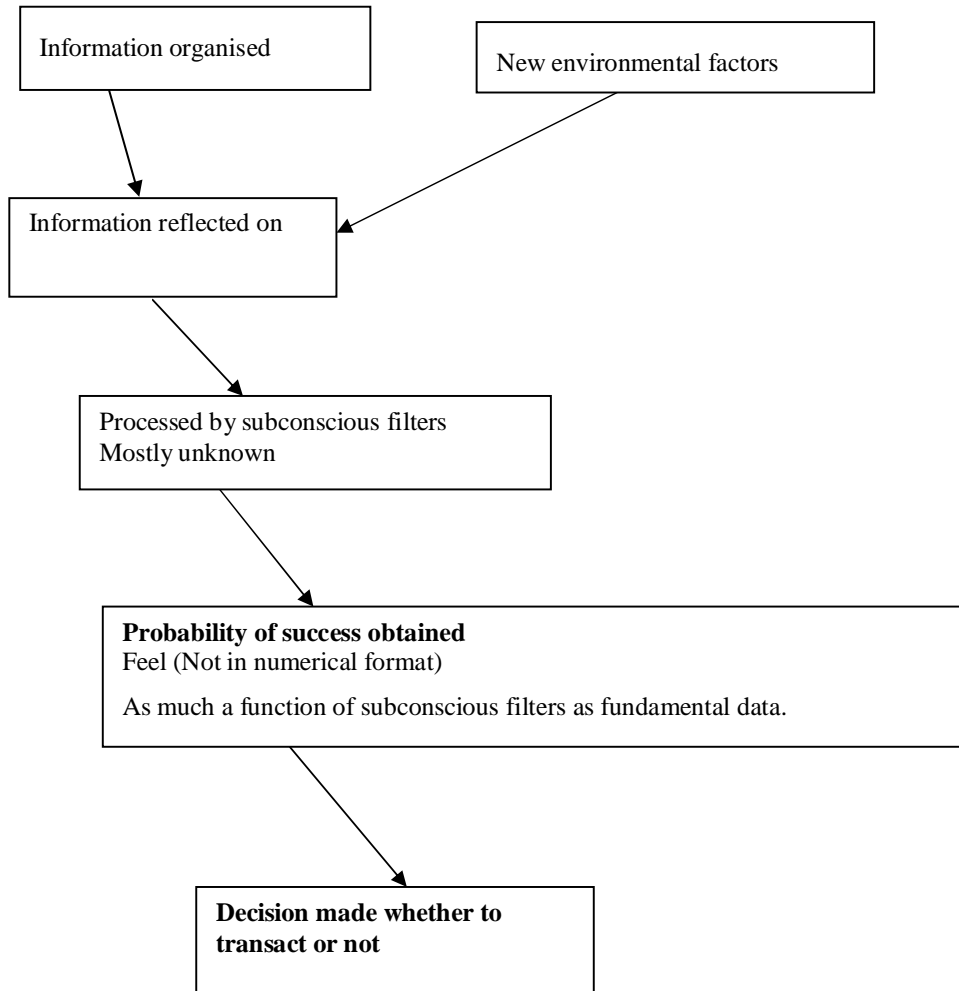
Because this action involved only one person, the decision maker, and not the other actors, analysis using the familiar CATWOE mnemonic was not done next. Now, I could implement that planned decision making, and subsequently reflect upon that planned execution in a recycling of the four steps above. As noted in the analyses of research issues 1, 2 and 3 above, the analysis of the method of decision making made this activity more and more explicit.

To conclude, all the reflective practice of four activities helped in making explicit my investment decision processes.

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Figure 5 **How a decision is made**



Source: research data base.

Distinctiveness of this analysis

The analysis above is distinctive in three ways, that is, it makes three contributions to the finance literature. Firstly, this analysis recognizes complex qualitative elements that are not included in neoclassical models. Neoclassical theory omits complex elements that are not easily reduced to numbers (Shiller 2006). However, real life situations and problems for decision makers are complex and dynamic. Indeed, the real world is so complicated that the

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

reductive theory of utility maximization on which neoclassical finance is based, limits in-depth understanding of decision making (Simon 1959; Beinhocker 2006). However, empirical research methods that may provide in-depth understanding by addressing these complex issues are not accepted in finance research (Shiller 2006). This study addresses these complex features and used an appropriate methodology to study them.

The second difference of this analysis from traditional investment studies is the employment of systems thinking (Checkland 1999; Wilson 2001; Dick 2000). The overall cognitive process of deciding may be viewed as a system - the relationships between elements pertaining to investment decisions may be as important as the elements themselves (Beinhocker 2006). Another element of systems thinking that is incorporated into this study is a holistic appreciation of the decision making process.

The final difference is that this analysis models the actual investment situation, unlike simplified situations of neoclassicism modelled on natural science concepts (Markowitz 1952; Merton 1986). Moreover, it is the only research about investors in Malaysia.

The research is also distinctive in other ways that makes contributions to the reflective practitioner literature (identified with the ABI/Inform database). Firstly, this is the only report by a reflecting manager themselves – the few other management reports are by educators and trainers. Secondly, this is the only report about finance – apart from those few management reports, most other reports are in the fields of education and health. Next, this report considers different paradigms underlying reflective practice. Finally, it covers more of the reflective practice steps than other reports, including the first example of the dialectic soft systems process.

In brief, this research makes many contributions.

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Implications for policy and practice

Now consider implications for policy and practice. This research found that experience is an important part of building an investment decision making process. Therefore, experience of investing should be included when an individual or a firm develops and builds an investment process. The importance of experience provides three implications for potential and current investment practitioners. Firstly, those wishing to become investment practitioners should accumulate their own experience of making investment decisions with real money in real markets in real time, or possibly with realistic simulations. Using internet securities broking, this experience could be bought for a few hundred dollars. In contrast, much decision theory derives from fabricated settings with unreal decision pressures. This lack of realism is an example of the gap between theory and practice described above.

In turn, consider the implications for practitioner use of existing investment literature. Although there are problematic assumptions in the existing investment literature, this research does not imply that practitioners ignore that investment literature. Instead, this research suggests ways that practitioners may *complement* that book knowledge by extracting understanding from practical experience. This research has shown that an investment decision maker *can* incorporate book knowledge even if they do not share the underlying assumptions of financial theory paradigms. Widely read practitioners may identify models and theories from unrelated fields in that parent theory to broaden their understanding of investment practice, as I did. In brief, practitioners should include more types of knowledge when investing (and this is consistent with the assumptions of behavioural economists (Shiller 2006)).

These implications for practice based on the importance of experience and the expansion of knowledge have two implications for *teaching*. Firstly, since learning and the development of an investment decision making process can not occur in artificial environments, investment courses should include opportunities for learners to make real investment decisions with real money. Finally, investment courses should provide instruction on how to research the literature and implement that research in investment decision making.

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Limitations of this research and implications for further research

There are two limitations in using dialectic soft systems method described above. Firstly, if the research data are not validated, then the dialectic soft systems method may become pure, subjective constructivism. This pure constructivism was avoided in this research by using a second stage of data validation through convergent interviewing described in another report. The second limitation of dialectic soft systems method is that it can become mechanistic (Checkland 1999; Wilson 2001). Mechanistic employment was avoided in this research by testing the models in practice in a reflective practice loop.

There are some other limitations of this research. Firstly, this study occurred in Malaysia during 2003 to 2008 and thus conclusions are relevant only to that time period and location. In particular, the global financial crisis of 2007 and 2008 may limit the findings to that sort of stock market upheaval. Moreover, the model of investment decision making processes built in this research was based on investment professionals, and so generalizations to other types of investment decision makers are not intended. For example, although this research's professional investors based their investment decisions on a feeling of comfort, conclusions are not made in this research about what is meant for a feeling of comfort for novice investors lacking both experience and technical knowledge. Thirdly, data interpretation in the reflective practice section was influenced by the biases of the researcher, as acknowledged above. However, these biases were addressed by triangulating findings with convergent interviews in a subsequent research project and with the literature. In brief, these three limitations are recognized; nevertheless, the conclusions of this research make contributions to finance literature and practice.

Moreover, these limitations provide embarkation points for *future research*. Future researchers may consider extending the research to different periods, different research settings and different types of investor. In addition, conclusions on how pain affects future investment decisions could not be made based on the evidence gathered. These points may be an area for future research. Another area for future research is the relationship between emotions and decisions. More specifically, decision theorists have shown that emotions or

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

feelings can be studied in more depth than mere valence (Zeelenberg et al. 2008). Future research may include more detailed methods of investigating emotion and feel such as the appraisal pattern (Scherer et al. 2001). This future research may provide new understanding to what a feeling of comfort implies. Finally, the three steps of execute entry, monitoring and exit that exists beyond the four core ones used here to develop the four research issues, could be investigated in future research.

Conclusion

The domination of quantitative reduction and scientific positivism paradigms in methods of decision making in finance literature was questioned in this research. It used an unusual methodology to develop a new framework of investor decision making that incorporates experience and qualitative processes. Some steps forward have been made for real world investors like the researcher, and for theory about them.

References

Abelson, RP 1976, 'Social psychology's rational man', *Rationality and the social sciences: contributions to the philosophy and methodology of the social sciences*, Routledge, Kegan and Paul

Allias, M 1987, 'Allias Paradox', *New Palgrave Dictionary of Economics*.

Argyris, C 1980, 'Some limitations of the case method: experiences in a management development program', *Academy of Management Review*, iss. 5, pp. 291-298.

Argyris, C & Schön, DA 1978, *Organisational learning: a theory of action perspective*. Reading, Addison-Wesley.

Aronson, JL, Harré, R. & Way, EC 1995, *Realism rescued*, Open Court, Chicago.

Beinhocker, ED 2006. *The origin of wealth*, HBS Press, Boston.

Benjamin, G & Dodd, DL 1934, *Security analysis*, McGraw Hill, New York.

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

- Black, F. & Scholes, M 1973, 'The pricing of options and corporate liabilities', *Journal of Political Economy*, vol. 81, p. 637.
- Block, SB 1999, 'A study of financial analysts: practice and theory', *Economics*, vol. 76, pp. 25-26.
- Cattell, JMK 1986. 'The time it takes to see and name objects', *Mind*, vol.11, pp. 63-65.
- Central_Intelligence_Agency 2008, *The CIA world factbook* , Skyhorse, New York.
- Checkland, P 1999, *Soft systems methodology in action a 30-year retrospective*, Chichester, England and New York, Wiley.
- Dick, B 1999, 'What is action research?' < <http://www.scu.edu.au/schools/gcm/ar/whatisar>.
- Dick, B 2000, *Soft systems methodology*. Session 13 of areol – action research and evaluation on line, viewed 28 October 2010, <<http://www.scu.edu.au/schools/gcm/ar/areol/areolhome.html>>
- Fama, EF 1970, 'Efficient capital markets: a review of theory and empirical work'. *Journal of Finance*, vol. 25, pp. 383-417.
- Fjellman, SM 1976, 'Natural and unnatural decision-making: a critique of decision theory', *Ethos*, vol. 4, pp. 73-94.
- Garro, IC 1998, 'On the rationality of decision-making studies: part 1: decision models of treatment choice', *Medical Anthropology Quarterly*, 12, 319 - 340.
- Gladwell, M 2005, *Blink: The power of thinking without thinking*, Penguin, New York.
- Graham, B 1949, *The intelligent investor: a book of practical counsel*, Harper and Row, New York.
- Guba, E.G. & Lincoln, YS 1994, 'Competing paradigms in qualitative research', in NK Denzin & YS Lincoln (eds.), *Handbook of Qualitative Research*, Sage, Thousand Oaks, pp. 105-117.
- Gummesson, E 2000, *Qualitative methods in management research*, Sage, London.
- Hagstrom, RG 2005, *The Warren Buffett Way*, Wiley, Hoboken, New Jersey.

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Hashim, MB 2006, *Achieving success in tough times: how one man saved his company and kept his sanity during the 1997 Asian economic crisis*, KasehDia, Kuala Lumpur.

Healy, M. & Perry, C 2000. 'Comprehensive criteria to judge validity and reliability of qualitative research within the realism paradigm', *Qualitative Market Research: an International Journal*, vol. 3, pp. 118-126.

Holland, DC & Quinn, N 1987, *Cultural models in language and thought*, Cambridge University Press, London.

Kahneman, D 1981, 'The framing of decisions and the psychology of choice' *Science, new series*, 21 Jan 30, pp. 453-458.

Kahneman, D 2002, 'Maps of bounded rationality: a perspective on intuitive judgment and choice', *Nobel prize lecture*, pp. 449-489.

Kahneman, D. & Tversky, A 2000, *Choices, values, and frames*, Cambridge University Press, London.

Klein, G, 1998, *Sources of power : how people make decisions*, MIT Press, Cambridge.

Klein, GA. 1994, *Decision making in action; models and methods*, New Jersey, Ablex.

Krugman, P 1993, 'On the relationship between trade theory and location theory', *Review of International Economics*, vol. 1, pp. 110-122.

Magee, B 1985, *Popper* (third edition), Fontana, London.

Malkiel, BG 1973, *A random walk down Wall Street*, Norton, New York.

Markowitz, H 1952, 'Portfolio selection', *The Journal of Finance*, vol. 7, no. 1, pp. 77-91.

Matlin, MW 2002, *Cognition*, Holt, Rinehardt and Winston, New York.

Merton, RC 1986, 'A simple model of capital market equilibrium with incomplete information', *The Journal of Finance*, vol. 42, iss. 3, pp. 483-510

Mill, JS 1874, 'On the definition of political economy; and on the method of investigation proper to it', *London and Westminster Review*, October 1836.

Mitchell, M 1993, *Analogy-making as perception: a computer model*, MIT Press, Cambridge.

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Miyauchi, Y 2002, Japanese market entry and development strategies for Australian information technology and telecommunication and high technology firms, PhD thesis, University of Southern Queensland.

Mosier, KL & Chidester, TR 1991, 'Situation assessment and situation awareness in a team setting', *Designing for Everyone*, pp. 798-800.

Nonaka, I, Toyama, R & Konno, N 2000) 'Leadership: a unified model of dynamic knowledge creation', *Long Range Planning*, vol. 33, pp. 5-34.

Perry, C 1998a, 'Processes of a case study methodology for postgraduate research in marketing', *European Journal of Marketing*, vol. 32, pp. 785-802.

Perry, C 1998, 'A structured approach for presenting theses', *Australasian Journal of Marketing*, vol. 6, pp. 63- 85

Perry, C, Riege, A & Brown, L 1999, 'Realism's role among scientific paradigms in marketing research', *Irish Marketing Review*, vol. 12, no. 2, pp. 16-23.

Pfister, GB 2008, 'The multiplicity of emotions: a framework of emotional functions in decision making', *Judgment and Decision Making*, vol. 3, pp. 5-17.

Phillips, EM & Pugh, DS 1987, *How to get a PhD*, Open University Press, Milton Keynes.

Porter, M 1980, *Competitive strategy: techniques for analysing industries and competitors*, Free Press, New York.

Porter, M 1985, *Competitive advantage*, Free Press, New York.

Quinn, N 1978, 'Do fish sellers estimate probabilities in their heads?', *American Ethnologist*, vol. 5, pp. 206-226.

Reicher, GM 1969, 'Perceptual recognition as a function of meaningfulness of stimulus material', *Journal of experimental psychology*, vol. 81, pp. 275.

Rogers, J 2004, *Hot commodities: how anyone can invest profitably in the world's best market*, New York, Random House.

Ross, L 1987, 'The problem of construal in social inference and social psychology' *A distinctive approach to psychological research: the influence of Stanley Schachter*.

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Sahlins, MD 1976, *Culture and practical reason*, Chicago, University of Chicago Press.

Salas, R 2001, 'Taking stock of naturalistic decision making' *Journal of Behavioural Decision Making*, vol.14 , no. 5, pp. 331.

Salleh, B 1993, *Malaysian legal history : cases and materials*, Kuala Lumpur, Dewan bahasa dan pustaka, Ministry of Education, Malaysia.

Sarji, A 1993, *Malaysia's vision 2020: understanding the concept, implications, and challenges*, Pelanduk Publications, Kuala Lumpur.

Scherer, KR, Schorr, A & Johnstone, T 2001, *Appraisal processes in emotion: Theory, methods, research*, Oxford University Press, London.

Schon, D 1983, *The reflective practitioner*, Basic Books, New York.

Schwager, JD 1989, *Market wizards: interviews with top traders*, New York Institute of Finance, New York.

Securitiescommision (2002) *Compliance module 11 examination study guide*

Shiller, RJ 2005, *Irrational exuberance*, Princeton University Press, Princeton, New Jersey.

Shiller, R 2006, 'Tools for financial innovation: neoclassical versus behavioural finance', *The financial review*, vol. 41, pp. 1-8.

Simon, HA 1955, 'A behavioural model of rational choice', *The Quarterly Journal of Economics*, vol. 69, pp. 99-118.

Simon, HA 1957, *Models of man: social and rational; mathematical essays on rational human behaviour in society setting*, Wiley, New York.

Simon, HA 1959, 'Theories of decision-making in economics and behavioral science', *The American economic review*, vol. 49, pp. 253-283.

Soros, G 1995, *Soros on Soros*, Wiley, New York.

Stein, E 1996, *Without good reason: the rationality debate in philosophy and cognitive psychology*, Oxford University Press, Oxford.

Learning how to invest: using reflective practice to understand how a Malaysian fund manager makes decisions

Samsukri Glanville bin Mohamad and Chad Perry

Taleb, N 2007, *The black swan : the impact of the highly improbable*, Random House, New York.

Taleb, N 2005, *Fooled by randomness: the hidden role of chance in life and in the markets*, Random House, New York.

Tarr, MJ 2003, 'Visual object recognition. Can a single mechanism suffice?', *Perception of faces, objects and scenes. Analytic and holistic processes*, pp. 177–211.

Tversky, A 1969, 'Intransitivity of preferences', *Psychological Review*, vol. 76, pp. 31-48.

Tversky, A & Kahneman, D 1974, 'Judgment under uncertainty: heuristics and biases', *Science*, vol. 185, pp. 1124-1131.

Tversky, A & Kahneman, D 1979, 'Prospect theory: an analysis of decision under risk', *Econometrica*, vol. 47, pp. 263-292.

von Neumann, J & Morgenstern, O 1944, *Theory of games and economic behavior*.

Wilson, B 2001, *Soft systems methodology : conceptual model building and its contribution*, Wiley, New York.

Yin, RK 2003, *Case study research: design and methods*, London, Sage.

Zeelenberg, M, Nelissen, RMA, Breugelman, SM, Pieters, R 2008, 'On emotion specificity in decision making: Why feeling is for doing', *Judgement and decision making*, vol. 3, pp. 18-27.

Zvi Bodie, AK & Marcus, AJ 1995, *Essentials of investment*, New York, Irwin.