

**Abstract**

This study focuses on processes employed by organisational managers making strategic investment decisions (SIDs) in an environment of extreme uncertainty in post-revolution Egypt. Our study illustrates how significant social, political and economic uncertainty impacts upon the utility of capital investment appraisal techniques employed in management accounting decision-making. To engage in this analysis, we employ strong structuration theory as a lens to examine how local Egyptian managers (agents-in-focus) respond to the impact of emergent structures that emanate from the post-revolutionary context in their strategic investment decision-making (SIDM). Our empirical evidence includes focused interviews with twenty-one local managers to understand the experience of accounting for decision-making under extreme uncertainty. Our analysis demonstrates that non-financial considerations and objectives take precedence over the technical 'accounting' measures, for example net present value (NPV) in post-revolution SIDM processes. In particular, recognising and responding to shifting labour power and short-term sacrifices (such as rejecting merger opportunities) become comparatively more important than the pre-supposed rationality of the NPV criteria. However, as multi-national corporations insist on the calculation of NPV by their Egyptian subsidiaries, local managers reproduce the imperfect NPV as a communication tool in relation to capital investment decisions, whilst resisting its persuasiveness in favour of more qualitative criteria.

### 1. Introduction

This paper responds to calls for comprehensive studies of how social, economic, political, cultural and organisational influences impact upon management accounting and decision-making (Carr, Kolehmainen and Mitchell, 2010). We argue that a holistic approach to understanding strategic investment decision-making (SIDM) takes account of the context of emergent external structures and their impacts on the organisation. In the context of post-revolutionary Egypt, we focus on the impact of emergent structures on the organisation and on people making strategic investment decisions (SIDs) and we examine adaptations to and adoptions of SID processes. We argue that while SIDs may involve technical elements (e.g. NPV) the utility of accounting analysis is improved by contextualising the accounting decision-making process holistically. This results in understanding accounting and managerial judgment as *relational* to internal and external structures.

Recent SID research signals a shift from an early focus on using capital budgeting techniques in SIDM (Arnold and Hatzopoulos, 2000; Alkaraan and Northcott, 2006; Abdel-Kader and Luther, 2008) to a conceptual focus that reflects the impact of different influences upon SIDM, including risk assessment (Harris, 1999), politics (Hickson et al., 1986), culture (Carr, 2005; Carr et al., 2010) and social issues (Child and Lu, 1996). Some strategic management accounting (SMA) literature on making strategic decisions (Tomkins and Carr, 1996) also suggests that the organisation's increasing tendency to emphasise non-financial considerations illustrates the potential mediating impact of strategic considerations (Carr et al., 2010, p. 170). Consequently, Ma and Tayles (2009) argue that decision makers should explicitly focus on external influences, in a shift from financial to strategic information, and Morgan (1988, p. 483) illustrated that taking into account the uni-dimensional nature of financial information results in uni-dimensional decisions. Shank (1996) argued that in SIDM, capital budgeting techniques were limited in terms of how they incorporate 'strategy' and argues, instead, that a strategic cost management framework, as a sub-set of SMA practices, should be adopted in making investment decisions. However, as most SMA research focuses on examining the use of SMA techniques (e.g. competitive position monitoring, brand valuation and value-chain costing) in organisations and their antecedents (see, Shank and Govindarajan, 1992; Cadez and Guilding,

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2008), these illustrations constitute isolated examples of recognising the broader organisational scope of SMA (Nixon and Burns, 2012).

We argue that significant SID and SMA literature ignores the role of agency and particularly the role of decision makers, their judgments and intuition (Emmanuel, Harris and Komakech, 2010; Kingsley and Reed, 1991; Marsh, Barwise, Thomas and Wensley, 1988; Pike, 1996). Consequently, we argue for the importance of taking into account the context of emergent external structures (conditions in the decision-making environment) and their impacts on the organisation and in influencing agents' judgment (as often these influences will impact the organisation and agents differently). In situating our study in Egypt in the post-2011 revolutionary period, we investigated SID-making at a time of extreme uncertainty characterised by radical social, economic and political change in Egypt. What was interesting for us was that in spite of the revolutionary context, agents and organisations still made SIDs and thus, we investigate how emergent external structures of the revolutionary context re-constructed relationships between agents and structures relevant to SIDM. Consequently, we employ a holistic 'structure-agent' approach to deepen our understanding of SIDM (Stones, 2005).

While there is research on the role of organisational influences in SIDM (e.g. Berry, Coad, Harris, Otley and Stringer, 2009; Emmanuel et al., 2011; Chittenden and Derregia, 2013), our contribution focuses precisely on the impact of extreme uncertainty (the post-revolution context) on those emergent external structures influencing the organisation and decision-makers. We hold that this focus is under-represented in SMA literature, as most literature adopts the 'perspective assumption' that the organisational environment (economically, politically, and socially) is *relatively* stable and predictable (Nixon and Burns, 2012: p.236). In relation to high-uncertainty, Sutton, Eisenhardt and Jucker (1986) argue that strategic decision-making is problematic due to the radical nature of change and, consequently, the rational evaluation of outcomes is difficult and inaccurate (Eisenhardt and Bourgeois, 1988). However, we argue that this limited literature on uncertainty tends to privilege the instruments or accounting techniques of decision-making and fails to account for context or managerial intuition (Harris, 2014). In our study of extreme uncertainty, organisations still made strategic decisions, but the uncertainty impacted upon the nature of the decisions, as uncertainty redefines existing structures or creates new structures. Dent (1990) argues that with rapid

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environmental change, new organisational structures emerge involving the decoupling of strategies and rules from existing structures and the temporal recoupling of emerging strategies and rules.

In employing Stones' (2005) Strong Structuration Theory (SST), this holistic 'structure-agent' approach explores the impact of uncertainty on existing structures, emergent structures (strategies and rules) and the impact of these re-constituted/emergent external structures on agents that make SIDs and the processes employed by agents in making SIDs in the post-revolution context. We examine the influence of ownership influences by studying both domestic and multi-national entities operating in Egypt, which allowed us to focus on a particular organisation and a particular decision-maker, as SIDs reflect 'structure-agent' relationships. This is a narrative of heterogeneity, rather than homogeneity (Hines, 1989), as Ghoshal and Nohria (1989) emphasise that the nature of multi-national organisations generates an inherent flexibility that enables their national subsidiaries to respond to emergent external structures. This flexibility is fundamentally a function of power (Pfeffer, 1981) and thus, our multi-national examples afford the opportunity to examine how the revolutionary context shaped power relationships in relation to SIDs. This challenges the classical 'perspective assumption' of shareholder wealth maximisation by focusing on bargaining power within the organisation (Nixon and Burns, 2012).

In relation to SMA and SID literatures, we concentrate on three contributions: a) in a context of extreme uncertainty, we investigate the processes of making SIDs, with a focus on the impact of emergent external structures; b) in this uncertainty, we explore the nature and impacts of reconstituted or emergent external structures on the organisation and especially how these influence agents; and c) we identify the impact of power embedded in 'structure-agent' relationships and how this influences agents in reproducing or resisting accounting technical models in making SIDs, as Stones' (2005, p. 85) SST explores power relationships between agents and structures, through a quadripartite framework of external and internal structures, agency and outcomes. We argue that all SIDs are impacted by the influence of political, social, cultural and economic structures, but these impacts are more easily identifiable in the context of revolution, as the emergent external structures affect the organisation, decision makers and impact upon judgments more significantly. As Stones' framework examines the interaction between external and internal structures, as well as their emergence and change, this enables

us to understand how agents reproduce or resist technical SIDM calculations. Therefore, the research findings develop SMA and SID literature, such as Harris and Elmassri (2011), by illustrating the impacts of increasing complexity and uncertainty in SIDM.<sup>1</sup>

The paper progresses as follows: we contextualise post-revolution Egypt, before positioning our study in extant literature. We then outline and justify the decision to employ Stones' SST, before we outline the study and methodology employed. The empirical section examines how SIDs were made in the post-revolution context, how reconstituted and emergent structures impacted upon agents and the influence of power and power relationships. Finally, in relation to these emergent themes, we summarise our contributions and conclusions.

### **2. Post-Revolution Egypt: A Context of Extreme Uncertainty**

Egypt has a challenging history, and in the decade leading to the 2011 revolution, multi-various political, economic and social problems emerged. Economic and social inequity around income differentials, low living standards, a declining GDP and increasing unemployment existed within a repressive political regime that stifled opposition, prevented free elections and freedom of speech, falsified parliamentary elections, liberally employed 'state of emergency' laws and was characterised by police brutality. However, in a moment of revolutionary spontaneity, the Arab Spring emerged in Egypt (Carter and Spence, 2011). From January 25, 2011, world media focused on Tahrir Square, Cairo (in Arabic, Tahrir means 'liberation'), as numerous political, social and economic movements took to the streets in demonstrations seeking substantive social, political and economic change, democracy and the removal of President Mubarak. For 18 days, 20 million Egyptians protested and pressurised the Mubarak regime. Eventually, on February 11, 2011, after nearly 30 years, Mubarak handed power to the Supreme Council of the Armed Forces (SCAF), signalling the beginning of a period of significant transition and reform. Initially, the SCAF formed a committee to introduce constitutional changes to introduce democracy and delegated presidential power to a caretaker cabinet. Despite this, the government was unable to meet the social and economic expectations of the people, as many misunderstood the purpose of the caretaker cabinet and the nature of the transition period.

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<sup>1</sup> We accept that there is a level of uncertainty embedded in political, economic, and social structures in any context.

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Widespread demonstrations and strikes continued, resulting in the SCAF appointing a second caretaker cabinet that promised to relinquish power following presidential elections scheduled for June 2012.

The revolution had a dramatic impact on Egypt's economic performance. Tourism revenues decreased by 60 per cent compared with June 2010 levels, and the Central Bank of Egypt announced that foreign currency reserves had dropped to a 'critical level' (declining from \$36 to \$14.8 billion by the end of 2012) and that they might be insufficient to cover imports beyond three months. The Central Bank spent in excess of \$US20 billion in foreign reserves to shore up the economy during the revolution (Egypt Independent, 2013).

Social expectations post-revolution were high: for example, workers (including government employees) asked for pay increases. However, in an environment of continued strikes, diminishing production and growing inflation, the caretaker government called for cooperation and 'co-production' (Dryzek, 1994; Ackerman, 2004), asking for the cessation of strikes and demonstrations, emphasising a need to turn the 'wheels of production' to improve the economy, create jobs, increase exports and raise standards of living. Hazim El-biblawy, the former Minister of Finance, stated:

The government completely understands the legitimacy of these demands, especially after the long history of injustice and lack of transparency in the available resources during the past regime.... But on the other hand, the situation is really difficult and needs everyone to cooperate with the government where everyone goes to work first (Shams El-Din, 2011:1).

The revolution depleted Egypt's security capabilities, as many police vehicles were destroyed and weapons were taken from police stations. This created 'security chaos', as car thefts, criminal assaults and the looting of antiquities increased significantly, which provides an insight into the uncertainty that manifested in post-revolution Egypt due to the significant gap between social expectations of change and the capabilities of the caretaker governments to meet those expectations.

It was hoped that the political, economic and social uncertainty would improve following the Presidential election. In May 2012, Dr Mohamed Morsi, a Muslim Brotherhood candidate, won

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a narrow majority of 51.5 per cent, from Dr Ahmed Shafik (a former Air Chief Marshal, and a former Minister and Prime Minister in the Mubarak regime). While Morsi was the first democratically elected President of Egypt, social unrest and discontent was not appeased and the Morsi government was characterised by increasing political conflict. Morsi's Presidency was short-lived, as he was removed from power in 2013. In part, this was due to a perception that Morsi was not managing the transition to democracy. For example, Morsi granted the President (himself) unlimited powers to legislate without oversight from the judiciary, as Morsi claimed that the judiciary was a remnant of the old [Mubarak] regime. Consequently, the New York Times (2013) reported that Morsi 'precipitated the deepest crisis since the revolution, when he granted himself broad powers beyond court review'.

The level of uncertainty in post-revolution Egypt continued to grow as political movements and parties protested the lack of 'democracy' and argued that Morsi was a president of and for the Muslim Brotherhood. This disquiet was further inflamed by Morsi's Islamist-based constitution. For example, independent and opposition media labelled the constitution 'an Islamist coup' (El Rashidi, 2013). Consequently, conceptions of the future were filled with uncertainty, and the discontent criticised the new 'democracy' for not providing a transparent plan for the future and failing to fulfil promises to seek consensus about the constitution prior to the referendum.

Thus, Egyptian businesses were ravaged by uncertainty and instability, particularly as the political conflicts manifested negatively economically and socially. The constitutional crisis and Presidential decrees conveyed messages that corruption prevailed, and the continuous strikes conveyed a message to foreign investors that Egypt was unproductive. Thus, two years post-revolution, the country was in a state of flux, as three governments (the first and second caretaker and Morsi's government) had taken power and each introduced their own social, political and economic reform. Egypt was in a position of deep instability.

[INSERT TABLE 1 ABOUT HERE]

Table 1 shows the economic impact of the revolutionary uncertainty. For example the real GDP growth rate was 5.20% in 2010 (before the revolution) and radically declined to 1.78% in

2011. It slightly recovered in 2012, partly due to a new investment law<sup>2</sup> and partly due to new tax incentives, after which it has remained at around 2%. What this study focuses on is how these 'sudden' and radical changes to structures and the emergence of new structures impacted on the process of SIDM and upon decision makers, in an active re-construction and re-articulation of the 'structure-agent' relationship. However, before we engage in this detailed analysis, we situate the paper in two principal literatures: a) the SIDM people and process literature in management accounting; and b) the theoretical literature pertinent to Stones' SST.

### 3. People and Processes and External Structures in Management Accounting

We situate this paper within management accounting literature that views SIDs and SMA from a process and people perspective, rather than a technical perspective. The technical SIDM perspective (see, for example, Pike, 1996; Abdel-Kader and Dugdale, 1998) de-emphasises the role for human agents by presenting SIDs as objective decisions based on rational technical structures. However, in contrast, we hold that the decision-maker and the role of internal and external influences are crucial to the SID process. As such, we draw on Harris and Elmassri's (2011, pp. 361-369) categorisation of emergent themes from SIDM research: the people and process aspects of organisational context and the psychological aspects of managerial judgment.

The people and process perspective (Hickson et al., 1986; Emmanuel et al., 2010) emphasises organisational context and behavioural influences on SIDs. However, the majority of case studies on SIDs tend to focus on internal influences (in relation to decision-makers and organisations). There is comparatively less attention paid to the impact of the external environment (Harris and Elmassri, 2011). Our analysis explicitly focuses on external structures and agents-in-context (made easier in the post-revolution context). As Gaffikin (2008, p. 239) argues:

Accounting is shaped by the demands placed on it, but it also shapes the environments with which it interacts. Consequently, accountants need to be aware of social, political, legal and linguistic considerations, and not just serve the economic interests of a few members of society.

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<sup>2</sup> Law No. 4 of 2012 adding article 7 bis to the Investment Law, allowing foreign investors to settle disputes on contracts made prior to 2011, together with new tax incentives to boost FDI in 2012.

There is a significant line of accounting research that argues that accounting decisions and practices are influenced by external structures (for example, Cooper and Sherer, 1984; Puxty, 1993; Frezatti, Carter and Barroso, 2014). Thus, we extend prior SID literature by exploring how social, economic, cultural and political influences impact upon managerial judgment, by constructing SIDs as subjective judgements, contingent on a 'structure-agent' relationship.

Verbeeten (2006) argues that organisations adopt sophisticated capital budgeting practices in dealing with uncertainty, while maintaining that SIDs are a calculative process (whether the source of this 'uncertainty' is internal or external is unclear). However, there are few, if any, studies that have been set in a post-revolution context, where calculative SID techniques traditional in accounting are rendered inadequate. The challenge of uncertainty is that as decision-makers can make only limited risk calculations (risk as analysis), they make decisions based more on 'risk as feelings' (Harris, 2014). As this section has illustrated the importance of emergent external structures and the role of agents, the next section introduces the core theoretical components of Stones' SST and the interrelationship of 'structures' and 'agents'.

### 4. Strong Structuration Theory

We adopt SST (Stones, 2005), which constitutes a 'strengthened' version of Giddens' (1984) structuration theory [ST] (Jack and Kholeif, 2007). Giddens (1979, p. 63) incorporates agents and structure into ST, depicting organisations as social systems producing and reproducing through the interactions of agents and structures, underpinned by rules and norms constituting organisational knowledge. In management accounting literature, it is suggested that management accounting systems (MAS) constitute structures of meaning that agents draw upon to orientate their actions, provide moral ordering of reciprocal rights and obligations and embed power relationships (Roberts and Scapens, 1985). There has been substantial ST-based research in management accounting, including research into resistance to change in MAS (Macintosh and Scapens, 1990), management by objectives (Alam, Lawrence and Nandan, 2004; Dirsmith, Heian and Covaleski, 1997), costing systems (Granlund, 2001; Jack, 2005), budgets (Uddin and Tsamenyi, 2005), enterprise resource planning (Jack and Kholeif, 2008,

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Hyvönen, Järvinen and Pellinen, 2009), supply chains (Free, 2008), organisational change (Conrad, 2005; Joseph, 2006) and performance evaluation (Scapens, 2006).

However, ST is not without criticism (see, for example, Cohen, 1989; Stones, 1991; Jones and Dugdale, 2001, Stones, 2005). Traditional ST sees structures and agents in a duality relationship, which assumes agency and structure as dichotomous and independent. Cohen (1989) argues for dualism, which constructs agency and structure as mutually intertwined. Stones (2005, p. 61) critiques Giddens as there is 'no place in structuration theory for external structures that either pre-exist agency, or have a causal influence on the outcome of agent's practices. Stones (2005, p. 111) argues that external structures are conditions that enable and constrain agents in producing and reproducing social practices. In SIDM, social, political and economic structures influence the decision-making process: Hickson et al. (1986) concluded that the political environment significantly influenced SIDs; Child and Lu (1996, p. 61) emphasised the influence of social and political dimensions, arguing that institutional constraints impacted upon SIDs; and Elbanna and Child (2007) focused on the influence of culture in shaping SIDs.

Thus, SST, crucially, suggests that in understanding SIDs in Egypt, we need to consider the influence of external structures. SST provides a space to understand how external influences structurally affect SIDs through understanding how social, political and economic influences impact upon the organisation and decision makers. We suggest that the context of post-revolution encourages an examination of the impact of emergent economic structures upon SIDs. The SST focus, then, is how these strategic changes impacted upon the process of SIDM.

Stones' (2005:85) SST is a holistic theory, which depicts structuration as the quadripartite intertwining between external and internal structures, agents and outcomes. Thus, we focus not just on external elements, but we employ SST to explore the managerial judgment of agents, as it helps us to understand how agents interpret and react to emergent external structures. For Stones (2005, p. 91), 'conjuncturally-specific' internal structures refer to the agents' specific knowledge of particular contexts, which is 'knowledge of interpretative schemes, power capacities and normative expectations and principles of the agents within context'. Contrastingly, 'general dispositions' are experiences and values that influence agents 'naturally' without thinking (Stones, 2005, p. 9).

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In an Egyptian-based study of the implementation of an ERP system, Jack and Kholeif (2007) argue there was conflict between the 'conjuncturally-specific' and 'general dispositions': accountants were attempting to perform 'conjuncturally-specific' actions in creating organisational structures, rules and routines in establishing the ERP system, while acting in accordance with their general disposition (as accountants and former corporate employees) led them to reproduce familiar structures. This 'stickiness' or resistance to change is a common theme in management accounting research. Coad and Herbert (2009) investigated the impact of a new management accounting system on engineers. As the engineers previously maintained manual records, the new management control regime affected the financial empowerment of engineers, creating conflict between the engineers' general dispositions and their external structural context.

For us, SST enables us to empirically examine how external structures influence agents in making SIDs. There are three reasons in support. First, existing SIDM work illustrates the importance of considering external influences (for example, Carr et al. 2010; Hickson et al., 1986; Child and Lu, 1996). Quinn (1980), in particular, argues that strategic decision-making is shaped by past events, present circumstances and future perspectives. Second, Stones' (2005, p. 122) emphasises the role of agents-in-context in the 'agent-structure' relationship, which represents an opportunity to understand the impact of external structures:

...agents context analysis can 'round-off' the accounts that can, in principle if not always in fact, be given by agents' conduct analysis. It covers parts of the structuration cycle that the latter does not reach. Without agents context analysis the researched agent would be deracinated and condemned to turn inwards upon herself, cut off from any account of her hermeneutic and practical engagement with external structures...

Third, SST focuses on power relationships. A focus on agents enables us to empirically examine how external structures influence structures of signification, legitimation and domination. In this, we focus on how agents-in-context shape the hermeneutic frames of agents-in-focus (e.g. decision makers) and construct their strategic conduct in making SIDs. Giddens (1984, p. 373) argues that agents exercise power through controlling material (allocative) and people (authoritative). Both types of resources mediate the transformative capacity of human actions (power in a broad sense), and at the same time provides the medium of domination (power in the narrow sense) (Macintosh and Scapens, 1990; Busco, 2009). Giddens' refers to this as the

*dialectic of control* by which there are relations of autonomy and dependence in all social relations beyond those based on physical coercion (Stones, 2005, p. 29).

Equally, Coad and Glyptis (2014) argue that agents should be sensitive to the fact that their strategic conduct is contingent on how others act. This is explored by understanding the relational power of agents' 'position-practices' (Stones, 2005, p. 63). Coad and Glyptis (2014, p. 158) illustrate the use of the 'position-practices' in accounting and management control research, arguing that 'position-practices':

...more clearly sensitises accounting and control studies to how agents, situated in time-space contexts, draw upon their knowledge of situated practices, when engaged in the exercise of power, acts of communication and the imposition of sanctions.

The position-practices perspective enables us to understand how the agents exercise their power in a time of rapid change and extreme uncertainty. Thus, in summary, each component of Stones' quadripartite framework represents a relationship between structures and agents and it enables us to empirically examine the various relationships between agents and structures to explore how SIDs are made in a post-revolution context. An ontic focus also enables us to understand the influence of external structures, agents-in-context, position-practices, internal structures, agents-in-focus and power in the 'structure-agent' relationship. The next section depicts the relevant methodological choices to enable this 'in-depth' analysis, drawing on thematic analysis.

## 5. Methodology

We position this study at the ontic level. Stones (2005, p. 7) argues that Giddens' ST establishes a general set of concepts, '*ontology-in-general*', that constructs the conceptual definitions of ST at the abstract level encompassing all structures, agents, times and spaces. Contrastingly, Stones (2005, p. 78) argues that to understand a particular social phenomenon at a given time and space, we should move to '*ontology-in-situ*' or '*ontic*' analysis. Frezatti et al. (2014, p. 434) argue:

The "ontic" describes physical or factual existence, which is complementary to the nature or properties of that being (ontology). This philosophical turn allows the differentiation between the ontic, as an adjective referring to "real being", and

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ontology, which attempts to distil essences or structures from Being...Ontological analysis presupposes the ontic, explicitly analysing the moments of ontic existence...this is where ontic moments acquire (or are attributed) meaning: ontic existence requires explanation, not expansion or combination.

Stones (2005, p. 76) argues that the ontic is the 'level at which the empirical can be sought'. Jack and Kholeif (2007) found the ontic level enables researchers to understand dispositions and practices of agents. SST primarily constitutes a guide for empirical research in situated contexts, by making 'a leap to ontology-in-situ via a bridging meso-level framework' (Coad and Herbert, 2009, p. 179).

To engage in this 'in-depth' ontic study, we employed a combination of documentary analysis and focused interviews:

- a) Documentary analysis: we drew upon two particular sources of documents: i) organisational-specific documents, including websites and annual reports; ii) publicly-sourced documents concerning the Egyptian context including Government and Central Bank announcements, media reports and other social, political and economic information. The documents played an important contextualisation role (Stones, 2005). Bloyce (2004, p. 158) argues that when engaged in socio-political analysis, documentary analysis is crucial. May (1997, pp. 157-158) argues:

Documents, as the sedimentations of social practices, have the potential to inform and structure the decisions which people make on a daily and longer-term basis; they also constitute particular readings of social events.

Thus, documents provided valuable organisational and environmental, contextual information.

- b) Focused interviews: The use of focused interviews afforded the opportunity for thick descriptions of how SIDs had been made in the Egyptian context and the impact of reconstituted and emergent structures on the organisation and agents (Howarth and Torfing, 2004, p. 338). We chose to employ focused interviews as they allow an open conversation that allow researchers to focus on a particular set of issues, but by allowing interviewees to respond in an open manner. This flexibility and meaning (Pahl, 1995, p. 197) encourages greater qualitative depth by allowing:

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Interviewees to talk about the subject in terms of their own frames of reference. By this, I mean drawing upon ideas and meanings with which they are familiar. This allows the meanings that individuals attribute to events and relationships to be understood on their own terms (May, 1997, p. 113).

We sought to interview managers with suitable experience of making SIDs for our qualitative study. The experience and perceptions of the manager were more important to us than the business sector of the company, as we did not frame our study as a cross-sectional survey. Hence we did not select a sample of firms as such, but approached some 22 managers via business networks for our study. Despite the turbulent environment only four declined and we were able to conduct 18 interviews. The initial plan was to interview a single manager in each company, but in two of the multi-national companies (MNCs) the interviewees recommended we speak to their colleagues in relation to a particular question as they would be likely to be better-informed on that aspect. Therefore we actually conducted 21 interviews with managers, where 10 interviewees represented 7 MNCs, 9 were from nationally-owned companies (NOCs)<sup>3</sup> and 2 were from joint ventures (JVs). The interviewees had an average of 25 years managerial experience. Table 2 shows the spread of industries and types of ownership.

[INSERT TABLE 2 ABOUT HERE]

The interviews lasted between 35 and 70 minutes, with an average of 56 minutes and were conducted between April 1, 2013 and June 30 2013. With permission, most interviews were digitally-recorded, but some interviewees asked not to be recorded. In these cases, extensive notes were taken during interviews. The interviews were conducted in Arabic, the first language of the interviewer and interviewees, which enabled us to achieve a deeper interpretation of the influences of emergent external structures on SIDs in Egypt. Each interviewee was asked an open-ended question about the processing of making SIDs (see the overarching question in the interview guide in appendix one). This generated a myriad of responses from interviewees, but the goal of this interviewing technique is flexibility:

[f]or an approach that stresses the importance of subjectivity in explaining social reality, and which seeks to provide “thick descriptions” of events and processes...in-

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<sup>3</sup> By nationally-owned we mean Egyptian-owned companies, not state-owned enterprises

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depth qualitative interviewing is an important way of generating primary texts (Howarth and Torfing, 2004, p.338).

The interview guide shows one or two follow up questions under each of the four headings taken from SST, which were used to prompt, extend or refocus the conversations as necessary. Thus, interviewees explained the making of SIDs by discussing the new political regime in Egypt, how the new regime (described earlier in section 2) impacted upon decisions, how the Egyptian government programmes concerning social and economic development influenced SIDs and the nature of investment appraisal technical methods employed. The range of themes that emerged during the interviews increased our understanding of the how, why and what emergent external structures influenced SIDs.

During the field work, detailed field notes were made based on observations and interviews and recordings of the interviews were replayed multiple times to draw out ideas and themes and gain in-depth understanding of their meaning (ontic). We recognise that this is not an 'authentic' presentation of the ideas (Frezatti et al., 2014), as our depiction both decontextualises and recontextualises: analysis is 'always a question...of recontextualisation that is interesting ("novel"), credible and respectful' (Czarniawska, 2000, p. 19). After transcription and translations, all authors reviewed the empirical material. Initial thematic analysis took place after interviews. Braun and Clarke (2006, p. 79) argues that thematic analysis provides a rich, detailed, complex account of data.

A visual technique (akin to those sometimes used in forensic investigations) was used to cut out quotes from printed notes and transcripts and paste this evidence onto a long roll of paper clustered under the various themes to see how they related to extant literature, SST or emergent themes. These included, for example, reflections on the influence of the political situation, personal intuition, consensus, security, managerial judgment, investment appraisal methods and economic conditions. This helped us to identify commonly held or unique arguments between the data and literature. Ahrens and Chapman (2006:836) argue that this process can 'generate a plausible fit between problem, theory and data'.

Accordingly, the focus of the empirical analysis in the next section examines how agents, in post-revolution Egypt, understood the emerging and changing external structures and why and

how agents made SIDs during a period of revolution. It also examines how structures are understood by agents-in-focus and how ownership structures influence the reproduction of or resistance to technical structures.

## **6. Empirical Analysis and Discussion**

In terms of Stones' (2005) quadripartite components, our interviewees were 'agents-in-focus', (our interviewees were involved in making SIDs as investment directors, chief financial officers, owners and partners). See Figure 1 below for a representation of the interplay of the quadripartite framework relevant to our study:

[INSERT FIGURE 1 ABOUT HERE]

Based on the SST's quadripartite framework, the first component concerns the external structures and agents-in-context and the impact of Egypt, post revolution, upon the internal structures and agents-in-focus' practices in making SIDs. The second component focuses on internal structures of agents-in-focus, which is divided analytically to 'conjuncturally-specific' and 'general disposition' structures (Stones, 2005:85). 'Conjuncturally-specific' structures are the actions that agents-in-focus conduct in a certain context through understanding the knowledge about interpretative schemes, power and normative expectations of agents-in-context (Stones, 2005:91), and we refer to 'general disposition' structures as *habitus*<sup>4</sup> that agents-in-focus act 'naturally' and repeatedly across different situations in making decisions (Stones, 2005, p.87).

The third component is active agency, which represents the managerial judgement of agents-in-focus. We examined managerial judgment by intuition, personal experiences, and consensus, which impacted upon the internal structures of agents-in-focus. Finally, the fourth component is the outcome which explains how the interaction between external structures, internal

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<sup>4</sup> Stones use Bourdieu's term 'habitus' to refer to 'general dispositions'. Bourdieu defines habitus as "a system of lasting transposable dispositions which, integration past experiences, functions at every moment as a *matrix of perceptions, appreciations and actions* and make possible the achievement of infinitely diversified tasks" (Stones, 2005:68)

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structures, agents and managerial judgements shape SIDM process, especially, the change and reproduction of accounting techniques (e.g. NPV) in making SIDs.

We wish to emphasis the intertwining between these external structures, internal structures and agents which impacts upon practice and outcome (Stones, 2005). SST is not sequential, but emphasises dynamic interaction and feedback. In that sense, as there are multiple decisions, agents-in-focus constantly re-construct the relationship between agents and structures.

### 6.1 External structures and agents-in-context

This section illustrates how certain social, political and economic emergent structures impacted upon SID decision-making (Carr and Tomkins, 1996; Carr, 2005; Emmanuel et al., 2010). What is crucial is that the emergent structures resulted in different decisions, which illustrates the importance of the external environment and how that influences organisations and agents. For example, the Vice President of an automobile company focused on regulatory uncertainty. Following a government announcement that new tax legislation might raise increased tax proceeds from the automobile sector to overcome the economic crisis, Interviewee 4 acknowledged that this would change decisions:

Our company has now one third of the market share. However, I doubt we will continue our progress. There is a concern that new tax legislation might come out that raises the tax on automobile imports. This will lead the prices to increase. We have a recession now in this sector, and can you imagine the situation after the expected increase of prices. The government cabinet changed many times in short periods, each cabinet has its own decisions. So how can I open a new showroom now? I have to wait...

In this, Interviewee 4 invokes three different issues. First, the regulatory uncertainty over a new tax directly impacts upon an investment decision to open a new showroom and the interviewee suggests a need to 'wait'. Second, changes in government created uncertainty, as does each government's specific decisions (see section 2 above). Finally, the interviewee suggests that the uncertainty will impact economically upon market share. Post-revolution, there were severe fuel shortages and queues outside most petrol stations in Egypt. This was matched with fear that the government would change the energy subsidies reform, as the IMF was unimpressed with Egypt's fuel subsidy reform plan, which created doubt as to the government's willingness to ration diesel fuel. Under the new reform, consumers would be provided with limited

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subsidised fuel. Any further fuel needs would be paid for at market prices. For Interviewee 4, the fuel problem decreased the demand for automobiles and devalued the assets and the business. Interviewee 4 focused on the uncertainty, as the combination of the current fuel shortage, expected increases in fuel prices and government's plans for new tax legislation directly challenged the automobile industry, creating an ambiguous business environment. Delmas and Tokat (2005) argue that political and regulatory environments are an important source of organisational uncertainty.

Interviewee 13, the owner of a pharmaceutical company, argued that the new assessment rules, issued by the Ministry of Health, influenced SIDs. For example, the company planned to open a new factory and after many meetings, the partners decided to open the factory. However, during the preliminary stages, the Ministry of Health issued a new assessment rule, and in order to follow this new criterion the company would have to buy different machines than it was planning to buy to meet the new standards of health and safety. Consequently, Interviewee 13 states that 'after considering the new regulation issued by the Ministry of Health, we have postponed the decision'. This illustrates that regulatory decisions due to political instability resulted in a re-evaluation of an existing SID.

Changes of regulation postponed SIDM, but these emergent structures resulted in the re-evaluation of existing investment plans. For example, Interviewee 3, from a telecommunications company, had worked in the company's branch in Iraq and thus, he was familiar with working in a politically unstable context. Interviewee 3 commented:

The government has now given a licence to a fourth company to operate in Egypt. This decision changed our expansion plan. We slightly shifted our long-term investment policy to some short-term plans. For example, instead of thinking of getting new equipment to introduce 4G services to our network, we introduced many competitive offers through making agreements with outsourcing companies.

This company was planning to introduce 4G (4<sup>th</sup> generation) technology in Egypt requiring the replacement of equipment. However, as the Egyptian government issued a licence for a new (fourth) communication company to operate in Egypt, this led to a re-evaluation of investment policy. Consequently, the company had a contingency plan to introduce attractive tariffs. This example illustrates that the impact of new regulatory licence from the government resulted in

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the company postponing a long-term investment decision (SID) to make a short-term investment decision.

Other interviewees were concerned that government regulations failed to manage the impacts of the financial market crisis that emerged post-revolution. Interviewee 2, the CFO of a multinational producing hygiene products, noted that post-revolution there was a crisis in buying US dollars in the Egyptian financial markets. As banks did not sell US dollars, exchange companies increased the US dollar/Egyptian pound exchange rate. The CFO mentioned that sometimes the company took more than five days to buy US\$10,000. This created a significant challenge as the company was dependent upon importing raw materials and other production tools (e.g. machines). Interviewee 2 commented:

The government actions towards the foreign currency rate affected our expected sales. I am serious about what I am saying now, if this crisis had happened before we opened our factory in Egypt, we probably would have changed our decision.

In effect, Interviewee 2 is stating that with the benefit of hindsight, the company would have changed the SID to invest in Egypt. In particular, Interviewee 2 questions the ability of the government to manage the economy post-revolution. Thus, this adds a further layer of uncertainty, especially in terms of day-to-day governmental operations. The Central Bank of Egypt took approximately two months to resolve this foreign currency issue; this currency problem needed immediate action to demonstrate competence, build trust and reinforce that the government and its agents were in control. Lewis-Beck and Stegmaier (2000), for example, argue that strong economic institutions (such as central banks) attract greater FDI, as multinational organisations consider these institutions will provide the capital, exchange and environment needed in support of investments. Well-developed governmental economic institutions and financial markets provide crucial external economic structures in support of capital investment decisions (Bevan and Estrin, 2004).

In addition to stable financial markets and government regulation, ten interviewees focused on the security situation in making SIDs. Interviewee 10, the Head of Finance and Oil Operation in an oil company, stated that:

The political instability changes our evaluating process. For example, a project has been rejected because of the security problems in Egypt now.

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In this situation, the company was evaluating an opportunity to explore crude oil in the Western Egyptian desert. This project required high-skilled employees to spend at least three months in the desert operating high-specification oil exploration equipment. Consequently, while this project may have made economic sense, interviewee 10 suggests that the state of post-revolution security resulted in this SID being rejected, as the rise in unlawful activity against both person and property posed a significant challenge for the organisation in protecting employees and equipment. Thus, the political environment, in the sense of a security, changed or negated economic considerations.

Equally, interviewee 6 argued that the lack of security led some customers to breach the law and behave 'illegally'. Security, in this sense, is both about safety to the person and to property, as well as the ability for the law to be upheld:

Unfortunately, due to the dysfunctional behaviour of some people, as they target our stores and loot them (due to the lack of security) we are thinking to stop opening new stores now.

Thus, despite this company planning to expand and open new stores, the behaviour of some customers, as security emerged as a core concern, was an influence that resulted in the abandonment of this plan. Interviewee 4, similarly, also highlighted the importance of security: 'we are seriously thinking now to stop selling trucks on an instalment basis as we expect that many customers will not pay'. Interviewee 4 was concerned about the practical legal structures required to enforce contracts and the law. Since the revolution, the cases of armed robbery, car thefts and criminal action resulted in the re-assessment of many SIDs.

The state of post-revolution security altered the nature of business environment, which impacted upon the competitive decisions of competitors. Interviewee 12, a Middle East sales director for an organisation producing hygiene products, noted that while his company was planning to introduce a new product to the market, the attitude of competitors resulted in the company postponing the decision:

Some competitors are trying to drop the selling prices in order to keep selling their products. I think they are making losses, but they need to operate in the market. These actions influenced our decision to introduce a new brand to the market. I think political and economic instability led this group of competitors to behave in this way.

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In effect the 'rules of the game' changed and this qualitatively impacted upon the business decisions of organisations. Interviewee 12 suggests that some competitors behave differently and contrary to normal market pricing rules, by selling at a loss (contrary to general dispositions). Thus, in relation to the emergent structures, post-revolution, some competitors reduced their selling prices to continue operating in the market. This might be stimulated by a lack of business activity (with a drastic decline in real GDP) as a lack of perceived government control, security or organisation might be affecting the level of disposable income in the market. Interviewee 12 ascribes a survivalist mentality: they have no other options, resulting in competitors behaving 'dysfunctionally' to survive. This may reflect, also, that the same set of emergent structures impacts differently upon different organisations and actors, as Interviewee 12's organisation does not seem to engage in this 'dysfunctional' behaviour. Due to the economic climate, the need to survive in the market changed decision makers and competitors' actions.

Moreover, our empirical information found a strong unifying message in the social discontent that manifested post-revolution with a call for social justice through enhancing employee rights and increasing salaries. What was interesting, for us, is that the ownership structure (particularly, multi-national versus nationally-owned) impacted upon the relative weighting of the organisational context in SIDM. This is representative, in part, of power dynamics and illustrates how the ownership structure manifested itself in the decisions of agents-in-focus and the strategies of employees in terms of position-practices.

Our interviews demonstrate a difference between the power capacities of employees in nationally-owned [NOCs] in comparison to multi-national companies [MNCs]. Interviewee 1, who was working in a MNC (but had previously worked in a NOC), highlighted the difference in employees' power in different types of organisation:

In my former company, employees had more power to influence management actions than in this current company. They had the ability to stop any decision or revise it.

Interviewee 1 drew on comparative experience to suggest that there was greater flexibility and scope for influence in NOC than a MNC. Thus, the need to survive for NOCs gave employees comparatively more power, as employees bargaining power impacted upon SIDs. In contrast,

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employees exercised limited power in MNCs, as the MNC possessed other legitimate options, including shutting down the Egyptian subsidiary.

Our empirical information is consistent with many prior studies (e.g. Bevan and Estrin, 2004; Delmas and Tokat 2005), which found that political, social and economic structures affect investment decisions. However, this study analyses the influence of external structures, in a post- revolution context, not only directly on SIDM but also their impact upon the internal structures of agents-in-focus and managerial judgement, which is examined in the next section.

### 6.2 Internal structures of agents-in-focus

We analysed how agents-in-focus use their interpretative schemes to understand the power and the normative expectations of agents-in-context and external structures, also how this is reflected in the habitus of agents-in-focus in making SIDs.

Agents-in-focus understand that the outcome of their strategic conduct is contingent on how other agents react (Coad and Glyptis, 2014, p. 145). Thus, based on expected agents-in-context reactions (e.g. employees), agents-in-focus adapt their practices. Therefore, 'dialectic of control' is enacted, as their power shifts from one group of agents (management) to another (employees) (Conrad, 2005; Uddin and Tsamenyi, 2005). The 'dialectic of control' highlights that the relationship of domination and subordination is often fragile and subject to change, due to asymmetric distributions of power between agents (Coad and Glyptis, 2014).

Interviewee 9, a business owner manufacturing metal products, argued:

One of the factors I consider before buying a new machine and expanding is whether it will cut jobs...Employees could strike and stop work at any time. Since the revolution, employees' behaviour has become different; every couple of months they ask for a pay rise and production incentives...I should feel that we are one team.

Interviewee 9 points to the changing attitudes of employees, and the ability for employees to collectively exert pressure seeking salary increases and reductions in hours. For Interviewee 9, this places the company under constant pressure and shifts traditional power structures, which resulted in Interviewee 9 changing the nature of the decision-making process to identify the direct impacts of machinery purchases on the workforce. Thus, certain projects that might make sense technically and economically were no longer appropriate given the relative power

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of employees. In particular, we find the change in power dynamics fascinating, when Interviewee 9 refers to the employees and the organisation as 'one team'. This manifested later when Interviewee 9 discussed receiving an offer from an Italian company to purchase the business (where Interviewee 9 would continue in management). However, despite the desire to sell the business, Interviewee 9 was concerned about the reaction of employees and consequently decided to reject the offer and tried to instil processes that made SIDs as a collective team.

Stones (2005) argues that external structures shape the 'conjuncturally-specific' internal structures of agents-in-focus in response to the new position-practice of certain-agents-in-context. The new position-practices of employees drove the agent-in-focus to change the process and nature of making SIDs. Interviewee 9 attests to changing management strategy post-revolution: this involved monthly meetings with employees and employees had easier access to senior management. This reflects a significant shift in power dynamics, as employees, effectively, hold the lifeblood of the company in their collective hands: they can choose to support the company by allowing it to operate or not. Thus, this changes the nature of management, and exercising control through means other than formal MCS mechanisms is meaningful in uncertain contexts (Tucker and Parker, 2013, p. 250). This suggests that agents-in-focus realised that contextual uncertainty and the influence of other agents-in-context changed power dynamics and employees gained comparatively more power due to their position-practices.

The extreme uncertainty in a post-revolution context resulted in a power struggle between agents-in-focus and employees. Although agents-in-focus control allocative and authoritative resources, employees exert influence over the process of making SIDs. This questions the ability to exercise power through structures. Agents-in-focus reflexively monitor the past position-practice of employees, but also interpret their employees' current and future position-practices, which enables them to re-interpret the emergent power relationships held by employees through their new position-practice. The interpretative schemes, power capacities and the normative expectation of rewards and sanctions of agents-in-focus are re-constructed due to their re-interpretation of the position-practices certain agents-in-context. Stones (2005, p. 92) reinforces this by emphasising temporality:

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It should be noted that there is an inner temporality within the agent-in-focus' 'knowing' about what the agent-in-context is likely to do. This temporality involves her in, from the vantage point of the unfolding present, taking a position on what the agent-in-context might be expected to do in a situated future based on what can be interpreted about what she has been and what she has done in various situated pasts. The agent-in-focus looks backwards and forwards at the same time in making judgments.

The influence of external structures and agents, also, influence the habitus of agents-in-focus.

Interviewee 14 mentioned that:

After the revolution and in this high degree of uncertainty, we have a different understanding of making SIDs. The political and economic instability, on one side, and the government's unclear plans and employees' continuous demands, on the other side, both push us to change the way we used to evaluate any business proposal.

In addition, Interviewee 21 stated that:

In this extreme uncertain environment, I cannot use the same actions according to 'my manual' which I used for a long time in making investment decisions.

External structures shape the habitus of agents-in-focus, so that they act in a different way from their pre-reflexive way (before the revolution). The influence of external structures creates an interaction between the conjuncturally-specific and general dispositions structures (Coad and Herbert, 2009). This interaction is reflected through the managerial judgements of agents-in-focus, which is discussed in the next section.

### 6.3 Active agency: managerial judgement

Wilson, Branicki, Sullivan-Taylor, and Wilson (2010, p. 700) argue that strategic decisions 'are about future states of affairs and are based on incomplete information and managers therefore cannot be analytically rational in making such decisions'. Thus, SIDs are judgmental, affected by various contextual influences, where personal experience and intuition are crucial in translating external and internal influences (Frezattiet al., 2014).

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Interviewee 14, a CFO of a glass company, reflected on the role of intuition in considering an investment proposal to open a new branch:

After I prepared an investment proposal as normal, using a certain 'template' for this purpose, and presented it to the owners, they called me and asked me about my opinion. They said, 'forget about the template, based on your experience how can you judge this', and we will start to discuss it with you and all the directors to reach a consensus about the decision. This is our decision, and do not worry about any sanctions in the case of the failure of the project.

Interviewee 14 explained that in the post-revolution context, intuition was increasingly important, but also that there was a need for consensus, based on group discussions. Individuals, alone, in this uncertain context, cannot make decisions, as there are few reliable sources of information that can be used to support judgement. Interviewee 14 goes further on post-revolution to explain that the owners changed their management strategy as well as the reward and sanction systems to fit this new context. This reflects extant literature that illustrates a role for consensus even in 'relatively stable' contexts (Harris, 1999; Marsh et al., 1988). In addition, Interviewee 14 acknowledged that the owners benefitted from managers' experience in making SIDs. Eisenhardt (1989, p. 559) argued that the 'greater the use of experienced counsellors [experienced executives] the greater the speed of [the] strategic decision process'. We argue that this experience, this fundamental intuition for business and of the business, is increasingly important in extreme uncertainty.

Interviewee 2, the CFO of a company that produces hygiene products explained the role of managers' intuition; however, these intuitive acts cannot be isolated from experience and consensus.

Keep in your mind that managerial judgements must come from highly experienced and skilled staff (technicians, engineers and finance people). It is very important to depend on highly skilled persons with huge experience and involve them in the process of making any investment decision.

This explores the interrelationship between heuristics and consensus and managers' intuitions. Managerial judgement is a tactical process that depends on the manager's intuition and that uses the experience of interested parties (e.g. technicians, engineers and finance people and other departmental managers) to obtain a consensus about SIDs.

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The majority of interviewees acknowledged that managerial judgement influenced SIDs, as the numbers and technical methods were unreliable (Morgan, 1988). The role of subjective judgment in understanding investment proposals is crucial. Interviewee 8, one of three owners in a national pharmaceutical company, argued that personal intuition was primary in SIDM:

I am a pharmacist and I am not proficient in reading the numbers. We took the decision to start our business (open this factory) with my two partners without preparing complicated investment appraisal reports. It was a very simple study from non-professionals, and it works. I believe that our personal intuition is very important; especially nowadays as we cannot trust numbers, no one can know what will happen even tomorrow!

This reflects Grundy and Johnson (1993, p. 263), who argue, in a UK context, that managers in making SIDs rely on 'subjectivity, which involves reliance on more intuitive acts'. Butler and Ghosh (2014) found that the individual differences in the 'comprehensive thinking ability' of decision makers influenced their managerial accounting judgments and decisions. Thus, our study reflects that intuitive acts become even more important in extremely uncertain environments. This reflects Frezatti et al. (2014) where an organisation abandoned MAS systems and this created an environment of uncertainty. Under uncertainty, decision-makers rely on judgment and experience, rather than technical models (Langley, 1989).

In brief, the empirical data are consistent with the stream of research (Butler, Davies, Pike and Sharp 1991; Emmanuel et al., 2010) that views managerial judgement as one of the important influences on SIDs. However, in terms of SST, prior studies consider managerial judgement as an agents' conduct analysis, where agents repeatedly act across different contexts (*habitus*). Dissimilarly, we analyse managerial judgment as a result of an interaction between agents' conduct analysis and agents' context analysis, (where agents draw upon specific knowledge of a particular context) 'conjuncturally-specific structures'. This enables us to analyse how uncertain irresistible and independent external structures (Stones, 2005 p. 109) force agents-in-focus to rely *mainly* on managerial judgements rather than any technical investment appraisal methods in making capital investment decisions, which is examined in the outcome section.

### 6.4 Outcome: reproduction and change

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It was interesting, for us to see the influence of ownership structure on the process of change or reproducing technical structures (e.g. NPV). Interviewee 5, who was the CFO of a NOC manufacturing plumbing supplies for agriculture, irrigation, industry and housing. In reflecting on the technical methods of SIDs, Interviewee 5 stated:

It could be acceptable to consider the technical methods throughout the process of making SIDs before the revolution. But now no one can even expect what will happen tomorrow, nor after five years!!! Many employees, from the Finance department, in our weekly meetings told the owner that it does not make sense to calculate the NPV or IRR now. I think they are right, the uncertainty that exists now can never be expressed in numbers, and the owner accepted this.

As a medium-sized company, it aimed to fulfil substantial local and international demand and in the year prior to the revolution, the company invested in replacing the majority of its old machines, funded through bank loans. Thus, the revolution pressured the company to keep operating to meet its debt obligations and order commitments. This constructed a 'need to survive' which drove agents-in-focus to change practice. Thus, technical, rational calculation in a period of extreme uncertainty made little sense, and the owner accepted the abandonment of requiring the reproduction of technical structures.

However, comparatively, the power dynamic was substantially different in the MNC environment. For example, Interviewee 11, as a Director of Middle East and African planning and logistics for a multi-national laundry and homecare company, succinctly summarised the power dynamic in a MNC:

This is a multi-national company. It has many branches all over the world, so it can move its investments from Egypt to any other country. This happened to the Iraqi and Pakistani subsidiaries.

The MNC is a holding company with 25 subsidiaries, with consolidated assets of US\$2.5 billion and 8,000 employees. These broader external structures were comparatively more influential on SIDs than the Egyptian external structures that impacted upon NOCs. MNCs make SIDs with reference to the strategic plan of the company and the MNC headquarters influences the acceptable approach to making SIDs (Chung, Gibbons and Schoch, 2000). In effect, Interviewee 11 recognised that if the risks to operations are great, a MNC can shift to more stable markets. This flexibility reinforces the power relationships of MNCs and local subsidiaries, as MNCs keep

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their global structures irrespective of the local external environment of subsidiaries. Morsicato and Radebaugh (1979) argue that subsidiary managers perform in accordance with the standardised system of the parent companies, rather than their own special environment. Thus, in comparison, the degree of pressure that the agents-in-focus can exert is limited by a stronger set of external and organisational structures.

However, this results in perverse situations. As MNCs require agents-in-focus in the local environment to reproduce technical structures (such as requiring certain calculations and presenting SIDs in a numerical form), this does not necessarily represent everyday practice. Interviewee 7 reflected on the insistence by the MNC headquarters for all subsidiaries to prepare their investment proposals using traditional investment appraisal methods. Interviewee 7, a CFO of a multi-national construction company, recognised the space for agents-in-focus to exercise a degree of power in restating the position-practices relationship:

Each decision has its own context, so how can I adopt the same methods for each decision? A decision is not a mathematical equation without room for personal judgments. In addition, these quantitative methods are based on a Western context, so their suitability for the Egyptian context is questionable. Although, headquarters believe that it is almost impossible now (after the revolution) in Egypt to rely on NPV in making our decisions, they still ask us to use these quantitative methods in preparing our investment proposals. I do not know why? Maybe the stakeholders are happy with that.

What this demonstrates is the imposition of power from the MNC with respect to the local subsidiary company. However, what this also demonstrates is that the local agents-in-focus, such as Interviewee 7, are able to renegotiate power by recognising the absurdity of NPV in the Egyptian context given the uncertainty. Thus, any NPV is a construction (Morgan, 1988) that suits the purposes of the local Egyptian company. Interviewee 7 recognised that SIDs depend on predictions and estimations, based on managerial judgments, and argued that SID numbers are not 'pure', as they cannot be isolated from personal judgment. The impact of external factors may not be obvious in relatively stable social, political and economic structures characterising advanced capital contexts. However, the combination of Egypt as an emerging economy and Egypt in a post-revolutionary context renders these emergent external structures and uncertainty crucial to the SID process. This questions the suitability of abstracted technical models for SIDs in emerging economies, and reflects important literature (see, for example, Uddin and Hopper 2001; Wickramasinghe, Hopper and Rathnasiri, 2004; Kattan, Pike and

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Tayles, 2007). These studies suggest that the unique social, political and cultural structures characteristic of emerging economies challenge the direct adoption and application of dominant Western MAS. We suggest that this is even more complex in extremely uncertain contexts, such as post-revolution Egypt.

This evidence contradicts traditional SIDM studies that consider SIDs as objective decisions (Cary, 2008). However, almost all interviewees understood SIDs from a people and process perspective intertwined with emergent social, political and economic external structures. This demonstrates the importance of the dualism of interpretations: a) the impact of external structures on the organisation (as internal structures); and b) the impact of external structures on agents-in-focus. Table 3 summarises the various themes and the intertwining of agents and structures evidenced by selected interviewees' quotes within our SST framework of analysis.

[INSERT TABLE 3 ABOUT HERE]

We argue that SIDs are not abstracted and they are not the technical application of abstracted 'taken-for-granted' methods employable in any context. SIDs are context-specific and individual, as they reflect power and subjectivity.

This room for manoeuvre reflects Macintosh and Scapens' (1991) concept where actors use 'stocks of knowledge' and inherently understand what to do in social settings. Stones (2005, p. 29) claims that these 'stocks of knowledge' (practically and discursively), in combination with power, is closely related to Giddens' notion that agents can 'act otherwise'. The need to survive prevents agents-in-focus in NOCs to exercise their power through structures (e.g. rules and regulations). Thus, employees gain more bargaining power according to their new position-practices and they have the 'adequate power' (Stones, 2005:111) to 'act otherwise' and abandon the reproduction of technical structures. However, MNCs use structures to push agents-in-focus to reproduce technical structures. Although parent companies know that agents-in-focus have gained power due to their position-practices post the revolution, their ability to shut down the Egyptian subsidiary constrains the power of agents-in-focus from being 'adequate' enough to 'act otherwise' and stop reproducing technical structures. In this,

technical tools constrain agents-in-focus to the extent that they 'window-dress' their decisions within the confines of the tools to legitimise their actions (Suddaby and Greenwood, 2005). Oliver (1991) argues extensive emphasis on external legitimacy leads actors to engage in 'window dressing'. However, this is reflective of a form of power: Carr et al. (2010, p. 287) argue that 'the greater the power, the less the need for rationality, in the sense of rational means-end justification'.

### 6. Conclusions

The prime contribution of this paper is to highlight the impact of emergent structures that emanate from extreme uncertainty on SIDM. We do not study particular SIDs *per se*, having a greater focus on process, but we identify that organisational decision-makers were impacted by the uncertainty of external (political, social and economic) structures in making SIDs. This did not result in agents' inability to act, as might have been expected, but in their shift of focus from previous accounting routines to more socially sensitive considerations.

This study is a comprehensive application of Stones' (2005) quadripartite framework to SIDM. We employed SST in this endeavour because it gave us a distinct theoretical lens through which to view the 'people and process' approach embedded in recent SID literature, and highlighted the importance of external structures previously neglected in SID research. The key issue in adopting the SST approach is that the influence of external structures is not uni-dimensional and uni-directional. Rather, the influence and impact of external structures is a complex intertwinement of structures (internal and external) and agents. We argue that this constitutes a 'structure-agent' dualism. In this sense, we discovered the impact of changes in both internal and external structures on decision makers. We found the degree of uncertainty provided greater space for intuition, experience and judgment.

The paper makes three further conclusions. First, it emerged that ownership structures were important in understanding current SIDM in Egypt. There was a marked difference in the power relationships between employees in a nationally-owned organisation vis-à-vis a multi-national organisation. In this, the multi-national had a further set of external management control structures that were, in effect, more important than the local structures. However, the

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domestic organisations were more directly impacted by the extreme uncertainty, and this involved shifting power to employees to reflect the demands of the revolutionary movement.

Second, we found the ownership structures influenced the adoption of calculative techniques in accounting for SIDM. With domestic organisations, the social and political agenda attached to the revolution shifted power to employees and agents-in-focus who resisted the adoption of NPV in communicating SIDs. However, with multi-national organisations, the NPV was part of the structure they are so familiar with, it appears to have become an unmovable structure that dominates and legitimises investment, despite agents-in-focus realising its lack of meaning when the underlying assumptions were so uncertain. We argue that this is due to the global reach of MNCs enabling them to benefit from a portfolio effect of investing in subsidiaries in other countries, hence balancing out the risk. This is supported by at least one interviewee commenting that the multi-national has the option to simply move production. We realise that this may not be so feasible in certain industries, for example oil and energy, where production is harder to relocate due to the location of natural resources.

Finally, we examined the power in agent-structure relationships and found how agents in nationally-owned companies were able to assert their conjuncture-specific knowledge and use a formal project proposal as a vehicle for communicating the judgments and intuition derived from experiencing the uncertain business environment. In part, this was because the very concept of economically rational calculation and communication was seen by local owners as irrational given the uncertainty.

Thus, the paper contributes to the developing SMA and SID literature that in an extremely uncertain context capital investment can be justified even when NPV is at best extraordinarily unreliable, and at worst 'broken' in terms of a decision rule. This was based on the complex interrelationships between organisational and environmental influences observed by decision-makers and the reflections we elicited on their changing practice.

## **References**

Abdel-Kader, M., Luther, R. (2008). The impact of firm characteristics on management accounting practices: a UK-based empirical analysis. *British Accounting Review*, 40(1), 2–27.

## Accounting for strategic investment decision-making under extreme uncertainty

- Abdel-Kader, M., Dugdale, D. (2001).Evaluating investments in advanced manufacturing technology: A fuzzy set theory approach. *The British Accounting Review*, 33(4), 455-489.
- Ackerman, J. (2004). Co-governance for accountability: beyond “exit” and “voice”. *World Development*, 32(3), 447-463.
- Ahrens, T., Chapman, C. S. (2006).Doing qualitative field research in management accounting: Positioning data to contribute to theory. *Accounting, Organizations and Society*, 31(8), 819-841.
- Alam, M., Lawrence, S., Nandan, R. (2004). Accounting for economic development in the context of post-colonialism: the Fijian experience. *Critical Perspectives on Accounting*, 15(1), 135-157.
- Alkaraan, F., Northcott, D. (2006). Strategic capital investment decision-making: A role for emergent analysis tools?: A study of practice in large UK manufacturing companies. *The British Accounting Review*, 38(2), 149-173.
- Arnold, G. C., Hatzopoulos, P. D. (2000). The Theory-Practice Gap in Capital Budgeting: Evidence from the United Kingdom. *Journal of Business Finance and Accounting*, 27(5-6), 603-626.
- Berry, A., Coad, A., Harris, E, Otley, D., Stringer, C. (2009). Emerging themes management control: a review of recent literature. *British Accounting Review*, 41(1), 2–20.
- Bevan, A.,Estrin, S. (2004). The determinants of foreign direct investment into European transition economies. *Journal of comparative economics*, 32(4), 775-787.
- Bloyce, G. (2004). Critical accounting education: teaching and learning outside the circle. *Critical perspectives on Accounting*, 15(4), 565-586.
- Braun, V., Clarke, V. (2006).Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.
- Busco, C. (2009). Giddens’ structuration theory and its implications for management accounting research. *Journal of Management and Governance*, 13(3), 249-260.
- Butler, R., Davies, L., Pike, R., Sharp, J. (1993). Strategic Investment Decisions: Theory. *Practice and Process*, Routledge, London.
- Butler, S., Ghosh, D. (2015) Individual differences in managerial accounting judgments and decision making, *The British Accounting Review*, 47(1), 33-45.
- Cadez, S., Guilding, C. (2008).An exploratory investigation of an integrated contingency model of strategic management accounting. *Accounting, Organizations and Society*, 33(7), 836-863.

## Accounting for strategic investment decision-making under extreme uncertainty

- Carr, C. (2005). Are German, Japanese and Anglo-Saxon Strategic Decision Styles Still Divergent in the Context of Globalization?. *Journal of Management Studies*, 42(6), 1155-1188.
- Carr, C., Kolehmainen, K., Mitchell, F. (2010). Strategic investment decision making practices: A contextual approach. *Management Accounting Research*, 21(3), 167-184.
- Carr, C., Tomkins, C. (1996). Strategic investment decisions: the importance of SCM. A comparative analysis of 51 case studies in UK, US and German companies. *Management Accounting Research*, 7(2), 199-217.
- Carter, D., Spence, C. (2011). The dictatorship of love: A response to "A spiritual reflection on emancipation and accounting" by Pala Molisa. *Critical Perspectives on Accounting*, 22(5), 485-491.
- Cary, D. (2008). An integrated approach to alternative capital budgeting techniques, mutually exclusive projects, and consistency with the net present value rule. *Journal of American Academy of Business*, 13(2), 14-19.
- Child, J., Lu, Y. (1996). Institutional constraints on economic reform: The case of investment decisions in China. *Organization Science*, 7(1), 60-77.
- Chittenden, F., Derregia, M. (2015). Uncertainty, irreversibility and the use of 'rules of thumb' in capital budgeting, *The British Accounting Review*, 47(3), 225-236.
- Coad, A., Herbert, I. (2009). Back to the future: New potential for structuration theory in management accounting research? *Management Accounting Research*, 20(3), 177-192.
- Coad, A., Glyptis, L. (2014). Structuration: A position–practice perspective and an illustrative study. *Critical Perspectives on Accounting*, 25(2), 142-161.
- Cohen, I. (1989). *Structuration theory: Anthony Giddens and the constitution of social life*. London: Macmillan.
- Conrad, L. (2005). A structuration analysis of accounting systems and systems of accountability in the privatised gas industry. *Critical perspectives on accounting*, 16(1), 1-26.
- Cooper, D., Sherer, M. (1984). The value of corporate accounting reports: arguments for a political economy of accounting. *Accounting, Organizations and Society*, 9(3), 207-232.
- Chung, H., Gibbons, T., Schoch, P. (2000). The influence of subsidiary context and head office strategic management style on control of MNCs: the experience in Australia. *Accounting, Auditing and Accountability Journal*, 13(5), 647-668.
- Czarniawska, B. (2000). The uses of narrative in organization research, GRI Report, available on the internet at: <https://gupea.ub.gu.se/handle/2077/2997> Accessed 16.11.14.

## Accounting for strategic investment decision-making under extreme uncertainty

- Delmas, M., Tokat, Y. (2005). Deregulation, governance structures, and efficiency: the US electric utility sector. *Strategic Management Journal*, 26(5), 441-460.
- Dent, J. (1990). Strategy, organization and control: some possibilities for accounting research. *Accounting, Organizations and Society*, 15(1), 3-25.
- Dirsmith, M., Heian, J., Covaleski, M. (1997). Structure and agency in an institutionalized setting: The application and social transformation of control in the Big Six. *Accounting, Organizations and Society*, 22(1), 1-27.
- Dryzek, J. (1994). *Discursive democracy: Politics, policy, and political science*. Cambridge University Press.
- Egypt Independent, (2013). Central bank: US \$5bn in foreign investments left Egypt in six months, available on the internet at: <http://www.egyptindependent.com/news/central-bank-us5-bn-foreign-investments-left-egypt-six-months> Accessed 16.01.13.
- Eisenhardt, K. (1989). Making fast strategic decisions in high-velocity environments. *Academy of Management journal*, 32(3), 543-576.
- Eisenhardt, K., Bourgeois, L. (1988). Politics of strategic decision making in high-velocity environments: Toward a midrange theory. *Academy of management journal*, 31(4), 737-770.
- El Rashidi, Y. (2013). Egypt: the rule of the brotherhood. *New York Review*, available on the internet at: <http://www.nybooks.com/articles/archives/2013/feb/07/egypt-rule-brotherhood> Accessed 07.02.13.
- Elbanna, S., Child, J. (2007). The Influence of Decision, Environmental and Firm Characteristics on the Rationality of Strategic Decision-Making. *Journal of Management Studies*, 44(4), 561-591.
- Emmanuel, C., Harris, E., Komakech, S. (2010). Towards a better understanding of capital investment decisions. *Journal of Accounting and Organizational Change*, 6(4), 477-504.
- Free, C. (2008). Walking the talk? Supply chain accounting and trust among UK supermarkets and suppliers. *Accounting, Organizations and Society*, 33(6), 629-662.
- Frezatti, F., Carter, D., Barroso, M. (2014). Accounting without accounting: Informational proxies and the construction of organisational discourses. *Accounting, Auditing and Accountability Journal*, 27(3), 426-464.
- Gaffikin, M. (2008). *Accounting Theory Research, Regulation and Accounting Practice*. Frenchs Forest: Pearson Education Australia.
- Ghoshal, S., Nohria, N. (1989). Internal differentiation within multinational corporations. *Strategic management journal*, 10(4), 323-337.

## Accounting for strategic investment decision-making under extreme uncertainty

- Giddens, A. (1984). *The constitution of society*. Cambridge: Polity Press.
- Giddens, A. (1979). *Central Problems in Social Theory*. London: Macmillan.
- Granlund, M. (2001). Towards explaining stability in and around management accounting systems. *Management accounting research*, 12(2), 141-166.
- Grundy, T., Johnson, G. (1993). Managers' Perspectives on Making Major Investment Decisions: the Problem of Linking Strategic and Financial Appraisal. *British Journal of Management*, 4(4), 253-267.
- Harris, E. (1999). Project risk assessment: a European field study. *The British Accounting Review*, 31(3), 347-371.
- Harris, E. (2014). Feel the risk: strategic investment decisions in an uncertain world. In D. Otley and K. Soin (Eds.), *Management Control and Uncertainty*, (pp. 162-177). Palgrave: Basingstoke.
- Harris, E., El-Massri, M. (2011). Capital investment appraisal. In M. Abdel-Kader (Ed.), *Review of Management Accounting Research* (pp.343-377). Palgrave: Basingstoke.
- Hickson, J., Butler, J., Cray, D., Mallory, R., Wilson, C. (1986). *Top Decisions: Strategic Decision-Making in Organizations*. Blackwell: Oxford.
- Hines, R. (1989). Financial accounting knowledge, conceptual framework projects and the social construction of the accounting profession. *Accounting, Auditing and Accountability Journal*, 2(2), 72-92.
- Howarth, D., Torfing, J. (2004). *Discourse theory in European politics*. London: Palgrave Macmillan.
- Hyvönen, T., Järvinen, J., Pellinen, J., Rahko, T. (2009). Institutional logics, ICT and stability of management accounting. *European Accounting Review*, 18(2), 241-275.
- Jack, L. (2005). Stocks of knowledge, simplification and unintended consequences: the persistence of post-war accounting practices in UK agriculture. *Management Accounting Research*, 16(1), 59-79.
- Jack, L., Kholeif, A. (2007). Introducing strong structuration theory for informing qualitative case studies in organization, management and accounting research. *Qualitative Research in Organizations and Management: An International Journal*, 2(3), 208-225.
- Jack, L., Kholeif, A. (2008). Enterprise resource planning and a contest to limit the role of management accountants: a strong structuration perspective. *Accounting Forum*, 32(1), 30-45.

## Accounting for strategic investment decision-making under extreme uncertainty

- Jones, T., Dugdale, D. (2001). The concept of an accounting regime. *Critical Perspectives on Accounting*, 12(1), 35-63.
- Joseph, G. (2006). Understanding developments in the management information value chain from a structuration theory framework. *International Journal of Accounting Information Systems*, 7(4), 319-341.
- Kattan, F., Pike, R., Tayles, M. (2007). Reliance on management accounting under environmental uncertainty: The case of Palestine. *Journal of Accounting and Organizational Change*, 3(3), 227-249.
- Kingsley, A., Reed, N. (1991). Decision process models and organizational context: Level and sector make a difference. *Public Productivity and Management Review*, 14(4), 397-413.
- Langley, A. (1989). In search of rationality: The purposes behind the use of formal analysis in organizations. *Administrative Science Quarterly*, 34(4), 598-631.
- Lewis-Beck, M., Stegmaier, M. (2000). Economic determinants of electoral outcomes. *Annual Review of Political Science*, 3(1), 183-219.
- Ma, Y., Tayles, M. (2009). On the emergence of strategic management accounting: an institutional perspective. *Accounting and Business Research*, 39(5), 473-495.
- Macintosh, N., Scapens, R. (1990). Structuration theory in management accounting. *Accounting, Organizations and Society*, 15(5), 455-477.
- Macintosh, N., Scapens, R. (1991). Management accounting and control systems: a structuration theory analysis. *Journal of Management Accounting Research*, 3(3), 131-158.
- Marsh, R., Barwise, P., Thomas, K., Wensley, C. (1988). Managing strategic investment decisions. In A. Pettigrew (Ed.), *Competitiveness and the Management Process* (pp. 86–136). Blackwell: Oxford
- May, T. (1997). *Social Research: Issues, Methods and Process*. Buckingham: Open University Press.
- Morgan, G. (1988). Accounting as reality construction: towards a new epistemology for accounting practice. *Accounting, Organizations and Society*, 13(5), 477-485.
- Morsicato, H., Radebaugh, L. (1979). Internal performance evaluation of multi-national enterprise operations. *The International Journal of Accounting*, 15(1), 77-94.
- New York Times (2013). Egypt News — Revolution and Aftermath. *The New York Times*, at: <http://topics.nytimes.com/top/news/international/countriesandterritories/egypt/index.htm> Accessed 16.04.13.
- Nixon, B., Burns, J. (2012). The paradox of strategic management accounting. *Management Accounting Research*, 23(4), 229-244.

## Accounting for strategic investment decision-making under extreme uncertainty

- Oliver, C. (1991). Strategic responses to institutional processes. *Academy of management review*, 16(1), 145-179.
- Pahl, R. (1995). *After success: Fin de siècle anxiety and identity*. Cambridge: Polity.
- Pfeffer, J. (1981). *Power in organizations*. Marshfield: MA.
- Pike, R. (1996). A longitudinal survey on capital budgeting practices. *Journal of Business Finance and Accounting*, 23(1), 79-92.
- Puxty, A. (1993). *The Social and Organizational Context of Management Accounting*. London: Academic Press.
- Quinn, J. B. (1980). *Strategies for change: Logical incrementalism*. Irwin Professional Publishing.
- Roberts, J., Scapens, R. (1985). Accounting systems and systems of accountability—understanding accounting practices in their organisational contexts. *Accounting, Organizations and Society*, 10(4), 443-456.
- Scapens, R. (2006). Understanding management accounting practices: A personal journey. *The British Accounting Review*, 38(1), 1-30.
- Shams El-Din, M. (2011). Egypt: uncertainty is bad for business, available on the internet at: <http://www.globalpost.com/dispatch/news/regions/middle-east/egypt/111106/egypt-uncertainty-bad-business> Accessed 22.02.13.
- Shank, J. (1996). Analysing technology investments—from NPV to strategic cost management (SCM). *Management Accounting Research*, 7(2), 185-197.
- Shank, J., Govindarajan, V. (1992). Strategic cost management: the value chain perspective, *Journal of Management Accounting Research*, 4, 179- 198.
- Stones, R. (1991). Strategic context analysis: a new research strategy for structuration theory. *Sociology*, 25(4), 673-695.
- Stones, R. (2005). *Structuration theory*. London: Palgrave.
- Suddaby, R., Greenwood, R. (2005). Rhetorical strategies of legitimacy. *Administrative science quarterly*, 50(1), 35-67.
- Sutton, R., Eisenhardt, K., Jucker, J. (1986). Managing organizational decline: Lessons from Atari. *Organizational dynamics*, 14(4), 17-29.
- Tomkins, C., Carr, C. (1996). Reflections on the papers in this issue and commentary on the state of strategic management accounting. *Management Accounting Review*, 7 (2), 271–280.

## Accounting for strategic investment decision-making under extreme uncertainty

- Tucker, B., Parker, L. (2013) "Out of control? Strategy in the NFP sector: the implications for management control", *Accounting, Auditing and Accountability Journal*, 26(2), 234 – 266.
- Uddin, S., Hopper, T. (2001). A Bangladesh soap opera: privatisation, accounting, and regimes of control in a less developed country. *Accounting, organizations and society*, 26(7), 643-672.
- Uddin, S., Tsamenyi, M. (2005). Public sector reforms and the public interest: a case study of performance monitoring in a Ghanaian state-owned enterprise (SOE). *Accounting, Auditing and Accountability Journal*, 18(5), 648-675.
- Verbeeten, F. (2006). Do organizations adopt sophisticated capital budgeting practices to deal with uncertainty in the investment decision? A research note. *Management Accounting Research*, 17(1), 106-120.
- Wickramasinghe, D., Hopper, T., Rathnasiri, C. (2004). Japanese cost management meets Sri Lankan politics: Disappearance and reappearance of bureaucratic management controls in a privatised utility. *Accounting, Auditing and Accountability Journal*, 17(1), 85-120.
- Wilson, D., Branicki, L., Sullivan-Taylor, B., Wilson, A. (2010). Extreme events, organizations and the politics of strategic decision-making. *Accounting, Auditing and Accountability Journal*, 23(5), 699-721.

**Table 1: Economic Indicators before and after the Revolution**

	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>Real GDP growth rate</b>	5.20%	1.78%	2.20%	2.10%	2.10%
<b>Net FDIs (USD million)</b>	\$1596	\$1108	\$2586.6	\$2554	\$2959.8
<b>Inflation rate</b>	7.5%	8.4%	8.7%	6.9%	10.1%
<b>Unemployment rate</b>	9%	12%	12.7%	13.30%	13.20%

Source: Bloomberg (2015)

**Table 2: Information about Interviewees**

<b>Interviewee No.</b>	<b>Interviewee Job Title</b>	<b>Sector/Industry</b>	<b>Company</b>	<b>Ownership Type</b>	<b>Duration (Mins)</b>
1	Vice President Exploration and New Ventures	Oil and Energy	OE (1)	Multi-national	60
20	Planning and Investment Director	Oil and Energy	OE (1)	Multi-national	70
2	CFO - Egypt	Hygiene products	HP (1)	Multi-national	55
12	Middle East sales director-Egypt	Hygiene products	HP (1)	Multi-national	65
18	Middle East marketing director-Egypt	Hygiene products	HP (1)	Multi-national	65
3	Investment and planning Director	Communication	COM. (1)	Multi-national	45
4	CEO (vice president)	Automobile	AUTO. (1)	National	70
5	CFO	Pumps industry	PUMP. (1)	National	50
6	Investment and planning director	Communication	COM. (2)	Joint venture	60
7	Financial Director – Egypt	Construction	CONS. (1)	Multi-national	65
8	CEO (owner)	Pharmaceutical	PHARM. (1)	National	60
9	CEO (owner)	Metal construction	METAL (1)	National	60
10	Head of Finance Oil Operation – Egypt	Oil and Energy	OE (2)	Multi-national	60
11	Director of Middle East and Africa planning and logistics	Manufacturing, Home Products	LAUND. (1)	Multi-national	50
13	CEO (owner)	Pharmaceutical	PHARM. (2)	National	55
14	CFO	Glass	GLASS (1)	National	60

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15	CFO	Plastics and chemicals	PLAS. (1)	National	50
16	CFO	Paper	PAPER (1)	National	40
17	CEO (vice president)	Automobile	AUTO. (2)	Joint venture	55
19	CEO (owner)	Weavers	WEAV. (1)	National	35
21	Investment and Finance Director	Food and Beverage	FOOD (1)	Multi-national	45

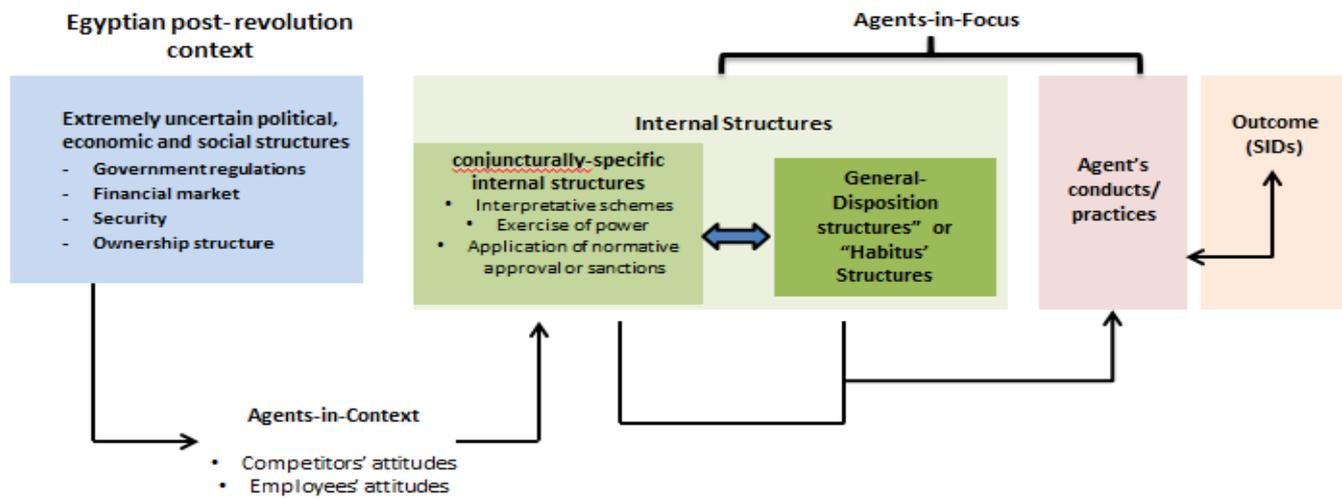
**Table 3: Summary of Empirical Analysis: Themes, Structures and Agents**

Themes	Source of evidence (interview numbers)		Illustrative quote (interview number)
	MNCs/JVs	NOCs	
<b>1- External Structures and Agents</b>			
<i>External structures</i>			
Government regulations	1,2,3,10,11,12,17,20,21	5,13	The government has now given a licence to a fourth company to operate in Egypt. This decision changed our expansion plan. We slightly shifted our long-term investment policy to some short-term plans. For example, instead of thinking of getting new equipment to introduce 4G services to our network, we introduce many competitive offers through making agreements with outsourcing companies (3).
Security	1,2,3,6,7,10,20	4,13,14,16	Unfortunately, due to the dysfunctional behaviour of some people, as they target our stores and loot them (due to the lack of security) we are thinking to stop opening new stores now (6).
Financial markets	2,12,18,20	5,9,13	The government actions towards the foreign currency rate affected our expected sales. I am serious about what I am saying now, if this crisis had happened before we opened our factory in Egypt, we probably would have changed our decision (2).
Ownership structure	1,3,8,11,20,21	5,14,16,19	This is a multi-national company. It has many branches all over the world, so it can move its investments from Egypt to any other country. This happened to the Iraqi and Pakistani subsidiaries (11).
<i>Agents-in-context</i>			
Employee attitudes	1,6,11	4,5,8,9,13,14,16	One of the factors I consider before buying a new machine and expanding is whether it will cut jobs...Employees could strike and stop work at any time. Since the revolution, employees' behaviour has become different; every couple of months they ask for a pay rise and production incentives...I should feel that we are one team (9).
Competitor attitude	2,3,6,12,18,21	8,9,13,15	Some competitors are trying to drop the selling prices in order to keep selling their products. I think they are making losses, but they need to operate in the market. These actions influenced our decision to introduce a new brand to the market. I think political and economic instability led this group of competitors to behave in this way (12).

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<b>2- Internal Structures</b>			
<i>Conjuncturally-specific knowledge</i>			
Knowledge of interpretative schemes, power capacities and normative expectations	1,7,11,17,18,20	4,5,8,9,13,14,19	After the revolution and within this high degree of uncertainty, we have a different understanding of making SIDs. The political and economic instability, on one side, and the government unclear plans and employees' continuous demand, on the other side, both push us to change our way of evaluating any business proposal (5).
<i>General Disposition</i>			
Habitus /norms	1,2,3,6,7,10,12,18,21	4,5,9,13,14,19	In this extreme uncertain environment, I cannot use the same actions in 'my manual' which I used (to do it) for a long time in making investment decisions (21).
<b>3- Active Agency: managerial judgement</b>			
Intuition, heuristics (personal experiences) and consensus	1,2,3,6,7,10,12,18,21	4,5,9,13,14,19	After I prepared an investment proposal as normal, using a certain 'template' for this purpose, and raised it to the owners, they called me and asked me about my opinion. They said, 'forget about this template, and based on your experience how can you judge about that', and we will start to discuss it with you and all the directors to reach a consensus about the decision. This is our decision, and do not worry about any sanctions in the case of failure of the project (14).
<b>4- Outcome</b>			
Re-producing/resisting technical structure (e.g.NPV)	1,2,3,6,7,10,11,20,21	4,5,8,9,13,19	It could be acceptable to consider the technical methods throughout the process of making SIDs before the revolution. But now no one can even expect what will happen tomorrow, nor after five years!!! Many employees, from the Finance department, in our weekly meetings told the owner that it does not make sense to calculate the NPV or IRR now. I think they are right, the uncertainty that exists now can be never expressed in numbers, and the owner accepted this (5).

Figure 1: The Quadripartite Framework in the Egyptian Revolution Context



Adapted from Stones, 2005:85

**Appendix One**

**The Interview Guide**

How do you make SIDs in the Egyptian context?

External structures:

- How do the political, social and economic radical changes influence SIDM?
- How do the Egyptian government policies and regulations influence SIDs?

Internal structures:

- How do your personal experiences and managerial judgements influence SIDM?

Active agency:

- How do you make SIDs in the Egyptian context?
- Did you find any investment proposal with a positive NPV that has been rejected? And if any, why were they rejected?

Outcome:

- How are accounting models (e.g. NPV) adopted in SIDM? Especially, after the revolution.
- How/does the parent company/top management effect the adoption of such capital budgeting techniques?