Analysis of strategic performance of global engineering and construction firms

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Analysis of Strategic Performance of Global Engineering and Construction Firms

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A thesis submitted to the Nanyang Technological University
in fulfillment of the requirement for the degree of
Master of Engineering

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This research proves interdisciplinary in nature, as concepts utilized are heavily drawn from the fields of finance, accounting, strategy and corporate management. Armed with limited background of such non-engineering knowledge, the author finds the research truly challenging. Without the dedicated and insightful guidance from Dr. Cheah, who acts as the author's supervisor, this research would not have born any fruit. He has provided the much-needed facilitation throughout the research. The author cannot but express his deepest gratitude to him. His multi-disciplinary intellects have definitely enlightened the author and broadened his viewpoint.

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SUMMARY

Strategic management theories are gradually gaining recognitions in the construction industry. This is shown by incremental efforts of researchers in exploring concepts such as competitive positioning in determining their feasibility of application to the industry. Even so, literatures that focus on the empirical analysis of strategic performance remain lacking. In recognizing the gap between the theories and empirical studies, this research is conducted to assess the performance of global engineering and construction (E&C) firms. Sixty-one large firms from various countries in the region of North America, Europe and East Asia are selected as study objects. The methodology adopted is known as fundamental analysis, where financial statements of these publicly listed firms are analyzed. For a majority of them, data are collected over a seven-year period from 1997 to 2003. A number of statistical tests are conducted to collectively assess them in four aspects, namely profitability, capital structure, liquidity and human resource management.

A preliminary study on the trend of revenue growth has been carried out. It is found that the construction business is still very much localized in nature, and therefore domestic economic strength continues to play an influential role in determining the growth of the industry. This suggests that the industry is yet to be a truly globalized one even though forces of globalization have resulted in different degrees of operational integrations in many other industries.

Specific to the analysis on profitability, it is found that through superior selection and management of business portfolios, relatively smaller-sized firms can achieve higher profit margin than their larger counterparts. It is also suggested that when a small, narrowly-focused E&C firm grows, it should eventually adopt a diversification strategy to improve its outlook. A related diversification strategy may not improve its profit margin but it can reduce the adverse impact on the firm due to fluctuating business cycles. Alternatively, non-related diversification has a

potential of improving profit margin, but the firm would face a higher risk of underperformance. Besides, the research also reveals that firms in the construction industry face tradeoff between profit margin and assets turnover – one hardly achieves significant improvement in both at the same time.

Asset liquidity analysis is performed mainly to search for an optimal band of liquidity for the healthy development of an E&C firm. It is found that liquidity is significantly correlated to internationalization, diversification and profitability. Similarly, capital structure analysis is also carried out to identify the significant determinants of book leverage so that a firm can structure a right mixture of debt and equity. The study indicates that book leverage is negatively correlated to internationalization, liquidity, profitability and growth opportunities but positively correlated to diversification and firm size. Lastly, human resource management analysis is carried out to search for vital link between this strategic aspect and a firm's financial performance.

Essentially, the core analysis of this research comprises three strategic fields, namely financial strategy, business strategy and human resource strategy. It is concluded that the interactions between them play a significant role in determining the strategic position of an E&C firm. The main objective of this research has been summarized into and addressed through two themes – growth and risk management.

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CHAPTER 1: INTRODUCTION

1.1 Background of Performance Analysis

In principle, analyses are carried out so as to understand the corresponding area of concern, and ultimately it is hoped that they can shed some light on improving the performance of the respective fields. Such concept generally applies to civil engineering as well. The nature of analyses from different schools/divisions in the profession may be totally different, but often they have the shared mission of performance-enhancing.

Often, performance analyses in civil engineering comprise two categories: technical analysis, and project-level construction management analysis. As the terminologies suggest, the former consists of specific technical aspects related to different schools in civil engineering. For instance, there are analysis of strength of different types of concrete, analysis of pile performance under different soil conditions, and analysis of effectiveness of a waste-water treatment plant. As for the construction managerial analysis, essentially it aims to improve quality, cost and time factor of construction projects. Analysis of risks associated with an infrastructural project, analysis of resource utilization, analysis of financing arrangements of a multi-national project are some of the typical examples for this category of analysis. Indisputably, these analyses have significantly expanded the body of knowledge of the profession, pushing the level of the knowledge even higher.

This is indeed encouraging. However, a critical and cross-functional mind can read that, apparently, there are relatively fewer analyses¹ of *corporate performance*. For these analyses, the performance of a corporate acting as an entity is assessed by studying various areas at the corporate level¹. To quote some examples, there are financial performance (budgeting decisions and financing

¹ The job scope mentioned is very much similar to that of a financial analysis. However, the latter has the ultimate objective which is very much different in nature from that of a researcher in the engineering profession.

decisions), operational performance (coordination between different divisions in a firm), marketing performance (geographical expansion and diversification), information technology performance, and human resources management performance. Together, these areas can be conceptualized under the umbrella of *corporate strategic performance*.

Corporate strategic performance is an equally important area of investigation, as it has close inter-relationship with technical and project-managerial performance mentioned above. As illustrated by Figure 1-1, improvements in the technical and managerial performance can be capitalized to generate higher profits for the firm. Part of the profits can then be reinvested in various strategic areas of the firm to improve its strategic performance. If executed successfully, this in turn can bring higher profitability to the firm. Eventually, the firm has more financial resource for improvements in technical and project-managerial aspects again.

Figure 1- 1: Inter-relationship between Strategic Performance and Technical and Project-managerial Performance [Source: developed by the author]

There is a commonly held myth, that strategic performance is perceived as an area of secondary relevance to the engineering profession². This is indeed not true. In his doctoral thesis, Cheah (2002) pointed out that concepts from the fields of strategic management, corporate finance and organizational theories have been appropriately and successfully applied to industries such as automobile (mechanical) and telecommunication (electrical). Apparently, the construction industry has not caught up with this trend, as Element B in Figure 1-1 is largely missing in the literatures of the civil engineering profession. This is further supported by Goodman (1998)'s comment that existing literature and research reports provide far fewer means for construction professionals to obtain knowledge of strategic management.

The consequence of such incompleteness of development can be ruinous to the industry. Already, there are many cases where technically strong large international companies lost their past glories partly due to the reason that wrong strategic policies and choices were made. Philipp Holzmann, Stone & Webster and Washington Group International, for examples, are some of the many firms that faced severe financial strains not because of poor technical and project management skills but of the reason mentioned above (Cheah et al., 2004).

1.2 Objectives of Research Topic

In essence, the objective of this research topic is to analyze the strategic performance of large global engineering and construction (E&C) firms to identify critical factors in corporate strategy that affect their outlooks. To provide a more complete picture, the detailed objectives have been set as followed.

Firstly, the immediate task on hand is to examine annual reports of selected E&C firms. Empirical evidences on different measures of strategic performance are to be extracted so as to draw corresponding conclusions. To narrow the gap between construction profession and strategic management, some of these conclusions are

² Researchers and practitioners may be aware of the *importance* of strategic performance. However, the amount of effort spent in this field seems to suggest that they would not prefer to engage in the leading role in this kind of studies.

then compared with the existing descriptive theories of mainstream strategic management. There are others that would provide possible new insights to existing corporate strategy.

Ultimately, it is hoped that this research topic can help construction business practitioners to understand various pertinent issues that influence the performance of their firms, so that strategic changes can be made to improve their firm performance. This thesis, being part of the literatures of the topic, will bring them a step closer to achieving such target.

1.3 Scope and Limitations

First, the focus of this research targets only large global E&C firms instead of a random selection of firms. Having relatively stronger financial muscles, they are believed to be more organized than small firms in their management strategies, and this will greatly facilitate the study of their strategic performance. Nonetheless, there is a possibility that young and high-growth firms being excluded from the analysis, thus missing the strategies that work best for small- and medium-sized firms.

Besides, only publicly-listed firms are selected as samples of study. Financial figures of such companies are readily available from their annual reports. As a result of this firm selection criterion, privately owned E&C firms, including Bechtel – one of the largest E&C firm in the United States, are not examined.

Due to the limited time frame, the performance of selected firms is analyzed mostly from year 1997 to 2003. Obviously, a longer time frame is always desirable in order to capture the long-term strategy implementation and transformation. Nevertheless, this project, essentially an expansion of the work done by Cheah (2002), serves as an effort to continuously collect data of these large E&C firms.

Lastly, there is no direct intention to develop a new strategic model for the industry. Instead, efforts will be concentrated on providing empirical evidence on the strategic performance of the firms selected. A few propositions on corporate strategy are nevertheless developed as a result of this research.

1.4 Organization of the Thesis

This section provides an overview of the structure of this thesis.

In the next chapter, a literature review of the main schools of strategic theories is first presented. The focus is then zoomed into Porter's (1985) concept of competitive strategy, one of the most influential classical approaches of strategic management. In the later part of the chapter, relevance of these strategic models to the construction industry is discussed.

Chapter 3 outlines the research methodology, whereby the three main steps involved are presented. First, data are screened and collected from various sources. It is then followed by data extraction and organization. Lastly, analytical tools that are utilized in this research are briefed.

A total of two broad categories of analyses have been carried out and are documented in Chapter 4. They are: (1) overall trend analysis; and (2) profitability analysis. The corresponding analytical findings and conclusions are presented as well.

Chapter 5 further presents research findings on asset liquidity analysis and human resources management analysis.

In Chapter 6, further implications of the analytical findings are discussed to highlight their practical insights. Major themes of strategic performance of a firm, namely growth and risk management, are discussed in line with the conclusions derived from the study of firm sample.

Chapter 1: Introduction

The last chapter summarizes the main conclusions of the research. Several recommendations for future research purposes are also highlighted accordingly.

CHAPTER 2: REVIEW OF STRATEGY AND ITS APPLICATIONS

2.1 Introduction

Strategies, put plainly, are ideas proposed in response to internal and external environments to achieve desired objectives. Just as there could be many different routes to a certain destination, there are many different strategic paths leading to intended goals too. Strategy does not contain universal truths that can be documented through scientific theorems, nor does it have intrinsic steps leading to final targets. Such situation arises mainly because “users” of strategy are vastly diverse. Ranging from researchers to corporate leaders in different disciplines and industries, they have different agendas in minds to accomplish when plotting strategies. Moreover, the foundations of strategy are built from various bodies of knowledge such as finance and economics, organizational sociology and cognitive psychology, all of which are constantly evolving at their own pace (Rumelt et al., 1994).

Though appear abstract, strategies can still be subjectively mapped into various schools of thought to facilitate their management. In the following section, four prominent ones are briefly laid out.

2.2 General Streams of Strategic Theories

Whittington (2001) ingeniously pointed out that there are four basic conceptions of strategy in the modern management: rational, fatalistic, pragmatic and relativist. As shown in Figure 2-1, these schools of thoughts can be mapped along two axes: outcomes and strategy (vertical axis) and processes by which it is made (horizontal axis).

Chapter 2: Review of Strategy and its Applications

Figure 2- 1: Approaches of Strategy [Source: Whittington (2001)]

The vertical axis measures the variation of outcome intended when a certain strategy is planned. It ranges from a single-minded goal of profit maximization to consideration of other priorities such as social responsibilities. The horizontal axis measures the assumed effort to be put in for the corresponding outcome. At one extreme, the intended outcomes are achieved by deliberate strategy planning or organization, while the other extreme suggests that those outcomes are simply products of accidents or chances.

► Classical Approach

This school of thoughts advocates rational planning methods and making objective decisions. Ideally, strategic formulation is done by top level of executives, followed by strategy implementation by middle-level managers and operating core of organization. Clearly, it implies that planning should be a top-down process, flowing through a hierarchical command system. Organization structure is treated merely a tool of strategy execution instead of a core drivers of strategy.

Chapter 2: Review of Strategy and its Applications

The approach successfully creates a consistent system for decision making process. This, in turn, allows comparison between projected and actual performance so that feedback can be readily obtained to refined strategic plans. Another apparent strength of such approach is that it enables linkages to other bodies of knowledge such as finance and economics. This is a strong point because they provide assisting tools for analysis and decision-making purpose. However, the approach is not without its weaknesses. Among others, it totally discards “soft issues” such as human behavior when considering strategic choices. This is often considered as its major flaw, as human issues are becoming one of the decisive factors dictating a firm’s strategic performance in this modern era. Besides, it also naively assumes that strategies planned will be implemented smoothly at the operating core. Facts have also shown that in most of the time, the separation of strategy formulation and execution does not work perfectly.

► Evolutionary Approach

The classical approach postulates that deliberate planning is necessary so as to react to the operating environment strategically. However, under this evolutionary approach, such is futile simply because the environment is constantly changing and the market is fully efficient. As such, plans are rendered either “out-dated” during their implementation or obsolete in the near future. In other words, there is no strategy that is sustainable in the long-run. To survive, a firm has to keep the level of cost at its lowest possible.

There are many weaknesses that are associated with this approach. Most importantly, it is overly and unnecessarily passive and pessimistic. Plans will still work because changes in the business environment are not totally abrupt. In addition, the market is not as fully efficient as hypothesized. Nevertheless, the Evolutionists do contribute a valuable lesson to strategic minds - that it is very important to give due considerations to environmental factors that invoke constant strategy review.

Chapter 2: Review of Strategy and its Applications

► Processual Approach

Like the Evolutionary approach, this school of thought also disagrees with the idea of deliberate strategic planning. It is because the underlying assumption of 'rational planning' in classical approach is viewed with much skepticism. There are inevitable limits within every decision-maker that circumscribe his rational reasoning such that the effectiveness of strategic planning and analysis has to be compromised with other considerations or unforeseen events. As such, the key to success is not to do extensive planning by top management but to stay close to operation level in order to accumulate knowledge about internal and external operating environments. Equipped with such practical information, strategies are then planned accordingly. Obviously, the school advocates a 'bottom-up' approach in shaping strategies. Strategy formulation is closely linked with strategy implementation in order to reap its benefits. Besides, this approach places emphasis on 'soft-issues' such as human behavior and corporate culture. Internal coordination and functional mechanism are the two main characteristics observed.

The recognition of soft-issues and its initiation to tackle them actively are the specific strengths of this approach which are not found in other schools. From an organizational point of view, it creates an enriching working environment that promotes coordination, learning and team-work. Notwithstanding its strengths, the approach is far from perfect. The analytical tools and theories from classical approach that are ignored by this approach can prove to be valuable in providing a feedback loop for planners to monitor corporate and individual performances.

► Systemic Approach

This approach agrees with the need of deliberate planning proposed by the classical approach. However, it postulates that planning is done not just for profit maximization. Instead, there are other objectives and responsibilities that a firm need to accomplish. Sometimes, even political agendas are associated with a firm's vision. Implicitly, it considers external environmental issues such as politics and regulations during strategy formulation. The school believes the feasibility of planning for future provided that the intimacies of socio-logical context have been

Chapter 2: Review of Strategy and its Applications

included in planning. As Whittington (2001) puts it, the rule of thumb is to play by the local rules and to follow the *modus operandi*.

The strength of this school is its consideration of external political and social issues besides the usual economic factors. Under certain economic situations (such as that in China), this proves to be vital for a firm's survival and performance. The approach is most useful in the study and comparison of multinational companies because it offers a plurality of resources and norms of conduct to explain a wide range of business behavior. However, it needs to be complemented by studies of firms' behavior given by the Processual approach for a better understanding of operational factors.

To summarize, each school of thought has its unique strengths and room for improvements. It follows then that there is no single approach that can claim best for every firm under all political, social and economical situations. As such, some researchers (Ruefli and Sarrazin, 1981; Cheah, 2002) have even tried to develop conceptual models by encompassing the strengths and avoiding the weaknesses of these approaches. Ultimately, it is hoped that the models will offer strategic guidelines for a firm to achieve satisfactory performance.

2.3 Porter's Generic Strategy for Competitive Positioning

Porter's (1985) concept of competitive strategy is the archetypal classical approach that is widely quoted and utilized in today's modern management. The strategies postulated are of generic nature – they can be applied to various sizes of firm in different types of industry. In the following sections, the overall picture of Porter's idea is first briefly introduced. The application of the concept in the construction industry is then laid out.

Chapter 2: Review of Strategy and its Applications

2.3.1 Core Concepts of Competitive Strategy

The objective of a competitive strategy is to search for a favorable competitive position in an industry which would bring above-average performance. This can be achieved through creating and sustaining competitive advantages against other industry competitors. The choice of competitive strategy depends on two factors: the attractiveness of an industry and the relative position of a firm within the industry. These will be briefly explained below.

Structural Attractiveness of an Industry

According to Porter, the first fundamental determinant of a firm's profitability is industry attractiveness. Forces that shape the industry structure must be understood before strategies can be mapped out to maneuver these forces. There are five forces that form an industrial setting:

1. potential entrants
2. potential substitution
3. rivalry among existing competitors
4. bargain power of buyers
5. bargain power of suppliers

These forces can determine industrial profitability because they individually and/or collectively influence the three elements of return on investment – price, cost and required investment. The studying of industry structure is just as important as determining a firm's relative position within the industry. If a firm makes strategic choices to improve its position only at the expense of the industry structure, it is likely to wreck the structure and leave every competitor worse off.

Generic Competitive Strategies

Competitive strategies are planned with the objective of enhancing a firm's relative competitive position within the industry it operates. Three generic strategies have been identified by Porter: cost leadership, differentiation, and focus (cost focus

Chapter 2: Review of Strategy and its Applications

and differentiation focus). As shown in Figure 2-2, cost leadership and differentiation target a broad range of industry segments while focus strategies aim to provide cost advantage or differentiation in narrowly-selected segments.

► Cost Leadership

As the name suggests, a firm adopting cost leadership set out to become the low-cost producer in the industry. Cost of products can be lowered by pursuing the economies of scale effect, having preferential access to raw materials or utilizing proprietary technologies in the production process. If a firm incurs low cost and commands the industry average (or near average) price for its products, it will then become an above-average performer in its industry. This logic implicitly implies that the firm cannot totally ignore differentiation, for if the product is not comparable with others in the market, it would not be able to command the average price.

		COMPETITIVE ADVANTAGE	
		Lower Cost	Differentiation
COMPETITIVE SCOPE	Broad Target	1. Cost Leadership	2. Differentiation
	Narrow Target	3A. Cost Focus	3B. Differentiation Focus

Figure 2- 2: Three Generic Strategies [Source: Porter (1985)]

► Differentiation

A firm that adopts differentiation strategy aims to provide some unique attributes that are perceived as important and valuable by buyers. In particular, the attributes must be valuable – if they are unique but not perceived as valuable, no strategic advantage will be gained. Such ‘valuable-ness’ is rewarded by

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commanding a premium price for the products. If a firm successfully commands a premium while incurring industry average (or near average) cost, it will become an above-average performer in its industry. Again, the logic implies that the firm cannot totally ignore cost control, as additional cost incurred during product differentiation can write off the price premium gained.

► Focus

Under this generic strategy, the competitive scope aimed is relatively narrow. Only several segments in an industry will be selected, and strategies will be specifically tailored to serve these segments. The focus strategy can be either in the form of cost focus or differentiation focus – the former exploits differences in cost behavior across different segments, while the latter exploits different special needs of buyers in different segments. Focus strategy works only if such differences are significant and these segments are poorly served by broadly-targeted competitors.

2.3.2 Value Chain

Value chain is a tool that Porter uses to identify the sources of competitive advantage. Usually, there are a number of activities undertaken by a firm in its course of business operation, such as designing, producing, packaging and delivering. These activities can be represented and categorized strategically by a value chain. By scrutinizing the value chain, cost behaviors and sources of product differentiation can be identified. This can then be followed by drafting the corresponding competitive strategies.

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Figure 2- 3: The Generic Value Chain [Source: Porter (1985)]

Primary activities are activities that are directly related to core business operation of the firm. They include inbound logistics, operations, outbound logistics, marketing and sales, and services. By disaggregating the activities, it is hoped that activities that are particularly crucial for an industry can be identified, so that focus is placed on them when identifying sources of competitive advantages. On the other hand, support activities are those not directly related but nevertheless exist to ensure smooth business operation. As shown in Figure 2-3, these include firm infrastructure, human resource management, technology development and procurement. Support activities are not equivalent to secondary activities, as they are as important as the primary activities in providing sources of competitive advantages.

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2.3.3 Industry Segmentation

Industry segmentation is the partition of an industry into several smaller units for the purpose of developing competitive strategies. An industry can have different segments because each of them has different intrinsic structural attractiveness and different requirements for competitive advantages. For broadly-targeted competitors, the exercise of industry segmentation can reveal areas where they are vulnerable to focusers and thus these relatively unattractive areas should not be ventured. For narrowly-focused competitors, it can reveal segments that appear profitable yet poorly served by broadly-targeted competitors.

An industry can generally be segmented by identifying different buyer types and product varieties. There are four classes of segmentation variables that can be used to capture such differences – product segment, buyer segment, channel segment and geographic segment. Segmentation variables that have implications for competitive advantages are to be determined, combined and eventually plotted into a two-dimensional industry segmentation matrix. The matrix finally developed is primarily used to identify segments that are attractive to be ventured in.

2.4 Competitive Positioning in the Construction Industry

The previous sections signal that competitive positioning can be a key for a firm to achieve admirable strategic performance. Recognizing the importance of the concept, some researchers (Betts and Ofori, 1992; Warszawski, 1996; Jennings and Betts, 1996; Kale and Ardit, 2002) have explored the possibility of integrating it in the context of construction industry. Among them, Kale and Ardit ingeniously interpreted Porter's competitive positioning along two dimensions – scope of competition and mode of competition – in construction. The mode of competition is about a firm's decisions on means of developing competitive advantage, while the scope of competition refers to the degree of operational involvement in segments of the industry.

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2.4.1 Mode of Competition in Construction

Kale and Arditi pointed out that there are four important modes that act as bases of competition – quality, products and process innovation, cost, and time. Put plainly, when a firm competes on the quality basis, it seeks for the available potentials for improving and enhancing values that its products offer. There are several criteria that can be used for a firm to evaluate its product quality. Among others, durability, aesthetics and conformance to specifications are some that are directly related to construction. The researchers went further by arguing that for a construction firm, the extent of its ability to improve the quality of a facility greatly depends upon the stage in which it is involved. Often, the earlier stage it is involved, the greater is its ability to enhance the quality. The construction stage in which a construction firm is involved, in turn, depends on the type of project delivery system. For example, a design-and-build system allows a construction firm to involve right from the design phase and thus, it has a better opportunity to influence the quality of the facility. Nevertheless, even if it is involved only in the construction stage, it is still possible to compete on the basis of product quality. This can be done through stricter conformance to specifications and tighter fault tolerance. In short, competing on the basis of quality proves to be a feasible potential for competitive advantage in construction industry.

In terms of product and process innovations, Kale and Arditi argued that the ability of a firm to compete on this basis is closely related to the influence of incentives and constraints imposed on it. Apparently, there are barriers such as complex legal responsibility, labor relations issues, and safety and environment requirements that act against innovative approaches in construction. On the other hand, there exist several areas for innovation basis such as new construction methods through utilization of technology and attractive financial packages. On balance, it is concluded that there is room for competition on the basis of innovation in construction.

Competing on the basis of time is the third mode of competition. According to the researchers, the speed of transforming various resources into final products can be a vital source of competitive advantage under the following conditions:

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1. the delivery of products span over a certain period
2. the transformation process can be accelerated significantly, and
3. clients value the speed of transformation process.

The first condition is present in construction industry, as facilities are built and delivered over a period stated in a contract. The second condition is also applicable to the industry, as construction methods and technologies can often improve the speed of a project. Studies from Arditi et al. (1985) and Majid and McCaffer (1998) unanimously suggest that there is room for improving the speed of its execution because not all delays are beyond the control of construction firms. Lastly, the speed of project execution is highly valued by clients as early completion brings economical benefits to them. In fact, the existence of a liquidated damages clause in a contract implicitly signifies the argument. As such, it is concluded that competing on the basis of time is feasible for construction firms, since all of the three conditions are present in the construction industry.

Cost is another mode of competition that is related to the sensitivity of clients to price. Economically, when there is lack of product differentiation offered by firms in an industry, clients become more sensitive and this easily heightens the intensity of rivalry. This situation is true especially in the middle- and lower-end of construction industry where the conditions favor construction firms to compete on the basis of price. Cost-cutting can be the vital key for them to stay competitive, though it is not sufficient to achieve above-average performance. Besides, construction firms can also look into improving cost efficiency during the construction stage such as better material usage at site and proper allocation of resources.

Overall, the construction industry settings allow a construction firm to compete favorably on the basis of one of the four modes of competition mentioned above. Kale and Arditi (2002) even suggested that an approach that envelopes the combined effect of all of the four modes is realistic and practical. It ensures a high quality of finished facility built by utilizing innovative construction methods in a cost-effective manner, and that it is delivered according to agreed schedule. By

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achieving them, a construction firm stands a very good chance to strategically outperform its peers.

2.4.2 Scope of Competition in Construction

A construction firm can adopt either a broad market or narrow market approach, with each offering unique competitive advantages. For a firm that targets a broad-based market, it enjoys benefits from sharing resources in different projects and locations. This can potentially lead to cost reduction, provided that the cost of coordination and compromise is not significantly high. The approach also enables a firm to enter new profitable market segments by capitalizing on its good reputation gained from other market segments. Diversification across different segments also minimizes the adverse effect of business cycles. On the other hand, a narrow market approach allows a firm to concentrate its limited resources and efforts in selected projects. This possibly ensures a better quality control. Besides, it also stands to gain exclusive experience of the conditions and trends within the chosen segments. Having better responsiveness to the market demand, the firm can react strategically ahead of broadly-targeted firms.

2.4.3 Implications of the Concept of Competitive Positioning

Thus far, it has been established that the concept of competitive positioning is relevant to the construction industry. In a nutshell, a construction firm can achieve superior performance by placing as equal an emphasis on strategy formulation and management as on project management. More importantly, the recognition of the importance of strategic management theories serves as a strong basis to *justify the worthiness of the current research and as a foundation to support arguments on strategic management derived in later chapters.*

2.5 Knowledge Gap between the Concept and Strategic Performance Analysis in Construction Industry

Notwithstanding the fact that strategic management theories are gradually gaining recognitions in the construction industry, literatures that focus on the analysis of strategic performance of E&C firms remain lacking. In particular, empirical studies in this area are important since they provide direct evidence to support (or refute) qualitative arguments derived from management theories. It also follows that empirical findings may help to refine existing theories to suit practical circumstances.

In this area, Lee and Lansley's (1975a) work that measured the profitability of construction firms could be one of the earliest analyses. However, their research focus is limited only to profitability while excluding other performance indicators such as liquidity and capital structure. Likewise, Akintoye and Skitmore's (1991) studied the profitability of construction contractors with their geographical scope limited to the U.K.. Kale and Arditi (2002) also addressed the issues of strategic performance by targeting only U.S. construction firms. Hampson and Tatum (1997) specifically assessed the competitive performance of firms by analyzing their technology strategies. The other components of corporate strategy, such as business strategy and finance strategy, are yet to be explored.

The task at hand, thus, is to analyze strategic performance of construction firms in a more comprehensive manner. The scope will cover a *wider* geographical area, with assessment carried out in *broader* strategic areas of construction firms.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Overview of Research Methodology

The research methodology is drafted with the core objective of analyzing performance of global E&C firms. However, it is discovered that performance can be measured by using two different methods: objective approach and subjective approach. For the former approach, a firm's performance is directly determined from its financial reports that include income statement, balance sheet and cash flow statement. Figures such as revenues, net profit, total asset and cash generated from operation are extracted for performance assessment. This method has been used by Akintoye and Skitmore (1991) and Cheah (2002) to analyze their firm samples. In contrast, the subjective approach accomplishes the task by using indirect measurements. Responded questionnaires or survey forms are analyzed using statistical models to derive a firm's performance. The method, developed by Dess and Robinson (1984), proves useful when financial figures are not available. This is especially the case when privately held companies are analyzed. Hampton and Tatum (1997) and Kale and Arditi (2002) are some of the researchers that make use of such method in their analyses.

In this research, the objective approach has been chosen for performance analysis. The decision is made on the condition that only publicly-listed firms will be studied. As generally their financial reports are readily available, it appears that there is no strong need to adopt a subjective approach. Besides, the author believes that the chosen method yields more reliable and convincing conclusions because of the transparency and objectivity of the data.

The performance analysis here is not linked to the movement of stock prices. No doubt, there is a strong relationship between firm performance and the movement of its share price. However, the latter is dictated not only by firm performance. Factors such as future trend of demand, monetary policies, market

sentiment and expectations, just to name a few, will also collectively affect the movement. In view of such complexities, share price will not be used as a benchmark to gauge the performance of a firm.

3.2 Data Collection

Data collection is necessarily the first step for the research. Further details are duly explained in the following sections.

3.2.1 Firm Sample

A total of 61 firms have been selected as study objects in this research. Among them, 25 firms are from Europe (UK, German, France, Spain, the Netherlands, Italy, Sweden and Norway), 17 from North America (US and Canada) and 19 from East Asia (Japan and South Korea). The complete list of the firms is presented in **Appendix A**. Only publicly listed firms are studied, since information pertaining to their operations is more readily accessible. Besides, the firms selected are large in terms of revenue, with most appearing in the list of *Engineering News Record*'s "Top 225 Global Contractors" in year 2003 and having average annual revenues that exceed US\$1 billion. This selection criterion is set because large firms are generally better organized in strategy management than small firms. Features such as internationalization, business diversification and integrated project delivery methods are more likely to be found in large firms (Cheah, 2002). This provides an opportunity to identify strategic policies that drive superior firm performance (as well as critical factors that result business failure).

3.2.2 Sources of Data

Annual reports of each firm are the primary sources of data in this research. For some U.S. firms, the 10-K statements filed with the Security and Exchange Commission (SEC) also serve as an important resources. Databases such as *Datastream*, *Company Analysis* and *Osiris* also provide additional financial data that has a high degree of reliability. Often, firms' internet home pages also offer

valuable non-financial information such as company mission, organization structure, services offered and projects completed.

For a majority of the firms, data are collected over a 7-year period from 1997 to 2003. However, there were several events that did not allow data collection for such an extended period. For example, some firms were acquired or merged with others while a few firms had filed for bankruptcy protection. For these cases, data are collected only up to the point of these events. Besides, many of the Japanese firms have not had their 2003 annual reports (English version) ready at the time of study. To compensate for such cases, a 7-year period from 1996 to 2002 is chosen instead.

3.3 Data Extraction and Organization

After the raw data are collected, relevant information are then extracted and categorized for analytical purposes. In this research, all the acquired data are systematically organized into three templates, namely the Firm Background template, the Market Segmentation Matrix and the Financial template.

3.3.1 Firm Background Template

As the name suggests, this template serves to capture general information such as year of firm establishment, number of employees and organization structure. A sample of this is shown in **Appendix B**. It can provide insights of the specific intrinsic characteristics of each firm, which may possibly affect its strategic performance. For example, the trend of number of employees over the years can reflect the human resource strategy adopted by the firm.

3.3.2 Market Segmentation Matrix

Market Segmentation Matrix is used to record the various segments of an industry that a firm targets to compete. In this research, the modified matrix proposed by Cheah (2002) proves to be suitable and useful since, unlike the original

matrix that caters mainly for the manufacturing industry, it has been designed and tailored specifically for the construction industry. Essentially, the matrix segments the industry into various market sectors (horizontal axis) and type of functions or activities along a value system (vertical axis). Further minor refinements to the matrix are outlined below.

I. Along the vertical axis:

- The “O&M / Renovation” activity has been named “Post-construction Services” to include all activities that follow after the completion of a facility. These include total facility management, additions and alterations, and upgrading.
- Realizing that concession activities are becoming more and more popular especially in Europe, it is included in the “Own/Develop” activity.
- The “combined” row has been done away with, as it is believed that the other value activities along the axis can fully represent all activities in the industry. For example, a design-build-operate project can be represented by the three rows of “A&E Design”, “Construction & Installation” and “Post-construction Services”. Without the “combined” row, there will be no more ambiguity as whether to choose all the three rows or to choose only the “combined” row.

II. Along the horizontal axis:

- The “Environment” sector has been expanded to include earth works such dredging, landfill and land-hazard prevention works. The name is therefore changed to “Earth and Environment”.

A sample of the improved matrix is shown in **Appendix C**. It will be used to classify firms into one of the following categories: broadly-targeted, narrowly-focused or non-related diversified firm.

3.3.3 Financial Template

3.3.3.1 Credibility of Annual Reports

The reliance of financial reports to derive strategic conclusions is frequently questioned amid accounting scandals happening sporadically in the corporate world. For instance, the collapse of Enron, the largest bankruptcy in the U.S. history, proves that indeed financial reports can be manipulated such that losses and debts are hidden, thus painting an illusively favorable picture to outsiders. Thus, it is pertinent to address the credibility of financial reports, since research conclusions are only as good as such affirmation.

Cheah (2002) pointed out that, notwithstanding the scandals, these reports should still be granted with merits. Firstly, annual reports are bound to follow certain standardized reporting rules such as the General Accepted Accounting Principles (GAAP) in the U.S. These rules are regularly reviewed and updated so as to improve transparency in financial reporting and to patch up any loopholes. Besides, independent auditors that act as third-party are also constantly regulated by their own profession to uphold their ethical conducts. Furthermore, the SEC effectively functions as a regulatory body that scrutinizes corporate governance and annual reports to identify fraudulence of any kind.

With these, it is justifiable to conclude that financial reports are generally reliable and cases of scandals should arguably be treated as isolated cases.

3.3.3.2 Context of Financial Reporting

Apart from the contents, the context of financial reporting is another dimension that affects the interpretations of financial reports. Specifically, accounting reporting practices and disclosure standards in different regions are rarely uniform as they are heavily influenced by regional, cultural, legal and economic environment (Haskins et al., 2000). Therefore, it is not surprising to realize that different countries or regions have their own set of accounting rules. Although the International Accounting Standards Committee (IASC) periodically issues International Accounting Standards with the hope to harmonize the different

practices, many firms still observe local/regional standards. As this study involves cross-regional comparison of firms, this non-uniformity needs to be addressed.

Past researchers found that society cultures, such as that of East Asian countries, can lead to higher degree of conservatism and uniformity in their style of financial reporting. In addition, the emphasis is placed more on smooth and steady results instead of exactness. These are in direct contrast with the practices adopted by the U. S. and the U.K. firms. In addition, the degree of financial disclosures is also affected by the state of capital markets in a country. For example, the U.S. and U.K. firms raise capitals mainly through the stock and bond markets. In order to win investors' confidence and to attract their interest in buying their securities, firms tactically place much emphasis on financial disclosures. In contrast, Japanese firms tend to fund their assets mainly through bank loans³. Thus relatively, firms need not to place that high emphasis on financial disclosure for external investors. Besides, it is also found that German and Japanese banks often function as both lenders and substantial shareholders of their local firms. As internal corporate information is readily accessible for these lenders, external financial disclosure becomes less of a concern.

In particular, the Japanese culture has uniquely shaped Japanese business practices. The society generally highly values interdependence and harmony. Business relationships are soundly built on mutual trust and understanding. Often, a firm's outstanding short-term debt is automatically extended. Trade credit is also arranged such that terms of payment are very favorable (Haskin et al., 2000). Again, these are also in direct contrast to the practices in the U.S. and U.K.

Corporate taxation law is another important factor that affects the style of reporting. In the U.S. and U.K., firms generally prepare two different sets of accounting books: one for tax returns and the other for disclosure to investors. On the other hand, firms from countries such as Japan, Germany, Sweden and Italy tend

³ To illustrate such contrast, Haskin et al. pointed out that the total liabilities of Nippon Oil accounted for almost 80% of its total assets, while total liabilities of Shell was only 40% of its total assets in the same year.

to understate their profitability as they report higher expenses to minimize tax obligations.

In a nutshell, with some understanding of these aspects, a deeper understanding of international financial reports can be achieved.

3.3.3.3 Contents of Financial Template

Only after the issues of creditability and context of financial reporting are addressed then it is deemed more appropriate to tackle financial statements. At this stage, all the numerical data that represent a firm's financial performance are to be summarized into a financial template. As future analyses are mostly based on the template, it becomes necessary to elaborate its components.

A sample of the template is shown in **Appendix D**. The template consists of six main items. Item (1), (2) and (3) serve to record figures extracted from income statements, balance sheets and cashflow statements respectively. Item (4) is termed 'Key Financial Ratios', as it stores different types of ratios calculated using figures from the three items mentioned above. Item (5) records revenues generated from different countries, while Item (6) records revenues generated from different business areas/units. In summary, the first three items serve to store primary data obtained from financial reports. Item (4) serves as a secondary data recording section, while the last two items store supplementary data extracted from footnotes.

Each of the Item (1), (2), (5) and (6) consists of two sub-parts. While part (a) stores as-reported actual figures, part (b) shows trends of various components. This can be done by using the earliest year as the base year to calculate normalized index values for the subsequent years. The benefit that part (b) offers is that it gives a quick indication of the directional strategy (growth, consolidation or divestment) that a firm adopts.

Some descriptions and important issues in the six items are given below.

Item 1: Income Statement

- **Revenue** figures are usually extracted without adjustments. Located right at the top of the income statement, they are relatively free of manipulation if compared to figures at the lower part of the statement (Cheah, 2002). However, care must still be exercised to identify the methods and timing of revenue recognition, as creative accounting practices often begin with revenue recognition (Mulford and Comiskey, 2002). In terms of timing, premature revenue recognition can be used to boost reported earnings. In the context of construction, a construction firm could accelerate the recognition of up-front fees earned over an extended period to the time of receipt. Subject to data availability, such pitfall is guarded against by consistently using the percentage-of-project-completion method. In terms of method, incorrect classification of income items can also inflate reported revenue. For example, for firms that are not ordinarily involved in property development, gains from sales of fixed assets are non-recurring and thus should not be counted as revenue. At the other extreme, such gains, as well as income from rental, should not be excluded if property development is one of the firm's business units. The general guideline used is to study the accompanying footnotes and compare them with the ordinary course of businesses a firm enters.
- Ideally, cost of goods sold (**COGS**) consists of only material cost, sub-contractors' fee and wages. Salaries or other similar remunerations should not be included here as they are more appropriately treated as operating expenses.
- Depreciation expenses must be included as part of **operating expenses**.
- **Operating income** is calculated by deducting COGS and operating expenses from revenue. All non-recurring items, that is, unusual items, income from discontinued operations, extraordinary items, and gain/loss arising from change of accounting method, are excluded.
- Earning Before Interest and Tax (**EBIT**) is obtained by adding all other income/expense items not related to corporate tax or financial structure to operating income. Such a broad definition implicitly means that, besides

unusual (or infrequent) items, even extraordinary items are included in EBIT. The latter is usually not excluded as there is no strong basis to do so, after considering the following reasons:

1. To be classified as extraordinary, an item must be both unusual and infrequent. Given such stringent requirements of test, there are very few items that can be classified as extraordinary⁴ (Mulford and Comiskey, 2002). Indeed, such items are rarely encountered during the study of the firm sample. Moreover, as average figures are to be used for analysis purpose, such item, if any, will be averaged out. Thus, its effect is likely to be insignificant⁵.
2. The classification of non-recurring items is often at management discretion. Preferably, bad news is reported as extraordinary items, as analyst normally exclude such items when estimating a firm's earning power (White et al., 1997). Combining this finding with the one stated above, it seems to hint that most probably, the so-called 'extraordinary items' shown in reports are actually unusual items that ought to be included in EBIT.

At the other extreme, there arises another issue as whether to include non-recurring items at all. After all, there are really *non-recurring*. To address that, White et al. (1997) warn that ignoring them tends to result in an overestimation of firm's earning trend, as they usually have effect on subsequent years. Graham (1985) also pointed out that they should be included in the calculation of average earnings because they certainly represent a part of the company's operating history.

- **Net income before taxation** includes all types of gain/loss that a firm records except corporate taxation. It will be primarily used for comparison between firms. More detailed discussions regarding the usage of this item in profitability analysis will be laid out in the next chapter.

⁴ Some examples of extraordinary items are expropriation of assets and gain on early retirement of bonds.

⁵ To ensure that the effect is insignificant, net profit margin before tax is compared against operating profit margin. If the difference between them appears to be significant, the accompanying footnotes that explain the extraordinary items will be studied to decide whether to exclude them or not.

Item 2: Balance Sheet

- **Accounts receivable** here, strictly speaking, refer only to those activities related to the ordinary business that a firm undertakes. They are sometimes more accurately termed as trade receivable. Subject to data availability, other types of receivable such as sundry receivable or even receivables from employees are to be excluded. This should give a more representative picture of a firm's credit management in the business world. Besides, the receivables here are of net amount. Allowance for doubtful accounts (also known as bad debts) must be provided.
- **Quick asset** includes accounts receivable of all types, cash or cash equivalents, and short-term investments but excludes stocks, prepayments and all non-current assets.
- **Long-term debts** refer to all debts incurred by a firm during the ordinary course of business and are payable after one year. Besides long-term financial debts, long-term non-financial debts are also included under this caption. However, they are not equivalent to long-term liabilities, as the former is only a sub-set of the latter. Contingencies liabilities, deferred income tax, negative consolidation difference and provisions do not fulfill the definition set above and thus are not treated as long-term debts.
- **Total liabilities** are automatically calculated by subtracting owners' equity from total assets.
- As is usually the case, **owners' equity** includes capital shares, additional paid-in capital, treasury shares and retained earnings. In addition, reserves of all types (e.g. legal reserves, revaluation reserves and foreign currency exchange reserves) are also included. According the White et al. (1997), minority interest can be appropriately treated as equity as it is also a residual claim on the assets of consolidated entity. At such, minority interest is consistently counted as owners' equity too.

Item 3: Cash Flow Profile

- **Capital expenditure (CAPEX)** figure can be found directly under the section of “Cash Flow from Investment” (CFI). Sometimes, equipment purchased through capital lease is considered as part of CAPEX as well, as it is an activity of “replacement and expansion of investment in production capacity” (White et al., 1997).
- **Corporate financing gap** is calculated by subtracting net CFI from net Cash Flow from Operation (CFO). The figure suggests how much free cash is left after necessary investments are made.

Item 4: Key Financial Ratios

- There are broadly five categories of ratios built in the template: **liquidity ratio, activity ratio, profitability ratio, finance ratio and market ratio**. They can be used to quantitatively describe the economic characteristics and competitive strategies of firms. However, ratios can be deceptive when negative numbers are involved. This is especially the case for Return on Asset (ROA) and Return on Equity (ROE). For example, if a firm records negative net income (i.e. losses) and negative average equity, its ROE will misleadingly paint a healthy picture of its operation.

Item 5 (Revenue by Regions) examines the degree of internationalization that a firm pursues, while Item 6 (Revenue by Business Areas) records a firm’s business portfolio.

There are two additional points that must be noted when data are extracted from financial reports. Firstly, the reports must be the consolidated ones. This is particularly true when analyzing the Japanese firms, as usually both consolidated and unconsolidated accounts are presented. Secondly, the end-date of financial year must be paid attention to. Most of Japanese firms have the year ended in 31 March. As such, their ‘2004 annual reports’ that document events from 1 April 2003 to 31 March 2004 should actually be treated as a ‘2003 annual report’ instead.

3.4 Data Analysis

3.4.1 Analytical Tools

After organizing the necessary information into the three templates, data analysis can then be readily carried out. This section serves to provide an overview of the tools and models used in the analyses.

To derive conclusions from extracted data, statistical models such as independent-sample T-test analysis, Analysis of Variance (ANOVA), bivariate correlation analysis and simple linear regression analysis are used extensively. Like financial accounting, these tests also need to be understood fundamentally to prevent their misuses. The requirements and assumptions associated with the models are checked before the analyses are carried out. Table 3-1 shows the basic assumptions for each of the models mentioned above.

Type of Analysis	Assumptions made
Independent-sample T-test	<ul style="list-style-type: none">• Independent samples• Normal populations or large samples• Equal population standard deviation (not required for non-pooled t-test)
ANOVA	<ul style="list-style-type: none">• Independent samples• Normal populations• Equal population standard deviation
Correlation	<ul style="list-style-type: none">• Data points are scattered about a straight line
Linear Regression	<ul style="list-style-type: none">• Independent observations• Normal populations• Equal population standard deviation

Table 3- 1: Assumptions of Statistical Models

If the normality assumption is significantly violated, the corresponding variable can be transformed into other suitable types of expression (e.g. normal

logarithm, square root). Alternatively, non-parametric test can be used to do without the normality assumption. If the samples do not have an equal population standard deviation, a suitable non-parametric test will have to be chosen.

When a particular sub-sample is drawn from the firm sample, sometimes the number of firms involved is very small (i.e. less than 10). Although this may be allowed statistically, the outcomes are deemed to be practically inconclusive due to the small size of the sub-sample. Under this kind of situation, the corresponding analysis will not be conducted.

In this research, SPSS is used for all statistical analyses. It is a reliable analytical and data management system that is widely used for various research purposes.

3.4.2 Overview of Analysis Directions

The analytical work conducted in this research can be broadly structured into three main directions. Starting from the microscopic level to the macroscopic level, they are listed as follow.

1. Time-series analysis of each firm
2. Analysis of firms from the same region
3. Analysis of firm sample as a whole

The first level of analysis, also called internal analysis, is to keep track of individual firm performance. Some related examples are the trend of number of employees and the trend of revenues secured by a firm over the study period.

Studying individual firms *per se* does not yield many conclusions about strategic performance, as it does not distinguish out-performers that implement ingenious strategies and under-performers that fail to do so. At such, the second level of analysis is done to compare performance of a firm vis-à-vis its peers from the same region. The comparison is limited to the same region mainly because each region has different financial reporting practices as pointed out earlier. Moreover,

there could be different industry structures across regions as a result of uncontrollable market forces. Some examples of analysis that are conducted at this level are profitability of European firms, liquidity of North American firms, and cash management of East Asian firms.

The final level of analysis is carried out based on the assumption that the firm sample represents the global E&C industry. Its objectives are to construct a general outlook of the industry and to determine critical success factors that possibly exist specifically among firms coming from a certain region. If any of such trends are found, they may serve as great learning points for firms from other regions. An example of such analysis is cross-comparison of profitability of European, North American and East Asian firms.

3.5 Setting the Definitions

Before the analysis is started, there are several terminologies that need to be clearly defined to facilitate grouping and comparisons. They arise when effort is put in to categorize:

1. the type of generic strategy adopted; and
2. geographical coverage

These definitions are required as there are no standard guidelines available for reference. After all, classification is only a matter of degree. In view of that, the work will be done on the basis of relativity within the construction industry. Detailed explanations are laid out in the following sections.

1. Type of generic strategy adopted

Basically, a firm can be classified as narrowly-focused, broadly-targeted, or non-related diversified firm. The classification is done after its Market Segmentation Matrix is carefully studied. A firm is considered as “narrowly-

focused” if it competes in no more than two markets or functions⁶. Wilbros Group, for example, is clearly a narrowly-focused firm as its matrix, shown in Table 3-2, suggests that it involves primarily in the infrastructure and industrial markets.

If a firm competes in more than two markets or functions, it is classified either as “broadly-targeted” or “non-related diversified”. The distinguishing factor between these two is the percentage of revenue generated from business activities/units that are not closely related to civil engineering. Such activities include mobile phone operational services, human resources training and consultancy, logistics, and street cleaning. If such contributions are more than 20%, it will be regarded as “non-related diversified”. Otherwise, it is classified as “broadly-targeted”. For example, Bouygues involves in more than two-markets or functions and has more than 25% of its revenue generated alone from Telecommunication-Media business unit (Table 3-3). At such, it is a non-related diversified firm. Jacobs Engineering, on the other hand, is a broadly-targeted firm that does not operate in non-engineering market (Table 3-4).

	Residential		Institutional		Commercial		Industrial		Infrastructure		Earth & Environ.		Diversification	
	D	I	D	I	D	I	D	I	D	I	D	I	D	I
Supply														
Feasibility studies & Planning									*	*				
A&E Design									*	*				
Construction & Installation							*	*	*	*				
Post-construction Services							*	*	*	*				
Finance														
Own / Develop / Concession							*							

Table 3- 2: Market Segmentation Matrix for Wilbros Group

⁶ There are two types of narrowly-focused firm: market-focused and function-focused. Market-focused firm specializes in certain markets and provides various functions related to these markets. On the other hand, function-focused firm specializes in providing certain functions in various markets.-

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	Residential		Institutional		Commercial		Industrial		Infrastructure		Earth & Environ.		Diversification	
	D	I	D	I	D	I	D	I	D	I	D	I	D	I
Supply									*	*	*	*	*	
Feasibility studies & Planning									*	*				
A&E Design	*	*	*	*	*	*			*	*	*	*		
Construction & Installation	*	*	*	*	*	*			*	*	*	*	*	
Post-construction Services			*	*	*	*			*	*	*	*		
Finance														
Own / Develop / Concession	*	*		*	*	*			*	*				

Table 3- 3: Market Segmentation Matrix for Bouygues

	Residential		Institutional		Commercial		Industrial		Infrastructure		Earth & Environ.		Diversification	
	D	I	D	I	D	I	D	I	D	I	D	I	D	I
Supply														
Feasibility studies & Planning			*	*			*	*	*	*				
A&E Design			*	*			*	*	*	*				
Construction & Installation			*	*			*	*	*	*	*			
Post-construction Services			*	*			*	*	*	*				
Finance														
Own / Develop / Concession			*				*	*	*	*				

Table 3- 4: Market Segmentation Matrix for Jacobs Engineering

2. Geographical Coverage

A firm can also be classified as either a regional or an international firm. The classification is done using Item 5 (Revenue by Regions) in the financial template is studied. If more than 70% of revenue of a firm is generated from its home country or regional countries, it is considered as “regional”. Otherwise, it is classified as “international”. For example, Skanska has only

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60% of its revenue generated from Scandinavian and other European countries, with the rest coming from other parts of the world. It is thus regarded as an international firm. On the other hand, more than 95% of Penta Ocean Construction's revenue is secured in Japan or South East Asia. Likewise, The Shaw Group has nearly 90% of its revenue obtained from the U.S., Canada and some South American countries. Clearly, both are regional firms.

Obviously, a certain degree of subjectivity in the classification schemes described above is inevitable.

CHAPTER 4: RESEARCH FINDINGS ON PROFITABILITY

4.1 Introduction

In this research, the performance of an E&C firm is assessed through four broad strategic criteria – **profitability, asset liquidity, capital structure** and **human resource management**. They are addressed in two separate chapters. This chapter documents analytical findings specifically from the profitability analysis. Arguably, the survival of a firm greatly depends on achieving a sustainable level of profitability and hence much effort is devoted to this aspect. This is preceded by an overall trend analysis that reports the global outlook of the construction industry. Analytical findings from the other three areas (asset liquidity, capital structure and human resource management) are presented in the next chapter.

4.2 Overall Trend Analysis

This section serves as a background that paints the overall outlook of the construction industry before the firm sample is more specifically assessed through the various criteria. The outlook is presented by firstly analyzing the revenue growth of the firms and subsequently by their profitability growth (represented by Return-on-Equity, ROE).

4.2.1 Trend of Revenue Growth

This part of the analysis surveys the regional growth trends of the construction industry. The overall trend, be it cyclical, expanding or contracting, tells a lot about the recent outlook of the industry and should therefore interest many researchers and practitioners. By understanding the current market condition, a firm stands a higher chance of achieving a better strategic position through structuring appropriate competitive strategies.

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To shed some light on this aspect, revenues (from year 1999 to 2003) of selected firms are extracted. Year 1999 is taken as the base year (with Index Value = 100), and revenues in subsequent years are normalized with respect to that of the base year. The normalization exercise helps to prevent unfair comparison among companies of different sizes and eliminates the need of standardizing currency units when comparing firms from different countries. The trends of revenue growth in different regions – Europe, North America and East Asia, are plotted separately.

The results show that companies from different regions exhibit different trends and outlook, as shown in Figure 4-1, 4-2 and 4-3. For instance, the North American group (Figure 4-1) exhibits the best outlook in terms of average revenue growth as compared to those firms from the other regions. It is observed that more than 50% of the firms have had positive revenue growth continuously for four years. At the end of year 2003, revenues are, on average, 62% higher than those in 1997 (this figure excludes the Aecon Group and the Shaw Group, which have grown 356% and 569% respectively and are thus treated as outliers). This growth pace is in fact the highest among the three regions studied. However, the volatility (fluctuation) of growth paths is also the highest, with the average coefficient of variation being determined as 23%.

Figure 4- 1: Revenue Growth of North American Companies

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For the European group, the outlook is also encouraging. Only 5% of the European sample has recorded negative revenue growth continuously for four years (refer Figure 4-2). At the end of 2003, the revenue is, on average, 48% higher than that in 1999, slightly lower than that shown by North American firms. However, the European firms show a more consistent growth trend when compared to their North American counterparts, as its average coefficient of variation in revenue growth is 18.3%.

Figure 4- 2: Revenue Growth of European Companies

Compared to the first two groups, the East Asian companies exhibit rather stagnant growth rates (see Figure 4-3). At the end of 2002, revenues are, on average, 3% lower than those in 1999. Nevertheless, the volatility in revenue growth is also the lowest among the three regions (average coefficient of variation = 10%). In Figure 4-3, it is interesting to note that the number of companies recording positive revenue growth is approximately equal to that recording negative revenue growth. Specifically, in year 2000, some companies peaked while others started to turnaround – it is as if the x-axis is acting as a mirror. This would suggest that

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competition among large firms in the East Asian construction industry is very intense as a result of stagnant economic growth. The rise of one company may result in the fall of another. In Japan, the situation is worsened by a prolonged sluggish economy. This is evidenced in Figure 4-4, which shows that Japan’s GDP has been heading south since 1997.

(Note that the scale for the standardized revenue (y-axis) is relatively smaller than that used for North American and European companies.)

Figure 4- 3: Revenue Growth for East Asian Companies

Figure 4- 4: GDP of Japan [Source: Bank of Japan]

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To provide further evidence on the global construction outlook, gross outputs of the construction industry of each region are extracted from the relevant governmental institutions. In Figure 4-5 and 4-6, the growth trends observed are consistent with the previously discussed findings. Both North America and Europe have enjoyed increasing levels of output during the study period, with the former having a higher growth rate than the latter. On the other hand, the public orders received by the construction sector in Japan have been constantly declining.

Figure 4- 5: Gross Output of the Construction Industry in North America and Europe [Source: Bureau of Economic Analysis, U.S.; European Central Bank]

Figure 4- 6: Public Orders Received for Construction in Japan [Source: Bank of Japan]

4.2.2 Trend of Profitability Growth

While achieving revenue increment is almost certainly a good news for a firm, it does not necessarily guarantee a higher profitability in tandem. More specifically, Porter (1985) indicated that if the structure of an industry is unattractive, firms within the industry may not be able to retain their value (profit margin) albeit an increase in turnover due to higher demand. In conjunction with that, it becomes appropriate to examine the profitability outlook of the construction industry after analyzing its revenue growth. The results, when compared with that from the trend of revenue growth, will form part of the picture that suggests the structure of the construction industry.

The profitability of the firm sample is to be represented by ROE. The ratio is obtained by dividing net profits with shareholders' equity. For most of the selected firms, the ratios from year 1997 to 2003 are plotted. However, firms that record negative shareholders' equity in at least one year are completely excluded from the analysis as they would distort the actual picture of their profitability⁷.

Similar to the results of Section 4.2.1, it is found that firms from different region show different trends and outlooks (refer Figure 4-7). Again, North American firms exhibit the most outstanding performance when compared to those from other regions. The average ROE recorded from the sample is a sterling 20%, a figure that is the highest among the three regions studied. The volatility of profitability is relatively the lowest, with the average coefficient of variation calculated as 170%. In Europe, the profitability of the firms is also commendable, though not as high as that of their North American counterparts. The average ROE is found to be 12% while the average coefficient of variation is 171%. For the group of firms in East Asia, the profitability exhibited in their financial reports is the lowest, where the average ROE is -4%. The coefficient of variation is a whopping 490%, the highest figure among the three groups of firms.

⁷ Refer Section 3.3.3.3 page 31 (Item 4: Key Financial Ratios) for detailed explanation. Firms that are excluded are Hazama, Hyundai E&C, Ssangyong, Foster Wheeler, McDermott, WGI and Philipp Holzmann, all of which are seriously plagued with financial distress.

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Figure 4- 7: Trends of Profitability of Firms in North America, Europe and East Asia

Conclusions on Overall Trend Analysis

The preliminary study shows that a synchronized picture of the global construction industry cannot be seen. Instead, each region exhibits different growth rates and volatilities. This suggests that the construction business is still very much localized in nature, and therefore domestic economic strength continues to play an influential role in determining the growth of the industry. In other words, unlike some other industries, construction is yet to (or probably never will) be a truly globalized industry even though forces of globalization have resulted in various extents of operational integrations in many other industries. This is an important conclusion for E&C firms prior to their structuring and designing of competitive strategies.

Overall, the graphs in the trend analysis suggest that the industry is still very much cyclical in nature. Peaks and troughs, though not synchronized within the same year, are observed in every region. However, in view of the limited length of the study period, the entire length of the business cycle of the industry cannot be deduced from this study.

Specific to the analysis of profitability growth, it is found that the profitability growth trend shown in each region is similar and consistent with that of revenue growth trend. For instance, the exceptionally high profitability for the North American firms is matched with the highest revenue growth rate among all regions. The group of European firms records a revenue growth rate that is slightly lower than that of the North American firms, and correspondingly its profitability is also marginally lower than theirs. Apparently, as far as large E&C firms are concerned, there is no sign of profitability being eroded through severe competition when the industry in these two regions is booming (refer Table 4-1).

Troubled with stagnant revenue growth, the East Asian firms have the lowest profitability among the three regions. Besides, the highly volatile profitability is another signal supporting the postulation made earlier that the competition in the region is fierce and intense.

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Region	Ave. ROE	2003 Revenue as % of 1997 Revenue (Average figure)
North America	19.5%	162.4%
Europe	11.7%	148.3%
East Asia	-3.5%	105.2%

Table 4- 1: Comparison between ROE and Revenue Growth for Firms in Different Regions

4.3 Profitability Analysis

In this section, various intrinsic factors such as firm size, geographical coverage, generic strategy and organizational structure of a firm are looked into to determine their relevance with the profitability of an E&C firm. It is hoped that critical factors of corporate strategy that enhance the profitability can be identified.

Throughout this report, the definition of profitability is set from an equity holder’s point of view. As such, any effect from capital structure, such as interest payments and interest income, is to be accounted for to derive the net profit figure. However, the taxation effect is not included due to its complex nature. Firstly, it is observed that nominal tax rate shown in financial statements is usually not equal to effective tax rate applied to firms. Besides, international accounting policies are different in treatment of taxation issues. Thus, it is decided that corporate taxation is to be ignored altogether to minimize distortion during comparison between firms. It thus follows that tax shield, too, is not included in the net profit figures. In short, net profit is calculated simply by deducting net interest payments from EBIT.

There are three proxies that are used to represent the profitability of a firm. Firstly, it can be assessed in terms of net profit margin (NPM). The ratio, derived by dividing net profit by total revenue, indicates the capability of the firm to capture and retain values that it creates – the higher margin it records, the more value it retains.

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As compared to NPM, Return on Asset (ROA) is a measurement that enables a more comprehensive analysis of the performance of a firm. By disaggregating the ratio into two components – NPM and assets turnover – researcher is able to assess not only the capability of the firm to capture values but also its efficiency in utilizing assets acquired to generate revenues.

$$ROA = \frac{net_profit}{revenue} \times \frac{revenue}{total_asset}$$
$$= NPM \times Assets\ Turnover$$

Capability of
values capturing

↑

Efficiency of
asset utilization

↑

Assets of a firm can be financed through either equity or debt. In view of that, ROA does not indicate the extent a firm leverages assets through borrowings. Return on Equity (ROE) is a measure of profitability that takes into accounts the issue in hand by incorporating the ratio of total assets acquired over equity (known as financial leverage) into ROA. The corresponding equation, which is known as Dupont equation, is given as below.

$$ROE = \frac{net_profit}{revenue} \times \frac{revenue}{total_asset} \times \frac{total_asset}{shareholders'_equity}$$
$$= NPM \times Assets\ Turnover \times Financial\ Leverage$$

Capability of
value capturing

↑

Efficiency of
asset utilization

↑

Extent of debt
leveraging

↑

4.3.1 Analysis of Profit Margin (I)

In the manufacturing industry, there is usually a strong correlation between company profit margin and company size. This can be attributed to the economic of scale benefit that they enjoy during bulk purchase of raw materials and during mass production. Knowing that construction is not strictly a production industry, it is interesting to find out if larger construction company can enjoy higher profit margin too in any manner.

In 1991, Akintoye and Skitmore reported that there appears to be a positive correlation between profitability and size of a construction company. They suggested that this is because large companies are '*more efficient, better organized and have a better defined pricing policy*'. As the analysis was conducted only for the UK companies, it would be interesting to expand the geographical scope in order to derive a more general conclusion.

The size of operation of a company is represented by its average revenue⁸, while the profitability is measured by NPM. Pearson correlation tests are carried out to determine if there is any significant linear relationship between NPM and revenue.

The overall bivariate test shows that there is no significant correlation between the two at the significant level of 0.05 (1-tailed). When the analysis is done separately for each region, the correlations found are still not significant (European: p-value=0.34; North American: p-value=0.31; East Asian: p-value=0.43). These results can also be verified through scatter plots which show the absence of obvious trend lines (see Figure 4-8, 4-9 and 4-10). Besides, in all three graphs, it is also observed that the variability among company profitability decreases with higher revenue.

⁸ Unless otherwise stated, throughout this report the size of operation is measured by revenues instead of total assets. Such proxy has been used by researchers such as Akintoye and Skitmore (1991), Chen and Hammes (1992) and Grossmann (2003). Renowned publications such as *ENR* and *Fortune* also rank firms based on annual revenues. Size of operation and size of firm are used interchangeably.

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There are two issues that can be drawn from the above analysis. First, the results show that NPM is not correlated to firm size, even when only European companies are analyzed. This contradicts with the conclusions made by Akintoye and Skitmore (1991). A further scrutiny of the European sample reveals that only 8.7% of the companies are from the U.K. In other words, a majority of European companies analyzed in this current study are non-UK companies (Spain: 22%; Germany: 17%; France: 17%). Therefore, the conclusions made by Akintoye and Skitmore may be applicable only for U.K. firms but not generally for European firms. Furthermore, the coefficient of correlation derived in their study is merely

Figure 4- 8: Correlation between NPM and Revenue for North American Companies

Figure 4- 9: Correlation between NPM and Revenue for European Companies

Figure 4- 10: Correlation between NPM and Revenue for East Asian Companies

0.084 – although it is statistically significant, it may prove to be too low to have any economic implications.

The second point on *variation* in profitability (which decreases with increasing firm size) is consistent with the findings of Asenso and Fellows (1987) and Akintoye and Skitmore (1991). It was suggested that with an increased level of market awareness among larger firms, the firms are quite similar to one another in terms of pricing and production and there are fewer viable alternatives for their clients.

With these two findings, an important strategic issue can be deduced, that:

It is possible for small- and medium-sized firms to enjoy a higher profit margin than large players.

To investigate further, relatively smaller-sized firms are isolated from the main sample before examining the key business strategies adopted by those with superior performance⁹ (recall that the firm sample is made up of large E&C firms, this group of firms is “small” only in a relative sense). The strategic business units (SBUs) of this group of firms are first determined. Then, the percentage of revenue generated and the corresponding profit margin enjoyed by each SBU are recorded.

⁹ Obviously, the other components of corporate strategies, such as human resources strategies and finance strategies, can also contribute to the overall success of this category of firms. As a starting point, only business strategies are studied here.

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The study indicates that these firms are outstanding in terms of profitability because they are involved in selected markets that offer higher profit margins than the general construction market. This point is further addressed below.

For diversified firms, their portfolio of activities can be designed in such a way that they consist of high-margin works in order to balance the lower margin ones. Ferrovial, for instance, is a European firm that has four major business units: Construction, Services (e.g. street cleaning, municipal solid waste collection and treatment, gardening), Real Estate, and Infrastructure (development and management of toll roads, car parks and airport concessions). It can be said that the three latter business units are not directly related to traditional construction works. While the compounded annual growth rate (CAGR) for the Construction unit was 13% over the study period, the CAGR for the Infrastructure, Real Estate and Services units were 53%, 39% and 76% respectively (see Figure 4-11). Ferrovial's management team focused more significantly on "non-traditional" construction projects, since the profit margin for the Construction unit was only 4.7% in 2003, whereas the margins for Infrastructure and Real Estate were 47% and 18% respectively. Such kind of strategic positioning has helped Ferrovial to record the highest overall profit margin within the firm sample despite its relatively smaller size of operation, which is less than half of Skanska's.

Fomento de Construcciones Y Contratas (FCC), another Spanish firm, has also adopted a similar strategy and achieved the second highest profit margin in the European firm sample during the study period. As of 2003, as much as 50% of FCC's revenue was generated from business units related to services, urban environment and cement production, which collectively achieved an average operating profit margin of 13%. In contrast, the average margin achieved the core construction unit was only 3.5%.

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Figure 4- 11: Performance of Each Business Units of Ferrovial

WGI is another firm that outshines its peers in terms of profitability by including high-margin activities in its operation portfolios. Three of its divisions, namely Mining, Defense, and Energy and Environment, are non-construction related units that form about 40% of its total revenue. They collectively contribute an operating profit margin of 15%, as compared to the far lower profit margin of 3.5% from its construction-related divisions.

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Instead of designing balanced portfolios as what the diversified firms did, narrowly-targeted firms could also become outstanding by focusing on unique niche markets that offer high profit margins. For example, Technip Coflexip is a European firm that competes mainly in the hydrocarbon and petrochemical industry and provides multiple services in both offshore and onshore markets. During the period studied, it actively positioned itself as the leader in the industry through expansion and acquisition. As a result, the firm enjoyed an admirable operating profit margin of 6%, even when the average industry performance was lackluster. This figure is almost double of Vinci's (3.3%), which is much larger in size.

Figure 4- 12: Performance of Business Units of Technip Coflexip

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Granite Construction, an America company, also shares a similar success story. By focusing mainly in infrastructural markets such as bridges, interstate highways and airport runways, it not only recorded 18 years of continuous revenue growth, but also enjoyed an average net profit margin of close to 6%. In comparison, this is more than double of Fluor's net profit margin – another U.S. firm that is much larger than Granite Construction. Other successful examples of adopting a narrowly-targeted strategy include Stantec and Taikisha, which have excelled in profitability as compared to their larger counterparts.

Figure 4- 13: Revenue Growth of Granite Construction

4.3.2 Analysis of Profit Margin (II)

Though it is found that profit margin is not *directly* correlated to the size of operation of a firm, there are most probably some other factors that affect firms' profitability. Among the possible factors are listed below:

1. geographical origin (Europe, North America or East Asia)
2. geographical coverage (regional vs. international companies)
3. generic strategy adopted (narrowly-focused, broadly-targeted or non-related diversification)
4. organizational structure (market, geographical, functional or hybrid structure)

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Before each factor is tested independently, a multiple ANOVA test is run to find any interaction between the factors. If there is no significant interaction effect between any two of the factors, an independent t-test or one-way ANOVA test will be carried out as follows:

- i. ANOVA to compare NPM of companies from different regions
- ii. t-test to compare mean NPM of regional companies to that of international companies
- iii. ANOVA to compare NPM of companies adopting different generic strategies
- iv. ANOVA to compare NPM of companies having different organizational structure.

The multiple ANOVA results, show, in Table 4-2, indicate that there is no significant and strong interaction between any of the factors listed above (p-value>0.05). As such, the results of the above tests will be discussed independently.

Interaction between Factors	F-parameter	Significance
geographical origin x geographical presence	1.556	0.222
geographical origin x generic strategy	0.106	0.956
geographical presence x generic strategy	2.432	0.100
geographical origin x geographical presence x generic strategy	1.130	0.347

Table 4- 2: Interaction Test Results for NPM

4.3.2.1 Regional Analysis

From Table 4-3, it is observed that NPM for companies from different regions not the same (p-value=0.001<0.05). Specifically, the East Asian companies are found to have significantly lower margin than North American companies (p-

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value<0.05). This can be quantitatively shown by listing the mean NPMs for companies from each region:

- European companies: 2.5%
- North American companies: 3.5%
- East Asian companies: 0.6%

Region A	Region B	Mean Difference of NPM (A-B) ^a	Significance
Europe	North America	-1.0417	0.453
Europe	East Asia	-1.8716	0.073
North America	East Asia	2.9133 ^b	0.007

Notes: a. Dependent variable is average NPM.
b. The mean difference is significant at 0.05 level.
c. $F = 5.300$; $P = 0.008$

Table 4- 3: NPM for Companies from Different Regions

The figure for European companies is the same as that found by Lea and Lansley (1975a), while the figure for North American companies conforms to that reported by Park (1966). The profitability of the industry has not changed much since the 1960’s, indicating that the industry has long reached a matured growth. Such conclusion is an important one, as it could shed some light on the best competitive generic strategy for E&C firms to achieve superior performance.

At first look, the relatively lower NPM for East Asian companies does not come unexpected, as it has been pointed out in the earlier chapter that Japanese companies intentionally understate their bottom lines to avoid hefty corporate taxes.

However, even if the profits are to be adjusted upward by three-fold¹⁰, the margin is *still* lower than that found in other regions. The gloomy finding is consistent with those presented in the analysis of revenue growth, where it is found that:

- 1. The national macroeconomics outlook for Japan is negative.
 - declining GDP
 - declining public orders for construction
- 2. The average construction industry outlook is lackluster.
 - stagnant revenues growth
 - the rise of a company results in the fall of another

It should not come as a surprise to conclude that, under such unfavorable condition that is coupled with high exit barrier, the competition among E&C firms in the region becomes very fierce and intense. In fact, some company chairpersons even explicitly acknowledge that the competition faced is acutely severe.

4.3.2.2 Geographical Coverage Analysis

The results, shown in Table 4-4, indicate that there is no significant difference in NPM between regional and international firms (p-value=0.175>0.05). This shows that firms should not expect to reap a significantly higher profit margin if they choose to venture overseas. The results partially reflect the previous finding that the NPM for the industry is statistically the same globally (except East Asia).

Geographical Presence	Sample Size	Average NPM (%)	t-statistics	Significance (2-tailed)
Regional	40	2.73	1.374	0.175
International	20	1.73		

Table 4- 4: NPM for Companies with Different Geographical Presence

¹⁰ This adjustment is made as Haskins et al. (2000) reported that the average return of equity for Japanese publicly listed firms is approximately 300% lower than for U.S. firms.

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4.3.2.3 Generic Strategy Analysis

The difference in NPM among companies adopting different generic strategies is significant ($p\text{-value}=0.007<0.05$). Specifically, non-related diversified firms stand out and yield significantly higher NPM than broadly-targeted and narrowly-focused firms (refer Table 4-5).

Generic Strategy A	Generic Strategy B	Mean Difference of NPM (A-B) ^a	Significance
Narrowly-focused	Broadly-targeted	0.6413	0.605
Narrowly-focused	Non-related diversified	-2.4771 ^b	0.050
Broadly-targeted	Non-related diversified	-3.0914 ^b	0.009

Notes: a. Dependent variable is average NPM.
b. The mean difference is significant at 0.05 level.
c. $F = 5.410$; $P = 0.007$

Table 4- 5: NPM for Companies with Different Generic Strategy

Following the statistical results, a couple of propositions can be established, which are elaborated in turn:

(i). The profitability of firms adopting a broadly-targeted strategy is comparable to those that have adopted a narrowly-focused strategy (phenomenon 1 as shown in Figure 4-14).

There exists a long-standing wisdom, which states that “focus is the answer” when superior corporate growth is sought after. For example, Ravenscraft and Scherer (1987), Stimpert and Duhaime (1997) and Berlin (1999) contend that product diversification has a negative effect on firm performance. In contrast, others (such as Pandya and Rao, 1998; Harper and Viguerie (2002)) have rebutted this argument and indicated that firms pursuing a diversification strategy in *related* fields achieve a better

performance as compared to firms that have opted to remain focus. Note that diversification in related fields would imply a similar definition of the broadly-targeted strategy adopted in this study. As far as E&C firms are concerned, the results obtained in this study seem to support neither of these arguments – a narrowly-focused strategy is as good as a broadly-targeted strategy in terms of profitability.

Figure 4- 14: Ranking of Generic Strategy According to Profit Margin

There are two possible explanations for the profit margin proximity between the two strategies. Firstly, the cost of diversification could be adequately compensated by the higher gross profit obtained from other related market segments. Alternatively, the cost of diversification could be minimal relative to other operating costs while the gross profits for all related market segments are close to one another.

Indirectly, the findings also highlight that profitability should not be used as the sole criterion to decide on the type of new market ventures. Instead, other factors, such as the core competencies of the firm (capability of management, technical knowledge, financial resources), could be more relevant. This conclusion is consistent with Porter’s (1985) theory of competitive advantage, in which he suggested that firms’ resources and skill base should be matched with suitable market segments in order to achieve sustainable profitability.

- (ii). *The profitability of firms adopting a non-related diversification strategy is higher than those that have adopted a narrowly-focused or broadly-targeted strategy (phenomenon 2 as shown in Figure 4-14).*

The statistically higher profit margin of non-related diversified firms suggests that their gross profits may have adequately and significantly compensated for the additional costs of diversification. This point supports the anecdotal evidence given in the previous analysis, which demonstrates that certain business areas not related to the core construction market are benefiting those firms with a higher profit margin. (As highlighted on page 51, firms such as Ferrovial and FCC are outstanding in terms of profitability because they are involved in selected markets that offer higher profit margins than the general construction market.)

However, it needs to be emphasized that the above conclusion has been made without taking into consideration the risk associated with a non-related diversification strategy. Rightfully, if higher return is always associated with higher risk, the percentage of successful firms (as measured by profitability) adopting a non-related diversification strategy should be lower than those that have adopted a broadly-targeted or narrowly-focused strategy. Further investigation confirms that this is indeed the case. Out of a total of nine non-related diversified firms, 2 firms (20%) are identified as underperformers. In contrast, only one firm (3%) within the broadly-targeted group and one (4%) within the narrow-focused group are underperformers (see Figure 4-15). As such, the second proposition is now expanded to include the factor of risk: *The profitability of firms adopting a non-related diversification strategy is higher than those that have adopted a narrowly-focused or broadly-targeted strategy, but they carry higher risk of underperformance than the latter.*

Figure 4- 15: Outliers among Different Generic Strategies

Reasons for Underperformance¹¹ among Non-related Diversified firms

Obviously, it is important to look beyond the numbers in order to grasp a more thorough understanding of the different risks faced by E&C firms. A few examples of underperforming firms that have adopted non-related diversified strategy are discussed in this section. This investigation would help to identify certain pitfalls that firms should avoid.

“Excessive diversification” is often cited as one of the major reasons for the underperformance of firms adopting a non-related diversified strategy. At times, there are large firms that aggressively diversify their business portfolios in order to tap market opportunities or to keep the companies growing. When diversification is overly done and financial and management resources are stretched too thin, firms would find their bottom lines declining instead of increasing.

¹¹ The two underperformers discussed here have not only low profit margin but also low assets turnover and return on assets.

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Kvaerner, which was once one of the five largest international E&C firms according to ENR's ranking, was a victim of excessive diversification. Prior to 1999, the Norwegian firm was aggressively expanding its portfolios through acquisitions to include activities that were not related to its core construction business, such as metals manufacturing, paper and pulp processing, satellite launching and ship building. In the process of expansion, the interest-bearing debts of the firm developed much faster than its operational profits. Its financial strain was clearly shown in its various financial ratios (see Figure 4-16). Subsequently, the management had to restructure the business portfolio of the firm through a series of divestments, including the pulp and paper unit, the ship building business and the metal manufacturing operations. In 2000, the firm sold its building and civil engineering businesses to Skanska and continued to seek buyer for its stake in the satellite launching business.

McDermott International is another non-related diversified firm that suffers from the effect of excessive diversification. Although the firm also suffered from excessive asbestos litigations and claims, excessive diversification also played a part in its underperformance. In the 1990s, its business portfolio included operations such as ship building, manufacturing of pile-driving hammer, air-cooled heat exchanger and nuclear steam generating equipment. When expected returns from these diversified units did not materialize, the firm was also forced to divest several of its business units such as ship building and manufacturing of components for the defense industry.

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Figure 4- 16: Various Financial Ratios for Kvaerner

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(Note: Only non-related diversified firms are shown in this figure)

Figure 4- 17: Comparison of NPM for McDermott and Kvaerner

Focus Is Not Risk-Free, Either.

Although excessive diversification is risky, a narrowly-focused strategy has other facets of danger. An overly focused strategy does not guarantee stable and risk-free performance, as it is more vulnerable to fluctuating business cycles. In fact, some researchers, such as Pandya and Rao (1998), even argued that the risk faced by a dominantly undiversified firm is much greater than a diversified firm.

Foster Wheeler, a narrowly-focused U.S. firm in the sample, is an example that provides empirical evidence for the above claim. The firm has two business groups. The Engineering and Construction Group designs and constructs various industrial facilities (for petrochemical and pharmaceutical processes) and the Energy Group designs and erects steam generating equipments for power stations. Clearly, the firm concentrates its business activities mainly in the downstream of the hydrocarbon-processing industry. Incidentally, global capital expenditure in oil and gas refining was reduced in the late 1990s (see Figure 4-18). The slowdown was exacerbated by consolidation in the industry, which had resulted in closure of

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refinery plants worldwide. In addition, the power sector in North America was depressed by slow growth, over capacity and financial difficulties of independent power producers (Foster Wheeler, 2002 and 2003). As a result of all these factors, Foster Wheeler’s performance was volatile and deteriorating (see Figure 4-19). In fact, it was forced to undergo reorganization pursuant to a debt-restructuring plan in 2001. Other firms, such as Chiyoda and Toyo Engineering Corporation that also compete in the hydrocarbon-processing industry, similarly suffered from the lackluster outlook of this sector during the same period.

Figure 4- 18: Market Trend of Oil and Gas Industry [Source: *Pulses*, Nov 2004.]

The lesson learnt from these cases is clear – there is not a “perfect” generic strategy that best suits all the firms in both aspects of profitability and risk. Rather, Harper and Viguerie’s (2002) advice is deemed the most practical in guarding against underperformance: “A firm should ensure an appropriate balance among growth potential, current performance and the intensity of management focus so as to achieve healthy growth and returns”. There is no clear demarcation between an overly focused and an excessively diversified portfolio; it is only a matter of degree.

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The findings should serve as a reminder whenever business portfolios are designed or revised.

Figure 4- 19: Financial Performance of Foster Wheeler Corporation

4.3.2.4 Organizational Structure Analysis

No significant difference in NPM between companies with different organizational structures is detected ($p\text{-value}=0.192>0.05$). This implies that company structure does not influence profitability of large E&C firms in the construction industry and thus there is no single preferred structure. Perhaps, the more concerning issues are the appropriateness of company structure with respect to corporate culture and the strength of internal coordination and cohesion among

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different divisions within the company. These might have greater impact than formal organizational structure alone.

Organizational Structure	Sample Size	Average NPM (%)	F-parameter	Significance
Market	34	1.937	1.632	0.192
Functional	6	4.172		
Geographical	5	3.818		
Hybrid	14	1.574		
Sample	59	2.238		

Table 4- 6: NPM for Companies with Different Company Structure

4.3.2.5 Summary of Insights from Analysis of Profit Margin

To recapitulate, there are two factors that directly affect NPM: geographical origin and generic strategy. The first factor is usually not a strategic option for E&C firms. That leaves generic strategy as the only feasible factor for the firms to achieve above-average performance.

Apparently, generic strategy appears as a choice that can be controlled. If this is true, does it mean that *every* organization should adopt a non-related diversification strategy, which has a better potential to offer a higher profit margin according to the previous analysis? Intuitively, this is impossible because the extent of diversification is often constrained by the available resources. If one assumes that larger firms have more resources (which is a logical assumption), then it can be postulated that firm size may indeed affect the choice of generic strategies.

To examine this hypothesis, an ANOVA test was conducted to detect any differences in average revenue (which is used to represent size of operation) among companies with different generic strategies. Since average revenue is not normally

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distributed, this parameter is transformed into a logarithmic measure. The transformed measure is then used in the statistical test since it is found to be normally distributed. The one-way ANOVA results show that the differences observed are significant ($p\text{-value} = 0.003 < 0.05$). Specifically, the average revenue of firms adopting the narrowly-focused strategy is lower than those adopting the broadly-targeted or non-related diversification strategy at the 5% level of statistical significance (refer to Table 4-7). This finding is consistent with Amey (1964) and Utton (1977), whose observations also suggested a positive relationship between firm size and diversification.

Generic Strategy A	Generic Strategy B	Mean Difference of revenue (A-B) ^a	Significance
Narrowly-focused	Broadly-targeted	-0.8371 ^b	0.003
Narrowly-focused	Non-related diversified	-0.8535 ^b	0.042
Broadly-targeted	Non-related diversified	-0.0164	0.999

Notes: a. Dependent variable is normal logarithmic of average revenue.
b. The mean difference is significant at 0.05 level.
c. $F = 6.522$; $P = 0.003$

Table 4- 7: Revenue for Companies with Different Generic Strategy

In a theoretical sense, the results are in line with the typical growth path of a firm. During the early stage of formation, a firm is usually small in size and tends to focus only on a few market segments due to limited capacity and resources. As its size and resources grow, the firm would try to customize its products/services to serve other new market segments. The strategy changes gradually from narrowly-focused to broadly-targeted. In the later stage, some established broadly-targeted companies may even go further by diversifying into areas not related to their core businesses for different reasons.

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In short, it is clear that not every organization would be able to adopt a non-related diversification strategy. In general, the type of generic strategies to be adopted should be commensurate with the company size, capacity and resources.

The analytical findings so far indicate that although profitability is not *directly* correlated with firm size, it may still be affected by the latter through the type of generic strategies adopted. Based on the findings, Figure 4-20 proposes the three-way interrelationships among size, generic strategies and profitability.

Figure 4- 20: Expanded Relationship between Company Size, Generic Strategy and Profit Margin

Referring to this figure, several strategic issues are recapitulated and presented:

- (i) *When a firm grows and increases in size, it is capable of shifting its competitive strategy from narrowly-focused to broadly-targeted. However, this move may not lead to an increase in profit margin (as supported by the statistical results in Table 4-5 of page 58).*

This point is represented by the two links marked out as “A” in Figure 4-20. This shift in strategy should be favorable as it can reduce the adverse impact on a firm due to fluctuations of business cycle on one hand, while maintaining the level of profitability on the other.

- (ii) *Broadly-targeted firms may have a similar level of financial capacity as non-related diversified firms (as measured by their ability to generate revenue), but not all of them would choose to shift to the non-related diversification strategy that potentially offers higher profitability.*

This point is represented by the two links marked out as “B” in Figure 4-20. Out of a total of 61 construction firms in the sample, nearly 15% of them have average annual revenues exceeding ten billion U.S. dollars. With strong financial muscles, there is no question about the ability of this group of firms to undertake non-core business activities and seek for higher profitability and growth in other sectors. Yet, only 10% of them have shifted to the non-related diversification strategy, while almost all of the others stick with the broadly-targeted strategy. As pointed out earlier, those that choose to remain broadly-targeted are compensated by a lower risk of underperformance.

4.3.3 Analysis of Return on Asset (I)

There have been numerous discussions concerning the impact of generic strategy on firm performance in the previous sections, where non-related diversification is favored in terms of profitability measured by NPM. In this section, discussions will be continued and expanded to assess the different types of generic strategy in terms of ROA. Particularly, ANOVA is carried out to compare the ratio among firms adopting different generic strategies. The mean value for the sample is to be determined as well.

The results are shown in Table 4-8. It is found that no significant difference in ROA is detected among companies with different generic strategies ($p\text{-value}=0.32>0.05$). This shows that generic strategy does not affect ROA of E&C firms. Another findings presented is that the mean value for the firm sample is approximately 3%. Incidentally, this is similar to that obtained by Kitamura (2003) when he surveyed over 3000 Japanese construction firms from 1994 to 2000.

Generic Strategy	Sample Size	Average ROA (%)	F-parameter	Significance
Narrowly-focused	22	2.775	1.157	0.322
Broadly-targeted	29	2.472		
Non-related diversified	6	5.027		
Sample	57	2.858		

Table 4- 8: ROA for Companies adopting Different Generic Strategy

Following the statistical analysis, some propositions are presented as follows:

- (i) *Depending on the proxy used to represent profitability, generic strategy may or may not be a significant determinant of profitability.*

As indicated in the earlier section, firms adopting a non-related diversification strategy outshine other firms in terms of profitability, if the performance is gauged by NPM (refer Table 4-5 on page 58). In contrast, as indicated by above finding, if the aspect is represented by ROA instead, generic strategy no longer differentiates the firm sample. It can be inferred then that using a single financial indicator to measure an aspect of performance may not be adequate to describe the actual performance.

(ii) A firm adopting a non-related diversification strategy may yield lower assets turnover than those that have adopted a narrowly-focused or broadly-targeted strategy.

As pointed out, non-related diversification strategy yields significantly higher NPM than the other two strategies (refer Figure 4-20 of page 69). On the other hand, it is also found that ROA for all of these firms are not statistically different. Thus, the only plausible suggestion to explain so is that non-related diversified firms have relatively lower assets turnover to offset their higher NPM. Similarly, broadly-targeted firms should have higher asset turnover to compensate their lower NPM. This postulation subsequently leads to an investigation in the next section for its verification.

4.3.4 Analysis of Return on Asset (II)

White, Sondhi and Fried (1997) suggested that firms can often be differentiated by two different competing strategies. They adopt either a high-turnover/low-margin strategy or a low-turnover/high-margin strategy to generate profits. While such statements are generally valid, more often some companies could not be *strictly* categorized into any of the two groups mentioned above. Either intentionally or unintentionally, they are located somewhere in between, having average-turnover/average-margin. As such, it is proposed that, for a certain value of ROA, companies can be categorized into one of the following groups:

- 1. High-margin Group
- 2. High-turnover Group
- 3. Average Group

Figure 4- 21: Location of Each Group in the NPM-Asset Turnover Graph

It is suggested in the previous section that a non-related diversification firm may adopt a high-margin/low-turnover strategy while a broadly-targeted firm may adopt a high-turnover/low-margin strategy. To verify that this is a plausible suggestion, an analysis of an intuitive nature is conducted as explained below. First, data points of NPM and asset turnover for the firm sample are plotted¹². Given that $[NPM \times \text{asset turnover} = ROA]$, and that ROA is indifferent among the firms of different generic strategies (as verified in Table 4-8), the NPM-assets turnover graph is thus expected to show an inverse curve. Backed with the assumption, the data points plotted are subsequently regressed to an inverse function after they are plotted.

The statistical result indicates that the inverse curve is indeed significant at 5% level ($p\text{-value} < 0.001$). This serves as another evidence showing that ROA is indifferent among firms with different generic strategies.

¹² In view of the exceptionally lower NPM for East Asian firms, they are excluded from the analysis so that the broad picture is not distorted.

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Figure 4- 22: Inverse function between NPM and Asset Turnover

Figure 4- 23: Locations of Firms with Different Generic Strategies

As can be seen from Figure 4-23, firms with different generic strategies are clearly located into different competing strategy groups: most non-related diversified companies are in the High-margin Group, narrowly-focused companies in the Average Group and most broadly-targeted companies in the Average Group or High-turnover Group. In order to provide quantitative support to the above grouping, the *time-series* of asset turnover and NPM of some selected companies are studied and tabulated. This may shed some light on what competing strategy that firms with different generic strategies emphasize and apply.

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As noticed in Table 4-9, over the years the non-related diversified companies have their asset turnover increasing or decreasing, but their NPM always increase. This shows that the management teams are unanimously focusing on *at least* increasing their NPM. In contrast, some broadly-targeted companies, as listed in Table 4-10, belong to the High-turnover Group. Most of them try to increase their asset turnovers to compensate for the decrease in NPM.

Generic strategy adopted	Company name	Trend over the period studied	
		Asset Turnover	NPM
Non-related Diversification	ACS	Decreasing	Increasing
	Bouygues	Decreasing	Increasing
	Dragados	Increasing	Increasing
	Ferrovial	Decreasing	Increasing
	FCC	Increasing	Increasing
	WGI	Decreasing	Increasing
	URS	Decreasing	Increasing

Table 4- 9: Trends of Asset Turnover and NPM for Non-related Diversified Companies

Generic strategy adopted	Company name	Trend over the period studied	
		Asset Turnover	NPM
Broadly-targeted	Ballast Nedam	Decreasing	Decreasing
	HBG	Decreasing	Decreasing
	AMEC	Decreasing	Decreasing
	Veidekke	Increasing	Decreasing
	Walter Bau	Increasing	Decreasing
	Jacobs Engineering	Increasing	Decreasing
	Hochtief	Increasing	Decreasing
	Skanska	Increasing	Decreasing

Table 4- 10: Trends of Asset Turnover and NPM for Broadly-targeted Companies

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Thus far, the analyses have shown that non-related diversified companies distinguish themselves from others by means of competing along the low-turnover/high-margin strategy. In contrast, most broadly-targeted companies adopt low-margin/high-turnover strategy to compete in the market. Following the research results, further issues are raised and discussed as below.

(i). Different generic strategies are associated with different competing strategies.

It has been shown earlier that generic strategy affects NPM of a firm (refer Figure 4-20). In line with the analysis of ROA, the figure is now modified to reflect a more complete picture – that generic strategy of a firm affects its competing strategy (low-turnover/high-margin or low-margin/high-turnover). This sends an important message for companies that are preparing for a change in generic strategy when their sizes grow.

(ii). The paradigm of tradeoff between profit margin and assets turnover exists in the construction industry.

More importantly, the results confirm that it is tough to achieve both high profit margin and high assets turnover at the same time. It affirms the conclusions made by Cheah et al. (2004), who obtained a negative slope between the two ratios. Depending on management capabilities, financial resources and type of market segments entered, a firm growing healthily usually faces one of the following scenarios:

- 1. profit margin increases but assets turnover decreases
- 2. assets turnover increases but profit margin decreases
- 3. both profit margin and assets turnover increase but at least one of them is relatively insignificant

The third scenario is worth discussing as it truly reflects the paradigm of tradeoff between turnover and margin – one hardly can have both ratios growing at the same desired pace. Fluor Corporation, for instance, is a firm that is in such scenario. From year 1999 to 2003, on average, its assets turnover increases by 0.12 points annually while its net profit margin increases by a mere 0.35% annually (refer Panel A of Figure 4-24 on page 78). Located at the lower end of the ROA curve, the firm is seen as adopting a High-turnover strategy. In contrast, Grupo Dragados has its assets turnover increasing by 0.02 points annually, a figure that is only one-fifth of Fluor's, while its net profit margin increases by 1% annually – nearly three times of Fluor's (refer Panel B). Clearly, it adopts a high-margin strategy.

4.3.5 Analysis of Return on Equity

From shareholder's point of view, ROE of a firm is one of the most concerned proxies of profitability. It is believed that a high ROE is a good indication that the management of the firm is capable of generating more wealth for the shareholders by profitably employing its retained earnings (Buffett and Clark, 1999). Consequently, increasing the ratio should be a pertinent task to be accomplished by the management members, since they are given the mandate by the shareholders to act in their interests.

As shown in Section 4.3 (page 47), there are three apparently independent components that structures ROE, namely assets turnover, NPM and financial leverage. In conjunction with the objective to increase ROE, the question in hand thus is to identify the single component, if any, which significantly dictates ROE. This is a valuable question because it enables the management to focus their attention and available resources on the identified component so as to increase ROE in the most effective manner.

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Figure 4- 24: A Comparison of Fluor and Grupo Dragados in Profit Margin-Turnover Tradeoff

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In order to identify the component that is most strongly associated to ROE, the *time-series* of ROE, assets turnover, NPM and financial leverage for each firm are first obtained. Correlation tests are then carried out between ROE and (1) assets turnover; (2) NPM; and (3) financial leverage to obtain the corresponding three coefficients of correlation using the time-series data. The steps are repeated for the rest of the firms, and average coefficients are then calculated and compared with one another to determine their relative strength – the higher is the coefficient, the stronger is its association to ROE.

Table 4-11 summarizes the results of the correlation tests. It clearly shows that NPM is the component that is most strongly correlated to ROE in all of the three regions studied. In contrast, assets turnover and financial leverage are apparently not significantly correlated to ROE.

Regional Firms	Coef. for AT	Coef. for NPM	Coef. for FL
East Asian	0.1099	0.9426	-0.0210
European	0.0956	0.8541	-0.1074
North American	0.4768	0.6906	0.1513
Overall sample	0.2274	0.8291	0.0077

Table 4- 11: Results of Correlation Tests between ROE and Assets Turnover, NPM and Financial Leverage

While studying the firm sample, there are ample evidences, some shown in Figure 4-25, which prove that the trend of ROE is closely trailed by that of NPM. In other words, strong correlation has been consistently found between ROE and NPM. The observations thus lead to the conclusion that, among the three ratios which form ROE, *NPM is the one having the most significant influence over ROE.*

Figure 4- 25: Comparison of Trends in ROE, Assets Turnover and Financial Leverage of Selected Firms

Figure 4-25 (Cont'd): Comparison of Trends in ROE, Assets Turnover and Financial Leverage of Selected Firms

It follows that E&C firms should focus their attention *more* on increasing NPM, than on increasing assets turnover or financial leverage in pursuance of higher ROE.

There is a commonly held conjecture that, if financial leverage could be kept constant or increased, a decrease in NPM could be such adequately compensated by an increase in assets turnover (or vice-versa) that ROE remains at least status quo, if not increasing. Clearly, the results of the study refute this conjecture, as it is found that a decrease in NPM per se is most probably a sufficient signal for a decrease in ROE. Moreover, further study reveals that only 20% of the firm sample has significant negative correlation between NPM and assets turnover, and the combination of the three ratios is such that most of these firms still have their ROE dictated by NPM (refer Figure 4-26).

It is noted that the findings and conclusions here do not contradict with the existence of the tradeoff between profit margin and assets turnover found in earlier section (refer page 76). In other words, the competing strategy that 'high assets turnover to compensate low profit margin' is still valid. This is because the study in this section analyzes and compares the trends of time-series of the ratios while the earlier one utilizes mean values from the time-series.

4.3.5 Analysis of Cash Flow from Operation

Income statement is prepared based on the accrual concept. It can therefore be affected by managerial choice of accounting principles and estimates. On the other hand, cash flow statement is relatively free of the drawbacks of the accrual concept, and thus providing a better picture of the condition of profits. This section serves to compare the profit figure as shown in income statements to the Cash Flow from Operation (CFO) in cash flow statements for the E&C firm sample. In essence, it may be interesting to find out whether the construction industry generally adopts conservative accounting principles such that the profit figure is significantly different from CFO.

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Correlation tests are run between net profit and CFO. As net profit differs significantly among companies from different regions, they are done separately for each of the three regions. For European and North American companies, strong positive correlations are found (0.86 and 0.88 respectively) and are significant at 1% level (1-tailed). For East Asian companies, moderately strong positive correlation was observed (0.68), also significant at 1% level (1-tailed). The respective results are shown in Figure 4-27, 4-28 and 4-29.

For European and North American companies, the strong correlations qualitatively show that the profitability outlook as deduced from income statement does not deviate significantly from CFO, a measure derived from the cash flow statement. On the other hand, the correlation for East Asian companies is lower than that for other regions. The higher variation between the figures suggests that probably some understatement or overstatement of profit exists in the income statement. To further provide quantitative support to the above claims, CFO is regressed against net profit to determine the slope of the line. As a general guideline, a steeper slope indicates that CFO is higher than net profit, signaling that net profit is probably suppressed, and vice versa.

Figure 4- 27: Correlation between CFO and Profit for European Companies

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Figure 4- 28: Correlation between CFO and Profit for North American Companies

Figure 4- 29: Correlation between CFO and Profit for East Asian Companies

As shown in Table 4-12, the slopes obtained for North American and European are closer to unity (1.0 and 1.4 respectively). Combined with the strong correlations found above, the findings show that there is probably no serious understatement or overstatement of net profits. On the other hand, East Asian

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companies record a significantly steeper slope of 2.8. Obviously, the figures support the claim that East Asian companies culturally understate their net profits. Following that, it can even be suggested that more effort should be spent in interpreting cash flow statement than in interpreting income statement, if one needs to have a better picture of liquidity and profit-generating ability of East Asian companies¹³. This empirical finding is of significant importance for future profitability analysis of East Asian E&C firms.

Region	Slope of Regression	Significance
Europe	1.385	0.001
North America	1.030	0.001
East Asia	2.816	0.004

Table 4- 12: Results of Regression between CFO and Net Profit for Firms from Different Regions

4.3.6 Overall Conclusions on Profitability Analysis

The analyses aim to discover the significant determinants of profitability of E&C firms by measuring their performance through NPM, ROA, and ROE. First, factors such as firm size, generic strategies, company structure, geographical diversification and geographical origin are studied to determine their relevance to NPM. It is found that the profit margin of an E&C firm is not correlated to its size – at least not in a direct manner. Moreover, the variation in profit margin is found to decrease with increasing firm size. These results indicate that through superior selection and management of business portfolios, relatively smaller-sized firms can achieve higher profit margin than their larger counterparts. The study also shows that profit margin is significantly related to generic strategies. Specifically, a non-

¹³ The suggestion does not indicate that income statement should not be used at all. In fact, all statements (income statement, cash flow statement and balance sheet) **must** be collectively scrutinized when analyzing a company (Brown, 2004). The findings merely suggest that *more* weight should be put in cash flow statement if serious discrepancy between net profit and CFO is observed.

related diversification strategy can potentially yield a higher level of profit margin, but at the same time it comes with a higher risk of underperformance. Besides, it is also found that generic strategies are significantly related to company size. A diversification strategy, whether it is related or non-related, is economically feasible only when a firm has reached a reasonably large size and acquired a sufficient level of resources. On the other hand, there is no significant evidence to show that organizational structure and geographical diversification would affect the net profit margin of a firm.

Ideally, when a small, narrowly-focused E&C firm grows, it should eventually adopt a diversification strategy to improve its outlook. A related diversification (broadly-targeted) strategy may not improve its profit margin but it can reduce the adverse impact on the firm due to fluctuating business cycles. Alternatively, non-related diversification has a potential of improving profit margin, but the firm would face a higher risk of underperformance.

When profitability performance is measured through ROA, it is found that generic strategies do not differentiate the firm sample in terms of profitability. This subsequently leads to the finding that non-related diversified companies choose to compete along the low-turnover/high-margin strategy whilst most broadly-targeted companies adopt low-margin/high-turnover strategy. Put plainly, different generic strategies are associated with different competing strategies. This, implicitly, also indicates that firms in the construction industry face tradeoff between profit margin and assets turnover – one could hardly achieve significant concurrent improvement in both aspects.

Among the three components that form ROE (i.e. NPM, assets turnover and financial leverage), it is found that NPM is the one having the most significant influence over ROE. This timely sends an important message to management of E&C firms that, in order to efficiently improve ROE, resources should be focused more on means that increases NPM than on methods that increase assets turnover or financial leverage.

CHAPTER 5: RESEARCH FINDINGS ON ASSET LIQUIDITY, CAPITAL STRUCTURE AND HUMAN RESOURCE MANAGEMENT

5.1 Asset Liquidity Analysis

Asset liquidity is one of the critical areas in corporate management. It is particularly important in the contracting business, since a sufficient level of working capital is required to soften the effects of a timing mismatch between cash inflows and outflows. If liquidity is low, a company faces the danger of failure to meet its debt obligations and risks bankruptcy. On the other hand, if liquidity is too high, the company risks losing its competitiveness due to overly-conservative growth and expansion. In other words, an optimal range of liquidity exists for the healthy development of a firm.

In this section, the aspect of liquidity is analyzed through two proxies: current ratio and capital expenditure ratio. They are defined in the following equations:

$$\text{Current ratio} = \frac{\text{current_assets}}{\text{current_liabilities}}$$

$$\text{Capital expenditure ratio} = \frac{CFO}{\text{Capital_Expenditure}}$$

These proxies are derived from different parts of financial statements and represent the liquidity condition of a firm from different perspectives. The current ratio, defined by current assets divided by current liabilities, measures the ability of a firm to meet all immediate debt obligations within a relatively short period (less than one year). Technically [and generally], a firm with the ratio less than one is said to have imminent liquidity difficulty, though a firm with the ratio exceeding

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one is not always free of such threat. Besides balance sheets, the asset liquidity of a firm can also be judged from cash flow statements. Particularly, capital expenditure ratio, derived by dividing Cash From Operation (CFO) with capital expenditure, provides indication on the liquidity of a firm by measuring its ability to generate cash from operations in order to cover its capital expenditures. These capital expenditures may be incurred for new investments and growth, or simply to replace assets that have become obsolete. If the ratio exceeds one, it would also imply that the firm has leftover cash to repay its debts or to distribute dividends and the liquidity of the firm is not a big concern (White et al., 1997).

Obviously, an optimal range of liquidity would vary depending on specific circumstances of competition, threat and the local industrial context. Nevertheless, by having a deeper understanding of the factors that affect liquidity, firms would be able to develop strategic policies that prevent the pitfalls of a “liquidity squeeze”.

5.1.1 Analysis of Current Ratio

There are three factors that are postulated to be related to the current ratio of a firm. The first one is internationalization. When a firm ventures across borders, it faces higher business risks as there are more tangible and intangible uncertainties than in domestic market. Factors such as the foreign exchange rate, host country political and economical conditions as well as culture compatibility can post threats to international firms. As such, it is postulated that these firms may bear a higher level of liquidity to cushion any possible adversarial impact arising from internationalization. Besides, product diversification¹⁴ may be associated to liquidity as well. Specifically, an undiversified firm may have higher level of liquidity as it faces higher risk of fluctuating business cycle than a diversified firm. Thirdly, profitability may also be correlated to liquidity. The underlying logic is that a profitable firm will rationally keep its balance sheet sound so as to maintain its

¹⁴ Although engineering and construction industry is largely a service industry (except for equipment and material supplies), the diversification strategy will be referred as “product diversification” - which is a more general phrase – throughout this report.

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on-going status. In other words, its liquidity should be adequate to guard against the risk of default.

In the following sections, statistical tests are performed to testify the relationship between the various factors and asset liquidity.

5.1.1.1 Current Ratio and Internationalization

A Pearson correlation test is designed to detect any linear relationship between asset liquidity and internationalization. The average current ratio of a firm is chosen as a proxy for liquidity while the degree of internationalization is represented by the percentage of revenue generated from markets other than the home and neighboring countries.

The results indicate that firms from the different regions would exhibit different behavior. For example, in Panel A of Figure 5-1, there is no apparent trend between the current ratio of North American firms and the level of internationalization. Quantitatively, the correlation test confirms that the (negative) correlation is not statistically significant at the 5% level (1-tailed). This is in contrast with the results of European (Panel B) and East Asian firms (Panel C), which show that the current ratio increases in tandem with the level of internationalization. A positive correlation, significant at the 5% level, is observed. These results are summarized in Table 5-1.

The positive correlation exhibited by the East Asian and European firms supports the proposition that when firms diversify geographically and internationalize, they would increase their level of asset liquidity. Apparently, the move is to safeguard any adverse effects arising from oversea operations. This then suggests that managers of these firms overall perceive the potential threats from internationalization such as those indicated above as *likely and significant*.

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Figure 5- 1: Relationship between Current Ratio and Internationalization

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Region	Coefficient of Correlation	p-value
North America	-0.404	0.056
Europe	0.700	0.001*
East Asia	0.444	0.042*

* Statistically significant at 5% level (1-tailed)

Table 5- 1: Statistical Results of Correlation between Current Ratio and Internationalization

However, the North American firms do not follow the same trend. This phenomenon requires an alternative explanation. A further investigation indicates that the average current ratio for the entire sample is 1.3. When only North American firms are included, the mean values for their regional and international subgroups are 1.6 and 1.2 respectively. These figures suggest that the asset liquidity of regional firms within the North American group is substantially higher than the overall sample mean. Even their international counterparts are maintaining a level of liquidity that is more or less comparable to the overall sample mean. Consequently, in its entirety as a group, the North American firms have chosen to maintain high level of liquidity as a general financial policy (perhaps to match the expectation of the capital markets), instead of making adjustments based on other factors of corporate strategy.

5.1.1.2 Current Ratio and Diversification

To assess the impact of diversification on asset liquidity, the firms are divided into two groups – undiversified and diversified. Narrowly-focused firms are essentially treated as undiversified firms while both broadly-targeted and non-related diversified firms are considered diversified. The combination of broadly-targeted and non-related diversified firms into one category is similar to the

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approach of Low and Chen (2004). It is justified as both strategies similarly reduce the adverse effect of fluctuating business cycles that threaten the survival of narrowly-focused firms. An independent t-test is then carried out to determine if there is any significant difference in current ratio between the two groups of firm. The result, summarized in Table 5-2, shows that the difference in current ratio between undiversified and diversified firms is statistically significant at the 5% level (1-tailed). Specifically, diversified firms are found to have a lower current ratio than undiversified firms.

Group of firm	Mean current ratio	F-value	Significance (1-tailed)
Undiversified	1.30	2.224	0.040
Diversified	1.17		

Table 5- 2: Current Ratio for Undiversified and Diversified Firms

The outcome supports the hypothesis mentioned above, that to mitigate higher possible risk of fluctuating business cycles, *undiversified E&C firms tend to have higher level of liquidity than their diversified counterparts.*

5.1.1.3 Current Ratio and Profitability

Profitability is to be represented by ROA. Correlation test is run to determine if there is any significant linear relationship between the variable and current ratio.

Again, the results indicate that firms from the different regions would exhibit different behavior. Table 5-3 shows that there is insignificant correlation between current ratio and ROA for European firms, as measured at the statistical significance level of 0.01. On the other hand, East Asian and North American firms

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exhibit significant positive correlation between the variables. These are further confirmed by the scatter plots presented in Figure 5-2.

Figure 5- 2: Relationship between ROA and Current Ratio

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Region	Coefficient of Correlation	p-value
Europe	-0.304	0.075
North America	0.616	0.004
East Asia	0.602	0.005

Table 5- 3: Statistical Results of Correlation between Current Ratio and ROA

The results observed in East Asia and North America confirm the hypothesis that liquidity is positively associated to profitability¹⁵. Rationally, a healthy firm should exhibit strong balance sheet so as to support its profitable business on-going. In view of the moderate coefficient of correlation, further analysis is designed with the objective of obtaining a critical level of current ratio that corresponds to zero ROA. A regression analysis is performed between the two variables. From the equation shown in Table 5-4, it can be derived that the critical level is 0.90¹⁶ (=7.714/8.548). It is thus concluded that:

E&C firm having its current ratio drop below unity tends to have profitability problem.

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-7.714	2.379		-3.243	.003
Ave current ratio	8.548	1.761	.651	4.854	.000

a. Dependent Variable: Return on Asset

Table 5- 4: Regression between ROA and Current Ratio

¹⁵ Note that the results do not indicate that if management emphasizes only in profitability, the liquidity of the firm will be automatically well taken care of. Correlation does not necessarily indicate a causal relationship.

¹⁶ When regression analysis is done separately for the region of North America and East Asia, the critical levels found are close to 0.90 as well (North America: 0.90; East Asia: 0.86).

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The negative relationship observed in European firms appears weaker to make any convincing conclusion. More data are required to further study the peculiar phenomenon.

5.1.2 Analysis of Capital Expenditure Ratio

Within the E&C firm sample, almost 85% of the firms have current ratios that exceed 1.0. It is prudent to cross-check their liquidity status using an alternative measure – the capital expenditure ratio. For this purpose, it is hypothesized that the ratio of the firm sample is less than 1.0:

$$H_0: \text{capital expenditure ratio} < 1.0$$

$$H_1: \text{capital expenditure ratio} \geq 1.0$$

The hypothesis statements are structured such that a strong case has to be established to reject the null hypothesis. This is to prove that indeed the ratio is significantly higher than one.

A simple t-test is carried out to verify the above hypothesis. The outcome indicates that the null hypothesis is rejected at the 5% level of statistical significance (1-tailed; refer Table 5-5). In other words, the ratio is found to be notably greater than one. This confirms that for E&C firms, the cash generated from operations sufficiently covers necessary investment expenditures for asset replacement and/or expansion. In fact, there are surpluses left for financing activities. While the result does not necessarily signify that the firms have “cash-cow” or “shooting-stars” portfolios, at least it shows that generally large firms in the industry are not cash-strapped (Cash-cow and shooting-stars are terms developed by Boston Consulting Group in conjunction with its BCG Matrix which describe business portfolios that have high level of cash position due to large relative market share.). In short, it is concluded that the liquidity of E&C firms is not troubled by the requirements in capital expenditure.

One-Sample Test				
	Test Value = 1.00			
	t	df	Sig. (1-tailed)	Mean Difference
ave capex ratio	1.989	51	.026	.6065

Table 5- 5: Results of Capital Expenditure Ratio Hypothesis Testing

5.1.3 Overall Conclusions on Asset Liquidity Analysis

In line with the objective to search for an optimal point of asset liquidity, various analyses are carried out to identify factors which influence the financial aspect on hand. It has been established that liquidity of an E&C firm is significantly correlated to internationalization, diversification and profitability. Past literatures suggest that internationalization generally leads to an increase in business risk. This study confirms that as a result, the firm would be inclined to increase the level of asset liquidity in order to cushion any adverse impact arising from internationalization. In contrast, diversification tends to reduce the existing level of business risk and therefore the level of liquidity can be reduced in tandem. When the liquidity is examined using the alternative measure of capital expenditure ratio, it is found that large E&C firms generally have no problems in funding their capital expenditures from the cash generated from operations. All in all, the overall findings lead to the suggestion that there is not a universal optimal level of liquidity that suits all firms since it depends on the strategy of the firm, which is in turn dictated by many other factors. Consequently, it becomes vital for firms to understand the factors in play, so that liquidity policies can be uniquely yet strategically shaped towards enhancing their value.

5.2 Capital Structure Analysis

The capital structure of a firm is composed of debt and equity. In corporate finance theory, the proportion between debt and equity has strategic implications on a firm's outlook, since it can both create opportunities and impose limitations (Grinblatt and Titman, 1998). For instance, a suitable level of borrowing can result in a leveraging effect that stimulates the revenue growth of a firm. On the other hand, debts may impose additional financial risks, such as the risk of bankruptcy of a firm, if the firm is unable to duly meet the debt service payment. Similarly, all-equity financing would be overly conservative and foregoing the benefits of interest tax shield. Acknowledging its importance, past researchers have examined and identified the important factors that are related to capital structure. In this section, several factors are analyzed to determine the relevance of their findings to the E&C firms. These include internationalization, diversification, liquidity, profitability, growth opportunities and firm size. It is hoped that by understanding the inter-relationship between the factors, firms can make appropriate decisions on the choice of capital structure.

5.2.1 Book Leverage and Internationalization

A correlation test is carried out to determine any significant linear relationship between internationalization and book leverage. The first variable, internationalization, is measured by the foreign sales percentage (the average percentage of revenues generated from foreign regions). Capital structure is represented by book leverage, which is derived by dividing total debt to total book value of assets.

The plot in Figure 5-3 shows that there is a linear relationship between book leverage and internationalization¹⁷. Further result confirms that the negative correlation is significant ($p\text{-value} = 0.004 < 0.05$).

¹⁷ Domestic firms with less than 5% of revenue generated from international market are excluded as they have relatively very low book leverage (0.40–0.50). Thus, they are considered as outliers.

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Correlations

		Perc of int'l revenue	ave total debt/asset
Perc of int'l revenue	Pearson Correlation	1	-.354**
	Sig. (1-tailed)	.	.004
	N	55	55
ave total debt/asset	Pearson Correlation	-.354**	1
	Sig. (1-tailed)	.004	.
	N	55	55

** . Correlation is significant at the 0.01 level (1-tailed).

Figure 5- 3: Correlation between Internationalization and Book Leverage

Prior to this analysis, the effect of internationalization has been widely studied and discussed (see, for example, Michel and Shaked, 1986; Fatemi, 1988; Lee and Kwok, 1988; Burgman, 1996; Chen et al., 1997; Chuang et al., 1999; Low and Chen, 2004), although there do not focus specifically on the E&C industry. The results obtained here are generally consistent with that found by the researchers mentioned above, who also found a negative relationship between international diversification and leverage.

E&C firms which internationalize would have lower book leverages than those that have chosen to compete only in the domestic markets.

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Chkir and Cosset (2001) postulate that this phenomenon arises due to “imperfections in international capital and labor market, complexity of international operations and higher proportions of intangible assets”. Under such conditions, expansion across borders increases agency costs of debts¹⁸, thus causing the overall cost to exceed the possible benefits of internationalization. These then lead to lower debt ratios for multinational firms. Besides, by expanding across borders, firms are exposed to additional risks such as political and foreign exchange risk that are absent in a domestic market, prompting them to adopt a lower level of book leverage (Michel and Shaked, 1986).

5.2.2 Book Leverage and Diversification

In order to reflect the effect of diversification, the sample is again divided into two groups of firm as in the case of liquidity analysis. Narrowly-focused firms are treated as undiversified while both broadly-targeted and non-related diversified firms are considered diversified. An independent t-test is then carried out to determine if there is any significant difference in leverage between the two groups of firm.

The test shows that there is a statistically significant difference in leverage between undiversified and diversified firms (refer Table 5-6: $p\text{-value} = 0.037 < 0.05$). It further indicates that diversified firms have higher book leverage than undiversified firms.

¹⁸ measured as the ratio of advertising and R&D expenditures to sales (Chkir and Cosset ,2001)

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Group of firm	Mean Leverage	F-value	Significance (1-tailed)
Undiversified	0.686	4.453	0.037
Diversified	0.769		

Table 5- 6: Book Leverage for Undiversified and Diversified Firms

Like internationalization, diversification is also another important determinant of capital structure. Some of the researchers contributing in this area include Barton and Gordon (1987, 1988), Lowe et al. (1994) and Low and Chen (2004). Generally, their findings are consistent with the results obtained here, that:

Diversification enables E&C firms to carry higher debt levels.

One plausible explanation for this is that diversification effectively reduces a firm’s business risk of fluctuating revenue and offers more stable earnings. As a result, a diversified firm can afford to have a greater level of debt capacity than non-diversified firm (Lewellen, 1971; Berger and Ofek, 1995; Comment and Jarrell, 1995).

5.2.3 Book Leverage and Liquidity

Liquidity is to be represented by the current ratio and the quick ratio. Correlation tests are done to determine the relationship between liquidity and book leverage. The plots, shown in Figure 5-4 and 5-5, indicate that a linear relationship exists between liquidity and book leverage. Further investigation reveals that both liquidity ratios are significantly negatively correlated to leverage (p-value <0.001).

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Figure 5- 4: Correlation between Book Leverage and Current Ratio

Figure 5- 5: Correlation between Book Leverage and Quick Ratio

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The relationship between book leverage and liquidity is yet another interesting issue among strategists. On one hand, the negative relationship confirms the common conjecture that firms plagued with a high debt level are associated with low liquidity. Besides, financial theory on capital structure also explains that firms with high liquidity have little demand for external capital (Myers, 1984). The result obtained here is consistent with that found by Myers and Rajan (1998) and Low and Chen (2004), who also showed that firms with higher financial leverage have lower quick ratios. On the other hand, it can also be suggested that firms having high level of liquid assets is highly creditable. Serving as collaterals, these assets provide debt capacity for the firms, and thus a positive correlation between quick ratio and leverage would be expected. However, Minton and Wruck (2003) reckoned that this argument may not be plausible, since liquid assets may be highly subjected to management discretion in its disposition. Faced with high level of liquidity, management may “*behave opportunistically and misuse them for poor investments*”. Subsequently, these assets would be weak (rather than strong) collaterals for borrowing from the perspective of a creditor. In short, it is concluded that:

E&C firms that carry higher debt levels may also be associated with liquidity problem.

Firms distressed with huge debts and coupled with low liquidity would face a high risk of bankruptcy. Thus, there is a need to identify a threshold so as to warn firms against excessive leverage. Armed with this objective, the analysis proceeds with a regression test to obtain a linear equation between leverage ratio (dependent variable) and current ratio (independent ratio). The regression results are shown in Table 5-7. Assuming that a liquidity problem would surface when current ratio is less than one¹⁹, it is calculated that the corresponding value for leverage ratio is 0.83. At such, the conclusion above is modified to the one below:

E&C firms with total debts approaching 85% of their total assets tend to face liquidity problem.

¹⁹ Generally, when the current ratio of a firm drops below one, it is said to face liquidity problem since, theoretically, it fails to meet all current debt obligations.

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Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	.834	.019		43.009
	LN_CR	-.445	.064	-.669	-6.905

a. Dependent Variable: ave total debt/asset

Table 5- 7: Regression between Current Ratio and Leverage

5.2.4 Book Leverage and Profitability

In this section, the ROA is used to represent the profitability of a firm. A correlation test is carried out to detect any linear relationship between ROA and leverage ratio. The scatter plot shows that there is a linear relationship between ROA and book leverage (refer Figure 5-6). The negative correlation between them is found to be statistically significant (p-value <0.001).

Note:
Coefficient of correlation = -0.551
P-value = 0.001

Figure 5- 6: Correlation between ROA and Book Leverage

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The negative correlation is consistent with that of Titman and Wessels (1988), who contend that “*highly profitable firms often use their earnings to pay down debt and, as a result, are less levered than their less profitable counterparts*”. The phenomenon, that higher profitability corresponds to lower leverage, is also consistent with the ‘pecking order theory’, which states that firms prefer raising capital from retained earnings than from debts (Myers, 1977).

Similar to the previous procedure, a regression analysis is carried out to obtain a linear equation between the two variables. The result obtained is shown in Table 5-8. Further calculation shows that the critical leverage ratio is 0.93²⁰ when ROA is zero (breakeven profitability). As such, it is concluded that:

E&C firms with total debt approaching 90% of their total assets may face a profitability problem.

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	
1	(Constant)	14.727	2.346		6.278
	ave total debt/asset	-15.866	3.126	-.551	-5.075

a. Dependent Variable: Return on Asset

Table 5- 8: Regression between ROA and Book Leverage

5.2.4.1 Case Studies of Relationship between Profitability and Book Leverage

A further study of several related firms is necessary to provide more concrete support to the conclusion made above. It is found that Hazama is one of the firms with the highest average book leverage (0.975) within the sample. A check of financial reports of the Japanese firm reveals that it has two business

²⁰ When regression analyses are done separately for European, North American and East Asian firms, the critical levels for book leverage are 0.95, 0.96 and 0.85 respectively. These figures are also close to the critical level of 0.93 as indicated above.

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units – the Construction unit and the Real Estate unit. Details about the performance of the respective units are highlighted in Table 5-9.

Business Unit	Average % of Total Revenue	Average Operating Profit Margin (%)
Construction	85	3.5
Real Estate	15	0.9

Table 5- 9: Performance of Each Business Units of Hazama

While the operating profit margin for its construction unit is commendable, the one for the Real Estate unit is a far cry from expectation. In fact, the figure, not even reaching one percent, is much lower than that of its other peers – Kajima, Taisei and Obayashi respectively record 9.5% 7.5% and 6.2% for their Real Estate activities. Although there is no disclosure about the distribution or usage of the debt incurred, it is reasonable to suggest that a part of it is in direct relation to the Real Estate unit in view of its poor performance. Furthermore, in a restructuring plan drew up in year 2003, the management explicitly indicated that the separated real estate business company “*will dispose of its assets holdings to reduce interest-bearing debts as much as possible*” (Hazama Annual Report, 2003 pp. 3).

Consistent with the conclusion made above, Hazama faces both profitability and liquidity problems at the same time it incurs high book leverage. The firm has an average ROA of -1%, one of the lowest among the sample of East Asian firms. Besides, its average current ratio is a mere 0.90, notably the lowest among the regional sample.

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Figure 5- 7: Trends of Book Leverage, Profitability and Liquidity for Hazama

Foster Wheeler, an underperformer that is shown in Figure 4-15 on page 61, is also another example indicating that high book leverage can be associated with distresses in liquidity and profitability. Having an average book leverage of 76%, the firm is clearly in an uncomfortable position to see its average current ratio and net profit margin recorded as 1.0 and -3% respectively.

5.2.5 Book Leverage and Growth Opportunities

Market-to-book ratio can be used as a proxy to measure growth opportunities of the firms. Past researchers have adopted the parameter as a proxy for the of future growth options possessed by a firm (Smith and Watts, 1992; Rajan and Zingales, 1995; Barclay et al., 2003; Johnson, 2003). The ratio is defined as market value of equity of a firm divided by book value of its total assets. A correlation test is conducted to detect any significant relationship between the ratio and book leverage.

The scatter plot reveals that there is a linear relationship between the two parameters. Correlation results, shown in Figure 5-8, further confirms that the negative relationship is significant (p-value<0.001).

Figure 5- 8: Correlation between Book Leverage and Market-to-book

The negative correlation is consistent with prior results by Jensen and Meckling (1976), Myers (1977), Smith and Watts (1992), Rajan and Zingales (1995), Barclay et al. (2003) and Shane (2003). When a firm generates additional

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future growth options, the value of the firm increases. Assuming that the management of the firm acts in the interest of shareholders, it eventually seeks to realize these opportunities. Effectively, the objective of the management is to turn assets not in place (as represented by market leverage) to assets in place. Barclay et al. (2003) found that these opportunities cause “*the cost of debts to increase while the free cash flow benefits of debt to decrease*”. As a result, the optimal level of total debt is reduced. Since future growth options generally do not affect book value of assets, the increase in growth opportunities then leads to lower leverage. From a relative perspective, such higher growth options results in a lower cost of equity financing. All in all, the finding suggests that equity is preferred over debt to finance growth opportunities.

In what situation, then, that makes debt financing favorable? The capital structure theories based on asymmetric information offer good explanations to its strategic usage (Leland and Pyle, 1977; Myers and Majluf, 1984). These authors suggest that asymmetric information between lenders (shareholders) and borrowers (insiders) occurs because the former is less informed than the current firm insiders about the value of the firm. As a result, new shareholders might require such a severe underpricing of new shares that even projects with positive Net Present Value (NPV) may not be carried out since the costs of new equity would exceed the benefit of the project to the incumbent shareholders. This underinvestment phenomenon can be avoided by using debt instead of equity. Following Hovakimian et al. (2001), the arguments of debt-equity choice are summarized into the one, which holds true too for E&C firms, as follows:

Firms should use relatively more debt to finance assets in place and relatively more equity to finance growth opportunities.

5.2.6 Book Leverage and Firm Size

As in Section 4.3.1, the size of a firm is represented by its annual revenue. A correlation test is run to detect if there is a size effect in the choice of leverage²¹. The results are shown in Figure 5-9. The positive linear relationship observed from the scatter plot is found to be significant ($p\text{-value}=0.005<0.05$).

Figure 5- 9: Correlation between Firm Size and Book Leverage

The results obtained support prior literatures that there is positive correlation between the two variables. Chen and Hammes (1997) suggest that smaller-sized firms have lower debt level as they have relatively higher market risk. They also argue that larger firms have easier access to capital markets due to the ‘too-big-to-fail’ doctrine. It postulates that governments are prone to save larger firms than smaller firms in the event of default. As a result, the former have higher incentive to

²¹ The sample here excludes East Asian firms as, unlike firms from the other regions, there is no correlation between the two variables. Besides, outliers in terms of size are also excluded. Apparently, the level of leverage for exceptionally large firms is influenced, in a far more complex manner, than by the size effect alone.

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borrow more than the latter. In any case, the analysis indicates that E&C firms are not exceptional for the positive size effect on book leverage.

5.2.7 Overall Conclusions on Capital Structure Analysis

Similar to the analysis of asset liquidity, a number of tests are performed with the objective of identifying significant determinants of book leverage. The study indicates that book leverage is negatively correlated to internationalization, profitability and growth opportunities but positively correlated to diversification and firm size. Capital structure is also found to be correlated to asset liquidity, apparently since both are affected by internationalization and diversification. All in all, the analytical findings suggest that capital structure is another corporate issue that can be strategically designed so that profitability of a firm is enhanced.

5.3 Human Resource Management Analysis

According to the conceptual model developed by Cheah (2002), human resource strategy is one of the seven strategic fields that have a significant impact on corporate performance of a firm. Apparently, different policies may influence the productivity efficiency of its employees and shape its unique corporate culture, thus indirectly affecting the profitability of the firm. In line with concept, this section studies various issues related to human resource in E&C firms.

5.3.1 Human Resources and Company Revenue (I)

In the business world, firms need to constantly monitor the dynamic environment to keep abreast of changes and developments that potentially alter their performance. Accordingly, adjustments have to be made. One example which illustrates so is that when the outlook of an industry is favorable, many firms take

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up opportunities to expand their businesses to increase firm revenue. It follows that they may increase the number of hires to support the expansion. Likewise, when the outlook turns negative, firms will, on average, record lower revenues. Subsequently, they may seek to retrench staff and cut down their labor costs.

The overall picture suggests that the number of employees may be positively related to a firm’s revenue. This motivates a study here to examine the relationship between the two variables using the firm sample. Specifically, an analysis is carried out to determine the strength of association between the number of employees and firm revenue. Quite simply, the *time-series* of the number of employees and revenue for each firm are first obtained. Correlation tests are then carried out between the two variables to obtain a corresponding coefficient of correlation. The steps are subsequently repeated for the rest of the firm sample.

Region	No. of Firms	Average Coefficient of Correlation
East Asia	17	0.5541
Europe	22	0.5655
North America	14	0.6332
Overall	53	0.5979

Table 5- 10: Results of Correlation between Number of Employees and Revenue

The average coefficients of correlation for the firms in the three regions are presented in Table 5-10. It shows that the two variables are moderately and positively correlated to each other. This is further evidenced by Figure 5-10, which highlights the positive relationship between the two.

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Figure 5- 10: Selected Firms with Positive Correlation between Number of Employees and Revenue

While the positive relationship is highly expected, its strength observed is, to some extent, numerically lower than that anticipated. A further study of the firm sample reveals that this is due to the presence of some firms that have moderate or strong **negative** correlation between the two variables. For instance, the coefficient of correlation for Taikisha, GTM, Impregilo and Tetra Tech is -0.63, -0.75, -0.87 and -0.94 respectively. These firms are typically found to behave abnormally as they continually reduce their number of employees even as their revenues are riding on an upward trend (refer Figure 5-11).

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Figure 5- 11: Examples of Firms Having Negative Correlation between Number of Employees and Revenue

The abnormality of these firms has distorted the overall picture of the relationship between the two variables. In view of that, the correlation test is re-done after excluding the firms. Table 5-11 shows the results of the test after the adjustment is made. The coefficients are found to improve significantly – the correlation is now positive *and* strong.

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Region	No. of Firms	Adj. Average Coefficient of Correlation
East Asia	14	0.7292
Europe	18	0.8058
North America	12	0.8448
Overall	44	0.7921

Table 5- 11: Results of Adjusted Correlation Test between Number of Employees and Revenue

As a whole, the study indicates that the number of employees is closely tracked by the trend of firm revenue in E&C firms from all of the three regions studied. This indicates that the growth of a firm, as measured by revenue, can directly affect its human resource strategy. More importantly, the strong correlations observed from the tests may even suggest that there is no significant time lag between the trend of revenue and the trend of number of employees. It appears that managers of the firm do not adopt a ‘wait-and-see’ attitude, as otherwise the trend of number of employees would have been at least one year lagging behind the revenue trend. On the other hand, there is also no ‘act-first’ practice, as otherwise the trend of number of employees would have been at least one year ahead of the revenue trend. In short, an ‘optimal’ number of employees is determined by the *current* revenue performance. Probably, the underlying reason for the practice is that it helps to keep operational cost low.

The study here may further indicate that large E&C firms adopt an evolutionary approach in dictating their human resource strategy (in terms of recruitment or retrenchment). As highlighted in Chapter two of this report, this school of thought postulates that deliberate planning is futile because the environment changes constantly. Instead, it is the market condition which determines the best configuration of operation to adopt. Hence, the only “strategy” needed is to closely follow requirements set by the environment while staying at the

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lowest level of cost. Apparently, the findings here match the characteristics of the approach.

Indeed, the findings here could well augment with that presented by Druker and Croucher (2000). Through surveys of several construction firms in European countries such as UK, Germany and the Netherlands from 1993 to 1995, they found that employers from the industry have increasingly favored the use of temporary and short term contracts in dealing with human resources management. Perhaps, it is this contractual flexibility that enables the firms to have the number of employees closely tracked by the trend of firm revenue.

5.3.2 Human Resources and Company Revenue (II)

Following the study of the relationship between number of employees and firm revenue, two major scenarios are identified and listed below:

- (1) firms with increasing revenue and increasing number of employees; and
- (2) firms with decreasing revenue and decreasing number of employees

In line with the objective to deduce more findings related to human resource strategy, further analysis is to be done in this section. Particularly, quantitative tests are designed and carried out so as to examine the specific response of the firms in each of the scenarios. Essentially, the firms are grouped into the two categories as depicted above and analyzed independently. For each firm, the average annual change in employees is computed by running best-fit curve (linear) against the time-series of number of employees. The average annual change in revenues is also similarly obtained from the time-series of revenue. Following that, correlation tests are run between the two variables derived to investigate their strength of association.

The analytical results for the two categories of firms are summarized in Figure 5-12. For firms in the first category (increasing revenue and number of employees), the correlation is found to be strong and significant (coefficient = 0.830;

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p-value <0.001). However, the correlation for firms in the second category (decreasing revenue and number of employees) is not as strong, albeit still significant at 0.01-level. The coefficient is only slightly higher than 0.50.

Figure 5- 12: Correlations between Annual Change in Revenues and Annual Change in number of Employees for Firms

The study suggests that generally firms behave slightly differently according to their revenue performance. Specifically, when firms record a growing trend of revenue, they are likely to increase their workforce accordingly – larger increment in revenue often results in a higher intake of employees, while smaller revenue increment is associated with a lower intake. However, when firms are confronted

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with a trend of decreasing revenue, the decisions in retrenchment are not uniform across the firm sample because each of them has a different financial capability to tide over difficult times. Understandably, firms that face a prolonged severe financial difficulty, such as Philipp Holzmann, would have less retained earnings or reserves to sustain its labour cost. As a result, retrenchment could not be possibly avoided. Nonetheless, Philipp Holzmann’s scenario is not common within the sample, and this explains the significance of the corresponding correlation even at a low 0.01-level.

To further investigate firm’s behavior for different outlook of revenue trends, supplementary investigation is carried out to compare the rate of hiring with the rate of retrenchment. Best fit lines are drawn in the first two graphs obtained earlier and the magnitudes of the slopes are computed. The results, as shown in Figure 5-13, indicate that, on average, a firm hires four additional employees for every increment of US\$ 1 million in revenue, while it lays off three employees for every decrease of US\$ 1 million. On a relative sense, this shows that firms hire at a higher rate as compared to retrenchment.

Figure 5- 13: Comparison between Average Employment Rate and Average Retrenchment Rate

5.3.3 Employee Productivity and History of Establishment

Many equate a long-established company to a stable company. Apart from having an established brand-name and reputation as invaluable intangible assets, the company is also expected to have a higher level of productivity and efficiency due to a pool of experienced workforce and time-tested operating systems. In other words, a long history of company establishment may be associated to higher productivity.

An analysis is carried out to examine the relationship between these two aspects. Employee productivity of every company is represented by dividing its average operating profit by the average number of employees. It is then plotted against the corresponding years of company establishment. The trends observed from the graphs would enable the author to verify (of refute) the hypothesis.

The graphical results are shown in Figure 5-14. For European companies, it is observed that their output per employee decreases notably with longer company history. In contrast, the opposite trend is noticed in East Asian firms – the output per employee increases with company history. As for North American firms, the trend line is apparently flat.

The findings indicate that, on average, a younger European company will yield a higher level of productivity than a longer-established company. The phenomenon may be explained by referring to Bartlett and Ghoshal's (2000) concept of '*administrative heritage*'. According to the researchers, a firm often uniquely inherits a set of values, norms and practices of its management from the path by which it developed. Collectively, these factors constitute a firm's administrative heritage. While the researchers acknowledges that it can act as the firm's greatest intangible asset to spur its growth, at the same time it may also significantly hinder its development, as it resists changes and prevents broadening of strategic capabilities. The results gathered here seem to indicate that this effect of "administrative heritage" is prominent for European firms. However, the trend observed from the East Asian firms – that output increases with company history – cannot be explained by Bartlett and Ghoshal's theory. The author would suggest

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Figure 5- 14: Relationship between Productivity and Company History

that such difference in trends is due to the socio-cultural differences among the regions and the influence of industry structure. Particularly, in Japan and South Korea, large keiretsus and conglomerates traditionally have far more market power and stronger organizational systems than younger companies. This explains the higher productivity in these long-established firms.

More on Administrative Heritage: Comparison between Two Germany Firms

The market condition in the German construction industry has been difficult since mid-1990. Till year 2002, the industry experienced its seventh year of recession in a row. In view of the unfavorable domestic market, some firms tried to venture overseas in a larger scales seek new opportunities which could stimulate their firm growth. Among the firms with such intentions are Strabag and Hochtief.

Strabag, a firm with 170 years of history, stretches its operation to overseas mainly through two of its subsidiaries, namely DIG and DSI. Though the management board has stressed on the importance of global expansion, there is nevertheless limited evidence showing the success of its internationalization. For instance, it has been found that the percentage of turnover generated from overseas has been hovering around 25% - 30% during the period of study, while at the same time the percentage of manpower abroad has been declining steadily (see Figure 5-15). Apparently, the long establishment of the firm has not helped the firm in switching its strategic focus from domestic to international markets.

Figure 5- 15: Percentage of Turnover and Employees Abroad for Strabag

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Hochtief was established some 130 years ago. Despite being 40 years younger than Strabag, the firm has apparently been more successful with its internationalization strategy. This can be evidenced by the fact that its percentage of turnover generated outside Germany had increased four times from 20% in 1998 to over 80% in 2003. Besides, the percentage of employee from overseas had also increased significantly (see Figure 5-16). In fact, Hochtief even explicitly specifies that the strategy of strengthening its international focus would be given high priority (Hochtief annual report, 2003 p. 21). All these appear to indicate that the firm was able to change its strategy promptly in accordance with the challenges arising from its operating environment.

Figure 5- 16: Percentage of Turnover and Employees Abroad for Hochtief

As shown in Figure 5-17, the average output per employee for Hochtief is approximately \$10 million higher than that for Strabag. While there are inevitably other factors which explain the difference, it is suggested that administrative heritage may play an important role in determining the difference. Specifically, unfavorable administrative heritage could have constrained Strabag from swiftly changing its corporate strategy to a more internationally-oriented operation.

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Figure 5- 17: A Comparison between Strabag and Hochtief in Employee Productivity

5.3.4 Overall Conclusions on Human Resource Management Analysis

In this section, the various issues pertaining to human resource management are examined to search for vital link between this aspect and a firm's strategic performance. It is found that the number of employees is closely tracked by the trend of firm revenue, suggesting that human resource strategy is in fact related to financial performance. The rates of recruitment and retrenchment are also compared. Lastly, the relationship between employee productivity and company history is studied. Preliminary results suggest that administrative heritage can be an influential factor in driving the productivity performance of a firm, at least in Europe.

In essence, the analysis strengthens the postulation that human resource management plays a significant role in influencing the performance of a company. It should not be viewed as merely a supporting function with secondary importance in a corporate structure, as strategic human resource policies can affect productivity and possibly profitability. Particularly, the findings remind the management of a firm to be aware of "soft-issues" such as administrative heritage and diligently deal with them. The task on hand can prove to be challenging, as unlike business or

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financial performance, the impact of these issues are subtle and may even take decades to become noticeable and significant.

CHAPTER 6: FURTHER IMPLICATIONS OF ANALYTICAL FINDINGS

6.1 The Link between Empirical Analysis and Conceptual Models of Strategic Management

A number of statistical analyses have been carried out in the preceding chapters to measure performances of an E&C firm from various aspects. Eventually, through the conclusions of these tests, it is hoped that critical factors of corporate strategy that potentially affect the prospects of an E&C firm can be identified. Indeed, the fundamental objective of this research is to search for a paradigm of strategic performance that particularly suits large E&C firms.

The approach adopted here is empirical in nature. Essentially, the search for the paradigm starts right from the actual performance of the selected firms by analyzing their financial reports. The methodology may appear different from the existing ones in the literatures, whereby conceptual models are often derived from anecdotal evidence and presented to deduce some appropriate corporate strategies (see, for instance, Venegas and Alarcon’s (1997) conceptual model). Nevertheless, both approaches do not in principal contradict each other in terms of research outcomes. In fact, as illustrated by Figure 6-1 below, both are closely related through the following logic: *conceptual models provide a broad-based macroscopic framework which enables empirical examination of strategic performance at corporate level.*

Figure 6- 1: Comparison of the Degree of Specification between Conceptual Model and Empirical Analysis

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Effectively, Cheah's (2002) open model is used as an initial reference in this research as it is found to be generic enough to offer the directions of analysis. Specifically, out of the postulated seven strategic fields in his model, three of them, namely financial strategy, business strategy and human resource strategy, have been selected by the author to form the core analysis topic in this report (see Figure 6-2). At the same time, the model is sufficiently specific to identify issues concerning strategic performances. As shown in Figure 6-3, each of the selected strategic fields acts as an umbrella that covers several relevant aspects, and they are duly discussed below.

Three areas have been discussed in the previous chapters under the topic of financial strategy – profitability, asset liquidity and capital structure. Pertaining to profitability, it is concluded that different strategies may have to be formulated to maximize returns to different parties of interest. For instance, for a firm which acts as a separate entity, it aims to build up the market share or maintain a high pricing power, and thus it is concerned with means of boosting its ROA or NPM. A shareholder of the firm, on the other hand, concerns with the ability of the management to create additional wealth to him, and thus he demands the shaping of strategies for higher ROE. These prompted the author to carry out the profitability analysis so as to identify the determinants of the different financial indicators.

As compared to the profitability analysis, the asset liquidity analysis is done with a slightly different objective. This is so simply because it is not meaningful for a firm to maximize its liquidity at the expense of other initiatives, such as the pursuit of corporate growth (recall that the profitability analysis aims to maximize returns). Instead, the liquidity level is often controlled within an optimal band so that the firm achieves a balance between expansion and cash adequacy. The search for the optimal band proves tricky, as different firms have their own corporate missions and corporate cultures. Specifically, firms are rarely similar to one other in terms of pace of expansion (some seek for aggressive growth while others prefer stability) and risk profiles of management (some are more risk-adverse than others). In view of that, there is no universal optimal band suited for every firm. It follows that an individual analysis has to be done so that the various determinants of asset

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liquidity can be identified. This would then facilitate the firm to structure its strategies to keep its liquidity level at most favorable level.

Figure 6- 2: The Three Chosen Strategic Fields from Cheah’s (2002) Open Model

Figure 6- 3: Aspects Related to the Three Strategic Fields and the Associated Interactions

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The capital structure analysis is performed with a similar objective as the asset liquidity analysis. In a nutshell, the right mix of debt and equity is desirable since each of the options offers unique advantages and disadvantages to a firm. The optimal debt level largely depends on its business and operational profiles, and again there appears no optimal mix of debt and equity after all. Consequently, the search for its determinants proves to be important.

Comparing to the financial strategy, analyses on business strategy are performed in a relatively subtle manner. Throughout the earlier two chapters, two main issues have been discussed in details, namely market/product diversification and internationalization. In essence, the issues on hand that need to be addressed are: (1) how the various business strategies could be geared towards enhancing the profitability of a firm; and (2) what the subsequent impact of the strategies on performance in other areas such as liquidity and capital structure are. Discussions on diversification lead to the choice of generic strategy (i.e. narrowly-focused, broadly-targeted and non-related diversified).

Lastly, issues on human resource strategy are briefly examined based on the prediction that human assets and firm performance are associated to each other. It leads to the search for evidences to support the assumption by examining the policy on recruitment and retrenchment and the impact of administrative heritage.

Of all the analytical conclusions presented, one of the most important ones in this report is that each of the strategic fields rarely acts independently to result in strategic performance of a firm. Instead, it is the interactions between them which play a more important role in determining the strategic position of the firm. This is clearly shown by the fact that most of the findings in the previous chapters confirm the presence of inter-relationships between two (or more) strategic fields. For example, the conclusion that profitability can be enhanced by adopting non-related diversification clearly indicates that business strategy and financial strategy are closely linked. Likewise, analyses also show that there are interactions between human resource strategy and financial and business strategy. These are depicted by the three pairs of two-sided arrows shown in Figure 6-3. Effectively, these

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interactions act as sources to achieve outstanding performance. In fact, this is consistent with Cheah's (2002) proposition that *"strategic actions stemming from the interaction between two strategic fields are more powerful than those that are contained within only one field in structuring a successful corporate strategy"*.

6.2 Themes of Strategic Performance

The empirical findings not only support existing conceptual models but also, more importantly, enhance their readiness for practical usage. In fact, the main objective of this research can be summarized into two themes that are often pursued by firms – growth and risk management. Some corporate strategies that have critically improved the outlook of several firms are highlighted and presented under these two themes. Although it is widely acknowledged that there is no 'universal strategy' for all the firms – as each is uniquely shaped with different key competencies, corporate missions and management cultures, the suggestions nevertheless serve as guidelines that would be useful for reference purposes.

6.2.1 Growth

In conjunction with the conclusion that there is no significant correlation between firm size and profitability, the author puts forward a postulation that there are specifically two types of growth for E&C firms. The first type concerns growth in terms of size of operation, whereby priority is directly given on increasing firm revenue. From the business perspective, the motive behind this type of growth is to gain market share as much as possible to have a dominant presence in the segments that it operates or in the construction industry as a whole. Firms pursuing such growth generally believe that the large number of backlogs and new projects will provide sufficient amount of profit to keep them growing in the future. In other words, it is growth in a 'quantitative' sense.

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The second type is growth in terms of profitability – the focus is given on maintaining high profit margin or increasing it if possible. Instead of competing for a larger pie of market share, firms pursuing this kind of growth prefer to have command of pricing power. They believe that success is defined as the ability to capture and retain a significant portion of value created for clients, and that the approach offers them a competitive edge since the intense competition in the construction industry forces many to precariously survive through low margin. In other words, it can be viewed as growth in a ‘qualitative’ sense.

It is therefore important for firms to first identify the type of growth that is more suitable and consistent with their corporate objectives before shaping appropriate strategies. Accordingly, these goals take different paths to achieve and certainly have different impacts on firm performances.

6.2.1.1 Growth in Size of Operation

Firms pursuing this type of growth seek to boost their revenue by tapping on the interaction between the strategic fields. One of the observations drawn from the large firms is that related-diversification strategy can be a feasible and effective means. To quote an example, when Vinci was set up in late 19th century, it originally focused itself in building and civil engineering construction sectors. Eventually, the construction business acted as a starting point for the firm to diversify into other business lines after it had successfully driven the growth of the firm for a century. In 1970s, the firm officially started to provide motorway concession service. In 1980s, it ventured into electric power sector, and in 1997 the firm set up Eurovia, a firm which manufactures aggregates for road works. The related diversification strategy it has been pursuing largely plays a part in propelling Vinci to become one of the largest engineering firms in the world today.

Essentially, there are three ways to pursue a related-diversification strategy, namely product/service development, market development, and a combination of both. Put simply, product/service development is about offering new products or services to clients. For example, a firm that solely offers commercial building

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construction services may develop a capability to offer post-construction services such as maintenance of the facility built. The key here lies on the understanding of the related value chain.

On the other hand, market development is about venturing into new market segments related to civil engineering such as construction of infrastructure and institutions. This can be done by identifying any operational relatedness between the markets that a firm currently competes in and the market that it intends to enter (Hitt et al., 2001). The underlying logic is that both markets may have similar value chains from the eyes of the firm management, and thus entering the new market is economically feasible as activity sharing between them is possible. For instance, it may be possible to share the design and engineering activity for both residential and institutional markets. As such, a firm specialized in residential market can possibly diversify into the institutional market. Alternatively, firms can also pursue market development through comparing corporate relatedness between two markets (Hitt et al., 2001). Specifically, a firm can possibly transfer its corporate capabilities (such as managerial and technological knowledge, experience and expertise) into a new market to compete in that area. For example, a firm specialized in construction of large transport infrastructural projects often learns the skills of large-scale purchasing and capital-intensive management. It follows that it may be able to transfer these skills to heavy-industrial projects.

Figure 6- 4: Approaches for the Strategy of Growth in Company Size

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The major issue that concerns related diversified firms is that they usually have lackluster profit margin. Fluor Corporation, one of the largest E&C firm in the U.S. that adopt a broadly-targeted strategy, has been recording a NPM of around 2% since 1997. AMEC, the top firm in the U.K. which pursues the strategy, also faces the same situation in its profitability performance. In fact, the statistics significantly point out that the average NPM for broadly-targeted firms is approximately 3% lower than that for non-related diversification firms. Thus, the challenge posted here is to ensure that the operational cost of these firms stay low so as to maintain the level of profit margin. Alternatively, they can attempt to compensate the low margin by generating high asset turnover. In other words, the efficiency of asset utilization in terms of revenue generation has to be increased. This, in turn, may largely depend on successful implementation of operational strategy (yet another evidence indicating the importance of interactions between different strategic fields to collectively improve the strategic performance of a firm). From the study of the firm sample, the strategy to combine low margin with high turnover appears feasible to generate a satisfactory return on asset.

6.2.1.2 Growth in Profitability

As indicated earlier, some firms aim to increase their profit margin or to maintain the margin at a high level. The study of the firm sample reveals that non-related diversification strategy is a business strategy that potentially helps a firm to achieve the above objective. The underlying key for success is superior business portfolio management – apart from general construction works that usually generate a lower profit margin, the portfolio should also consist of several other higher margin activities that are not directly related to the general construction. These supplementary activities usually do not form the core activities of a firm, as evidenced by the fact that their revenue contributions rarely exceed 50% of the total revenue. Nevertheless, they still can significantly and effectively boost the overall profit margin of the firm, considering that some activities can offer profit margins that are as high as 20% or four times the average profit margin for general construction works. A number of firms, such as Ferrovial, FCC and WGI, have

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successfully proven the practicability of this strategy. Listed in Table 6-1 below are some of the selected high profit margin activities that are commonly included in the business portfolios of the firm sample.

Category of Activity	Descriptions	Range of NPM (%)
Real estate	Development of first home, realty brokerage	5 – 10
Urban services	Street cleaning, municipal solid waste collection and treatment, gardening, vehicle parking lots provision	3 – 20
Telecommunication & media	Mobile phone service provider, broadband service, TV broadcasting, management of advertisement space	5 – 10
Defense	Design and development of new weapon system, military operation maintenance, weapon material demilitarization	8 – 15
Mining	Site exploration, metal extraction and processing	20
Transportation	Vehicle roadworthiness testing service, road passenger transportation service	10 – 16

Table 6- 1: Selected Non-construction Activities that Offer High Profit Margin

One of the financial characteristics of non-related firms is their low asset turnover. For example, Ferrovial records the highest NPM among the European firm sample, yet its asset turnover is only 0.60. The figure is far lower than the asset turnover for AMEC, which stands at around 2.0. Even Bouygues, the largest non-

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related diversified firm that is active in telecommunication and media sectors, can only manage to have an asset turnover of approximately 1.0, or half of that for AMEC. In conjunction with that, there are two major issues that this group of firms needs to address. First, it ought to be ensured that the selected diversification activities do not face a significant threat of obsolescence. This is to prevent the driving down of the asset turnover to an even lower level such that the overall profitability is adversely affected. This explains why none of the firms studied is involved in manufacturing of Fast Moving Consumer Goods (FMCG) – a sector that needs high asset turnover to avoid obsolescence.

The second issue for non-related diversified firms is the sustainability of the high profit margin enjoyed from the diversified activities. As the core competences of an E&C firm still largely lies on construction activities, the high margin activities form only supplementary part of the overall business portfolio. As such, there is a reason to question whether their contributions can be reasonably sustained in the near future, given that this group of firms faces constant competition from rivals that are highly specialized in the specific areas. According to Hitt et al. (2001), there are four criteria of sustainable competitive advantage, namely (1) valuable capabilities; (2) rare capabilities; (3) costly-to-imitate capabilities; and (4) non-substitutable capabilities. An E&C firm may have the capability to compete in a non-related sector, but its capability probably does not satisfy the third and fourth criteria mentioned. In other words, the firm is unlikely to possess competitive advantage over its specialized rivals. It follows that the high margin reaped may not be sustainable in the long-run, unless the firm manages to develop its specialty in the area over time.

To ensure that non-related diversified firms can continue to achieve above-average profitability performance, management of the firms may adopt an active corporate portfolio management as suggested by Harper and Vingerie (2002). According to the researchers, a firm may not be advised to hold on too long a business even if it performs strongly. Instead, it should be timely divested or spun off before its performance starts declining. Subsequently, the firm should proceed

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on acquiring another new business opportunity. The new undertaking is nurtured so that it creates values for the firm before it is sold again.

6.2.2 Risk Management

Other than growth, risk management is another vital element for a company under today's dynamic business environment. Briefly speaking, risk management aims to ensure that corporate missions can be achieved while containing the overall risk to a satisfactory level. While business strategies are set with the objective of growth or profit maximization, more than often they come with certain degree of risks. An appropriate assessment and management of the potential threats will then certainly help firms to achieve the intended objectives and subsequently a healthy continual growth.

From the study of the firm sample, it is postulated that the risk level can be controlled through the adjustment of two financial aspects – asset liquidity and capital structure. For asset liquidity, it is an effective hedge against any realized losses from business failure. Thus, when business risks are low and a firm enjoys a bright outlook, its liquidity can be lowered, and vice versa. Similarly, capital structure is believed to be closely related to risk management because debt per se may impose additional financial risks, such as the risk of bankruptcy of a firm, if it is unable to meet its debt service obligations.

In view of the strong relationship between business strategy and risk management, the latter is discussed along (1) market/product diversification; and (2) internationalization in the following sections.

6.2.2.1 Diversification and Risk Management

As highlighted, a diversification strategy can potentially stimulate the growth of a firm and improve its profitability performance. From the perspective of

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risk, the strategy minimizes dependence on a single product/service and thus reduces the risk of a fluctuating and cyclical revenue base. This is especially true for the construction industry due to close relation with domestic economy. On the other hand, diversification may actually decrease the profitability prospect of a firm if it is improperly or overly executed. In a nutshell, it can be a double-edge sword for a firm, and hence it justifies the importance of prudent risk management along with the adoption of the strategy.

From the study of the firm sample, it is suggested that undiversified firms generally face higher business risk than diversified ones mainly due to the reason mentioned above. Accordingly, extra measures are necessary to prevent the risk from jeopardizing the financial stability of undiversified firms. There are two possible approaches that this group of firms can adopt to moderate the higher risk. On one hand, they need to strategically build up a higher level of liquidity so as to cushion any adverse impact. Alternatively, they can maintain a low level of book leverage, as the move will help to lower their financial risk – in case an undiversified firm is hit by a severe slump in revenue, it is at least not further burdened by financial obligations. Figure 6-5 illustrates how risks can be adjusted in accordance with diversification.

6.2.2.2 Internationalization and Risk Management

Broadly speaking, internationalization can be viewed as a ‘diversification’ strategy along the geographical dimension. By selling products/services in markets outside a domestic market, a firm stands to expand the size of its potential markets. One of the incentives which internationalization offers is that it reduces revenue dependency on a single market (often the domestic market). This is particularly an attractive option to firms competing in domestic markets with limited growth opportunity, either as a result of over competition or that the markets are matured and saturated. On the other hand, the strategy could impose new threats arising from political and economical factors, such as foreign exchange, incompatibility of

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Figure 6- 5: Risk Management in Diversification through Adjustment of Asset Liquidity and Leverage

culture, or an unfavorable legal environment that is structured to protect the interest of host country companies. Again, these two-sided arguments highlight the significance of risk management in ensuring a reasonable level of strategic performance of a firm.

To recapitulate, the statistical results indicate that international firms generally face higher business risk than regional ones. In view of the conclusion, it is therefore suggested that asset liquidity and book leverage have to be adjusted in accordance with the degree of internationalization. Specifically, a firm may take calculated risk by internationalizing its businesses while: (1) maintaining a higher level of liquidity; and (2) keeping a low level of book leverage. This is illustrated in Figure 6-6.

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Note: Charts not shown to scale.

Figure 6- 6: Risk Management in Internationalization through Adjustment of Asset Liquidity and Leverage

Lastly, it is suggested that if the asset liquidity of a firm cannot be increased in the near future to support an internationalization plan, a firm may be wiser to first adopt or continue on market/product diversification as the latter requires a relatively lower level of liquidity.

CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions of the Research

This research is conducted to empirically examine the strategic performance of large global E&C firms so as to identify critical factors in corporate strategies that would affect their outlooks. The underlying key assumption made is that strategic management theories are not only relevant to the construction industry but more importantly, they can help firms to achieve above-average performance in the long-run.

In this thesis, the performance of E&C firms is assessed through four broad strategic criteria, namely profitability, asset liquidity, capital structure and human resource management. This is preceded by an overall trend analysis that reports the outlook of the construction industry.

When the regional revenue growth trends of the construction industry are surveyed, it is found that a synchronized world-wide development cannot be seen. Instead, each region exhibits its own growth rates and volatilities. This directly indicates that the construction business is very much localized in nature, and therefore domestic economic strength is expected to remain as a key factor in determining the growth of the industry. On deeper thought, the findings suggest that construction is far from being a truly globalized industry even though forces of globalization have resulted in various extents of operational integrations in many other industries, such as electronics and finance. This is an important conclusion for E&C firms prior to their structuring and designing of competitive strategies. Overall, the graphs in the trend analysis support the conjecture that the industry is still very much cyclical in nature. Peaks and troughs, though not synchronized within the same year, are observed in every region. When the profitability growth of the industry is examined, it is found that the trend shown in each region is similar and consistent with that of revenue growth trend.

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Much effort has been devoted to the profitability analysis in this thesis, as it is believed that the survival of a firm greatly depends on achieving a sustainable level of profitability. The analysis aims to discover the significant determinants of profitability of E&C firms by measuring their performance through NPM, ROA, and ROE. First, factors such as firm size, generic strategies, company structure, geographical diversification and geographical origin are studied to determine their relevance to NPM. It is found that the profit margin of an E&C firm is not directly correlated to its size. Moreover, the variation in profit margin is found to decrease with increasing firm size. These results subsequently lead to the conclusion that relatively smaller-sized firms can achieve higher profit margin than their larger counterparts through superior selection and management of business portfolios. The study also shows that profit margin is significantly related to generic strategies. Specifically, a non-related diversification strategy can potentially yield a higher level of profit margin than focused or related-diversified strategy. Nevertheless, the observation of firms adopting the non-related diversification strategy shows that this strategy comes with a higher risk of underperformance. Besides, it is also found that generic strategies are significantly related to company size. A diversification strategy, whether it is related or non-related, is economically feasible only when a firm has reached a reasonably large size and acquired a sufficient level of resources. On the other hand, there is no significant evidence to show that organizational structure and geographical diversification would affect the net profit margin of a firm.

Subsequently, the findings prompt the author to suggest that when a small, narrowly-focused E&C firm grows larger with time, it should eventually adopt a diversification strategy to improve its outlook. A related diversification (broadly-targeted) strategy may not improve its profit margin but it can reduce the adverse impact on the firm due to fluctuating business cycles. Alternatively, non-related diversification has a potential of improving profit margin, but the firm would face a higher risk of underperformance.

When ROA is used as a proxy to gauge profitability performance, it is found that generic strategies do not differentiate the firm sample in terms of profitability. This leads to the finding that non-related diversified companies choose to compete along the low-

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turnover/high-margin strategy whilst most broadly-targeted companies adopt low-margin/high-turnover strategy. Put plainly, different generic strategies are associated with different competing strategies. This, implicitly, also indicates that firms in the construction industry face inevitable tradeoff between profit margin and assets turnover – one could hardly achieve a significant and concurrent improvement in both aspects.

In the financial context, ROE consists of three components, namely NPM, assets turnover and financial leverage. The analysis indicates that the trend of NPM is the one parameter that has the most significant influence over the trend of ROE. This sends an important signal to E&C firms that in order to improve ROE efficiently, resources should be focused more on the means that would increase NPM rather than on methods that increase assets turnover or financial leverage.

Asset liquidity analysis is carried out on the basis that this financial aspect is critical to corporate management, particularly so in the contracting business. In contrast to the profitability analysis which aims to maximize returns, liquidity analysis is performed with a slightly different objective, for it is not meaningful to maximize liquidity at the expense of the pursuit of corporate growth. Instead, an optimal band of liquidity is sought after so that a firm could achieve a balance between expansion and cash adequacy. Various analyses have been performed to identify significant factors which influence the liquidity of a firm. It has been established that liquidity, as represented by current ratio, is significantly correlated to internationalization, diversification and profitability. Past literatures suggest that internationalization generally leads to an increase in business risk. This study confirms that, accordingly, the firm would be inclined to increase the level of asset liquidity so as to cushion any adverse impact from internationalization. In contrast, diversification tends to reduce the existing level of business risk and therefore the level of liquidity can be reduced in tandem. When the liquidity is examined using the measure of capital expenditure ratio, it is reported that large E&C firms generally do not face problems in funding their capital expenditures from the cash generated from operations.

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Essentially, the overall findings lead to the suggestion that there is not a universal optimal level of liquidity that suits all firms since it depends on the strategy of the firm, which is in turn dictated by many other factors. Consequently, it is essence for firms to recognize the factors in play, so that liquidity policies can be strategically shaped towards enhancing their value.

Capital structure is another corporate area that has strategic implications on a firm's outlook. Similar to the asset liquidity analysis, the related analysis is performed with the objective of determining a right mix of debt and equity. This can be achieved by identifying the significant determinants of book leverage of a firm. The study indicates that book leverage is negatively correlated to internationalization, profitability and growth opportunities but positively correlated to diversification and firm size. Capital structure is also found to be correlated to asset liquidity, apparently since both are affected by internationalization and diversification. All in all, it is concluded that again, there appears no universal optimal mix of debt and equity which suit all firms. Instead, the level largely depends on a firm's business and operational profiles.

Specific to the human resource management analysis, the various issues pertaining to the field are examined to search for its vital with a firm's strategic performance. It is found that the number of employees is closely tracked by the trend of firm revenue. This indicates that the 'optimal' number of employees is determined by the *current* revenue performance of a firm. Probably, the practice would effectively help firms to keep their operational cost low. The study may further indicate that large E&C firms adopt an evolutionary approach in dictating their human resource strategy (in terms of recruitment or retrenchment).

The recruitment and retrenchment behaviors are also analyzed. It is found that generally firms react differently according to their revenue performance. Specifically, when firms record a growing trend of revenue, they are likely to increase their workforce accordingly. However, when firms are confronted with a trend of decreasing revenue, the decisions in retrenchment are not uniform across the firm sample because each of them has a different financial capability to tide over difficult times. The study also finds that

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firms hire at a higher rate as compared to retrenchment. Lastly, the relationship between employee productivity and company history is studied. Preliminary results suggest that administrative heritage can be an influential factor in driving the productivity performance of a firm, at least in Europe. Collectively, these findings suggest that human resource management plays a significant role in influencing the performance of a company. They remind the management of a firm to be aware of “soft-issues” such as administrative heritage and diligently deal with them.

Overall, the analyses and discussions in this thesis can be categorized under three core strategic fields, namely business strategy, financial strategy, and human resource strategy. In the author’s opinion, one of the most fundamental yet remarkable conclusions presented in this thesis is that each of the strategic fields rarely acts independently to result in the strategic performance of a firm. Instead, it is the interactions between them which act as the underlying sources for a firm to achieve above-average performance. This is clearly supported by the fact that most of the findings in this thesis confirm the presence of inter-relationships between two (or more) strategic fields.

In conjunction with the main objective of this research, some selected empirical findings have been summarized to practically address two strategic themes – growth and risk management. Specific to the growth theme, it is postulated that there are two growth options that can be pursued by an E&C firm – growth in size of operation or growth in profitability. The first is about increasing a firm’s revenue or gaining a relatively large market share. This can be achieved by adopting a related-diversification strategy. Specifically, product development, market development and combined development are the three suggested approaches that would help firms to increase their revenue. The major issue that may concern firms pursuing this goal is that they usually record a lackluster profit margin. Thus, it is vital for related-diversified firms to control the operational cost at the lowest possible level.

The second type of growth options is growth in profitability, whereby the corporate focus is given on maintaining or increasing the profit margin of a firm. This can be feasibly achieved by adopting a non-related diversification strategy. Through the

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observation of non-related diversified firms in this research, it is found that they generally have a low asset turnover. Essentially, these firms are advised not to get involved in activities which face a significant threat of obsolescence. Besides, these firms must also constantly address the sustainability of the high-margin activities. It is suggested that they can either (1) develop its specialty in the diversified area over time to compete with highly-specialized rivals, or (2) adopt an active corporate portfolio management as suggested by Harper and Vingerie (2002).

Risk management, as another vital element for a company, aims to ensure that corporate missions can be achieved while containing the overall risk to an acceptable level. It is particularly crucial for firms pursuing diversification and internationalization strategy. From the observation of the firm sample, it is reported that undiversified firms generally face higher business risk than diversified ones. Consequently, they are suggested either to increase their level of asset liquidity or to lower their book leverage (or possibly both). Similarly, it is found that international firms generally face higher business risk than regional ones. Accordingly, they could lower the overall risk by adopting the measures mentioned above. Alternatively, if the liquidity of a firm cannot be increased in near future to support an internationalization plan, a firm is suggested to first adopt or continue on diversification as the strategy requires a relatively lower level of liquidity.

After going through the extensive examination of the firm sample, the author retrospectively re-evaluated the fundamental assumption made at the very beginning of this research – that strategic management is crucial for E&C firms to achieve superior performance. Judging from the overall conclusions presented in this thesis, does the statement remain intact?

The abundance of evidences, as highlighted in the corresponding sections on page 86, 97, 111 and 123, speaks for themselves.

7.2 Recommendations for Future Research

While the research in this thesis has been an extensive one, it is nevertheless acknowledged that the works on analyzing the strategic performance of E&C firms are far from being completed. To achieve the long-term objective as depicted in the Chapter 1 (page 4), much effort has to be devoted to expand the literatures of this research topic. Accordingly, two recommendations are broadly laid out in this section so as to facilitate future contribution to this topic.

7.2.1 Enlargement of Geographical Scope of Firm Sample

Particularly for the East Asian region, it may be noticed that it is represented only by Japanese and South Korean firms. In view of the fact that China is emerging as a fast-growing economic powerhouse, it may be appropriate to include Chinese firms as study objects in the future. Already, the annual construction spending in China has approached a gigantic US\$ 500 billion by 2004, making it the third largest in the world after the U.S. and Japan (Crosthwaite and Connaughton, 2004). In addition, it is also projected that the country will record an average annual growth of 9% in construction spending, the second highest after India. As a start, the author has identified some large Chinese E&C firms that may provide unique insights on strategic performance. They are:

1. China Harbour Engineering Company (Group)

It is a publicly-listed firm that is ranked fifth in ENR's top 60 Chinese Contractors. For the year ended 31 Dec 2002, its revenue is more than US\$ 2 billion. More details about the firm can be obtained from its website at www.chec.bj.cn.

2. Shanghai Construction Co. Ltd

The revenue for the firm is over US\$ 1 billion in 2003.

3. LongYuan Construction Group Co., Ltd

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This firm is ranked 27th in ENR’s top 60 Chinese Contractors with its revenue exceeding US\$ 500 million in year 2003. More information about the firm can be found at www.lycg.com.cn.

Other large firms such as Sichuan Road & Bridge Co. Ltd (www.srbcc.com.cn), CRBC International Co., Ltd (www.crbcint.com), and CNOOC Engineering (www.cnoocengineering.com) could also be selected for analysis purpose.

To make the research more representative of the global construction industry, it is also suggested to include firms from regions other than the three studied here. Despite the on-going political instability in the Middle East, there are several well-established large E&C firms that are originated from the region. In fact, firms such as Enka Construction and Industry Co. and Orascom Construction Industries are ranked within the ENR’s top 225 global contractors. Listed below are some selected large publicly-listed firms that future researchers may be interested in.

Company Name	Company Website	Geog. Origin	Revenue in 2003 (US\$)
Enka Construction & Ind. Co. Inc.	www.euka.com	Turkey	1.0 billion
Housing & Construction Holding Co. Ltd	www.hch.co.il	Israel	900 million
Orascom Construction Industries	www.orascomci.com	Egypt	750 million
GAMA Holding	www.holding.gama.com.tr	Turkey	400 million
Danya Cebus Ltd	www.danya-cebus.co.il	Israel	300 million

Table 7- 1: Some Large E&C Firms Originated from the Middle East

Figure 7- 1: A Glance at the Regions Studied and to be Studied

Notwithstanding the need to enlarge the geographical scope of firm sample, it must be reminded that, as highlighted in Section 3.3.3.2, different regions often have their very own accounting reporting practices and disclosure standards. Thus, any attempt to interpret financial statements of firms from these countries must be preceded with thorough understanding of their contexts of financial reporting.

7.2.2 Further Assessments of the Various Strategic Fields

Apart from the geographical scope, the current research area can also be expanded through further exploration of new aspects under the various strategic fields. Specifically, even within the three strategic fields (business strategy, financial strategy and human resource strategy) that form the core analysis topic in this thesis, the author sees more room for discussion purposes.

To quote an example, merger and acquisition (M&A) is one of the business strategies that can directly affect the strategic performance of an E&C firm. It is

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commonly adopted to increase the size of a firm and/or to leverage on expertise that one party lacks of. It can also offer the benefits of achieving synergies in areas such as operating efficiency and technological capabilities. In addition, Conyon et al. (1999) found that acquisitions can lead to a rise in wages and company profits. However, similar to diversification strategy, an overly-aggressive acquisition policy may spread the financial and management capabilities of a firm so thin that it detracts, rather than boosts, a firm's performance.

The merging between ACS and Grupo Dragados in 2003 can serve as a useful case study to analyze the impact of M&A. As far as the author is aware of, the size of ACS has increased significantly since the absorption of Grupo Dragados. This is evidenced by the fact that its ranking in the ENR's Top 225 Global Contractors soars from 51st in 2003 to 8th in 2004. Certainly, there are other major implications arising from the merger on its overall performance as well, of which only time can tell. Other firms that have grown through active acquisitions include Skanska, Kvaerner, Washinton Group International and the Shaw Group.

Specific to the financial strategy, it is discovered that many large firms utilize derivative instruments such as options and swaps to hedge against risk of fluctuation in interest rate and foreign currency exchange rate. On the other hand, for some reasons, there are also firms – Eiffage, Granite Construction and Kinden, just to name a few – which choose not to involve in these sophisticated financial products. Again, one may analyze the impacts of utilizing these instruments from the perspective of cost and benefit.

As for the human resource strategy, one can study issues related to employee share ownership/group saving scheme. While it may be argued that these schemes can effectively increase the employee productivity, they may nonetheless incur additional cost for the firm as well. Thus, the feasibility and the overall benefits of these schemes can be another study area in the future. Besides, investigation can also be carried out to determine the feasibility of setting up a private educational institution which trains middle-management personnel or professions specifically for the firm. As a start, the

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Skanska Management Institute and the Hocftief Academy are the two institutes that can be targeted as study objects in future analysis.

Apart from these three strategic fields, researchers may also like to embark on the other four as depicted in Cheah's (2002) open model so that a more complete picture of corporate strategy can be presented. As it has been emphasized that competitive advantages are mainly derived from interactions between strategic fields, it appears even more crucial at this stage to incorporate all of the seven fields while analyzing strategic performance of a firm.

First of all, operational strategy is concerned with daily execution and implementation of strategies. As pointed out by Cheah (2002), it covers activities such as material procurement, physical construction of facility, and the management of labour. To shed some light on this area, it is recommended to (1) assess the impacts of 'total solution' or 'life-cycle engineering' as conceptualized by well-established firms such as Kajima and Obayashi; and (2) study the feasibility of adopting a decent logistic system or supply chain management to improve operational efficiency. Hocftief, in the related development, has entered into master agreements with selected top-performing suppliers and sub-contractors to ensure uninterrupted flow of works and quality craftsmanship. Impregilo, on the other hand, aims to enhance the effectiveness of purchasing by having a 'Purchase Planning & Methodology' function. These moves are directly related to a firm's performance as they can at least help firms to cut costs.

For the aspect of information technology (I.T.), an E&C firm may leverage on the technology in many ways to achieve competitive advantages. For instance, it can foster communications between construction sites and main office through internet, as well as between subsidiaries through intranet. Accordingly, it appears necessary to conduct an analysis in the future regarding the impact of I.T. strategy on firm performance.

Besides, one may also study the marketing strategies of an E&C firm by scrutinizing, for example, the concept of partnership marketing/ relationship marketing. Particularly, relationship marketing can significantly affect the long-term financial

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performance of a firm, as researchers have pointed out that it is more expensive to win a new customer than it is to retain an existing customer (see, for example, Rosenberg and Zepiel, 1983). A high repeat-client rate will generate stable and recurring streams of revenue to a firm. Probably, this may be an effective antidote for the cyclical nature of the construction industry. Firms which explicitly pursue partnership-based relationship are Centex, Veidekke and NCC, just to name a few.

Brand-building is another marketing strategy that can be analyzed. Apparently, firms are increasingly paying attention to activities that can strengthen their reputation. For instance, the active involvement of E&C firms such as Bouygues, Vinci, Halliburton and AMEC in social projects, donations to charity organizations and sponsorships of community events may be viewed as an indirect means of building up good images on these firms. There are firms, such as Chicago Bridge and Iron, that directly stress the master brand name by updating their company logos and visual identity systems. In view of its apparent importance, it becomes pertinent to study the effectiveness and the impacts of the strategy.

Lastly, technology strategy can be analyzed by looking into the various issues related to Research and Development (R&D) program. Future researches in this area may be started by referring to Link's (1981) works. He analyzed R&D activities in the manufacturing industry in the U.S. and pointed out that firm size is a prerequisite for successful R&D activity. Particularly, larger firms are found to earn a relatively higher rate of return on their investment in R&D than smaller firms. Whether the same trend exists in the construction industry remains an issue to be verified in the future.

Figure 7- 2: Recommended Aspects in the Various Strategic Fields for Future Researches

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APPENDIX A – LIST OF SELECTED FIRMS

No.	Name of Firm	Geographical Origin	Ave. Revenue (US\$ mil.)
1	Bouygues	France	19,683.5
2	Vinci	France	15,620.9
3	Kajima Corp.	Japan	15,432.2
4	Halliburton	U.S.	14,622.3
5	Taisei Corp.	Japan	14,481.8
6	Shimizu Corp.	Japan	13,550.2
7	Skanska	Sweden	12,758.4
8	Obayashi Corp.	Japan	11,157.7
9	Fluor Corp.	U.S.	11,132.5
10	Hochtief	Germany	8,138.8
11	GTM	France	8,005.4
12	Kvaerner	Norway	7,401.5
13	Kumagai Gumi	Japan	7,030.8
14	Centex	U.S.	6,601.4
15	Eiffage	France	6,467.3
16	Philipp Holzmann	Germany	5,218.7
17	HBG	Netherlands	5,110.5
18	AMEC	U.K.	4,997.0
19	Toda Corp	Japan	4,975.5
20	Fomento De Construcciones & Contratas (FCC)	Spain	4,630.7
21	Hyundai E&C Co.	South Korea	4,605.0
22	NCC	Sweden	4,541.7
23	Nishimatsu Construction Co.	Japan	4,376.1

24	Ferrovial	Spain	4,323.0
25	Grupo Dragados	Spain	4,282.3
26	Kandenko Co. Ltd.	Japan	4,184.6
27	Balfour Beatty	U.K.	4,119.2
28	Kinden Corp.	Japan	4,104.6
29	Bilfinger Berger	Germany	3,959.9
30	Maeda Corp.	Japan	3,858.4
31	Foster Wheeler	U.S.	3,844.8
32	Penta Ocean Construction Co.	Japan	3,757.7
33	Hazama Corp.	Japan	3,705.7
34	Jacobs Engineering	U.S.	3,329.1
35	Technip Coflexip	France	3,215.0
36	Grupo ACS	Spain	3,161.8
37	Washington Group Int'l Inc.	U.S.	2,923.1
38	JGC Corp.	Japan	2,834.0
39	Walter-Bau	Germany	2,568.8
40	McDermott International	U.S.	2,558.2
41	URS	U.S.	2,311.6
42	Impregilo SPA	Italy	2,282.3
43	Ballast Nedam	Netherlands	2,049.3
44	Strabag	Germany	2,020.4
45	Ando Corp.	Japan	1,942.6
46	Chiyoda Corp.	Japan	1,938.0
47	The Shaw Group	U.S.	1,854.6
48	Granite Construction Inc.	U.S.	1,566.9
49	Toyo Eng'g Corp.	Japan	1,534.1
50	Taikisha Ltd.	Japan	1,468.8
51	Obrascon Huarte Lain	Spain	1,446.8
52	Perini Corporation	U.S.	1,227.5

53	Stone & Webster	U.S.	1,226.0
54	Veidekke ASA	Norway	1,042.5
55	Chicago Bridge & Iron Co.	U.S.	1,030.3
56	Tetra Tech Inc.	U.S.	886.7
57	Ssanyong Eng'g & Constr. Co. Ltd.	South Korea	864.1
58	Astaldi SPA	Italy	758.3
59	Aecon Group Inc.	Canada	584.8
60	Willbros Group	U.S.	345.3
61	Stantec Inc.	Canada	195.2

APPENDIX B – FIRM BACKGROUND TEMPLATE

NAME	COUNTRY	YEAR
VINCI (SGE)	France	1910

<u>No. of Employees</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>
	68,251	64,451	70,699	122,070	129,499	127,380	127,513
<u>Ownership Structure</u>	<u>Dec-97</u>	<u>Dec-98</u>	<u>Mar-00</u>	<u>Dec-00</u>	<u>Dec-01</u>	<u>Dec-02</u>	<u>Dec-03</u>
Vivendi Universal	51.2%	50.25%	16.9%	9.0%	8.2%	1.9%	0.0%
Suez	0.0%	0.0%	0.0%	17.0%	0.0%	0.0%	0.0%
SGE Group's employee savings plan	1.6%	2.67%	3.0%	4.0%	7.0%	9.1%	9.0%
Treasury Stock	0.0%	3.24%	7.5%	7.0%	8.6%	5.1%	5.0%
Other investors (Institutional & individual)	47.2%	43.84%	72.6%	63.0%	76.2%	83.9%	86.0%
	100.0%	100.00%	100.0%	100.0%	100.0%	100.0%	100.0%

<u>Credit Rating</u>	<u>2002</u>	<u>2003</u>
Standard & Poor	BBB+	BBB+
Moody	Baa1	Baa1

Organizational Setting

<div><div>Audit Committee</div><div>Strategic Apex</div><div>Investment Committee</div><div>Remuneration Committee</div></div>	
Created in Oct 2000, it is in charge of examining acquisition and divestment projects liable to have a significant impact on group sales and earnings.	
Technostructure	<div><div>Operating Core</div><div>Support Operations</div></div>
<div><div>M</div><div><div>1. Concessions</div><div>2. Energy</div><div>3. Roads</div><div>4. Construction</div></div></div>	
<div>Notes:</div> <div><div>Prior to 2000</div><div>Market segments are under five business sectors: Concession, Building & Civil Engineering, Electrical Works and Engineering, Roadworks, and Thermal & Mechanical Activities.</div></div> <div><div>2000</div><div><div>1. Vinci took over GTM following a friendly exchange offer announced on 13 July 2000, subsequently resulting in the holdings of 97.44% of GTM. The two concession entities, Cofiroute and Stade de France were consolidated in the accounts of the new entity. The subsequent merger between Vinci and GTM was approved by the two companies' shareholders. Note the very different merging environment as compared to Raytheon E&C and WGI.</div><div>2. The various market segments are restructured under four business sectors: Concession, Enery & Information, Roads, and Construction.</div></div><div><div>2002</div><div>Rename business sectors: Concession, Energy, Roads, and Construction.</div></div></div>	

APPENDIX C – MARKET SEGMENTATION MATRIX

Vinci - Market Segmentation Matrix

	Residential		Institutional		Commercial		Industrial		Infrastructure		Earth & Environ.		Diversification	
	D	I	D	I	D	I	D	I	D	I	D	I	D	I
Supply									1	1				
Feasibility studies & Planning														
A&E Design	*	*	*	*	*	*	*	*	*	*	*	*		
Construction & Installation	*	*	*	*	*	*	2	2	*	*	*	*		
Post-construction Services			*	*	*	*			*	*				
Finance														
Own / Develop / Concession			*	*					*	*				

Notes:

- 1. 'D' denotes domestic market, 'I' denotes international market.
- 2. Eurovia is a manufacturer of aggregate used in road building.
- 3. Includes installation of automated manufacturing system for automotive industry, and design and management of maintenance system for Omya sites.

APPENDIX D – FINANCIAL TEMPLATE

Vinci (Consolidated)		A/C period ended: 31-Dec															
1) Income Statement																	
a) As Reported (million Euros)										b) As % of 1997 level							
Yr.	1997	1998	1999	2000	2001	2002	2003	Yr.	97	98	99	00	01	02	03		
Revenue	8,533.1	8,415.1	9,413.3	14,741.6	18,132.0	18,443.9	18,875.9		100.0%	98.6%	110.3%	172.8%	213.2%	216.1%	221.2%		
COGS	5,525.5	5,414.6	6,120.1	9,583.4	11,441.5	11,769.5	11,979.3		100.0%	98.0%	110.8%	173.4%	207.1%	213.0%	216.8%		
Gross Income	3,007.6	3,000.5	3,293.2	5,158.2	6,750.5	6,674.4	6,896.6		100.0%	99.8%	109.5%	171.5%	224.4%	221.9%	229.3%		
Operating Expense	2,964.6	2,889.6	3,082.4	4,435.9	5,692.1	5,606.8	5,730.6		100.0%	97.5%	104.0%	149.6%	192.0%	189.1%	193.3%		
Operating Income	43.0	110.9	210.8	722.3	1,058.4	1,067.6	1,166.0		100.0%	257.9%	490.2%	1679.8%	2461.4%	2482.8%	2711.6%		
EBIT	2.1	33.5	124.4	459.2	929.2	972.4	995.2		100.0%	1595.2%	5923.8%	21866.7%	44247.6%	45304.8%	47390.5%		
Net Income before taxation	30.7	53.3	130.4	364.4	720.8	779.9	871.3		100.0%	173.6%	424.8%	1187.0%	2347.9%	2540.4%	2838.1%		
N.I. after tax & minor. int.	46.9	92.3	146.3	299.8	453.5	477.8	541.1		100.0%	196.8%	311.9%	639.2%	967.0%	1018.8%	1153.7%		
Note:																	
Taxation effect is consistently not included except dividend payout ratio																	
2) Balance Sheet																	
a) As Reported (million Euros)										b) As % of 1997 level							
Yr.	97	98	99	00	01	02	03	Yr.	97	98	99	00	01	02	03		
A/C Receivable	3,523.8	3,441.3	4,008.6	7,322.7	7,250.0	6,998.3	7,150.6		100.0%	97.7%	113.8%	207.8%	205.7%	198.6%	202.9%		
Quick Asset	5,146.5	4,796.2	5,239.6	9,587.5	10,455.6	10,364.3	11,661.3		100.0%	93.2%	101.8%	186.3%	203.2%	201.4%	226.6%		
Current Asset	6,783.4	5,098.9	5,572.2	10,047.3	10,860.8	10,788.0	12,135.0		100.0%	75.2%	82.1%	148.1%	160.1%	159.0%	178.9%		
Total Asset	8,109.1	6,589.0	7,978.6	18,763.5	20,302.7	20,281.6	21,843.4		100.0%	81.3%	98.4%	231.4%	250.4%	250.1%	269.4%		
Current Liability	6,127.5	4,524.8	5,446.4	9,482.5	9,628.6	9,098.9	9,329.5		100.0%	73.8%	88.9%	154.8%	157.1%	148.5%	152.3%		
Long-term Debt	179.4	222.7	500.7	2,958.4	4,053.2	5,320.3	6,235.5		100.0%	124.1%	279.1%	1649.1%	2259.3%	2965.6%	3475.8%		
Total Liability	7,639.5	6,037.4	7,385.2	16,446.9	17,418.6	17,172.3	18,355.2		100.0%	79.0%	96.7%	215.3%	228.0%	224.8%	240.3%		
Owners' Equity	469.6	551.6	593.4	2,316.6	2,884.1	3,109.3	3,488.2		100.0%	117.5%	126.4%	493.3%	614.2%	662.1%	742.8%		
3) Cash Flow Profile (millions Euros)																	
Yr.	1997	1998	1999	2000	2001	2002	2003										
Net CFO	197.2	252.1	564.2	972.0	1,250.6	1,572.5	1,376.7										
Net CFI	-229.2	-279.4	-1,022.2	-2,860.3	-1,361.2	-1,917.0	-1,119.4										
Cap. Expenditure	172.5	231.7	252.2	769.2	1,185.0	964.3	1,051.9										
Corp. Fin. Gap	-32.0	-27.3	-458.0	-1,888.3	-110.6	-344.5	257.3										

4) Key Financial Ratios																					
Yr.	97	98	99	00	01	02	03														
Current Ratio	1.11	1.13	1.02	1.06	1.13	1.19	1.30	Liquidity ratio	current asset/current liab												
Quick Ratio	0.84	1.06	0.96	1.01	1.09	1.14	1.25		quick asset/current liab												
CFO Ratio	0.03	0.06	0.10	0.10	0.13	0.17	0.15		CFO/current liab												
Avg. Collection Period (days)	90.28	151.05	144.43	140.28	146.19	140.99	136.80	Activity ratio	365* ave. acc. receiv/revenue												
Total Asset Turnover	1.23	1.15	1.29	1.10	0.93	0.91	0.90		revenue/ave. asset												
Gross Profit Margin	35.25%	35.66%	34.98%	34.93%	37.11%	36.19%	36.54%	Profitability ratio	gross income/revenue												
Operating Profit Margin	0.50%	1.32%	2.24%	4.90%	5.82%	5.79%	6.18%		op. income/revenue												
Net Profit Margin	0.36%	0.63%	1.39%	2.47%	3.86%	4.23%	4.62%		net income before tax/revenue												
ROA	0.44%	0.73%	1.79%	2.73%	3.69%	3.84%	4.14%	Market ratio	net profit margin*asset turnover												
ROE	9.14%	10.44%	22.78%	25.04%	27.72%	26.03%	26.41%		net income before tax/ave. owners' equity												
Total Debt ratio	16.27	10.95	12.45	7.10	6.04	5.52	5.26		total liab/owners' equity												
CAPEX ratio	1.14	1.09	2.24	1.26	1.06	1.63	1.31		CFO/capital expenditure												
Dividend Payout ratio	-	95.0%	78.5%	66.8%	25.8%	41.9%	0.0%		dividend/net income after taxation												
Notes:																					
Dividend payout ratio is calculated by dividing dividend with parent company net income.																					
5) Revenue by Regions																					
a) As Reported Pro Forma (millions Euros)																					
Yr.	97	98	99	00	01	02	03	b) As % of Total Revenue													
France	5,379.4	5,216.6	5,509.1	10,690.0	10,602.0	10,318.0	10,998.9	Yr.	97	98	99	00	01	02	03						
Rest of Europe	2,364.4	2,325.6	3,040.1	4,929.0	4,680.0	5,271.0	5,361.1	France	66.1%	65.1%	60.8%	61.7%	61.7%	58.8%	60.7%						
North America	19.6	15.7	81.6	711.0	835.0	1,006.0	934.7	Rest of Europe	29.0%	29.0%	33.6%	28.4%	27.3%	30.0%	29.6%						
Rest of World	376.8	454.6	426.0	1,001.0	1,055.0	959.0	816.1	North America	0.2%	0.2%	0.9%	4.1%	4.9%	5.7%	5.2%						
Total (pro forma)	8,140.2	8,011.5	9,056.8	17,331.0	17,172.0	17,554.0	18,110.8	Rest of World	4.6%	5.7%	4.7%	5.8%	6.1%	5.5%	4.5%						
													Total (pro forma)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		
6) Revenue by Business Areas																					
a) As Reported Pro Forma (millions Euro)													b) As % of Total Revenue								
Yr.	97	98	99	00	01	02	03	Yr.	97	98	99	00	01	02	03						
Concessions				1,339.0	1,791.0	1,851.0	1,895.0	Concessions	Not Applicable till 2000							7.7%	10.4%	10.5%	10.5%		
Energy & Info.				3,063.0	3,098.0	3,024.0	3,115.0	Energy & Info.								17.7%	18.0%	17.2%	17.2%	10.5%	10.5%
Roads				5,316.0	5,689.0	5,146.0	5,338.0	Roads								30.7%	33.1%	29.3%	29.3%	17.2%	17.2%
Construction				7,119.0	6,114.0	7,252.0	7,715.6	Construction								41.1%	35.6%	41.3%	42.6%		
Miscellaneous				494.0	480.0	281.0	47.2	Miscellaneous								2.9%	2.8%	1.6%	0.3%		
Total (pro forma)				17,331.0	17,172.0	17,554.0	18,110.8	Total (pro forma)								100.0%	100.0%	100.0%	100.0%		

APPENDIX E – DETAILED INFORMATION OF THE FIRM SAMPLE

(This section documents the financial data and indicators of the firm sample. The firms are arranged according to the alphabetical order of their names. The information presented is to be used at readers' discretion.)

1. ACS Group

ACS Group (Consolidated) A/C period ended: 31-Dec

1) Income Statement

a) As Reported (thousands Euros)		Yr.			
		97	98	99	00
Revenue		1,840,762	2,460,093	2,735,951	3,429,470
COGS		1,165,026	2,312,226	1,690,238	1,973,040
Gross Income		675,736	1,147,867	1,045,713	1,456,430
Operating Income		85,600	115,869	146,533	212,130
EBIT		87,189	106,518	82,748	216,740
Interest expense		31,265	29,528	31,565	56,450
Net income before taxation		65,498	88,884	115,048	176,570
N.I. after tax & minor. int.		49,373	68,005	85,115	120,780
Dividend		21,140	23,062	24,983	32,030
Note:					

1. Data from row 6 to row 14 are extracted from Osiris.
2. Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (thousands Euros)		Yr.			
		97	98	99	00
A/C Receivable		1,362,537	1,793,901	1,679,126	1,734,000
Quick Asset		1,477,763	1,974,517	1,892,846	2,059,620
Current Asset		1,750,177	2,132,794	2,185,046	2,435,580
Total Asset		2,029,095	2,412,673	2,847,054	3,339,740
Current Liability		1,442,994	1,726,437	1,835,473	2,122,010
Long-term Debt		191,747	157,237	270,738	317,790
Total Liability		1,702,307	1,924,705	2,192,341	2,523,760
Owners' Equity		326,788	487,968	654,713	814,980
Source: Osiris					

3) Cash Flow Profile (thousands Euros)

		Yr.			
		97	98	99	00
Net CFO					
Net CFI					
Cap. Expenditure					
Corp. Fin. Gap					
(Not disclosed)					

b) As % of 1997 level

		Yr.			
		97	98	99	00
Revenue		100.0%	133.6%	148.6%	186.3%
COGS		100.0%	198.5%	145.1%	169.4%
Gross Income		100.0%	21.9%	154.8%	215.5%
Operating Income		100.0%	135.0%	170.8%	247.2%
EBIT		100.0%	122.2%	106.4%	248.6%
Interest expense		100.0%	94.4%	101.0%	180.6%
Net income before taxation		100.0%	135.7%	175.6%	269.6%
N.I. after tax & minor. int.		100.0%	137.7%	172.4%	244.6%
Dividend		100.0%	109.1%	118.2%	151.5%

b) As % of 1997 level

		Yr.			
		97	98	99	00
A/C Receivable		100.0%	131.7%	123.2%	127.3%
Quick Asset		100.0%	133.6%	128.1%	139.4%
Current Asset		100.0%	121.9%	124.8%	139.2%
Total Asset		100.0%	118.9%	140.3%	164.5%
Current Liability		100.0%	119.6%	127.2%	147.1%
Long-term Debt		100.0%	82.0%	141.2%	165.7%
Total Liability		100.0%	113.1%	128.8%	148.3%
Owners' Equity		100.0%	149.3%	200.3%	249.4%

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	
Current Ratio	1.21	1.24	1.19	1.15	1.15	0.88	current asset/current liab
Quick Ratio	1.02	1.14	1.03	0.97	0.98	0.74	quick asset/current liab
Avg. Collection Period (days)	192.44	234.16	231.67	181.63	167.69	158.53	365*ave acc. receiv./revenue
Total Asset Turnover	1.26	1.11	1.04	1.11	1.11	1.02	revenue/ave asset
Gross Profit Margin	36.71%	6.01%	38.22%	42.47%	42.71%	41.34%	gross income/revenue
Operating Profit Margin	4.66%	4.71%	5.36%	6.19%	6.56%	6.59%	op. income/revenue
Net Profit Margin	3.56%	3.61%	4.20%	5.15%	5.56%	5.56%	net income before tax/revenue
ROA	4.48%	4.00%	4.37%	5.71%	6.16%	5.69%	net profit margin*asset turnover
ROE	27.31%	21.82%	20.14%	24.03%	25.76%	26.48%	net income before tax/ave owners' equity
Total Debt ratio	5.21	3.94	3.35	3.10	3.26	4.01	total liab/owners' equity
Debt Service ratio	2.79	3.61	2.94	3.84	3.83	3.40	EBIT/interest expense
Dividend Payout ratio	42.8%	33.9%	29.4%	26.5%	25.8%	25.4%	dividend/net income after taxation

5) Revenue by Regions

a) As Reported (thousands Euros)

Yr.	97	98	99	00	01	02
Spain				2,912,549		3,900,317
Rest of Europe				200,477		365,756
America				175,276		140,476
Rest of World				122,306		13,638
Total				3,410,608	0	4,420,187

6) Revenue by Business Areas

a) As Reported (thousands Euros)

Yr.	97	98	99	00	01	02
Civil Engineering				994,861		1,260,753
Building				683,858		938,424
Communications & Energy				1,448,094		1,809,461
Environment				212,937		313,483
Passenger Transp.				116,638		142,093
Elimination				-45,781		-44,027
Total				3,410,607	0	4,420,187

b) As % of Total Revenue

Yr.	97	98	99	00	01	02
Spain				85.4%		88.2%
Rest of Europe				5.9%		8.3%
America				5.1%		3.2%
Rest of World				3.6%		0.3%
Total				100.0%		100.0%

b) As % of Total Revenue

Yr.	97	98	99	00	01	02
Civil Engineering				29.2%		28.5%
Building				20.1%		21.2%
Communications & Energy				42.5%		40.9%
Environment				6.2%		7.1%
Passenger Transp.				3.4%		3.2%
Elimination				-1.3%		-1.0%
Total				100.0%		100.0%

2. Aeon group

Aeon group (Consolidated) A/C period ended: 31-Dec

1) Income Statement

a) As Reported (thousands Canada \$)	99	00	01	02	03
Revenue	213,114	1,006,330	1,138,864	1,072,964	972,486
COGS	184,341	935,791	1,021,524	1,005,138	929,044
Gross Income	28,773	70,539	117,340	67,826	43,442
Operating Expense	18,969	52,488	74,095	65,920	60,309
Operating Income	9,804	18,051	43,245	1,906	16,867
EBIT	11,245	17,978	29,899	3,849	-13,891
Interest expense	2,539	9,611	11,864	6,502	6,393
Net Income before taxation	9,460	16,859	24,321	923	-16,959
N.I. after tax & minor. Int.	6,072	10,622	12,386	230	-13,872
Dividend	0	1,798	0	2,245	757

Note:

Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (thousands Canada \$)	99	00	01	02	03
A/C Receivable	205,862	178,360	187,259	154,889	146,993
Quick Asset	306,815	236,291	294,356	243,473	205,585
Current Asset	367,670	393,012	456,840	371,724	332,463
Total Asset	460,550	525,764	589,253	515,720	483,358
Current Liability	332,847	384,147	435,101	325,962	312,804
Long-term Debt	44,819	43,661	44,357	38,615	35,121
Total Liability	387,993	438,670	489,477	384,166	366,390
Owners' Equity	72,557	87,094	99,776	131,554	116,968

3) Cash Flow Profile (thousands Canada \$)

	99	00	01	02	03
Net CFO	17,943	27,241	81,849	-36,651	-27,452
Net CFI	-34,219	-8,966	-28,685	-728	-7,925
Cap. Expenditure	7,069	14,370	14,673	4,855	2,010
Corp. Fin. Gap	-16,276	16,255	53,164	-37,379	-35,377

b) As % of 1999 level	99	00	01	02	03
Revenue	100.0%	472.2%	534.4%	503.5%	456.3%
COGS	100.0%	507.6%	554.1%	545.3%	504.0%
Gross Income	100.0%	245.2%	407.8%	235.7%	151.0%
Operating Expense	100.0%	276.7%	390.6%	347.5%	317.9%
Operating Income	100.0%	184.1%	441.1%	19.4%	-172.0%
EBIT	100.0%	159.9%	265.9%	34.2%	-123.5%
Interest expense	100.0%	378.5%	467.3%	256.1%	251.8%
Net Income before taxation	100.0%	176.1%	257.1%	9.8%	-179.3%
N.I. after tax & minor. Int.	100.0%	174.9%	204.0%	3.8%	-228.5%
Dividend	-	-	-	-	-

b) As % of 1999 level	99	00	01	02	03
A/C Receivable	100.0%	86.7%	91.0%	75.2%	71.4%
Quick Asset	100.0%	77.0%	95.9%	79.4%	67.0%
Current Asset	100.0%	106.9%	124.8%	101.1%	90.4%
Total Asset	100.0%	114.2%	127.9%	112.0%	105.0%
Current Liability	100.0%	115.4%	130.7%	97.9%	94.0%
Long-term Debt	100.0%	97.4%	99.0%	86.2%	78.4%
Total Liability	100.0%	113.1%	126.2%	99.0%	94.4%
Owners' Equity	100.0%	120.0%	137.5%	181.3%	161.2%

4) Key Financial Ratios

Yr.	99	00	01	02	03	
Current Ratio	1.10	1.02	1.05	1.14	1.06	Liquidity ratio
Quick Ratio	0.92	0.62	0.68	0.75	0.66	
CFO Ratio	0.05	0.07	0.19	-0.11	-0.09	
Avg. Collection Period (days)	218.54	69.68	58.59	58.20	56.65	Activity ratio
Total Asset Turnover	0.75	2.04	2.04	1.94	1.95	
Gross Profit Margin	13.50%	7.01%	10.30%	6.32%	4.47%	Profitability ratio
Operating Profit Margin	4.60%	1.79%	3.80%	0.18%	-1.73%	
Net Profit Margin	4.44%	1.66%	2.14%	0.09%	-1.74%	
ROA	3.32%	3.38%	4.36%	0.17%	-3.39%	Finance ratio
ROE	17.64%	20.87%	26.03%	0.80%	-13.65%	
Total Debt ratio	5.35	5.04	4.91	2.92	3.13	
Debt Service ratio	4.43	1.87	2.52	0.59	-2.17	Market ratio
CAPEX ratio	2.54	1.90	5.58	-7.55	-13.66	
Dividend Payout ratio	0.0%	16.9%	0.0%	976.1%	-5.5%	

current asset/current liab
quick asset/current liab
CFO/current liab
365*ave acc. receiv./revenue
revenue/ave asset
gross income/revenue
op. income/revenue
net income before tax/revenue
net profit margin*asset turnover
net income before tax/ave.owners' equity
total liab/owners' equity
EBIT/interest expense
CFO/capital expenditure
dividend/net income after taxation

5) Revenue by Regions

a) As Reported (thousands Canada \$)

Yr.	99	00	01	02	03
Canada	160,444	818,144	827,348	790,836	772,143
US	2,154	66,349	147,690	70,242	72,827
Rest of World	50,516	121,837	163,826	211,886	127,516
Total	213,114	1,006,330	1,138,864	1,072,964	972,486

b) As % of Total Revenue

Yr.	99	00	01	02	03
Canada	75.3%	81.3%	72.6%	73.7%	79.4%
US	1.0%	6.6%	13.0%	6.5%	7.5%
Rest of World	23.7%	12.1%	14.4%	19.7%	13.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

6) Revenue by Business Areas

a) As Reported (thousands Canada \$)

Yr.	99	00	01	02	03
Infrastructure	586,063	573,321	536,087	456,727	
Buildings	231,218	278,080	332,900	299,298	
Industrial	143,614	239,809	208,407	218,250	
Corporate & others	45,435	47,654	-4,430	-1,789	
Total	1,006,330	1,138,864	1,072,964	972,486	

b) As % of Total Revenue

Yr.	99	00	01	02	03
Infrastructure	58.2%	50.3%	50.0%	47.0%	
Buildings	23.0%	24.4%	31.0%	30.8%	
Industrial	14.3%	21.1%	19.4%	22.4%	
Corporate & others	4.5%	4.2%	-0.4%	-0.2%	
Total	100.0%	100.0%	100.0%	100.0%	

3. AMEC

AMEC (Consolidated)

A/C period ended: 31-Dec

1) Income Statement

a) As Reported (£ millions)

Yr.	97	98	99	00	01	02	03
Revenue (inc. JV)	2774.3	2721.9	2427.5	3,195.90	3,462.50	3212.6	4,422.80
COGS	2601.9	2522.5	2239.6	2,901.20	3,102.00	2888.2	3,853.20
Gross Income	172.4	199.4	187.9	294.7	360.5	324.4	569.6
Operating Expense	131	142.5	129.7	211.4	273.3	258.5	457.4
Operating Income	41.4	56.9	58.2	83.3	87.2	65.9	112.2
EBIT	71.6	70.2	74.8	99.2	94.5	60.2	124.9
Interest expense	14	11.5	11.3	36.5	29.9	33	54.3
Net income before taxation	68.4	69.2	80	81.8	80.7	39.2	95.7
N.I. after tax & minor. int.	44.7	47.3	57.0	53.3	49.7	10.8	60.0
Dividend	21.3	23.5	26.3	28	41.7	29.5	30.7

Note:
1. Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (£ millions)

Yr.	97	98	99	00	01	02	03
A/C Receivable	629.2	697.5	757.7	1,038.70	942.1	777.1	1,864.60
Quick Asset	817.2	890	947.2	1,289.5	1,232.6	1,019.8	2,029.4
Current Asset	1017.6	1099.2	1016.5	1,364.7	1,350.5	1,106.3	2,309
Total Asset	1187.7	1337.6	1258.8	1,949.1	1,912.3	1,629.1	2,961.2
Current Liability	882.2	971.5	870.5	1,246.30	1,248.40	1,024.6	2,042.10
Long-term Debt	110.7	147.9	95.5	366.1	324.2	303.8	587.3
Total Liability	992.9	1,135.4	1,000	1,649.1	1,603.6	1,375.5	2,686.7
Owners' Equity	194.8	202.2	258.8	300	308.7	253.6	274.5

3) Cash Flow Profile (in £ millions)

Yr.	97	98	99	00	01	02	03
Net CFO	54.2	51.8	-5.5	32.8	146.9	40.9	58.7
Net CFI	-7.6	-30.7	15.8	-333.2	33	-0.9	-205.8
Cap. Expenditure	20.2	23.1	21.1	38.1	49.3	21.8	69.6
Corp. Fin. Gap	46.6	21.1	10.3	-300.4	179.9	40	-147.1

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
Revenue (inc. JV)	100.0%	98.1%	87.5%	115.2%	124.8%	115.8%	159.4%
COGS	100.0%	96.9%	86.1%	111.5%	119.2%	111.0%	148.1%
Gross Income	100.0%	115.7%	109.0%	170.9%	209.1%	188.2%	330.4%
Operating Expense	100.0%	108.8%	99.0%	161.4%	208.6%	197.3%	349.2%
Operating Income	100.0%	137.4%	140.6%	201.2%	210.6%	159.2%	271.0%
EBIT	100.0%	98.0%	104.5%	138.5%	132.0%	84.1%	174.4%
Interest expense	100.0%	82.1%	80.7%	260.7%	213.6%	235.7%	387.9%
Net Income before taxation	100.0%	101.2%	117.0%	119.6%	118.0%	57.3%	139.9%
N.I. after tax & minor. int.	100.0%	105.8%	127.5%	119.2%	111.2%	24.2%	134.2%
Dividend	100.0%	110.3%	123.5%	131.5%	195.8%	138.5%	144.1%

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
A/C Receivable	100.0%	110.9%	120.4%	165.1%	149.7%	123.5%	264.6%
Quick Asset	100.0%	108.9%	115.9%	157.8%	150.8%	124.8%	248.3%
Current Asset	100.0%	108.0%	99.9%	134.1%	132.7%	108.7%	226.9%
Total Asset	100.0%	112.6%	106.0%	164.1%	161.0%	137.2%	249.3%
Current Liability	100.0%	110.1%	98.7%	141.3%	141.5%	116.1%	231.5%
Long-term Debt	100.0%	133.6%	86.3%	330.7%	292.9%	274.4%	530.5%
Total Liability	100.0%	114.4%	100.7%	166.1%	161.5%	136.5%	270.6%
Owners' Equity	100.0%	103.8%	132.9%	154.0%	158.5%	130.2%	140.9%

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03
Current Ratio	1.15	1.13	1.17	1.10	1.08	1.08	1.13
Quick Ratio	0.93	0.92	1.09	1.03	0.99	1.00	0.99
CFO Ratio	0.06	0.05	-0.01	0.03	0.12	0.04	0.03
Avg. Collection Period (days)	83.00	88.95	109.40	102.58	104.40	97.86	100.75
Total Asset Turnover	2.35	2.16	1.87	1.99	1.79	1.81	1.93
Gross Profit Margin	6.21%	7.33%	7.74%	9.22%	10.41%	10.10%	12.88%
Operating Profit Margin	1.49%	2.09%	2.40%	2.61%	2.52%	2.05%	2.54%
Net Profit Margin	2.47%	2.54%	3.30%	2.56%	2.33%	1.22%	2.16%
ROA	5.80%	5.48%	6.16%	5.10%	4.18%	2.21%	4.17%
ROE	33.12%	34.86%	34.71%	29.28%	26.52%	13.94%	36.24%
Total Debt ratio	5.10	5.62	3.86	5.50	5.19	5.42	9.79
Debt Service ratio	5.11	6.10	6.62	2.72	3.16	1.82	2.30
CAPEX ratio	2.68	2.24	-0.26	0.86	2.98	1.88	0.84
Dividend Payout ratio	47.7%	49.7%	45.1%	52.5%	83.9%	273.1%	51.2%

Liquidity ratio

Activity ratio

Profitability ratio

Finance ratio

Market ratio

current asset/current liab

quick asset/current liab

CFO/current liab

365*ave acc. receiv/revenue

revenue/ave asset

gross income/revenue

op. income/revenue

net income before tax/revenue

net profit margin*asset turnover

net income before tax/ave.owners' equity

total liab/owners' equity

EBIT/interest expense

CFO/capital expenditure

dividend/net income after taxation

5) Revenue by Regions

Yr.	97	98	99	00	01	02	03
U.K.	2,010.3	2,066.2	1,738.8	1,873.5	1,927.3	2,107.5	2,109.6
Rest of Europe	714.3	600.5	584.3	676.0	831.9	845.7	1,379.6
Americas	460.9	501.7	576.2	1,174.8	1,305.5	1,069.0	749.3
Rest of World	185.4	224.4	201.5	255.7	402.8	309.4	474.2
Total (exclude JV)	3,370.9	3,392.8	3,100.8	3,980.0	4,467.5	4,331.6	4,712.7

b) As % of Total Revenue

Yr.

97

98

99

00

01

02

03

U.K.

Rest of Europe

Americas

Rest of World

Total (exclude JV)

59.6%

21.2%

13.7%

5.5%

100.0%

60.9%

17.7%

14.8%

5.5%

100.0%

43.1%

18.6%

29.2%

9.0%

100.0%

48.7%

19.5%

24.7%

7.1%

100.0%

44.8%

29.3%

15.9%

10.1%

100.0%

6) Revenue by Business Areas

Yr.	97	98	99	00	01	02	03
Capital Projects	2,383.2	2,172.5	2,226.1	2,475.3	2,657.8	2,410.7	2,153.7
Client Support Serv	778.9	859.8	850.4	1,356.7	1,765.2	1,781.1	2,517.3
Prop. Development & Proj. Investmt.	252.7	418.4	114.5	200.6	131.1	189.3	118.8
Internal Turnover	-43.9	-58.0	-90.2	-52.6	-86.6	-49.5	-77.1
Total (exclude JV)	3,370.9	3,392.8	3,100.8	3,980.0	4,467.5	4,331.6	4,712.7

b) As % of Total Revenue

Yr.

97

98

99

00

01

02

03

Capital Projects

Client Support Serv

Prop. Development & Proj.

Development &

70.7%

23.1%

7.5%

12.3%

64.0%

25.3%

71.8%

27.4%

59.5%

39.5%

55.7%

41.1%

62.2%

34.1%

5.0%

4.4%

45.7%

53.4%

2.5%

4. Ando Corporation

Ando (Consolidated)

A/C period ended: 31-Mar

1) Income Statement

a) As Reported (millions Yen)

Yr.	99	00	01	02	03
Revenue	261,013	213,552	225,093	244,149	226,841
COGS	241,171	197,435	211,258	231,776	213,577
Gross Income	19,842	16,117	13,835	12,373	13,264
Operating Expense	15,100	11,564	11,258	10,056	9,762
Operating Income	4,742	4,553	2,577	2,317	3,502
EBIT	4,100	2,906	-456	-2,702	2,032
Interest expense	1,541	1,187	1,293	1,153	1,005
Net Income before taxation	3,047	2,078	-1,390	-3,572	1,248
N.I. after tax & minor. int.	658	693	-1,297	-2,379	297
Dividend	598	598	427	427	424

Note:

Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (millions Yen)

Yr.	99	00	01	02	03
A/C Receivable	75,325	67,665	56,467	63,459	67,971
Quick Asset	115,366	99,660	83,418	86,290	84,083
Current Asset	197,082	160,130	150,397	129,599	115,164
Total Asset	238,870	212,078	214,440	188,413	167,754
Current Liability	158,427	143,603	138,923	123,549	101,224
Long-term Debt	33,393	27,639	28,319	27,115	32,588
Total Liability	201,092	182,565	182,145	162,512	143,507
Owners' Equity	37,778	29,513	32,295	25,901	24,247

b) As % of 1999 level

Yr.	99	00	01	02	03
Revenue	100.0%	81.8%	86.2%	93.5%	86.9%
COGS	100.0%	81.9%	87.6%	96.1%	88.6%
Gross Income	100.0%	81.2%	69.7%	62.4%	66.8%
Operating Expense	100.0%	76.6%	74.6%	66.6%	64.6%
Operating Income	100.0%	96.0%	54.3%	48.9%	73.9%
EBIT	100.0%	70.9%	-11.1%	-65.9%	49.6%
Interest expense	100.0%	77.0%	83.9%	74.8%	65.2%
Net Income before taxation	100.0%	68.2%	-45.6%	-117.2%	41.0%
N.I. after tax & minor. int.	100.0%	105.3%	-197.1%	-361.6%	45.1%
Dividend	100.0%	100.0%	71.4%	71.4%	70.9%

b) As % of 1999 level

Yr.	99	00	01	02	03
A/C Receivable	100.0%	89.8%	75.0%	84.2%	90.2%
Quick Asset	100.0%	86.4%	72.3%	74.8%	72.9%
Current Asset	100.0%	81.3%	76.3%	65.8%	58.4%
Total Asset	100.0%	88.8%	89.8%	78.9%	70.2%
Current Liability	100.0%	90.6%	87.7%	78.0%	63.9%
Long-term Debt	100.0%	82.8%	84.8%	81.2%	97.6%
Total Liability	100.0%	90.8%	90.6%	80.8%	71.4%
Owners' Equity	100.0%	78.1%	85.5%	68.6%	64.2%

3) Cash Flow Profile (millions Yen)

Yr.	99	00	01	02	03
Net CFO		11,691	13,889	8,298	-16,398
Net CFI		8,082	16,936	1,862	8,050
Cap. Expenditure		1,831	1,711	1,258	744
Corp. Fin. Gap		19,773	30,825	10,160	-8,348

4) Key Financial Ratios

Yr.	99	00	01	02	03	
Current Ratio	1.24	1.12	1.08	1.05	1.14	Liquidity ratio
Quick Ratio	0.73	0.69	0.60	0.70	0.83	
CFO Ratio	0.00	0.08	0.10	0.07	-0.16	
Avg. Collection Period (days)	N.A.	122.20	100.64	89.64	105.74	Activity ratio
Total Asset Turnover	N.A.	0.95	1.06	1.21	1.27	
Gross Profit Margin	7.60%	7.55%	6.15%	5.07%	5.85%	Profitability ratio
Operating Profit Margin	1.82%	2.13%	1.14%	0.95%	1.54%	
Net Profit Margin	1.17%	0.97%	-0.62%	-1.46%	0.55%	
ROA	N.A.	0.92%	-0.65%	-1.77%	0.70%	
ROE	N.A.	6.18%	-4.50%	-12.28%	4.98%	Finance ratio
Total Debt ratio	5.32	6.19	5.64	6.27	5.92	
Debt Service ratio	2.66	2.45	-0.35	-2.34	2.02	
CAPEX ratio	N.A.	6.39	8.12	6.60	-22.04	
Dividend Payout ratio	90.9%	86.3%	-32.9%	-17.9%	142.8%	Market ratio

current asset/current liab

quick asset/current liab

CFO/current liab

365*ave acc. receiv/revenue

revenue/ave. asset

gross income/revenue

op. income/revenue

net income before tax/revenue

net profit margin*asset turnover

net income before tax/ave.owners' equity

total liab/owners' equity

EBIT/interest expense

CFO/capital expenditure

dividend/net income after taxation

5. Astaldi

A/C period ended: 31-Dec

Astaldi (Consolidated)

1) Income Statement

a) As Reported (Euro)

Yr.	99	00	01	02	03
Revenue	736,509,256	738,464,980	747,673,932	766,709,869	878,166,287
COGS	610,209,097	581,264,901	604,423,879	678,084,087	763,563,309
Gross Income	126,300,160	157,200,079	143,250,053	88,625,782	114,602,978
Operating Expense	166,835,496	153,382,445	120,323,710	81,148,980	76,320,952
Operating Income	-40,535,337	3,817,634	22,926,343	7,476,802	38,282,016
EBIT	42,060,352	41,058,093	54,905,957	51,284,363	54,976,022
Interest expense	42,527,207	36,340,456	42,500,597	45,506,490	51,167,336
Net Income before taxation	17,274,531	22,434,795	28,867,659	26,212,126	29,035,681
N.I. after tax & minor. Int.	10,666,281	11,499,677	30,026,685	15,069,862	22,394,581
Dividend	560,000	904,000	633,000	4,816,000	

Note:
Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (Euro)

Yr.	99	00	01	02	03
A/C Receivable	195,199,336	214,415,628	211,240,234	235,504,776	276,245,199
Quick Asset	580,745,000	569,564,223	615,341,111	603,831,248	608,431,487
Current Asset	838,583,000	863,000,802	840,434,533	865,800,337	846,209,657
Total Asset	1,000,061,000	1,054,577,438	1,015,206,553	1,112,554,364	1,142,145,928
Current Liability	613,861,000	570,410,948	581,805,598	519,659,162	453,973,189
Long-term Debt	88,682,000	238,993,693	159,400,595	273,270,310	373,039,263
Total Liability	896,606,000	925,349,918	867,117,531	890,243,279	914,865,437
Owners' Equity	103,455,000	129,227,520	148,089,022	222,311,085	227,280,491

3) Cash Flow Profile (Euro)

Yr.	99	00	01	02	03
Net CFO	-36,207,000	-42,521,000	56,378,000	11,510,000	32,860,000
Net CFI	24,006,000	-51,843,000	20,212,000	-96,825,000	-55,519,000
Cap. Expenditure	17,591,000	41,355,000	12,794,000	60,079,000	40,186,000
Corp. Fin. Gap	-12,199,000	-94,364,000	76,590,000	-85,315,000	-22,659,000

4) Key Financial Ratios

Yr.	1999	2000	2001	2002	2003
Current Ratio	1.37	1.51	1.44	1.67	1.86
Quick Ratio	0.95	1.00	1.06	1.16	1.34
CFO Ratio	-0.06	-0.07	0.10	0.02	0.07
Avg. Collection Period (days)	N.A.	101.23	103.90	106.34	106.35
Total Asset Turnover	N.A.	0.72	0.72	0.72	0.78
Gross Profit Margin	17.15%	21.29%	19.16%	11.56%	13.05%
Operating Profit Margin	-5.50%	0.52%	3.07%	0.98%	4.36%
Net Profit Margin	2.35%	3.04%	3.86%	3.42%	3.31%
ROA	N.A.	2.18%	2.79%	2.46%	2.58%
ROE	N.A.	19.28%	20.82%	14.15%	12.92%
Total Debt ratio	8.67	7.16	5.86	4.00	4.03
Debt Service ratio	0.99	1.13	1.29	1.13	1.07
CAPEX ratio	-2.06	-1.03	4.41	0.19	0.82
Dividend Payout ratio	5.3%	7.9%	2.1%	30.6%	0.0%

Liquidity ratio	current asset/current liab
Activity ratio	quick asset/current liab
Profitability ratio	CFO/current liab
Finance ratio	365*ave acc. receiv/revenue
Market ratio	revenue/ave asset
	gross income/revenue
	op. income/revenue
	net income before tax/revenue
	net profit margin*asset turnover
	net income before tax/ave.owners' equity
	total liab/owners' equity
	EBIT/interest expense
	CFO/capital expenditure
	dividend/net income after taxation

5) Revenue by Regions

a) As Reported (thousands Euro)

Yr.	99	00	01	02	03
Italy	421,368	417,390	386,160	338,919	425,444
Rest of Europe	71,194	91,380	91,310	131,210	91,533
America	139,937	144,540	190,040	208,779	288,025
Africa	54,321	56,110	66,410	78,510	74,104
Asia	9,581	9,900	0	0	11,039
Total	696,400	719,320	733,920	757,418	870,145

b) As % of Total Revenue

Yr.	99	00	01	02	03
Italy	60.5%	58.0%	52.6%	44.7%	48.9%
Rest of Europe	10.2%	12.7%	12.4%	17.3%	10.5%
America	20.1%	20.1%	25.9%	27.6%	30.8%
Africa	7.8%	7.8%	9.0%	10.4%	8.5%
Asia	1.4%	1.4%	0.0%	0.0%	1.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

6) Revenue by Business Areas

a) As Reported (thousands Euro)

Yr.	99	00	01	02	03
Transport Infrastruc.	588,440	621,800	643,908	608,030	608,030
Hydraulic works &	88,360	82,020	49,510	114,974	114,974
Energy prod. plant	42,530	30,100	64,000	147,141	147,141
Civil & Ind. Constr.	719,330	733,920	757,418	870,145	870,145
Total	1,418,660	1,468,840	1,514,836	1,740,289	1,740,289

b) As % of Total Revenue

Yr.	99	00	01	02	03
Transport Infrastruc.	81.8%	84.7%	84.7%	85.0%	69.9%
Hydraulic works &	12.3%	11.2%	11.2%	6.5%	13.2%
Energy prod. plant	5.9%	4.1%	4.1%	8.4%	16.9%
Civil & Ind. Constr.	100.0%	100.0%	100.0%	100.0%	100.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

6. Balfour Beatty

Balfour Beatty (Consolidated) A/C period ended: 31-Dec

1) Income Statement

Yr.	99	00	01	02	03	Yr.	99	00	01	02	03
a) As Reported (£ millions)						b) As % of 1999 level					
Revenue	2,070	2,305	2,731	3,100	3,161	Revenue	100.0%	111.4%	131.9%	149.8%	152.7%
COGS	2,357	2,114	2,479	2,816	2,847	COGS	100.0%	89.7%	105.2%	119.5%	120.8%
Gross Income	-287	191	252	284	314	Gross Income	100.0%	-66.6%	-87.8%	-99.0%	-109.4%
Operating Expense	249	171	193	226	243	Operating Expense	100.0%	68.7%	77.5%	90.8%	97.6%
Operating Income	-536	20	59	58	71	Operating Income	100.0%	-3.7%	-11.0%	-10.8%	-13.2%
EBIT	-344	122	136	119	149	EBIT	100.0%	-35.5%	-40.1%	-34.6%	-43.3%
Interest expense	22	4	7	13	12	Interest expense	100.0%	18.2%	31.8%	59.1%	54.5%
Net Income before taxation	-383	94	104	88	118	Net Income before taxation	100.0%	-24.5%	-27.2%	-23.0%	-30.8%
N.I. after tax & minor. Int.	-378	71	77	53	89	N.I. after tax & minor. Int.	100.0%	-18.8%	-20.4%	-14.0%	-23.5%
Dividend	17	19	21	22	25	Dividend	100.0%	111.8%	123.5%	129.4%	147.1%

Note:

Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

Yr.	99	00	01	02	03	Yr.	99	00	01	02	03
a) As Reported (£ millions)						b) As % of 1999 level					
A/C Receivable	512	524	654	686	723	A/C Receivable	100.0%	102.3%	127.7%	134.0%	141.2%
Quick Asset	713	746	840	878	961	Quick Asset	100.0%	104.6%	117.8%	123.1%	134.8%
Current Asset	794	827	926	976	1,059	Current Asset	100.0%	104.2%	116.6%	122.9%	133.4%
Total Asset	1,119	1,302	1,505	1,597	1,755	Total Asset	100.0%	116.4%	134.5%	142.7%	156.8%
Current Liability	885	998	1,093	1,158	1,203	Current Liability	100.0%	112.8%	123.5%	130.8%	135.9%
Long-term Debt	67	65	125	136	166	Long-term Debt	100.0%	97.0%	186.6%	203.0%	247.8%
Total Liability	1,036	1,145	1,317	1,404	1,525	Total Liability	100.0%	110.5%	127.1%	135.5%	147.2%
Owners' Equity	83	157	188	193	230	Owners' Equity	100.0%	189.2%	226.5%	232.5%	277.1%

3) Cash Flow Profile (£ millions)

Yr.	99	00	01	02	03
Net CFO					
Net CFI					
Cap. Expenditure					
Corp. Fin. Gap					

(not a typical cash flow statement)

4) Key Financial Ratios									
Yr.	99	00	01	02	03				
Current Ratio	0.90	0.83	0.85	0.84	0.88				
Quick Ratio	0.81	0.75	0.77	0.76	0.80				
CFO Ratio	-	-	-	-	-				
Avg. Collection Period (days)	-	82.03	78.72	78.89	81.35				
Total Asset Turnover	1.42	1.90	1.95	2.00	1.89				
Gross Profit Margin	-13.86%	8.29%	9.23%	9.16%	9.93%				
Operating Profit Margin	-25.89%	0.87%	2.16%	1.87%	2.25%				
Net Profit Margin	-18.50%	4.08%	3.81%	2.84%	3.73%				
ROA	-26.27%	7.77%	7.41%	5.67%	7.04%				
ROE	-271.63%	78.33%	60.29%	46.19%	55.79%				
Total Debt ratio	12.48	7.29	7.01	7.27	6.63				
Debt Service ratio	-15.64	30.50	19.71	9.15	12.42				
CAPEX ratio	-	-	-	-	-				
Dividend Payout ratio	-4.5%	26.8%	27.3%	41.5%	28.1%				

5) Revenue by Regions									
a) As Reported (£ millions)									
Yr.	99	00	01	02	03				
UK	1,858	1,866	2,144	2,441	2,749				
Rest of Europe	233	94	164	232	268				
North America	520	452	571	587	476				
Others	293	191	192	181	185				
Total	2,904	2,603	3,071	3,441	3,678				

b) As % of Total Revenue									
Yr.	99	00	01	02	03				
UK	64.0%	71.7%	69.8%	70.9%	74.7%				
Rest of Europe	8.0%	3.6%	5.3%	6.7%	7.3%				
North America	17.9%	17.4%	18.6%	17.1%	12.9%				
Others	10.1%	7.3%	6.3%	5.3%	5.0%				
Total	100.0%	100.0%	100.0%	100.0%	100.0%				

6) Revenue by Business Areas									
a) As Reported (£ millions)									
Yr.	99	00	01	02	03				
Building, Building Mgmt & Services	923	1,017	1,074	1,123	1,196				
Civil & Specialist Eng. & Services	922	1,011	1,150	1,347	1,393				
Rail Engineering & Services	351	439	698	838	873				
Investment & Developments	114	99	135	133	216				
Total	2,310	2,566	3,057	3,441	3,678				

b) As % of Total Revenue									
Yr.	99	00	01	02	03				
Building, Building Mgmt & Services	40.0%	39.6%	35.1%	32.6%	32.5%				
Civil & Specialist Eng. & Services	39.9%	39.4%	37.6%	39.1%	37.9%				
Rail Engineering & Services	15.2%	17.1%	22.8%	24.4%	23.7%				
Investment & Developments	4.9%	3.9%	4.4%	3.9%	5.9%				
Total	100.0%	100.0%	100.0%	100.0%	100.0%				

Notes:
1. The total amounts include share of joint ventures and associates as well.
2. Discontinued revenues are not shown.

7. Ballast Nedam

Ballast Nedam (Consolidated)

A/C period ended: 31-Dec

1) Income Statement

a) As Reported (million Euros)

Yn	97	98	99	00	01	02	03
Revenue	1,956	2,067	2,009	2,108	2,326	2,307	1,619
COGS	1,631	1,712	1,678	1,723	1,991	2,082	1,256
Gross Income	324	356	331	385	335	225	363
Operating Expense	273	296	313	339	358	370	363
Operating Income	51	60	18	45	-23	-145	0
EBIT	51	60	18	45	-23	-122	0
Interest expense	6	12	13	18	15	16	6
Net income before taxation	49	52	11	34	-32	-135	-6
N.I. after tax & minor. Int.	46	48	9	22	-50	-143	46
Dividend	23	23	11	11	11	11	0

Note: Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (million Euros)

Yn	97	98	99	00	01	02	03
A/C Receivable	259	393	507	573	485	364	234
Quick Asset	347	422	522	653	599	502	393
Current Asset	468	520	573	707	652	533	342
Total Asset	758	818	862	1,062	1,079	757	555
Current Liability	374	428	468	612	699	615	362
Long-term Debt	37	34	30	66	39	39	27
Total Liability	434	486	527	719	803	696	448
Owners' Equity	324	333	336	343	276	61	107
with convertible loan	91	88	84	120	93	93	81
total liab.	465	516	552	732	792	708	443

3) Cash Flow Profile (millions Euros)

Yn	97	98	99	00	01	02	03
Net CFO	24	-8	70	110	242	-94	16
Net CFI	-49	-64	-41	-108	-119	172	7
Cap. Expenditure	67	62	43	108	276	60	16
Corp. Fin. Gap	-25	-72	29	1	123	78	23

b) As % of 1997 level

Yn	97	98	99	00	01	02	03
Revenue	100.0%	105.7%	102.7%	107.8%	118.9%	118.0%	82.8%
COGS	100.0%	104.9%	102.9%	105.6%	122.1%	127.6%	77.0%
Gross Income	100.0%	109.6%	102.0%	118.6%	103.3%	69.4%	111.9%
Operating Expense	100.0%	108.4%	114.6%	124.3%	131.2%	135.6%	133.0%
Operating Income	100.0%	116.0%	35.4%	88.2%	-44.7%	-281.9%	0.0%
EBIT	100.0%	117.6%	35.3%	88.2%	-45.1%	-239.2%	0.0%
Interest expense	100.0%	201.0%	220.2%	310.6%	254.4%	271.4%	101.8%
Net Income before taxation	100.0%	105.8%	21.7%	70.5%	-65.4%	-275.7%	-12.3%
N.I. after tax & minor. Int.	100.0%	104.8%	20.6%	49.3%	-109.8%	-314.2%	101.1%
Dividend	100.0%	100.0%	49.8%	49.8%	48.5%	48.5%	0.0%

b) As % of 1997 level

Yn	97	98	99	00	01	02	03
A/C Receivable	100.0%	151.7%	195.7%	220.9%	187.1%	140.4%	90.3%
Quick Asset	100.0%	121.5%	150.4%	188.0%	172.5%	144.5%	113.1%
Current Asset	100.0%	111.2%	122.5%	151.1%	139.3%	113.8%	73.0%
Total Asset	100.0%	107.9%	113.7%	140.1%	142.3%	99.8%	73.2%
Current Liability	100.0%	114.4%	125.1%	163.6%	186.9%	164.4%	96.8%
Long-term Debt	100.0%	90.4%	80.1%	176.4%	104.3%	104.3%	72.2%
Total Liability	100.0%	111.9%	121.3%	165.5%	185.0%	160.3%	103.2%
Owners' Equity	100.0%	102.6%	103.6%	105.9%	85.2%	18.8%	33.0%

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03
Current Ratio	1.25	1.22	1.23	1.16	0.93	0.87	0.94
Quick Ratio	0.93	0.99	1.12	1.07	0.86	0.82	1.09
CFO Ratio	0.06	-0.02	0.15	0.18	0.35	-0.15	0.04
Avg. Collection Period (days)	46.58	57.59	81.82	93.51	82.98	67.16	67.41
Total Asset Turnover	2.71	2.62	2.39	2.19	2.17	2.51	2.47
Gross Profit Margin	16.59%	17.20%	16.47%	18.25%	14.40%	9.75%	22.42%
Operating Profit Margin	2.63%	2.89%	0.91%	2.15%	-0.99%	-6.29%	0.00%
Net Profit Margin	2.50%	2.50%	0.53%	1.64%	-1.38%	-5.65%	-0.37%
ROA	6.79%	6.57%	1.27%	3.59%	-2.99%	-14.71%	-0.91%
ROE	16.92%	15.78%	3.19%	10.16%	-10.34%	-80.12%	-7.14%
Total Debt ratio	1.34	1.46	1.57	2.09	2.91	11.41	4.19
Debt Service ratio	8.65	5.06	1.39	2.46	-1.53	-7.63	0.00
CAPEX ratio	0.35	-0.12	1.62	1.02	0.88	-1.57	1.00
Dividend Payout ratio	49.9%	47.6%	120.3%	50.4%	-22.0%	-7.7%	0.0%

current asset/current liab
quick asset/current liab
CFO/current liab
365*ave acc. receiv/revenue
revenue/ave asset
gross income/revenue
op. income/revenue
net income before tax/revenue
net profit margin*asset turnover
net income before tax/ave owners' equity
total liab/owners' equity
EBIT/interest expense
CFO/capital expenditure
dividend/net income after taxation

Liquidity ratio
Activity ratio
Profitability ratio
Finance ratio
Market ratio

5) Revenue by Regions

a) As Reported (millions Euros)

Yr.	97	98	99	00	01	02	03
Netherlands	831	863	1,061	1,083	1,267	1,242	1,132
UK	401	453	572	632	597	591	275
Other European	128	91	56	54	60	80	43
Middle East	369	360	122	125	76	72	14
S.E. Asia	86	127	65	90	201	232	103
Others	141	154	122	114	125	100	52
Total	1,956	2,067	1,998	2,098	2,326	2,307	1,619

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Netherlands	42.5%	41.7%	53.1%	51.6%	54.5%	53.8%	69.9%
UK	20.5%	21.9%	28.6%	30.1%	25.7%	25.2%	17.0%
Other European	6.5%	4.4%	2.8%	2.6%	2.6%	3.5%	2.7%
Middle East	18.9%	18.4%	6.1%	6.0%	3.3%	3.1%	0.9%
S.E. Asia	4.4%	6.1%	3.2%	4.3%	8.6%	10.1%	6.4%
Others	7.2%	7.5%	6.1%	5.4%	5.4%	4.3%	3.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

6) Revenue by Business Areas

a) As Reported (millions Euro)

Yr.	97	1998	1999	2000	2001	2002	2003
Infrastructure Neth.		368	367	474	481	456	456
Build. & Dev. Neth.		488	514	540	498	509	509
Construction UK		452	570	629	582	588	264
Construction Int'l		523	265	270	320	329	216
Dredging		211	127	147	206	220	0
Industry & Supply		156	178	168	202	207	184
Others		2	3	2	4	-10	-10
Total		1,998	2,098	2,326	2,307	1,619	1,619

Note:

Prior to 1999, the business areas were divided into only Construction Europe, Construction Int'l, and Infrastructure.

8. Bilfinger Berger

Bilfinger Berger (Consolidated) A/C period ended: 31-Dec

1) Income Statement

a) As Reported (million Euros)

Yr.	97	98	99	00	01	02	03
Revenue	4,173.6	3,524.4	3,770.2	3,653.2	3,645.0	3,885.7	4,592.1
COGS	2,920.0	2,457.6	2,572.2	2,544.4	2,489.0	2,485.6	2,820.8
Gross Income	1,253.6	1,066.8	1,198.0	1,108.8	1,156.0	1,400.1	1,771.3
Operating Expense	1,022.8	949.6	943.7	903.2	921.0	1,088.9	1,393.2
Operating Income	230.8	117.2	254.3	205.6	235.0	311.2	378.1
EBIT	-26.2	-85.9	-0.7	9.6	34.8	105.1	136.7
Interest expense	18.8	19.3	20.8	23.8	27.6	29.4	30.9
Net Income before taxation	34.3	-41.8	29.8	61.6	70.7	121.6	133.9
N.I. after tax & minor. int.	20.8	-46.4	22.0	43.4	52.4	114.7	125.9
Dividend	18.5	14.8	14.8	15.0	20.0	36.4	47.7

Note:

Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (million Euros)

Yr.	97	98	99	00	01	02	03
A/C Receivable	326.3	335.9	349.7	509.8	587.9	795.2	710.0
Quick Asset	2,010.2	1,901.8	1,832.0	1,821.8	2,006.4	1,963.0	1,995.3
Current Asset	2,477.9	2,286.9	2,361.0	2,230.1	2,411.8	2,375.0	2,365.9
Total Asset	3,054.5	2,863.7	3,075.3	3,076.5	3,310.6	3,632.8	3,483.3
Current Liability	1,415.3	1,384.6	1,428.4	1,308.1	1,358.4	1,708.7	1,563.5
Long-term Debt	51.8	22.4	222.2	238.8	258.1	206.1	183.0
Total Liability	2,346.1	2,225.6	2,441.8	2,173.1	2,197.6	2,600.5	2,347.2
Owners' Equity	708.4	638.1	633.5	903.4	1,113.0	1,032.3	1,136.1

3) Cash Flow Profile (millions Euros)

Yr.	97	98	99	00	01	02	03
Net CFO	42.3	-15.2	103.3	42.5	34.9	74.2	30.1
Net CFI	-77.8	-80.0	-209.0	-53.3	-91.3	-38.2	328.4
Cap. Expenditure	105.6	93.5	248.8	84.7	94.9	93.8	94.3
Corp. Fin. Gap	-35.6	-95.2	-105.7	-10.8	-56.4	36.0	358.5

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
Revenue	100.0%	84.4%	90.3%	87.5%	87.3%	93.1%	110.0%
COGS	100.0%	84.2%	88.1%	87.1%	85.2%	85.1%	96.6%
Gross Income	100.0%	85.1%	95.6%	88.4%	92.2%	111.7%	141.3%
Operating Expense	100.0%	92.8%	92.3%	88.3%	90.0%	106.5%	136.2%
Operating Income	100.0%	50.8%	110.2%	89.1%	101.8%	134.8%	163.8%
EBIT	100.0%	327.8%	2.8%	-36.6%	-132.8%	-401.2%	-521.8%
Interest expense	100.0%	102.5%	110.4%	126.3%	146.5%	156.1%	164.0%
Net Income before taxation	100.0%	-121.7%	86.8%	179.4%	205.9%	354.1%	389.9%
N.I. after tax & minor. int.	100.0%	-223.2%	105.8%	208.8%	252.1%	551.7%	605.6%
Dividend	100.0%	80.0%	80.0%	80.9%	107.9%	196.5%	257.8%

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
A/C Receivable	100.0%	102.9%	107.2%	156.2%	180.2%	243.7%	217.6%
Quick Asset	100.0%	94.6%	91.1%	90.6%	99.8%	97.7%	99.3%
Current Asset	100.0%	92.3%	95.3%	90.0%	97.3%	95.8%	95.5%
Total Asset	100.0%	93.8%	100.7%	100.7%	108.4%	118.9%	114.0%
Current Liability	100.0%	97.8%	100.9%	92.4%	96.0%	120.7%	110.5%
Long-term Debt	100.0%	43.3%	429.2%	461.3%	498.6%	398.1%	353.5%
Total Liability	100.0%	94.9%	104.1%	92.6%	93.7%	110.8%	100.0%
Owners' Equity	100.0%	90.1%	89.4%	127.5%	157.1%	145.7%	160.4%

4) Key Financial Ratios

Yr.	1997	1998	1999	2000	2001	2002	2003
Current Ratio	1.75	1.65	1.65	1.70	1.78	1.39	1.51
Quick Ratio	1.42	1.37	1.28	1.39	1.48	1.15	1.28
CFO Ratio	0.03	-0.01	0.07	0.03	0.03	0.04	0.02
Avg. Collection Period (days)	27.38	34.29	33.19	42.94	54.96	64.96	59.82
Total Asset Turnover	1.33	1.19	1.27	1.19	1.14	1.12	1.29
Gross Profit Margin	30.04%	30.27%	31.78%	30.35%	31.71%	36.03%	38.57%
Operating Profit Margin	5.53%	3.32%	6.75%	5.63%	6.45%	8.01%	8.23%
Net Profit Margin	0.82%	-1.19%	0.79%	1.69%	1.94%	3.13%	2.92%
ROA	1.09%	-1.41%	1.00%	2.00%	2.21%	3.50%	3.76%
ROE	4.84%	-6.21%	4.69%	8.02%	7.01%	11.34%	12.35%
Total Debt ratio	3.31	3.49	3.85	2.41	1.97	2.52	2.07
Debt Service ratio	-1.39	-4.45	-0.03	0.40	1.26	3.57	4.42
CAPEX ratio	0.40	-0.16	0.42	0.50	0.37	0.79	0.32
Dividend Payout ratio	89.0%	-31.9%	67.3%	34.5%	38.1%	31.7%	37.9%

Liquidity ratio

Activity ratio

Profitability ratio

Finance ratio

Market ratio

current asset/current liab

quick asset/current liab

CFO/current liab

365*ave acc. receiv./revenue

revenue/ave asset

gross income/revenue

op. income/revenue

net income before tax/revenue

net profit margin*asset turnover

net income before tax/ave.owners' equity

total liab/owners' equity

EBIT/interest expense

CFO/capital expenditure

dividend/net income after taxation

5) Revenue by Regions

a) As Reported (millions Euros)

Yr.	97	98	99	00	01	02	03
Germany	2,372.9	2,097.4	2,068.7	1,842.0	1,874.0	2,060.0	2,458.0
Rest of Europe	433.6	360.5	401.4	450.0	543.0	801.0	1,146.0
America	422.8	548.6	538.4	588.0	600.0	586.0	493.0
Africa	431.0	521.5	499.5	596.0	794.0	646.0	613.0
Asia	583.1	550.7	371.7	286.0	251.0	363.0	270.0
Australia	575.2	677.0	706.6	665.0	545.0	458.0	606.0
Total	4,918.7	4,755.6	4,586.4	4,437.0	4,607.0	4,912.0	5,586.0

6) Revenue by Business Areas

a) As Reported (millions Euro)

Yr.	97	98	99	00	01	02	03
Civil	4,247.9	4,147.7	4,149.0	4,282.0	1,991.0	2,036.0	1,920.0
Building & Industrial	183.0	180.5	204.0	288.0	247.0	231.0	1,363.0
Project Dev. & Concessions	288.9	284.8	217.0	200.0	187.0	181.0	181.0
Services	115.6	93.1	0.0	0.0	0.0	0.0	0.0
Environmental	-79.8	-119.6	-133.0	-163.0	-167.0	-145.0	-145.0
Construction Mat.	4,755.6	4,586.4	4,437.0	4,607.0	4,912.0	5,586.0	5,586.0
Consolidation/other							
Total							

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Germany	48.2%	44.1%	45.1%	41.5%	40.7%	41.9%	44.0%
Rest of Europe	8.8%	7.6%	8.8%	10.1%	11.8%	16.3%	20.5%
America	8.6%	11.5%	11.7%	13.3%	13.0%	11.9%	8.8%
Africa	8.8%	11.0%	10.9%	13.4%	17.2%	13.2%	11.0%
Asia	13.9%	11.6%	8.1%	6.7%	5.4%	7.4%	4.8%
Australia	11.7%	14.2%	15.4%	15.0%	11.8%	9.3%	10.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	51.8%	55.9%	54.9%	58.5%	59.3%	58.1%	56.0%

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Civil	89.3%	89.3%	90.4%	93.5%	92.9%	40.5%	36.4%
Building & Industrial						39.8%	34.4%
Project Dev. & Concessions		3.8%	3.9%	4.6%	6.3%	5.0%	4.1%
Services		0.0%	0.0%	0.0%	0.0%	14.2%	24.4%
Environmental		6.1%	6.2%	4.9%	4.3%	3.8%	3.2%
Construction Mat.		2.4%	2.0%	0.0%	0.0%	0.0%	0.0%
Consolidation/other		-1.7%	-2.6%	-3.0%	-3.5%	-3.4%	-2.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

9. Bouygues

Bouygues (Consolidated) A/C period ended: 31-Dec

1) Income Statement

a) As Reported (million Euros)	97	98	99	00	01	02	03
Revenue	14,597	15,388	16,801	20,604	21,611	23,496	22,926
COGS	3,151	3,238	3,373	4,210	4,505	4,836	4,888
Gross Income	11,446	12,150	13,428	16,394	17,106	18,660	18,038
Operating Expense	11,115	11,771	13,003	15,640	16,290	17,679	16,858
Operating Income	331	379	425	754	816	981	1,180
EBIT	389	482	448	827	949	1,436	1,182
Interest expense	79	112	133	138	191	292	270
Net income before taxation	436	430	335	612	800	1,145	1,006
N.I. after tax & minor. Int.	115	81	62	421	344	666	450

Note:

1. Taxation effect is consistently not included except dividend payout ratio.

2. Goodwill effect is shown in N.I. after tax and minority interest.

2) Balance Sheet

a) As Reported (million Euros)	97	98	99	00	01	02	03
A/C Receivable	3,640	3,838	4,824	8,123	6,445	5,865	5,972
Quick Asset	6,113	6,186	7,450	10,013	10,364	9,368	10,097
Current Asset	7,892	7,752	9,960	12,802	13,236	12,426	13,086
Total Asset	12,434	12,877	16,643	21,183	22,511	24,783	25,069
Current Liability	7,149	7,548	9,257	10,985	12,018	11,697	11,821
Long-term Debt	1,846	1,811	2,841	3,028	3,081	4,825	5,160
Total Liability	10,533	10,879	13,607	16,015	17,008	18,404	18,877
Owners' Equity	1,901	1,998	3,036	5,168	5,503	6,379	6,192

3) Cash Flow Profile (millions Euros)

	97	98	99	00	01	02	03
Net CFO	641	937	704	1,382	1,461	2,151	2,312
Net CFI	-963	-991	-1,850	-1,930	-1,583	-2,800	-1,653
Cap. Expenditure	706	792	922	1,358	1,288	1,946	1,133
Corp. Fin. Gap	-322	-54	-1,146	-548	-122	-649	659

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
Revenue	100.0%	105.4%	115.1%	141.2%	148.1%	161.0%	157.1%
COGS	100.0%	102.8%	107.0%	133.6%	143.0%	153.5%	155.1%
Gross Income	100.0%	106.2%	117.3%	143.2%	149.4%	163.0%	157.6%
Operating Expense	100.0%	105.9%	117.0%	140.7%	146.6%	159.1%	151.7%
Operating Income	100.0%	114.5%	128.4%	227.8%	246.5%	296.4%	356.5%
EBIT	100.0%	123.9%	115.2%	212.6%	244.0%	369.2%	303.9%
Interest expense	100.0%	141.8%	168.4%	174.7%	241.8%	369.6%	341.8%
Net Income before taxation	100.0%	98.6%	76.8%	186.2%	183.5%	262.6%	230.7%
N.I. after tax & minor. Int.	100.0%	70.4%	53.9%	366.1%	299.1%	579.1%	391.3%

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
A/C Receivable	100.0%	105.4%	132.5%	168.2%	177.1%	161.1%	164.1%
Quick Asset	100.0%	101.2%	121.9%	163.8%	169.5%	153.2%	165.2%
Current Asset	100.0%	100.8%	129.5%	166.4%	172.1%	161.5%	170.1%
Total Asset	100.0%	103.6%	133.9%	170.4%	181.0%	199.3%	201.6%
Current Liability	100.0%	105.6%	129.5%	153.7%	168.1%	163.6%	165.4%
Long-term Debt	100.0%	98.1%	143.1%	164.0%	166.9%	261.4%	279.5%
Total Liability	100.0%	103.3%	129.2%	152.0%	161.5%	174.7%	179.2%
Owners' Equity	100.0%	105.1%	159.7%	271.9%	289.5%	335.6%	325.7%

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03	
Current Ratio	1.08	1.03	1.08	1.17	1.10	1.06	1.11	Liquidity ratio
Quick Ratio	0.86	0.82	0.80	0.91	0.86	0.80	0.85	
CFO Ratio	0.09	0.12	0.08	0.13	0.12	0.18	0.20	
Avg. Collection Period (days)	75.58	88.69	94.09	96.96	106.13	95.62	94.23	Activity ratio
Total Asset Turnover	1.24	1.22	1.14	1.09	0.99	0.99	0.92	
Gross Profit Margin	78.41%	78.96%	79.92%	79.57%	79.15%	79.42%	78.68%	Profitability ratio
Operating Profit Margin	2.27%	2.46%	2.53%	3.66%	3.78%	4.18%	5.15%	
Net Profit Margin	2.99%	2.79%	1.99%	3.94%	3.70%	4.87%	4.39%	
ROA	3.72%	3.40%	2.27%	4.29%	3.66%	4.84%	4.04%	
ROE	29.32%	22.06%	13.31%	19.80%	14.99%	19.27%	16.01%	
Total Debt ratio	5.54	5.44	4.48	3.10	3.09	2.89	3.05	Finance ratio
Debt Service ratio	4.92	4.30	3.37	5.99	4.97	4.92	4.38	
CAPEX ratio	0.91	1.18	0.76	1.02	1.13	1.11	2.04	
Dividend Payout ratio		97.1%	190.9%	25.0%	52.2%	101.4%	76.0%	Market ratio

Note:

Dividend payout ratio is calculated by dividing dividend with parent company net income.

5) Revenue by Regions**a) As Reported (millions Euros)**

Yr.	97	98	99	00	01	02	03
France	8,924.1	9,465.0	10,072.9	11,998.3	12,866.0	15,052.0	15,712.0
Rest of Europe	1,807.8	2,122.4	2,237.6	2,926.3	3,284.0	3,269.0	2,820.0
Africa	1,419.8	1,350.2	1,511.5	1,472.7	1,569.0	1,574.0	1,214.0
America	626.0	940.0	1,134.0	1,542.0	1,875.0	1,848.0	1,626.0
Asia Pacific	1,061.7	815.5	761.7	1,029.4	847.0	460.0	425.0
Middle East	45.7	96.8	140.1	91.8	32.0	44.0	25.0
Total	13,885	14,790	15,858	19,062	20,473	22,247	21,822

6) Revenue by Business Areas**a) As Reported (millions Euro)**

Yr.	97	98	99	00	01	02	03
Telecoms-Media	1,631.5	1,840.5	2,384.1	3,301.7	3,711.0	5,540.0	5,998.0
Services	2,073.0	2,132.6	2,273.8	2,388.3	2,487.0	2,514.0	2,448.0
Construction	10,180.7	10,816.6	11,200.3	13,372.0	14,275.0	14,193.0	13,376.0
Total	13,885	14,790	15,858	19,062	20,473	22,247	21,822

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
France	64.3%	64.0%	63.5%	63.0%	62.8%	67.7%	72.0%
Rest of Europe	13.0%	14.4%	14.1%	15.4%	16.0%	14.7%	12.9%
Africa	10.2%	9.1%	9.5%	7.7%	7.7%	7.1%	5.6%
America	4.5%	6.4%	7.2%	8.1%	9.2%	8.3%	7.5%
Asia Pacific	7.6%	5.5%	4.8%	5.4%	4.1%	2.1%	1.9%
Middle East	0.3%	0.7%	0.9%	0.5%	0.2%	0.2%	0.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Telecoms-Media	11.7%	12.4%	15.0%	17.3%	18.1%	24.9%	27.5%
Services	14.9%	14.4%	14.3%	12.5%	12.1%	11.3%	11.2%
Construction	73.3%	73.1%	70.6%	70.1%	69.7%	63.8%	61.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

10. Centex Corporation

Centex (Consolidated)																
A/C period ended: 31-Mar																
1) Income Statement																
a) As Reported (thousands US\$)																
Yr.	97	98	99	00	01	02	03	04	b) As % of 1997 level							
Revenue	3,784,991	3,975,450	5,154,840	5,956,387	6,710,693	7,748,430	9,117,241	10,363,391	100.0%	105.0%	136.2%	157.4%	177.3%	204.7%	240.9%	273.8%
COGS	3,522,907	3,612,775	4,606,453	5,321,152	5,975,893	6,721,744	7,851,573	9,138,710	100.0%	102.6%	130.8%	151.0%	169.6%	190.8%	222.9%	259.4%
Gross Income	262,084	362,675	548,387	635,235	734,816	1,026,686	1,265,668	1,224,681	100.0%	138.4%	209.2%	242.4%	280.4%	391.7%	482.9%	467.3%
Operating Income	231,755	315,776	484,112	553,226	598,400	755,307	944,784	1,119,152	100.0%	136.3%	208.9%	238.7%	258.2%	325.9%	407.7%	482.9%
EBIT	229,495	308,337	468,488	548,477	660,100	755,307	944,784	1,252,748	100.0%	134.4%	204.1%	239.0%	287.6%	329.1%	411.7%	545.9%
Interest expense	34,062	33,256	41,581	56,844	99,069	115,766	119,560	154,866	100.0%	97.6%	122.1%	196.2%	290.8%	339.9%	351.0%	454.7%
Net Income before taxation	195,433	275,081	426,907	491,633	468,400	639,541	825,224	1,199,619	100.0%	140.8%	218.4%	246.4%	239.7%	327.2%	422.3%	613.8%
N.I. after tax & minor. int.	106,563	144,806	231,962	257,132	282,000	382,226	555,919	827,686	100.0%	135.9%	217.7%	241.3%	264.6%	358.7%	521.7%	776.7%
Dividend	5,744	7,994	9,620	9,486	9,472	9,724	9,743	13,601	100.0%	139.2%	165.7%	165.1%	164.9%	169.3%	169.6%	236.8%
Notes:																
1 Figures in row 7, 11 and row 13 are extracted from Datastream.																
2 Taxation effect is consistently not included except dividend payout ratio																
2) Balance Sheet																
a) As Reported (thousands US\$)																
Yr.	97	98	99	00	01	02	03	04	b) As % of 1997 level							
A/C Receivable	987,385	1,582,341	1,855,394	893,078	2,602,815	4,088,259	5,603,489	8,986,882	100.0%	160.3%	187.9%	90.4%	263.6%	414.0%	568.1%	910.2%
Quick Asset	1,018,705	1,690,657	1,966,662	1,032,641	2,717,995	4,414,245	5,253,863	9,476,045	100.0%	165.0%	193.1%	101.4%	266.8%	433.3%	613.9%	930.2%
Current Asset	2,020,464	2,745,211	3,500,481	2,986,678	4,920,289	7,093,258	9,759,246	15,037,850	100.0%	135.9%	173.3%	147.8%	243.5%	351.1%	483.0%	744.3%
Total Asset	2,678,829	3,416,219	4,267,909	4,038,740	6,649,043	8,985,455	11,610,536	16,068,568	100.0%	127.5%	159.3%	150.8%	248.2%	335.4%	433.4%	599.8%
Current Liability	1,606,283	2,187,332	2,649,160	2,070,127	2,724,620	2,699,060	3,658,217	6,078,088	100.0%	136.2%	164.9%	128.9%	169.6%	168.0%	227.7%	378.4%
Long-term Debt	236,769	237,715	280,369	419,912	2,066,735	4,016,332	5,124,246	6,804,204	100.0%	100.4%	118.4%	177.4%	872.9%	1696.3%	2164.2%	2789.3%
Total Liability	1,843,052	2,425,047	2,929,549	2,490,039	4,791,355	6,715,392	8,792,463	12,682,292	100.0%	131.6%	159.0%	135.1%	260.0%	364.4%	476.5%	688.1%
Owners' Equity	835,777	991,172	1,338,360	1,548,701	1,857,688	2,270,063	2,828,073	3,386,276	100.0%	118.6%	160.1%	185.3%	222.3%	271.6%	338.4%	405.2%
3) Cash Flow Profile (thousands US\$)																
Yr.	97	98	99	00	01	02	03	04	b) As % of 1997 level							
Net CFO	257,508	-432,673	-254,148	859,753	-1,413,303	80,986	-5,503	689,515	100.0%	-165.8%	-98.8%	333.6%	-558.8%	31.0%	-2.1%	268.0%
Net CFI	-116,306	-37,221	-227,716	-192,528	-782,880	-1,836,719	-1,545,877	-1,896,493	100.0%	-32.4%	-16.3%	-16.5%	-667.8%	-156.9%	-133.2%	-163.8%
Cap. Expenditure	16,137	36,874	52,453	67,766	62,701	62,701	53,758	53,758	100.0%	228.9%	423.2%	423.2%	395.0%	395.0%	395.0%	395.0%
Corp. Fin. Gap	141,202	-469,894	-481,864	667,225	-2,196,183	-1,555,733	-1,551,386	-1,206,978	100.0%	-333.2%	-342.1%	-342.1%	-156.8%	-156.8%	-156.8%	-156.8%
Source: Datastream																

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03	04	
Current Ratio	1.26	1.28	1.32	1.44	1.81	2.63	2.67	2.47	Liquidity ratio
Quick Ratio	0.63	0.77	0.74	0.50	1.00	1.64	1.71	1.56	
CFO Ratio	0.16	-0.20	-0.10	0.42	-0.52	0.03	0.00	0.11	
Avg. Collection Period (days)	N/A	117.97	121.71	84.21	95.07	157.60	194.12	257.04	Activity ratio
Total Asset Turnover	N/A	1.30	1.34	1.43	1.28	0.99	0.89	0.76	
Gross Profit Margin	6.92%	9.12%	10.64%	10.66%	10.96%	13.25%	13.88%	11.82%	Profitability ratio
Operating Profit Margin	6.12%	7.94%	9.39%	9.29%	8.92%	9.75%	10.35%	10.80%	
Net Profit Margin	5.16%	6.92%	8.28%	8.05%	6.98%	8.25%	9.05%	11.68%	
ROA	N/A	9.03%	11.1%	11.80%	8.77%	8.18%	8.01%	8.67%	
ROE	N/A	30.11%	36.65%	33.36%	27.50%	30.99%	32.37%	38.61%	Finance ratio
Total Debt ratio	2.21	2.45	2.19	1.61	2.58	2.98	3.11	3.76	
Debt Service ratio	6.74	9.27	11.27	8.21	6.66	6.52	7.90	8.09	
CAPEX ratio	15.96	-11.73	-4.85	9.80	-26.95	1.34	-0.09	12.83	
Dividend Payout ratio	5.4%	5.5%	4.1%	3.7%	3.4%	2.5%	1.8%	1.6%	Market ratio

5) Revenue by Regions

(Not disclosed, but it is believed that more than 85% of the sales are done in US.)

6) Revenue by Business Areas

a) As Reported (thousands US\$)

Yr.	97	98	99	00	01	02	03	04
Conventional Home	2,299,592	2,312,045	2,819,442	3,686,844	4,356,172	4,984,817	5,334,510	7,559,519
Financial Services	168,722	246,278	436,299	430,811	463,646	699,760	855,015	1,047,905
Constr. Products	239,380	297,322	336,073	470,465	441,127	471,083	501,257	0
Constr. Services	1,068,265	953,781	1,350,776	1,205,762	1,290,382	1,296,024	1,517,851	1,596,335
Investment Real Est	9,032	25,403	33,694	30,928	33,042	72,416	65,862	37,969
Manufactured Home	0	140,621	178,556	183,526	126,366	224,330	241,746	81,763
Total	3,784,991	3,975,450	5,154,840	6,008,136	6,710,735	7,748,430	9,117,241	10,363,391

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03	04
Conventional Home	60.8%	59.2%	54.7%	51.4%	64.9%	64.3%	65.1%	73.3%
Financial Services	4.5%	6.2%	8.5%	7.2%	6.9%	9.0%	9.4%	10.1%
Constr. Products	6.3%	7.5%	6.5%	7.8%	6.6%	6.1%	5.5%	0.0%
Constr. Services	28.2%	24.0%	26.2%	20.1%	19.2%	16.7%	16.6%	15.4%
Investment Real Est	0.2%	0.6%	0.7%	0.5%	0.5%	0.9%	0.7%	0.4%
Manufactured Home	0.0%	3.5%	3.5%	3.1%	1.9%	2.9%	2.7%	0.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

current asset/current liab
quick asset/current liab
CFO/current liab
365 ave. acc. receiv./revenue
revenue/ave. asset
op. income/revenue
net income before tax/revenue
net profit margin*asset turnover
net income before tax/ave. owners' equity
total liab/owners' equity
EBIT/interest expense
CFO/capital expenditure
dividend/net income after taxation

11. Chicago Bridge & Iron

CBI (Consolidated)

A/C period ended: 31-Dec

1) Income Statement

a) As Reported (thousands US\$)

Yr.	99	00	01	02	03
Revenue	674,770	634,108	1,081,824	1,148,478	1,612,277
COGS	598,335	568,323	945,048	992,927	1,415,715
Gross Income	76,435	65,785	136,776	155,551	196,562
Operating Expense	49,849	47,215	67,519	73,155	93,506
Operating Income	26,586	18,570	69,257	82,396	103,056
EBIT	29,374	34,594	42,224	77,713	103,341
Interest expense	2,980	5,190	8,392	7,114	6,579
Net Income before taxation	27,160	39,454	35,686	72,194	98,062
N.I. after tax & minor. int.	18,384	33,775	19,703	50,149	65,954
Dividend	2,614	2,220	5,227	5,187	7,257

Note:

Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (thousands US\$)

Yr.	99	00	01	02	03
A/C Receivable	93,811	130,868	144,625	172,933	200,521
Quick Asset	112,218	136,411	195,103	275,489	313,439
Current Asset	168,063	238,310	307,053	382,423	512,427
Total Asset	337,325	543,577	648,265	740,436	929,486
Current Liability	145,687	188,962	257,271	287,070	376,252
Long-term Debt	25,000	101,800	75,000	75,000	75,000
Total Liability	228,084	354,603	401,614	424,531	533,414
Owners' Equity	109,261	188,974	246,651	315,905	396,072

3) Cash Flow Profile (thousands US\$)

Yr.	99	00	01	02	03
Net CFO	22,461	4,086	105,796	72,030	80,366
Net CFI	-8,911	-65,568	-35,775	-36,957	-102,030
Cap. Expenditure	13,450	11,525	8,917	23,927	31,286
Corp. Fin. Gap	13,550	-61,482	70,021	35,073	-11,664

b) As % of 1997 level

Yr.	99	00	01	02	03
Revenue	100.0%	94.0%	160.3%	170.2%	238.9%
COGS	100.0%	95.0%	157.9%	165.9%	236.6%
Gross Income	100.0%	86.1%	178.9%	203.5%	257.2%
Operating Expense	100.0%	94.7%	135.4%	146.8%	187.6%
Operating Income	100.0%	69.8%	260.5%	309.9%	387.6%
EBIT	100.0%	-118.1%	143.7%	264.6%	351.8%
Interest expense	100.0%	174.2%	281.6%	238.7%	220.8%
Net Income before taxation	100.0%	-145.3%	131.4%	265.8%	361.1%
N.I. after tax & minor. int.	100.0%	-183.7%	107.2%	272.8%	358.8%
Dividend	100.0%	84.9%	200.0%	198.4%	277.6%

b) As % of 1997 level

Yr.	99	00	01	02	03
A/C Receivable	100.0%	139.5%	154.2%	184.3%	213.7%
Quick Asset	100.0%	123.3%	173.9%	245.5%	279.3%
Current Asset	100.0%	141.8%	182.7%	227.5%	304.9%
Total Asset	100.0%	161.1%	192.2%	219.5%	275.5%
Current Liability	100.0%	129.7%	176.6%	197.0%	258.2%
Long-term Debt	100.0%	407.2%	300.0%	300.0%	300.0%
Total Liability	100.0%	155.5%	176.1%	186.1%	233.9%
Owners' Equity	100.0%	173.0%	225.7%	289.1%	362.5%

4) Key Financial Ratios

Yr.	99	00	01	02	03	
Current Ratio	1.15	1.26	1.19	1.33	1.36	Liquidity ratio
Quick Ratio	0.77	0.73	0.76	0.96	0.83	
CFO Ratio	0.15	0.02	0.41	0.25	0.24	
Avg. Collection Period (days)	64.29	64.66	46.47	50.46	42.27	Activity ratio
Total Asset Turnover	1.97	1.44	1.82	1.65	1.93	
Gross Profit Margin	11.33%	10.37%	12.64%	13.54%	12.19%	Profitability ratio
Operating Profit Margin	3.94%	2.93%	6.40%	7.17%	6.39%	
Net Profit Margin	4.03%	-6.22%	3.30%	6.29%	6.08%	
ROA	7.92%	-8.96%	5.99%	10.40%	11.74%	
ROE	25.16%	-26.46%	16.38%	25.67%	27.55%	Finance ratio
Total Debt ratio	2.09	1.88	1.63	1.34	1.35	
Debt Service ratio	9.86	-6.68	5.03	10.92	15.71	
CAPEX ratio	1.67	0.35	11.86	3.01	2.89	
Dividend Payout ratio	14.2%	-6.6%	26.5%	10.3%	11.0%	Market ratio

current asset/current liab

quick asset/current liab

CFO/current liab

365*ave acc. receiv./revenue

revenue/ave asset

gross income/revenue

op. income/revenue

net income before tax/revenue

net profit margin*asset turnover

net income before tax/ave owners' equity

total liab/owners' equity

EBIT/interest expense

CFO/capital expenditure

dividend/net income after taxation

5) Revenue by Business Area (Regions)

Yr.	99	00	01	02	03	
North America	288,516	322,482	726,629	801,624	970,851	b) As % of Total Revenue
Europe, Africa, Middle East	159,580	176,542	124,226	132,853	329,947	
Asia Pacific	93,241	59,937	39,917	95,935	218,201	
Cent. & S. America	133,433	75,147	191,052	118,066	93,278	
Total	674,770	634,108	1,081,824	1,148,478	1,612,277	

6) Revenue by Project Types

Yr.	99	00	01	02	03	
Process & Tech. Standard Tanks Low		209,434	331,200	582,712		b) As % of Total Revenue
Temp./Cryogenic Tanks & Sys	82,147	90,481	135,392	109,312	285,334	
Repair & Turnaround	116,189	125,062	154,584	113,633	167,994	
Specialty and Other Structures	65,846	76,567	71,995	101,603	116,059	
Pressure Vessels	63,443	45,951	51,397	61,776	91,232	
Total	674,770	634,108	1,081,824	1,148,478	1,612,277	

Process & Tech. Standard Tanks

Low

Temp./Cryogenic Tanks & Sys

Repair & Turnaround

Specialty and Other Structures

Pressure Vessels

Total

12. Chiyoda Corporation

Chiyoda Corp. (Consolidated)

A/C period ended: 31-Mar

1) Income Statement

a) As Reported (\$ millions)

Yr.	97	98	99	00	01	02	03	04
Revenue	445,360	303,476	312,234	168,963	128,685	141,505	166,367	206,816
COGS	478,031	323,446	308,703	154,112	131,240	136,825	155,324	192,709
Gross Income	-32,671	-20,970	3,531	14,851	-2,575	4,680	10,443	14,107
Operating Income	-53,365	-42,559	-12,949	-153	-13,834	-5,146	1,548	5,881
EBIT	-53,061	-50,149	-10,288	2,179	-2,945	2,043	2,677	5,334
Interest expense	1,266	1,845	1,935	1,556	1,561	844	528	374
Net Income before taxation	-51,895	-48,799	-10,534	1,533	-3,357	1,860	2,508	5,370
N.I. after tax & minor. int.	-53,320	-51,795	-11,623	698	-4,607	121	1,999	6,846
Dividend	0	0	0	0	0	0	0	0

Note:

Taxation effect is consistently not included except dividend payout ratio

2) Balance Sheet

a) As Reported (\$ millions)

Yr.	97	98	99	00	01	02	03	04
A/C Receivable	85,787	58,872	36,339	22,685	19,164	27,213	24,746	24,181
Quick Asset	196,217	145,375	126,347	82,752	54,808	67,664	60,868	65,794
Current Asset	295,691	205,657	163,520	107,129	87,693	102,302	96,929	120,556
Total Asset	350,537	257,746	213,820	153,099	114,552	129,314	120,237	142,869
Current Liability	274,746	235,281	186,462	126,723	85,452	100,915	89,404	104,836
Long-term Debt	8,401	7,569	13,518	12,545	11,346	10,672	10,422	10,316
Total Liability	292,537	251,547	207,028	144,516	99,191	113,719	103,129	119,749
Owners' Equity	58,000	6,199	6,892	8,583	15,461	15,596	17,168	23,110

3) Cash Flow Profile (\$ millions)

Yr.	97	98	99	00	01	02	03	04
Net CFO	-80,125	-14,188	-9,608	-16,524	-15,398	10,418	6,939	15,580
Net CFI	2,514	19,285	29,951	20,716	31,445	-204	-873	-1,277
Cap. Expenditure	N.A.	N.A.	N.A.	1,101	213	484	296	761
Corp. Fin. Gap	-77,611	5,097	20,443	4,192	16,048	10,214	6,066	14,303

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03	04
Revenue	100.0%	68.1%	70.1%	37.9%	28.9%	31.8%	37.4%	46.4%
COGS	100.0%	68.9%	64.6%	32.2%	27.5%	28.6%	32.6%	40.3%
Gross Income	100.0%	79.5%	10.8%	-45.4%	7.9%	-14.3%	-32.0%	-43.2%
Operating Income	100.0%	79.8%	24.3%	0.3%	25.9%	9.6%	-2.9%	-11.0%
EBIT	100.0%	94.5%	19.4%	-4.1%	5.6%	-3.9%	-5.0%	-10.1%
Interest expense	100.0%	145.7%	152.8%	122.9%	123.3%	66.7%	41.7%	28.5%
Net Income before taxation	100.0%	96.0%	20.3%	-3.0%	6.5%	-3.6%	-4.8%	-10.4%
N.I. after tax & minor. int.	100.0%	97.1%	21.8%	-1.3%	8.6%	-0.2%	-3.7%	-12.5%

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03	04
A/C Receivable	100.0%	68.5%	43.1%	26.4%	22.3%	31.7%	28.8%	28.2%
Quick Asset	100.0%	74.1%	64.4%	42.2%	27.9%	34.5%	31.0%	33.5%
Current Asset	100.0%	69.6%	55.3%	36.2%	28.7%	34.6%	32.8%	40.8%
Total Asset	100.0%	73.5%	61.0%	43.7%	32.7%	36.9%	34.3%	40.8%
Current Liability	100.0%	85.8%	67.9%	46.1%	31.1%	36.7%	32.5%	38.2%
Long-term Debt	100.0%	90.1%	160.9%	149.3%	135.1%	127.0%	124.1%	122.8%
Total Liability	100.0%	86.0%	70.8%	49.4%	33.9%	38.9%	35.3%	40.9%
Owners' Equity	100.0%	10.7%	11.9%	14.8%	26.7%	26.9%	29.6%	39.8%

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03	04	
Current Ratio	1.08	0.87	0.88	0.85	1.03	1.01	1.08	1.15	Liquidity ratio
Quick Ratio	0.71	0.62	0.68	0.65	0.64	0.67	0.68	0.63	
CFO Ratio	-0.23	-0.06	-0.05	-0.13	-0.18	0.10	0.08	0.15	
Avg. Collection Period (days)	65.96	66.99	56.00	64.40	59.36	59.91	57.00	43.17	Activity ratio
Total Asset Turnover	1.27	1.00	1.32	0.92	0.96	1.16	1.33	1.57	
Gross Profit Margin	-7.34%	-8.56%	1.13%	8.79%	-2.00%	3.31%	6.28%	6.82%	Profitability ratio
Operating Profit Margin	-11.98%	-14.02%	-4.15%	-0.09%	-10.76%	-3.64%	0.93%	2.84%	
Net Profit Margin	-11.64%	-16.41%	-3.37%	0.91%	-2.61%	1.31%	1.51%	2.60%	
ROA	-14.74%	-16.37%	-4.47%	0.84%	-2.51%	1.52%	2.01%	4.08%	
ROE	-60.63%	-155.13%	-160.33%	19.81%	-27.92%	11.98%	15.31%	26.66%	Finance ratio
Total Debt ratio	5.04	40.58	30.04	16.84	6.42	7.29	6.01	5.18	
Debt Service ratio	-41.90	-27.18	-5.32	1.40	-1.89	2.42	5.07	14.26	
CAPEX ratio	N.A.	N.A.	N.A.	-15.01	-72.29	21.52	23.44	20.75	
Dividend Payout ratio	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Market ratio

current asset/current liab
quick asset/current liab
CFO/current liab
365*ave acc. receiv/revenue
revenue/ave asset
gross income/revenue
op. income/revenue
net income before tax/revenue
net profit margin*asset turnover
net income before tax/ave owners' equity
total liab/owners' equity
EBIT/interest expense
CFO/capital expenditure
dividend/net income after taxation

5) Revenue by Regions

a) As Reported (\$ millions)

Yr.	97	98	99	00	01	02	03
Japan		315,753	180,481	137,893	154,894	185,689	
Asia		11,557	5,914	7,900	8,633	6,283	
Europe		6,895	910	818	248	247	
North America		5,614	2,077	1,586	409	175	
Others		44	0	0	0	0	
Total		339,863	185,382	149,197	164,184	192,394	

6) Revenue by Business Areas

As % of Total Revenue

Yr.	97	98	99	00	01	02	03	04
Petroleum						6.1%	20.7%	12.4%
Petrochemical						7.9%	9.9%	15.4%
Chemical						17.0%	11.8%	10.8%
Gas & Power Util.						21.1%	28.8%	45.2%
Social Develop.						8.6%	12%	15%
Ind. Machinery						6.5%	10%	2.8%
Others eng-related						29.4%	23.7%	10.2%
Others non-eng.						3.4%	2.9%	1.7%
Total						100.0%	100.0%	100.0%

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Japan			92.9%	95.3%	93.0%	94.3%	96.5%
Asia			3.4%	3.1%	5.3%	5.3%	3.3%
Europe			2.0%	0.5%	0.6%	0.2%	0.1%
North America			1.7%	1%	1.1%	0.2%	0.1%
Others			0.0%	0.0%	0.0%	0.0%	0.0%
Total			100.0%	100.0%	100.0%	100.0%	100.0%

13. Eiffage

Eiffage (Consolidated)

A/C period ended: 31-Dec

1) Income Statement

a) As Reported (million Euros)	97	98	99	00	01	02	03
Revenue	5,457	5,473	5,812	6,261	6,457	6,833	7,208
COGS	3,547	3,613	4,037	4,406	4,427	4,732	4,903
Gross Income	1,920	1,860	1,775	1,855	2,030	2,201	2,305
Operating Expense	1,813	1,772	1,862	1,897	1,834	1,973	2,029
Operating Income	107	88	113	158	196	228	276
EBIT	135	60	75	108	175	195	228
Interest expense	75	59	18	16	12	8	1
Net Income before taxation	95	37	63	104	168	199	227
N.I. after tax & minor. Int.	92	40	64	103	152	126	140
Dividend	25	29	30	30	31	31	34

Note:

Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (million Euros)	97	98	99	00	01	02	03
A/C Receivable	1,620	1,549	1,906	2,116	2,126	2,276	2,203
Quick Asset	2,641	2,588	3,172	3,425	3,600	3,874	3,889
Current Asset	3,181	3,123	3,700	3,822	3,981	4,515	4,265
Total Asset	4,546	4,373	4,895	4,960	5,187	5,027	5,907
Current Liability	3,179	2,960	3,635	3,688	3,904	4,560	4,342
Long-term Debt	337	253	210	141	89	164	114
Total Liability	4,009	3,791	4,277	4,270	4,373	5,118	4,886
Owners' Equity	537	582	618	690	814	909	1,021

3) Cash Flow Profile (millions Euros)

	97	98	99	00	01	02	03
Net CFO	129	111	303	152	295	400	421
Net CFI	92	-8	-98	-44	-155	-431	-233
Cap. Expenditure	57	62	84	84	122	289	244
Corp. Fin. Gap	221	103	205	108	140	-31	188

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
Revenue	100.0%	100.1%	106.3%	114.5%	118.1%	126.8%	131.8%
COGS	100.0%	101.8%	113.8%	124.2%	124.8%	133.4%	138.2%
Gross Income	100.0%	96.9%	92.5%	96.6%	105.7%	114.7%	120.1%
Operating Expense	100.0%	97.8%	91.7%	93.6%	101.2%	108.9%	111.9%
Operating Income	100.0%	82.2%	105.4%	147.4%	182.8%	212.7%	257.5%
EBIT	100.0%	44.5%	55.8%	80.3%	130.1%	145.0%	169.5%
Interest expense	100.0%	92.0%	24.0%	21.3%	16.0%	10.7%	1.3%
Net Income before taxation	100.0%	39.2%	66.7%	110.0%	177.8%	210.6%	240.2%
N.I. after tax & minor. Int.	100.0%	43.5%	69.6%	112.0%	165.2%	137.0%	152.2%
Dividend	100.0%	116.0%	120.0%	120.0%	124.0%	122.4%	136.0%

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
A/C Receivable	100.0%	95.6%	117.7%	130.6%	131.2%	140.5%	136.0%
Quick Asset	100.0%	98.0%	120.1%	129.7%	136.3%	150.5%	147.2%
Current Asset	100.0%	98.2%	116.3%	120.2%	125.1%	141.9%	134.1%
Total Asset	100.0%	96.2%	107.7%	109.1%	114.1%	132.6%	129.9%
Current Liability	100.0%	93.1%	114.3%	116.0%	122.8%	143.4%	136.6%
Long-term Debt	100.0%	75.1%	62.3%	41.8%	26.4%	48.7%	33.8%
Total Liability	100.0%	94.6%	106.7%	106.5%	109.1%	127.7%	121.9%
Owners' Equity	100.0%	108.4%	115.1%	126.5%	151.6%	169.3%	190.1%

4) Key Financial Ratios

Yr.	1997	1998	1999	2000	2001	2002	2003
Current Ratio	1.00	1.05	1.02	1.04	1.02	0.99	0.98
Quick Ratio	0.83	0.87	0.87	0.93	0.92	0.87	0.90
CFO Ratio	0.04	0.04	0.08	0.04	0.08	0.09	0.10
Avg. Collection Period (days)	90.01	105.67	106.49	117.24	119.90	115.88	113.40
Total Asset Turnover	0.92	1.23	1.25	1.27	1.27	1.24	1.21
Gross Profit Margin	35.12%	33.99%	30.54%	29.63%	31.44%	31.75%	31.98%
Operating Profit Margin	1.96%	1.61%	1.94%	2.52%	3.04%	3.29%	3.83%
Net Profit Margin	1.73%	0.88%	1.08%	1.66%	2.80%	2.87%	3.15%
ROA	1.80%	0.83%	1.36%	2.11%	3.31%	3.55%	3.80%
ROE	19.25%	6.61%	10.50%	15.90%	22.34%	23.10%	23.52%
Total Debt ratio	7.47	6.51	6.92	6.19	5.37	5.63	4.79
Debt Service ratio	1.79	0.87	4.17	6.75	14.58	24.38	
CAPEX ratio	2.26	1.79	3.61	1.81	2.42	1.38	1.73
Dividend Payout ratio	27.2%	72.5%	46.9%	29.1%	20.4%	24.3%	24.3%

current asset/current liab
quick asset/current liab
CFO/current liab
365*ave acc. receiv./revenue
revenue/ave asset
gross income/revenue
op. income/revenue
net income before tax/revenue
net profit margin*asset turnover
net income before tax/ave. owners' equity
total liab/owners' equity
EBIT/interest expense
CFO/capital expenditure
dividend/net income after taxation

Liquidity ratio
Activity ratio
Profitability ratio
Finance ratio
Market ratio

5) Revenue by Regions

a) As Reported (millions Euros)

Yr.	97	98	99	00	01	02	03
France	4,282	4,412	4,977	5,426	5,447	5,828	5,735
Rest of Europe	511	497	582	617	689	934	1,051
Rest of World	214	221	167	202	266	179	176
Total	5,018	5,130	5,726	6,245	6,402	6,941	6,962

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
France	85.5%	86.0%	86.9%	86.9%	85.1%	84.0%	82.4%
Rest of Europe	10.2%	9.7%	10.2%	9.9%	10.8%	13.5%	15.1%
Rest of World	4.3%	4.3%	2.9%	3.2%	4.2%	2.6%	2.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

6) Revenue by Business Areas

a) As Reported (millions Euro)

Yr.	97	98	99	00	01	02	03
Construction & Civil Eng.	2,843	3,250	3,439	3,276	3,510	3,364	
Road							
Construction & Electrical Contract	1,290	1,372	1,586	1,715	1,895	1,985	
Metallurgical Construct	795	921	1,053	1,229	1,293	1,346	
Concessions	134	106	108	130	207	211	
	68	77	59	52	36	56	
Total	5,130	5,726	6,245	6,402	6,941	6,962	

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Construction & Civil Eng.		55.4%	56.8%	55.1%	51.2%	50.6%	48.3%
Road		25.1%	24.0%	25.4%	26.8%	27.3%	28.5%
Construction & Electrical Contract		15.5%	16.1%	16.9%	19.2%	18.6%	19.3%
Metallurgical Construct		2.6%	1.9%	1.7%	2.0%	3.0%	3.0%
Concessions		1.3%	1.3%	0.9%	0.8%	0.5%	0.8%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

14. Ferrovia

Ferrovia (Consolidated) A/C period ended: 31-Dec

1) Income Statement

a) As Reported (thousands Euros)

Yr.	99	00	01	02	03
Revenue	2,745,411	3,635,597	4,293,824	5,080,821	6,291,855
COGS	1,732,585	1,928,933	2,171,456	2,571,066	3,534,094
Gross Income	1,012,826	1,706,664	2,122,368	2,509,755	2,757,761
Operating Expense	818,354	1,435,420	1,733,446	2,024,772	2,142,896
Operating Income	194,472	271,244	388,922	484,983	614,865
EBIT	187,072	244,959	414,193	709,012	677,901
Interest expense	41,067	59,671	114,208	78,380	103,145
Net Income before taxation	194,868	236,367	348,657	684,265	606,105
N.I. after tax & minor. Int.	111,219	159,215	218,263	455,819	340,584
Dividend	35,000	38,600	55,900	91,900	84,200

Note:

Taxation effect is consistently not included except dividend payout ratio.

b) As % of 1999 level

Yr.	99	00	01	02	03
Revenue	100.0%	132.4%	156.4%	185.1%	229.2%
COGS	100.0%	111.3%	125.3%	148.4%	204.0%
Gross Income	100.0%	168.5%	209.5%	247.8%	272.3%
Operating Expense	100.0%	175.4%	211.8%	247.4%	261.8%
Operating Income	100.0%	139.5%	200.0%	249.4%	316.2%
EBIT	100.0%	130.9%	221.4%	379.0%	362.4%
Interest expense	100.0%	145.3%	278.1%	190.9%	251.2%
Net Income before taxation	100.0%	121.3%	178.9%	351.1%	311.0%
N.I. after tax & minor. Int.	100.0%	143.2%	196.2%	409.8%	306.2%
Dividend	100.0%	110.3%	159.7%	262.6%	240.6%

2) Balance Sheet

a) As Reported (thousands Euros)

Yr.	99	00	01	02	03
A/C Receivable	1,346,259	1,320,511	1,433,289	1,526,361	1,982,968
Quick Asset	1,926,021	2,243,188	3,130,784	2,995,770	3,659,296
Current Asset	2,417,553	3,000,471	4,212,828	4,272,350	5,162,956
Total Asset	6,917,734	8,821,383	10,981,282	11,266,584	14,551,747
Current Liability	2,444,026	2,809,657	3,551,508	3,813,723	5,295,358
Long-term Debt	3,142,242	4,417,168	5,641,289	4,815,558	6,016,459
Total Liability	5,678,455	7,371,387	9,358,230	8,997,895	11,890,237
Owners' Equity	1,239,279	1,449,986	1,623,052	2,268,889	2,661,510

b) As % of 1997 level

Yr.	99	00	01	02	03
A/C Receivable	100.0%	98.1%	106.5%	113.4%	147.3%
Quick Asset	100.0%	116.5%	162.6%	155.5%	190.0%
Current Asset	100.0%	124.1%	174.3%	176.7%	213.6%
Total Asset	100.0%	127.5%	158.7%	162.9%	210.4%
Current Liability	100.0%	115.0%	145.3%	156.0%	216.7%
Long-term Debt	100.0%	140.6%	179.5%	153.3%	191.5%
Total Liability	100.0%	129.8%	164.8%	158.5%	209.4%
Owners' Equity	100.0%	117.0%	131.0%	183.1%	214.8%

3) Cash Flow Profile (thousands Euros)

Yr.	99	00	01	02	03
Net CFO			401,700	292,187	516,430
Net CFI			-149,200	324,054	-792,487
Cap. Expenditure			46,854	62,167	N.A.
Corp. Fin. Gap			252,500	616,241	-276,057

4) Key Financial Ratios

Yr.	99	00	01	02	03	
Current Ratio	0.99	1.07	1.19	1.12	0.97	
Quick Ratio	0.79	0.80	0.88	0.79	0.69	Liquidity ratio
CFO Ratio	N.A.	N.A.	0.11	0.08	0.10	
Avg. Collection Period (days)	163.01	133.87	117.04	106.31	101.79	
Total Asset Turnover	0.55	0.46	0.43	0.46	0.49	Activity ratio
Gross Profit Margin	36.89%	46.94%	49.43%	49.40%	43.83%	
Operating Profit Margin	7.08%	7.46%	9.06%	9.55%	9.77%	
Net Profit Margin	7.10%	6.50%	8.12%	13.47%	9.63%	Profitability ratio
ROA	3.92%	3.00%	3.52%	6.15%	4.70%	
ROE	21.10%	17.58%	22.69%	35.16%	24.59%	
Total Debt ratio	4.58	5.08	5.77	3.97	4.47	
Debt Service ratio	4.58	4.11	3.63	9.05	6.57	Finance ratio
CAPEX ratio	N.A.	N.A.	8.57	4.70	N.A.	
Dividend Payout ratio	31.5%	24.2%	25.6%	20.2%	24.7%	Market ratio

current asset/current liab

quick asset/current liab

CFO/current liab

365+ave acc. receiv./revenue

revenue/ave.asset

gross income/revenue

op. income/revenue

net income before tax/revenue

net profit margin*asset turnover

net income before tax/ave.owners' equity

total liab/owners' equity

EBIT/interest expense

CFO/capital expenditure

dividend/net income after taxation

5) Billings by Regions

Yr.	99	00	01	02	03	
Spain		2,821,000	3,601,602	4,055,217		
Poland		687,000	618,784	477,296		
Chile		262,000	207,980	135,579		
Canada		241,000	212,353	221,459		
Portugal			265,383	209,255		
UK		229,008		844,362		
Rest of World			134,122	82,731		
Total		4,240,008	5,040,224	6,025,899		

b) As % of Total Revenue

Yr.

99

00

01

02

03

Spain

Poland

Chile

Canada

Portugal

UK

Rest of World

Total

6) Revenue by Business Areas

Yr.	99	00	01	02	03	
Construction	2,212,007	2,969,474	3,431,748	3,788,898	3,601,250	
Infrastructure	179,234	257,028	345,831	449,995	523,580	
Real Estate	244,552	305,304	375,179	619,679	728,656	
Services	91,306	194,223	215,529	340,057	1,358,063	
Others	31,319	28,200	45,284	37,957	38,924	
Elimination	-113,257	-158,585	-173,563	-196,362	-224,574	
Total	2,645,161	3,597,644	4,240,008	5,040,224	6,025,899	

b) As % of Total Revenue

Yr.

99

00

01

02

03

Construction

Infrastructure

Real Estate

Services

Others

Elimination

Total

15. Flour Corporation

Flour Corporation (Consolidated) A/C period ended: 31-Oct (before year 2001) 31-Dec (2001 onwards)

1) Income Statement

a) As Reported (US\$ thousands)

Yr.	97	98	99	00	01	02	03
Revenue	14,298,541	13,504,773	12,417,385	9,970,154	8,972,161	9,958,958	8,805,703
COGS	14,022,570	13,095,436	12,026,893	9,765,807	8,618,972	9,544,785	8,399,477
Gross Income	275,971	409,337	390,492	204,347	353,189	414,171	406,226
Operating Expense	13,230	22,598	55,350	65,349	166,961	160,097	141,465
Operating Income	262,741	386,739	335,142	139,998	186,228	254,074	264,761
EBIT	262,741	386,739	218,142	181,020	77,872	247,713	242,756
Interest expense	30,758	45,277	50,918	26,315	25,011	8,925	10,109
Net Income before taxation	255,269	362,626	185,653	166,324	76,964	254,163	245,976
NI, after tax & minor. Int.	146,187	235,344	104,187	123,949	19,410	163,615	157,450
Dividend	63,750	63,497	60,692	75,983	50,913	51,485	52,287

Notes:

Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (US\$ thousands)

Yr.	97	98	99	00	01	02	03
A/C Receivable	930,104	959,416	850,557	865,117	565,525	503,399	636,162
Quick Asset	1,239,517	1,299,960	1,060,171	734,543	1,138,179	1,256,766	1,132,664
Current Asset	2,225,866	2,277,151	1,910,171	1,447,793	1,851,327	1,941,465	2,213,644
Total Asset	4,697,840	5,019,208	4,886,117	3,652,734	3,091,162	3,142,151	3,449,482
Current Liability	1,990,684	2,495,554	1,100,435	1,620,375	1,811,418	1,756,171	1,829,138
Long-term Debt	300,508	300,428	317,555	17,573	17,594	17,613	44,652
Total Liability	2,956,790	3,493,599	3,304,745	2,043,477	2,301,896	2,258,284	2,367,948
Owners' Equity	1,741,050	1,525,609	1,581,372	1,609,257	789,266	883,867	1,081,534

3) Cash Flow Profile (US\$ thousands)

Yr.	97	98	99	00	01	02	03
Net CFO	328,624	702,519	464,876	141,800	677,728	206,861	-300,538
Net CFI	-511,971	-563,317	-375,179	-386,897	-157,068	69,097	-91,155
Cap. Expenditure	466,202	600,933	504,334	495,566	200,915	78,974	81,766
Corp. Fin. Gap	-183,347	139,202	89,697	-245,097	520,659	275,958	-391,693

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
Revenue	100.0%	94.4%	86.8%	69.7%	62.7%	69.7%	61.6%
COGS	100.0%	93.4%	85.8%	69.6%	61.5%	68.1%	59.9%
Gross Income	100.0%	148.3%	141.6%	74.0%	128.0%	150.1%	147.2%
Operating Expense	100.0%	170.8%	418.4%	493.9%	1262.0%	1210.1%	1069.3%
Operating Income	100.0%	147.2%	127.6%	52.9%	70.9%	96.7%	100.6%
EBIT	100.0%	147.2%	83.0%	68.9%	29.6%	94.3%	92.4%
Interest expense	100.0%	147.2%	165.5%	85.6%	81.3%	29.0%	32.9%
Net Income before taxation	100.0%	142.1%	72.7%	65.2%	30.2%	99.6%	96.4%
NI, after tax & minor. Int.	100.0%	161.0%	71.3%	84.8%	13.3%	111.9%	107.7%
Dividend	100.0%	99.6%	95.2%	119.2%	79.9%	80.8%	82.0%

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
A/C Receivable	100.0%	103.2%	91.4%	71.5%	60.8%	54.1%	68.4%
Quick Asset	100.0%	104.9%	85.5%	59.3%	91.8%	101.4%	91.4%
Current Asset	100.0%	102.3%	85.8%	65.0%	83.2%	87.2%	99.5%
Total Asset	100.0%	106.8%	104.0%	77.8%	65.8%	66.9%	73.4%
Current Liability	100.0%	125.4%	55.3%	81.4%	91.0%	88.2%	91.9%
Long-term Debt	100.0%	100.0%	105.7%	5.8%	5.9%	5.9%	14.9%
Total Liability	100.0%	118.2%	111.8%	69.1%	77.9%	76.4%	80.1%
Owners' Equity	100.0%	87.6%	90.8%	92.4%	45.3%	50.8%	62.1%

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03	
Current Ratio	1.12	0.91	1.74	0.89	1.02	1.11	1.21	Liquidity ratio
Quick Ratio	0.62	0.52	0.96	0.45	0.63	0.72	0.62	
CFO Ratio	0.17	0.28	0.42	0.09	0.37	0.12	-0.16	
Avg. Collection Period (days)	21.35	25.53	26.60	27.74	25.03	19.59	23.62	Activity ratio
Total Asset Turnover	3.31	2.78	2.51	2.34	2.66	3.20	2.67	
Gross Profit Margin	1.93%	3.03%	3.15%	2.05%	3.94%	4.16%	4.61%	
Operating Profit Margin	1.84%	2.86%	2.70%	1.39%	2.08%	2.55%	3.01%	Profitability ratio
Net Profit Margin	1.79%	2.69%	1.50%	1.67%	0.86%	2.55%	2.79%	
ROA	5.90%	7.46%	3.75%	3.90%	2.28%	8.15%	7.46%	
ROE	14.97%	22.20%	11.95%	10.43%	6.42%	30.36%	25.03%	Finance ratio
Total Debt ratio	1.70	2.29	2.09	1.27	2.92	2.56	2.19	
Debt Service ratio	8.54	8.54	4.28	6.88	3.11	27.75	24.01	
CAPEX ratio	0.70	1.17	0.92	0.29	3.37	2.62	-3.68	Market ratio
Dividend Payout ratio	43.6%	27.0%	58.3%	61.3%	262.3%	31.5%	33.2%	

current asset/current liab
quick asset/current liab
CFO/current liab
365*ave acc. receiv/revenue
revenue/ave asset
gross income/revenue
op. income/revenue
net income before tax/revenue
net profit margin*asset turnover
net income before tax/ave.owners' equity
total liab/owners' equity
EBIT/interest expense
CFO/capital expenditure
dividend/net income after taxation

5) Revenue by Regions

a) As Reported (US\$ millions)

Yr.	97	98	99	00	01	02	03
US	9,347.2	8,323.6	7,139.0	6,347.0	6,323.0	6,515.0	5,473.0
Canada	328.2	315.4	855.0	1,421.0	1,412.0	1,620.0	560.0
Asia Pacific	1,544.5	1,434.4	1,575.0	832.0	287.0	226.0	333.0
Europe	1,420.0	1,196.2	1,228.0	714.0	423.0	810.0	1,001.0
Central & South America	1,109.3	1,242.2	825.0	505.0	379.0	546.0	1,069.0
Mid. East & Africa	549.3	993.0	795.0	151.0	148.0	242.0	370.0
Total	14,298.5	13,504.8	12,417.0	9,970.0	8,972.0	9,959.0	8,806.0

6) Revenue by Business Areas

a) As Reported (US\$ millions)

Yr.	97	98	99	00	01	02	03
Energy & Chemical			4,075.0	3,251.0	2,529.0	3,633.0	2,647.0
Ind & Infrastructure			3,841.0	2,903.0	2,115.0	2,249.0	2,598.0
Power			934.0	1,325.0	2,476.0	2,164.0	759.0
Global Services			1,079.0	1,196.0	1,017.0	961.0	1,108.0
Gov't Services			757.0	722.0	813.0	952.0	1,694.0
Others			66.0	26.0	22.0	0.0	0.0
Total			10,752.0	9,423.0	8,972.0	9,959.0	8,806.0

Note:

Figures in year 1999 and 2000 are taken from 2001 Annual Report due to data availability. Thus, the total amounts differ from above.

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
US	65.4%	61.6%	57.5%	63.7%	70.5%	65.4%	62.2%
Canada	2.3%	2.3%	6.9%	14.3%	15.7%	16.3%	6.4%
Asia Pacific	10.8%	10.6%	12.7%	8.3%	3.2%	2.3%	3.8%
Europe	9.9%	8.9%	9.9%	7.2%	4.7%	8.1%	11.4%
Central & South America	7.8%	9.2%	6.6%	5.1%	4.2%	5.5%	12.1%
Mid. East & Africa	3.8%	7.4%	6.4%	1.5%	1.6%	2.4%	4.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Energy & Chemical			37.9%	34.5%	28.2%	36.5%	30.1%
Ind & Infrastructure			35.7%	30.8%	23.6%	22.6%	29.5%
Power			8.7%	14.1%	27.6%	21.7%	8.6%
Global Services			10.0%	12.7%	11.3%	9.6%	12.6%
Gov't Services			7.0%	7.7%	9.1%	9.6%	19.2%
Others			0.6%	0.3%	0.2%	0.0%	0.0%
Total			100.0%	100.0%	100.0%	100.0%	100.0%

16. FCC

FCC (Consolidated)

A/C period ended: 31-Dec

1) Income Statement

a) As Reported (thousand Euros)

Yr.	97	98	99	00	01	02	03
Revenue	2,961,655	3,329,295	4,012,201	4,551,561	5,280,474	5,592,308	6,132,015
COGS	1,427,091	1,559,536	1,802,081	1,983,274	2,393,975	2,599,876	2,843,293
Gross Income	1,534,564	1,769,759	2,210,120	2,568,287	2,886,499	2,992,432	3,288,722
Operating Income	203,617	239,431	380,441	435,505	497,661	517,189	539,419
EBIT	165,111	197,180	338,394	399,060	439,911	446,842	472,599
Interest expense	57,781	57,174	59,602	88,848	84,779	81,139	79,884
Net Income before taxation	143,895	173,326	310,320	356,232	391,139	401,058	434,857
N.I. after tax & minor. Int.	83,991	99,474	177,238	215,607	241,042	273,015	308,579

Note:

Source: Osiris.

2) Balance Sheet

a) As Reported (thousand Euros)

Yr.	97	98	99	00	01	02	03
A/C Receivable	875,837	1,071,815	1,300,758	1,536,716	1,639,581	1,962,515	2,138,447
Quick Asset	1,584,971	1,822,317	1,922,451	2,190,142	2,412,884	2,685,415	2,821,784
Current Asset	2,189,677	2,536,049	2,685,526	2,913,562	3,254,584	3,629,977	3,832,570
Total Asset	3,531,848	4,160,807	5,103,765	5,589,250	6,143,690	6,800,675	7,039,753
Current Liability	1,731,354	2,045,761	2,362,206	2,692,095	3,161,572	3,685,089	3,736,354
Long-term Debt	263,610	466,992	790,481	584,184	584,862	529,877	551,531
Total Liability	2,745,319	3,291,906	4,076,587	4,350,384	4,845,685	5,118,076	5,158,144
Owners' Equity	785,529	868,901	1,027,178	1,238,866	1,298,005	1,682,599	1,881,609

Note:

Source: Osiris.

3) Cash Flow Profile (thousand Euros)

Yr.	97	98	99	00	01	02	03
Net CFO						406.8	705.5
Net CFI						-693.0	-460.8
Cap. Expenditure						549.8	483.9
Corp. Fin. Gap						-286.2	244.7

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
Revenue	100.0%	112.4%	135.5%	153.7%	178.3%	188.8%	207.0%
COGS	100.0%	109.3%	126.3%	139.0%	167.8%	182.2%	199.2%
Gross Income	100.0%	115.3%	144.0%	167.4%	188.1%	195.0%	214.3%
Operating Income	100.0%	117.6%	186.8%	213.9%	244.4%	254.0%	264.9%
EBIT	100.0%	119.4%	204.9%	241.7%	266.4%	270.6%	286.2%
Interest expense	100.0%	98.9%	103.2%	153.8%	146.7%	140.4%	137.9%
Net Income	100.0%	120.5%	215.7%	247.6%	271.8%	278.7%	302.2%
N.I. after tax & minor. Int.	100.0%	118.4%	211.0%	256.7%	287.0%	325.1%	367.4%

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
A/C Receivable	100.0%	122.4%	148.5%	175.5%	187.2%	224.1%	244.2%
Quick Asset	100.0%	115.0%	121.3%	138.2%	152.2%	168.2%	178.0%
Current Asset	100.0%	115.3%	122.1%	132.5%	148.0%	165.1%	174.3%
Total Asset	100.0%	117.8%	144.5%	158.3%	174.0%	192.6%	199.3%
Current Liability	100.0%	118.2%	136.4%	155.5%	182.6%	212.8%	215.8%
Long-term Debt	100.0%	177.2%	299.9%	221.6%	221.9%	201.0%	209.2%
Total Liability	100.0%	119.9%	148.4%	158.4%	176.4%	186.4%	187.8%
Owners' Equity	100.0%	110.6%	130.8%	157.7%	165.2%	214.2%	239.5%

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03	
Current Ratio	1.27	1.24	1.14	1.08	1.03	0.99	1.03	Liquidity ratio
Quick Ratio	0.92	0.89	0.81	0.81	0.76	0.72	0.76	
CFO Ratio	N.A.	N.A.	N.A.	N.A.	N.A.	0.00	0.00	
Avg. Collection Period (days)	110.04	106.76	107.92	113.77	109.78	117.55	122.05	Activity ratio
Total Asset Turnover	0.88	0.87	0.87	0.85	0.90	0.86	0.89	
Gross Profit Margin	51.81%	53.16%	55.08%	56.43%	54.86%	53.51%	53.63%	Profitability ratio
Operating Profit Margin	6.88%	7.19%	9.48%	9.57%	9.42%	9.25%	8.80%	
Net Profit Margin	4.86%	5.21%	7.73%	7.83%	7.41%	7.17%	7.09%	
ROA	4.27%	4.51%	6.70%	6.66%	6.67%	6.20%	6.28%	
ROE	19.20%	20.95%	32.73%	31.44%	30.84%	26.91%	24.40%	
Total Debt ratio	3.50	3.79	3.97	3.51	3.73	3.04	2.74	Finance ratio
Debt Service ratio	2.86	3.45	5.68	4.49	5.19	5.51	5.93	
CAPEX ratio	N.A.	N.A.	N.A.	N.A.	N.A.	0.74	1.46	
Dividend per share			0.29	0.47	0.52	0.55	0.37	

current asset/current liab
quick asset/current liab
CFO/current liab
365*ave acc. receiv/revenue
revenue/ave asset
gross income/revenue
op. income/revenue
net income before tax/revenue
net profit margin*asset turnover
net income before tax/ave.owners' equity
total liab/owners' equity
EBIT/interest expense
CFO/capital expenditure

5) Revenue by Regions

a) As Reported (thousand Euros)

Yr.	97	98	99	00	01	02	03
Spain						4,738,611	5,412,923
Abroad						758,549	637,549
Total						5,497,160	6,050,472

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Spain						86.2%	89.5%
Abroad						13.8%	10.5%
Total						100.0%	100.0%

6) Revenue by Business Areas

a) As Reported (thousand Euros)

Yr.	97	98	99	00	01	02	03
Construction						2,395,959	2,613,143
Services						1,579,273	1,605,889
Urban Env.						250,532	305,215
Cement						791,741	831,430
Others						213,353	218,673
Elimination						-57,628	-77,190
Total						5,173,230	5,497,160

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Construction						46.3%	47.5%
Services						30.5%	29.2%
Urban Env.						4.8%	5.6%
Cement						15.3%	15.1%
Others						4.1%	4.0%
Elimination						-1.1%	-1.6%
Total						100.0%	100.0%

17. Foster Wheeler

Foster Wheeler (Consolidated) A/C period ended: 31-Dec

1) Income Statement

a) As Reported (US\$ thousands)

Yr.	97	98	99	00	01	02	03
Revenue	4,059,965	4,536,800	3,867,000	3,891,400	3,315,314	3,519,177	3,723,815
COGS	3,791,998	4,186,300	3,569,200	3,565,100	3,164,025	3,426,910	3,441,342
Gross Income	267,967	370,500	297,800	326,300	151,289	92,267	282,473
Operating Expense	268,026	253,401	235,549	219,353	225,382	226,524	189,949
Operating Income	-59	117,099	62,251	106,947	-74,103	-134,257	82,524
EBIT	55,453	93,423	-130,935	127,483	-132,498	-284,304	-18,541
Interest expense	54,675	62,535	55,032	67,504	68,734	66,418	77,354
Net income before taxation	19,500	47,800	-190,526	75,716	-212,965	-360,062	-109,637
N.I. after tax & minor. int.	5,624	-31,506	-143,635	39,494	-336,360	-525,219	-157,063
Dividend	34,014	33,999	21,995	9,774	4,905	0	0

Note:

Taxation effect is consistently not included except dividend payout ratio.

1997 1998 1999 2000 2001 2002 2003

2) Balance Sheet

a) As Reported (US\$ thousands)

Yr.	97	98	99	00	01	02	03
A/C Receivable	663,505	719,507	739,469	699,965	726,566	543,055	451,010
Quick Asset	1,058,680	1,098,296	1,106,219	1,082,875	1,170,635	972,797	933,899
Current Asset	1,545,271	1,672,842	1,615,096	1,622,976	1,754,376	1,329,847	1,174,376
Total Asset	3,368,363	3,495,019	3,438,109	3,477,528	3,316,379	2,842,277	2,506,530
Current Liability	1,437,052	1,498,677	1,471,552	1,454,603	2,388,620	1,449,795	1,373,760
Long-term Debt	855,668	990,714	702,754	581,305	137,855	1,101,342	1,041,583
Total Liability	2,292,720	2,489,391	2,174,306	2,035,908	2,526,475	2,551,137	2,415,343
Owners' Equity	646,160	572,116	375,863	364,089	-48,444	-709,939	-872,440

3) Cash Flow Profile (US\$ thousands)

Yr.	97	98	99	00	01	02	03
Net CFO	-1,200,570	-262,960	-562,000	-167,440	-886,810	160,365.0	-620,980.0
Net CFI	-271,600	-1,069,500	-559,140	356,490	4,321,200	-1,227,060	1,058,950.0
Cap. Expenditure	1,897,670	1,337,540	1,280,860	458,070	3,399,800	533,950	1,287,000
Corp. Fin. Gap	-1,227,730	-1,332,460	-502,940	1,890,500	-454,690	376,590	-437,970.0

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
Revenue	100.0%	111.7%	95.2%	95.8%	81.7%	86.7%	91.7%
COGS	100.0%	109.9%	94.1%	94.0%	83.4%	90.4%	90.8%
Gross Income	100.0%	138.3%	111.1%	121.8%	56.5%	34.4%	105.4%
Operating Expense	100.0%	94.5%	87.9%	81.8%	84.1%	84.5%	74.6%
Operating Income	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
EBIT	100.0%	168.5%	-236.1%	229.9%	-238.9%	-512.7%	-33.4%
Interest expense	100.0%	114.4%	100.7%	123.5%	125.7%	121.5%	141.5%
Net income before taxation	100.0%	245.1%	-977.1%	380.3%	-1092.1%	-1846.5%	-562.2%
N.I. after tax & minor. int.	100.0%	-560.2%	-2554.0%	702.2%	-5980.8%	-9338.9%	-2792.7%
Dividend	100.0%	100.0%	64.7%	28.7%	14.4%	0.0%	0.0%

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
A/C Receivable	100.0%	108.4%	111.4%	105.5%	109.5%	81.8%	68.0%
Quick Asset	100.0%	103.7%	104.5%	102.3%	110.6%	91.9%	88.2%
Current Asset	100.0%	108.3%	104.5%	105.0%	113.5%	86.1%	76.0%
Total Asset	100.0%	103.8%	102.1%	103.3%	98.5%	84.4%	74.5%
Current Liability	100.0%	104.3%	102.4%	101.2%	166.2%	100.9%	95.6%
Long-term Debt	100.0%	115.8%	82.1%	65.6%	16.1%	128.7%	121.7%
Total Liability	100.0%	107.5%	112.6%	114.5%	123.7%	133.2%	124.2%
Owners' Equity	100.0%	88.5%	58.2%	56.3%	-7.5%	-120.9%	-135.0%

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03	
Current Ratio	1.08	1.12	1.10	1.12	0.73	0.92	0.85	Liquidity ratio
Quick Ratio	0.74	0.73	0.75	0.74	0.49	0.67	0.68	
CFO Ratio	-0.08	-0.02	0.00	-0.01	-0.04	0.11	-0.05	
Avg. Collection Period (days)	69.64	55.63	68.66	67.51	78.53	65.84	48.72	Activity ratio
Total Asset Turnover	1.18	1.32	1.12	1.13	0.98	1.14	1.39	
Gross Profit Margin	6.60%	8.17%	7.70%	8.39%	4.56%	2.62%	7.59%	Profitability ratio
Operating Profit Margin	0.00%	2.58%	1.61%	2.75%	-2.24%	-3.82%	2.22%	
Net Profit Margin	0.48%	1.05%	-4.93%	1.95%	-8.42%	-10.23%	-2.94%	
ROA	0.57%	1.39%	-5.50%	2.19%	-6.27%	-11.69%	-4.10%	
ROE	2.89%	7.85%	-40.20%	20.47%	-134.94%	-86.83%	-13.26%	
Total Debt ratio	4.21	5.11	8.15	8.55	-69.46	-4.64	-3.87	Finance ratio
Debt Service ratio	1.01	1.49	-2.38	1.89	-1.93	-4.28	-0.24	
CAPEX ratio	-0.63	-0.20	-0.04	-0.37	-2.61	3.00	-4.83	
Dividend Payout ratio	604.8%	-107.9%	-15.3%	24.7%	-1.5%	0.0%	0.0%	Market ratio
Note: Beware of negative ratios!								

5) Revenue by Regions

a) As Reported (US\$ thousands)								
Yr.	97	98	99	00	01	02	03	
US	1,755,700	1,877,900	1,430,500	1,897,000	1,673,457	1,544,827	996,831	b) As % of Total Revenue
Europe	2,478,200	2,806,200	2,533,700	2,099,500	1,669,409	1,923,211	2,741,413	
Canada	100,400	70,900	91,400	77,200	126,851	136,267	69,626	
Total	4,334,300	4,755,000	4,055,600	4,073,700	3,469,717	3,604,305	3,807,870	
Note: Excludes Elimination that bears negative numbers.								

Yr.	97	98	99	00	01	02	03	
US	40.5%	39.5%	35.3%	45.6%	48.2%	42.9%	26.2%	b) As % of Total Revenue
Europe	57.2%	59.0%	62.5%	51.5%	48.1%	53.4%	72.0%	
Canada	2.3%	1.5%	2.3%	1.9%	3.7%	3.8%	1.8%	
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Note: Excludes Elimination that bears negative numbers.								

6) Revenue by Business Segments

b) As % of Total Revenue									
Yr.	97	98	99	00	01	02	03		
Eng. & Const.	71.3%	80.9%	72.5%	67.6%	57.0%	56.3%	61.8%		
Energy Equip.	25.9%	15.7%	23.7%	32.2%	43.0%	43.7%	38.2%		
Power Systems	2.8%	3.4%	3.8%	-	-	-	-		
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		

a) As Reported (US\$ thousands)							
Yr.	97	98	99	00	01	02	03
Eng. & Const.	3,610,700	4,329,100	2,752,200	3,094,600	1,944,018	2,027,531	2,353,393
Energy Equip.	1,312,600	841,500	901,100	1,468,700	1,468,844	1,576,774	1,454,477
Power Systems	140,100	162,700	144,800	-	-	-	-
Total	5,063,400	5,353,300	3,798,100	4,563,300	3,412,862	3,604,305	3,807,870

18. Granite Construction

Granite Construction (Consolidated) A/C period ended: 31-Dec

1) Income Statement

a) As Reported (thousands US\$)

Yr.	99	00	01	02	03
Revenue	1,328,774	1,348,325	1,547,994	1,764,742	1,844,491
COGS	1,149,573	1,157,707	1,364,378	1,540,158	1,618,041
Gross Income	179,201	190,618	183,616	224,584	226,450
Operating Expense	94,939	105,043	119,262	146,467	151,879
Operating Income	84,262	85,575	64,354	78,117	74,571
EBIT	86,152	86,140	66,982	81,853	99,680
Interest expense	8,791	8,954	8,829	9,162	6,577
Net Income before taxation	86,043	92,870	81,497	82,739	97,525
N.I. after tax & minor int.	52,916	55,815	50,528	49,279	60,504
Dividend	10,876	11,475	13,154	13,197	15,763

Note:

Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (thousands US\$)

Yr.	99	00	01	02	03
A/C Receivable	211,609	221,374	277,684	265,896	288,210
Quick Asset	319,686	322,105	470,917	414,828	448,998
Current Asset	402,321	411,628	586,916	547,895	618,651
Total Asset	679,572	711,142	929,884	983,819	1,060,410
Current Liability	258,664	231,577	338,503	327,499	348,704
Long-term Debt	64,853	63,891	131,391	132,380	126,708
Total Liability	351,840	333,378	511,182	513,632	544,647
Owners' Equity	327,732	377,764	418,502	470,187	515,763

3) Cash Flow Profile (thousands US\$)

Yr.	99	00	01	02	03
Net CFO	99,987	74,846	124,631	104,045	77,589
Net CFI	-54,204	-58,966	-97,123	-134,110	-33,039
Cap. Expenditure	82,035	52,454	65,265	57,415	62,805
Corp. Fin. Gap	45,783	15,880	27,508	-30,065	44,550

b) As % of 1997 level

Yr.	99	00	01	02	03
Revenue	100.0%	101.5%	116.5%	132.8%	138.6%
COGS	100.0%	100.7%	118.7%	134.0%	140.8%
Gross Income	100.0%	106.4%	102.5%	125.3%	126.4%
Operating Expense	100.0%	110.6%	125.6%	154.3%	180.0%
Operating Income	100.0%	101.6%	76.3%	92.7%	88.5%
EBIT	100.0%	100.0%	77.7%	95.0%	115.7%
Interest expense	100.0%	101.9%	100.4%	104.2%	97.6%
Net Income before taxation	100.0%	107.9%	94.7%	96.2%	113.3%
N.I. after tax & minor int.	100.0%	105.5%	95.5%	93.1%	114.3%
Dividend	100.0%	105.5%	120.9%	121.3%	144.9%

b) As % of 1997 level

Yr.	99	00	01	02	03
A/C Receivable	100.0%	104.6%	131.2%	125.7%	136.2%
Quick Asset	100.0%	100.8%	147.3%	128.8%	140.4%
Current Asset	100.0%	102.3%	145.9%	136.2%	153.8%
Total Asset	100.0%	104.6%	136.9%	144.8%	156.0%
Current Liability	100.0%	89.5%	130.9%	126.6%	134.8%
Long-term Debt	100.0%	98.5%	202.6%	204.1%	195.4%
Total Liability	100.0%	94.8%	145.3%	146.0%	154.8%
Owners' Equity	100.0%	115.3%	127.7%	143.5%	157.4%

4) Key Financial Ratios

Yr.	99	00	01	02	03	
Current Ratio	1.56	1.78	1.73	1.67	1.77	Liquidity ratio
Quick Ratio	1.24	1.39	1.39	1.27	1.29	
CFO Ratio	0.39	0.32	0.37	0.32	0.22	
Avg. Collection Period (days)	53.06	58.61	58.84	56.21	54.83	Activity ratio
Total Asset Turnover	2.03	1.94	1.89	1.84	1.80	
Gross Profit Margin	13.49%	14.14%	11.86%	12.73%	12.28%	Profitability ratio
Operating Profit Margin	6.34%	6.35%	4.16%	4.43%	4.04%	
Net Profit Margin	6.48%	6.89%	5.26%	4.69%	5.29%	
ROA	13.18%	13.36%	9.93%	8.65%	9.54%	
ROE	27.36%	26.33%	20.47%	18.62%	19.78%	
Total Debt ratio	1.07	0.88	1.22	1.09	1.06	Finance ratio
Debt Service ratio	9.80	9.62	7.59	8.93	11.62	
CAPEX ratio	1.22	1.43	1.91	1.81	1.24	
Dividend Payout ratio	20.6%	20.6%	26.0%	26.8%	26.1%	Market ratio

current asset/current liab
quick asset/current liab
CFO/current liab
365*ave acc. receiv./revenue
revenue/ave asset
gross income/revenue
op. income/revenue
net income before tax/revenue
net profit margin*asset turnover
net income before tax/ave. owners' equity
total liab/owners' equity
EBIT/Interest expense
CFO/capital expenditure
dividend/net income after taxation

Liquidity ratio

Activity ratio

Profitability ratio

Finance ratio

Market ratio

5) Revenue by Regions
100% in US

6) Revenue by Business Areas

a) As Reported (thousands US\$)

Yr.	99	00	01	02	03
HCD	352,310	337,413	464,268	576,930	691,765
Branch	976,464	1,010,912	1,083,728	1,187,812	1,152,726
Total	1,328,774	1,348,325	1,547,994	1,764,742	1,844,491

Source: 10-K files.

b) As % of Total Revenue

Yr.	99	00	01	02	03
HCD	26.5%	25.0%	30.0%	32.7%	37.5%
Branch	73.5%	75.0%	70.0%	67.3%	62.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

7) Revenue by Activities

a) As Reported (thousands US\$)

Yr.	99	00	01	02	03
Construction	1,169,755	1,168,430	1,358,124	1,537,009	1,591,746
Material Sales	159,019	159,895	189,870	227,733	252,745
Total	1,328,774	1,348,325	1,547,994	1,764,742	1,844,491

b) As % of Total Revenue

Yr.	99	00	01	02	03
Construction	88.0%	88.1%	87.7%	87.1%	86.3%
Material Sales	12.0%	11.9%	12.3%	12.9%	13.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

19. Grupo Dragados

Grupo Dragados (Consolidated) A/C period ended: 31-Dec

1) Income Statement

a) As Reported (thousands Euros)

Yr.	97	98	99	00	01	02
Revenue	2,941,200	3,330,790	3,726,050	4,495,010	5,433,351	5,767,254
COGS	1,683,016	1,921,770	2,079,440	2,476,180	3,166,310	3,334,808
Gross Income	1,258,184	1,409,020	1,646,610	2,018,830	2,267,041	2,432,446
Operating Expense	1,180,655	1,312,360	1,515,470	1,782,910	1,948,334	2,161,148
Operating Income	77,529	96,640	131,140	235,920	318,707	271,298
EBIT	107,298	141,150	146,240	294,050	396,449	282,976
Interest expense	59,921	48,420	50,530	78,060	101,237	104,849
Net Income before taxation	75,601	114,210	140,100	254,320	351,833	239,081
N.I. after tax & minor. int.	57,486	79,210	106,800	182,610	240,616	220,536
Dividend	31,075	31,075	31,075	28,659	31,368	31,368

Note: Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (thousands Euros)

Yr.	97	98	99	00	01	02
A/C Receivable	1,176,252	1,123,470	1,269,430	1,481,080	1,858,004	1,966,476
Quick Asset	1,680,592	1,831,250	1,943,940	2,078,320	2,812,669	3,024,090
Current Asset	2,002,332	2,151,790	2,287,810	2,388,420	3,087,255	3,279,739
Total Asset	2,823,634	3,098,850	3,580,800	4,121,880	5,213,088	5,481,093
Current Liability	1,561,372	1,657,670	1,959,260	2,482,910	3,068,542	3,457,678
Long-term Debt	164,346	175,290	262,590	282,270	642,106	494,840
Total Liability	1,998,922	2,250,710	2,700,340	3,064,900	4,049,226	4,279,461
Owners' Equity	823,712	848,140	880,460	1,056,980	1,163,862	1,201,632

3) Cash Flow Profile (thousands Euros)

Yr.	97	98	99	00	01	02
Net CFO						
Net CFI						
Cap. Expenditure						
Corp. Fin. Gap						

(Not Disclosed)

b) As % of 1997 level

Yr.	97	98	99	00	01	02
Revenue	100.0%	113.2%	126.7%	152.8%	184.7%	196.1%
COGS	100.0%	114.2%	123.6%	147.1%	188.1%	198.1%
Gross Income	100.0%	112.0%	130.9%	160.5%	180.2%	193.3%
Operating Expense	100.0%	111.2%	128.4%	151.0%	185.0%	183.0%
Operating Income	100.0%	124.7%	169.1%	304.3%	411.1%	349.9%
EBIT	100.0%	131.5%	136.3%	274.0%	369.5%	263.7%
Interest expense	100.0%	80.8%	84.3%	130.3%	169.0%	175.0%
Net Income before taxation	100.0%	151.1%	185.3%	336.4%	465.1%	316.2%
N.I. after tax & minor. int.	100.0%	137.8%	185.8%	317.7%	418.6%	383.6%
Dividend	100.0%	100.0%	100.0%	92.2%	100.9%	100.9%

b) As % of 1997 level

Yr.	97	98	99	00	01	02
A/C Receivable	100.0%	95.5%	107.9%	125.9%	158.0%	168.9%
Quick Asset	100.0%	110.3%	117.1%	125.2%	169.4%	182.1%
Current Asset	100.0%	107.5%	114.3%	119.3%	154.2%	163.8%
Total Asset	100.0%	109.7%	126.8%	146.0%	184.6%	194.1%
Current Liability	100.0%	106.2%	125.5%	159.0%	196.5%	221.5%
Long-term Debt	100.0%	106.7%	159.8%	171.8%	390.7%	301.1%
Total Liability	100.0%	112.5%	135.0%	153.3%	202.5%	214.0%
Owners' Equity	100.0%	103.0%	106.9%	126.3%	141.3%	145.9%

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	
Current Ratio	1.28	1.30	1.17	0.96	1.01	0.95	
Quick Ratio	1.06	1.10	0.99	0.84	0.92	0.87	
Avg. Collection Period (days)	149.68	126.01	117.20	111.67	112.16	121.66	Liquidity ratio
Total Asset Turnover	1.07	1.12	1.12	1.17	1.16	1.08	Activity ratio
Gross Profit Margin	42.78%	42.30%	44.19%	44.91%	41.72%	42.18%	
Operating Profit Margin	2.64%	2.90%	3.52%	5.25%	5.87%	4.70%	
Net Profit Margin	2.57%	3.43%	3.76%	5.66%	6.47%	4.15%	Profitability ratio
ROA	2.76%	3.86%	4.19%	6.60%	7.53%	4.47%	
ROE	9.83%	13.66%	16.21%	26.25%	31.67%	20.21%	
Total Debt ratio	2.43	2.65	3.07	2.90	3.48	3.56	
Debt Service ratio	1.79	2.92	2.89	3.77	3.92	2.70	Finance ratio
Dividend Payout ratio	54.1%	39.2%	29.1%	15.7%	13.0%	14.2%	Market ratio

5) Revenue by Regions

Yr.	97	98	99	00	01	02	
Spain	2,044.4	2,329.2	2,575.4	3,205.5	3,781.8	4,408.3	
America	363.7	519.0	688.6	707.1	897.5	699.5	
Rest of Europe	258.5	233.5	145.8	252.3	298.2	310.6	
Africa	59.3	78.3	163.7	113.9	77.2	93.9	
Others	21.6	27.0	8.6	20.8	62.1	29.6	
Total	2,747.5	3,187.1	3,582.0	4,299.6	5,116.8	5,541.9	

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	
Spain	74.4%	73.1%	71.9%	74.6%	73.9%	79.5%	
America	13.2%	16.3%	19.2%	16.4%	17.5%	12.6%	
Rest of Europe	9.4%	7.3%	4.1%	5.9%	5.8%	5.6%	
Africa	2.2%	2.5%	4.6%	2.6%	1.5%	1.7%	
Others	0.8%	0.8%	0.2%	0.5%	1.2%	0.5%	
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

6) Revenue by Business Areas

Yr.	97	98	99	00	01	02	
Construction	1,974.3	2,103.4	2,337.2	2,437.0	2,690.6	3,130.5	
Transp. infrastr. concessions	0.0	28.7	33.2	29.8	75.8	5.9	
Services	316.7	396.1	608.7	951.6	1,178.8	1,443.8	
Industrial	557.4	693.5	787.6	763.5	971.4	1,017.5	
Real Estate	64.4	140.4	101.4	117.7	0.2	2.0	
Total	2,912.8	3,362.1	3,868.1	4,299.6	5,116.8	5,599.7	

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	
Construction	67.8%	62.6%	60.4%	56.7%	56.5%	55.9%	
Transp. infrastr. concessions	0.0%	0.9%	0.9%	0.7%	1.5%	0.1%	
Services	10.9%	11.8%	15.7%	22.1%	23.0%	25.8%	
Industrial	19.1%	20.6%	20.4%	17.8%	19.0%	18.2%	
Real Estate	2.2%	4.2%	2.6%	2.7%	0.0%	0.0%	
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

20. Groupe GTM

Groupe GTM (Consolidated) A/C period

31-Dec

1) Income Statement

a) As Reported (million Euros)

Yr.	97	98	99
Revenue	5,835	7,121	7,920
COGS	4,811	5,004	5,477
Gross Income	2,024	2,117	2,443
Operating Expense	1,860	1,958	2,239
Operating Income	164	159	204
EBIT	52	80	152
Interest expense	484	74	82
Net Income before taxation	35	60	134
N.I. after tax & minor. Int.	39	65	143
Dividend	20	23	36

Note:

Taxation effect is consistently not included except dividend payout ratio.

b) As % of 1997 level

Yr.	97	98	99
Revenue	100.0%	104.2%	115.9%
COGS	100.0%	104.0%	113.8%
Gross Income	100.0%	104.6%	120.7%
Operating Expense	100.0%	105.3%	120.4%
Operating Income	100.0%	97.0%	124.4%
EBIT	100.0%	153.8%	292.3%
Interest expense	100.0%	15.3%	16.9%
Net Income before taxation	100.0%	171.4%	382.9%
N.I. after tax & minor. Int.	100.0%	166.7%	366.7%
Dividend	100.0%	115.0%	180.0%

2) Balance Sheet

a) As Reported (million Euros)

Yr.	97	98	99
A/C Receivable	2,238	2,273	2,607
Quick Asset	3,933	3,811	4,178
Current Asset	5,755	5,277	5,162
Total Asset	7,355	7,151	7,408
Current Liability	5,207	4,764	4,392
Long-term Debt	428	430	662
Total Liability	5,635	5,194	5,054
Owners' Equity	891	867	1,023

b) As % of 1997 level

Yr.	97	98	99
A/C Receivable	100.0%	101.6%	116.5%
Quick Asset	100.0%	96.9%	106.2%
Current Asset	100.0%	91.7%	89.7%
Total Asset	100.0%	97.2%	100.7%
Current Liability	100.0%	91.5%	84.3%
Long-term Debt	100.0%	100.9%	155.4%
Total Liability	100.0%	97.2%	98.8%
Owners' Equity	100.0%	97.3%	114.8%

3) Cash Flow Profile (millions Euros)

Yr.	97	98	99
Net CFO	337	589	629
Net CFI	-339	-352	-432
Cap. Expenditure	238	318	281
Corp. Fin. Gap	-2	237	197

4) Key Financial Ratios

Yr.	97	98	99	
Current Ratio	1.11	1.11	1.18	
Quick Ratio	0.76	0.80	0.95	
CFO/Current liab	0.06	0.12	0.14	
Avg. Collection Period (days)	115.40	115.61	112.45	
Total Asset Turnover	0.95	0.98	1.09	Liquidity ratio
Gross Profit Margin	29.61%	29.73%	30.85%	
Operating Profit Margin	2.40%	2.23%	2.58%	
Net Profit Margin	0.51%	0.84%	1.69%	
ROA	0.49%	0.83%	1.84%	
ROE	4.39%	6.83%	14.18%	Activity ratio
Total Debt ratio	7.25	7.25	6.24	
Debt Service ratio	0.11	1.08	1.85	
CAPEX ratio	1.42	1.85	2.24	Profitability ratio
Dividend Payout ratio	51.3%	35.4%	25.2%	Finance ratio
				Market ratio

current asset/current liab
quick asset/current liab
CFO/current liab
365*ave acc. receiv/revenue
revenue/ave asset
gross income/revenue
op. income/revenue
net income before tax/revenue
net profit margin*asset turnover
net income before tax/ave owners' equity
total liab/owners' equity
EBIT/interest expense
CFO/capital expenditure
dividend/net income after taxation

5) Revenue by Regions

Yr.	97	98	99
France	57.8%	56.4%	60.8%
Rest of Europe	20.5%	23.2%	20.7%
North America	4.7%	6.2%	6.2%
South America	1.0%	1.2%	1.3%
Africa	7.1%	6.4%	6.8%
Middle East	2.1%	1.8%	1.5%
Far East	6.8%	4.8%	2.7%
Total	100%	100%	100%

6) Revenue by Business Areas

Yr.	97	98	99
Concession	388	451	492
Roads	1,824	2,012	2,359
Industrial Activities	1,862	1,986	2,368
Building & Civil Eng	2,823	2,549	2,270
Others	186	368	334
Total	6,883	7,376	7,823

b) As % of Total Revenue

Yr.	97	98	99
Concession	5.6%	6.1%	6.3%
Roads	26.5%	27.3%	30.2%
Industrial Activities	24.1%	27.1%	30.3%
Building & Civil Eng	41.0%	34.6%	29.0%
Others	2.7%	5.0%	4.3%
Total	100.0%	100.0%	100.0%

21. Halliburton

Halliburton (Consolidated)

A/C period ended: 31-Dec

1) Income Statement

a) As Reported (US\$ millions)

Yr.	97	98	99	00	01	02	03
Revenue	16,272	17,353	14,898	11,944	13,046	12,572	16,271
COGS	14,202	15,376	13,781	11,218	11,575	12,379	15,268
Gross Income	2,070	1,977	1,117	726	1,471	193	1,003
Operating Income	1,399	397	650	462	1,084	-112	720
EBIT	1,399	397	809	775	1,341	-764	-431
Interest expense	111	137	144	146	147	113	139
Net Income before taxation	1,313	279	714	648	1,211	-880	-539
N.I. after tax & minor. int.	772	-15	438	501	809	-990	-820
Dividend	218	219	222	223	215	219	219

Note:

Taxation effect is consistently not included except dividend payout ratio

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
Revenue	100.0%	106.6%	91.6%	73.4%	80.2%	77.3%	100.0%
COGS	100.0%	108.3%	97.0%	79.0%	81.5%	87.2%	107.5%
Gross Income	100.0%	95.5%	54.0%	35.1%	71.1%	9.3%	48.5%
Operating Income	100.0%	28.3%	46.5%	33.0%	77.5%	-8.0%	51.5%
EBIT	100.0%	28.4%	57.8%	55.4%	95.9%	-54.6%	-30.8%
Interest expense	100.0%	123.1%	129.4%	131.2%	132.1%	101.5%	124.9%
Net Income before taxation	100.0%	21.2%	54.4%	49.4%	92.2%	-67.0%	-41.1%
N.I. after tax & minor. int.	100.0%	-1.9%	56.7%	64.9%	104.8%	-129.3%	-106.2%
Dividend	100.0%	100.6%	101.6%	102.3%	98.6%	100.4%	100.4%

2) Balance Sheet

a) As Reported (US\$ millions)

Yr.	97	98	99	00	01	02	03
A/C Receivable	3,368	3,860	3,879	3,845	4,095	3,257	4,765
Quick Asset	3,772	4,063	4,345	4,076	4,365	4,364	6,580
Current Asset	5,438	6,083	6,022	5,568	5,573	5,560	7,919
Total Asset	10,704	11,112	10,728	10,103	10,966	12,844	15,463
Current Liability	3,453	4,004	3,693	3,826	2,908	3,272	6,542
Long-term Debt	1,297	1,370	1,056	1,049	1,403	1,181	3,415
Total Liability	6,397	6,881	6,288	6,137	6,214	9,205	12,816
Owners' Equity	4,317	4,231	4,440	3,966	4,752	3,639	2,647

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
A/C Receivable	100.0%	113.9%	114.5%	113.5%	120.9%	96.1%	140.6%
Quick Asset	100.0%	107.7%	115.2%	108.1%	116.3%	115.7%	174.4%
Current Asset	100.0%	111.9%	110.7%	102.4%	102.5%	102.2%	145.6%
Total Asset	100.0%	103.8%	100.2%	94.4%	102.4%	120.0%	144.5%
Current Liability	100.0%	115.9%	107.0%	110.8%	84.2%	94.8%	189.5%
Long-term Debt	100.0%	105.6%	81.4%	80.9%	108.2%	91.1%	263.3%
Total Liability	100.0%	107.7%	96.4%	96.1%	97.3%	144.1%	200.7%
Owners' Equity	100.0%	98.0%	102.8%	91.9%	110.1%	84.3%	61.3%

3) Cash Flow Profile (US\$ millions)

Yr.	97	98	99	00	01	02	03
Net CFO	833	454	233	-57	1029	1562	-775
Net CFI	-873	-846	-159	-411	-858	-473	-196
Cap. Expenditure	880	914	593	578	797	-764	515
Corp. Fin. Gap	-40	-392	74	-468	171	1089	-971

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03	
Current Ratio	1.57	1.52	1.63	1.46	1.92	1.70	1.21	Liquidity ratio
Quick Ratio	1.09	1.01	1.18	1.07	1.51	1.33	1.01	
CFO Ratio	0.24	0.11	0.06	-0.01	0.35	0.48	-0.12	
Avg. Collection Period (days)	57.09	76.23	94.81	118.02	111.07	106.72	89.98	Activity ratio
Total Asset Turnover	2.15	1.59	1.36	1.15	1.24	1.06	1.15	
Gross Profit Margin	12.72%	11.39%	7.50%	6.08%	11.28%	1.54%	6.16%	Profitability ratio
Operating Profit Margin	8.60%	2.26%	4.36%	3.87%	8.31%	-0.89%	4.43%	
Net Profit Margin	8.07%	1.61%	4.79%	5.43%	9.28%	-7.00%	-3.31%	
ROA	17.34%	2.56%	6.54%	6.22%	11.50%	-7.39%	-3.81%	
ROE	40.55%	6.53%	16.47%	15.42%	27.78%	-20.97%	-17.15%	
Total Debt ratio	1.48	1.63	1.42	1.55	1.31	2.53	4.84	Finance ratio
Debt Service ratio	12.57	2.90	5.62	5.31	9.12	-6.76	-3.10	
CAPEX ratio	0.95	0.50	0.39	-0.10	1.29	-2.04	-1.50	
Dividend Payout ratio	28.2%	-1462.7%	50.6%	44.5%	26.6%	-21.9%	-26.7%	Market ratio

current asset/current liab
quick asset/current liab
CFO/current liab
365*ave acc. receiv./revenue
revenue/ave asset
gross income/revenue
op. income/revenue
net income before tax/revenue
net profit margin*asset turnover
net income before tax/ave. owners' equity
total liab/owners' equity
EBIT/Interest expense
CFO/capital expenditure
dividend/net income after taxation

5) Revenue by Regions

a) As Reported (US\$ millions)

Yr.	97	98	99	00	01	02	03
US	6,507	6,132	4,781	4,073	4,911	4,139	4,415
UK	2,315	2,247	1,740	1,512	1,800	1,521	1,473
Iraq	0	0	0	0	2	1	2,399
Rest of World	7,450	8,974	8,377	6,359	6,333	6,911	7,984
Total	16,272	17,353	14,898	11,944	13,046	12,572	16,271

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
US	40.0%	35.3%	32.1%	34.1%	37.6%	32.9%	27.1%
UK	14.2%	12.9%	11.7%	12.7%	13.8%	12.1%	9.1%
Iraq	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	14.7%
Rest of World	45.8%	51.7%	56.2%	53.2%	48.5%	55.0%	49.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

6) Revenue by Business Areas

a) As Reported (US\$ millions)

Yr.	97	98	99	00	01	02	03
Energy Services	8,505	9,010	6,999	7,916	7,811	6,836	6,995
Eng. & Constr.	4,993	5,495	5,314	4,028	5,235	5,736	9,276
Dresser Equip.	2,774	2,849	2,585	0	0	0	0
Total	16,272	17,353	14,898	11,944	13,046	12,572	16,271

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Energy Services	52.3%	51.9%	47.0%	66.3%	59.9%	54.4%	43.0%
Eng. & Constr.	30.7%	31.7%	35.7%	33.7%	40.1%	45.6%	57.0%
Dresser Equip.	17.0%	16.4%	17.4%	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

22. Hazama

Hazama (Consolidated) A/C period ended: 31-Mar**1) Income Statement****a) As Reported (millions Yen)**

Yr.	99	00	01	02	03
Revenue	534,713	452,408	457,432	416,902	362,163
COGS	486,233	410,923	417,408	380,216	340,808
Gross Income	48,480	41,485	40,024	36,686	21,355
Operating Expense	30,130	25,420	22,531	21,356	17,325
Operating Income	18,350	16,065	17,493	15,330	4,030
EBIT	11,993	-19,821	10,521	4,970	-105,107
Interest expense	12,357	9,970	8,156	5,624	5,336
Net Income before taxation	1,274	-26,503	3,573	-4	-109,958
N.I. after tax & minor. Int.	42	-19,815	2,305	-1,859	-122,596
Dividend	0	0	0	0	0

Source: Company Analysis

Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet**a) As Reported (millions Yen)**

Yr.	99	00	01	02	03
A/C Receivable	152,785	141,680	149,506	147,227	105,683
Quick Asset	235,395	233,144	189,074	176,352	142,169
Current Asset	410,928	401,096	301,679	281,615	209,108
Total Asset	694,486	688,993	528,115	504,194	374,669
Current Liability	505,798	541,336	301,843	272,920	222,653
Long-term Debt	141,516	107,854	200,744	196,157	211,484
Total Liability	683,326	686,626	527,707	495,570	485,839
Owners' Equity	11,160	2,367	408	8,624	-111,170

Source: Company Analysis

3) Cash Flow Profile (millions Yen)

Yr.	99	00	01	02	03
Net CFO	11,691	13,889	8,298	-16,396	-16,396
Net CFI	8,082	16,936	1,862	8,050	8,050
Cap. Expenditure	1,831	1,711	1,258	744	744
Corp. Fin. Gap	19,773	30,825	10,160	-8,348	-8,348

Source: Company Analysis

b) As % of 1999 level

Yr.	99	00	01	02	03
Revenue	100.0%	84.6%	85.5%	78.0%	67.7%
COGS	100.0%	84.5%	85.8%	78.2%	70.1%
Gross Income	100.0%	85.6%	82.6%	75.7%	44.0%
Operating Expense	100.0%	84.4%	74.8%	70.9%	57.5%
Operating Income	100.0%	87.5%	96.3%	83.5%	22.0%
EBIT	100.0%	-165.3%	87.7%	41.4%	-876.4%
Interest expense	100.0%	80.7%	66.0%	45.5%	43.2%
Net Income before taxation	100.0%	-2237.3%	280.5%	-0.3%	-8630.9%
N.I. after tax & minor. Int.	100.0%	-47178.6%	5488.1%	-3950.0%	-291895.2%
Dividend	100.0%				

b) As % of 1999 level

Yr.	99	00	01	02	03
A/C Receivable	100.0%	92.7%	97.9%	96.4%	69.2%
Quick Asset	100.0%	99.0%	80.3%	74.9%	60.4%
Current Asset	100.0%	97.6%	73.4%	68.5%	50.9%
Total Asset	100.0%	99.2%	76.0%	72.6%	53.9%
Current Liability	100.0%	107.0%	59.7%	54.0%	44.0%
Long-term Debt	100.0%	76.2%	141.9%	138.6%	149.4%
Total Liability	100.0%	100.5%	77.2%	72.5%	71.1%
Owners' Equity	100.0%	21.2%	3.7%	77.3%	-996.1%

4) Key Financial Ratios

Yr.	1999	2000	2001	2002	2003
Current Ratio	0.81	0.74	1.00	1.03	0.94
Quick Ratio	0.47	0.43	0.63	0.65	0.64
CFO Ratio	N.A.	0.02	0.05	0.03	-0.07
Avg. Collection Period (days)	N.A.	118.79	116.17	129.90	127.45
Total Asset Turnover	0.72	0.65	0.75	0.81	0.82
Gross Profit Margin	9.07%	9.17%	8.75%	8.80%	5.90%
Operating Profit Margin	3.43%	3.55%	3.82%	3.68%	1.11%
Net Profit Margin	0.24%	-6.30%	0.78%	0.00%	-30.36%
ROA	0.17%	-4.12%	0.59%	0.00%	-25.02%
ROE	11.44%	-42.12%	257.51%	-0.09%	214.46%
Total Debt ratio	61.23	290.08	1293.40	57.46	-4.37
Debt Service ratio	0.97	-1.99	1.29	0.88	-19.70
CAPEX ratio	N.A.	6.39	8.12	6.60	-22.04
Dividend Payout ratio	0.0%	0.0%	0.0%	0.0%	0.0%
	93.21%	94.22%	95.17%	93.04%	115.87%

5) Revenue by Regions

Not disclosed. Sales are assumed to be focused in Japan.

6) Revenue by Business Areas

Yr.	1999	2000	2001	2002	2003
Construction	532,616	416,777	413,911	361,900	331,360
Real Estate	94,176	105,945	107,635	90,692	75,155
Elimination	-92,078	-70,313	-84,113	-55,690	-44,352
Total	534,714	452,409	457,433	416,902	362,163

b) As % of Total Revenue

Yr.	99	00	01	02	03
Construction	99.6%	92.1%	90.5%	91.6%	91.5%
Real Estate	17.6%	23.4%	23.5%	21.8%	20.8%
Elimination	-17.2%	-15.5%	-14.0%	-13.4%	-12.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

23. HBG

HBG (Consolidated)

A/C period ended: 31-Dec

1) Income Statement

a) As Reported (million Euros)

Yr.	97	98	99	00	01
Revenue	4,845	4,714	4,979	5,397	5,817
COGS	4,056	3,994	4,236	4,603	4,830
Gross Income	789	720	743	794	787
Operating Expense	700	646	662	706	663
Operating Income	89	74	81	88	124
EBIT	72	88	80	46	157
Interest expense	11	24	25	33	34
Net Income before taxation	75	79	69	-61	140
N.I. after tax & minor. int.	54	60	48	-67	110
Dividend	22	24	25	26	0

Note:

Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (million Euros)

Yr.	97	98	99	00	01
A/C Receivable	951	812	975	942	886
Quick Asset	1,794	1,515	1,675	1,711	1,653
Current Asset	1,814	1,529	1,694	1,735	2,086
Total Asset	2,428	2,108	2,295	2,381	2,789
Current Liability	1,750	1,361	1,529	1,726	1,995
Long-term Debt	106	218	173	189	214
Total Liability	2,074	1,785	1,907	2,091	2,392
Owners' Equity	354	323	388	290	397

3) Cash Flow Profile (millions Euros)

Yr.	97	98	99	00	01
Net CFO	3	148	81	200	186
Net CFI	-355	-149	-131	-138	-153
Cap. Expenditure	225	19	125	120	125
Corp. Fin. Gap	-352	-2	-50	62	33

b) As % of 1997 level

Yr.	97	98	99	00	01
Revenue	100.0%	97.3%	102.8%	111.4%	115.9%
COGS	100.0%	98.5%	104.4%	113.5%	119.1%
Gross Income	100.0%	91.2%	94.2%	100.6%	99.7%
Operating Expense	100.0%	92.2%	94.5%	100.8%	94.7%
Operating Income	100.0%	83.5%	91.2%	99.0%	139.5%
EBIT	100.0%	121.1%	110.7%	-83.7%	217.2%
Interest expense	100.0%	210.7%	219.4%	289.6%	288.4%
Net Income before taxation	100.0%	106.0%	92.1%	-81.4%	186.9%
N.I. after tax & minor. int.	100.0%	110.0%	88.5%	-123.5%	202.8%
Dividend	100.0%	109.1%	113.6%	118.2%	0.0%

b) As % of 1997 level

Yr.	97	98	99	00	01
A/C Receivable	100.0%	85.4%	102.6%	99.1%	93.2%
Quick Asset	100.0%	84.4%	93.4%	95.4%	92.1%
Current Asset	100.0%	84.3%	93.4%	95.7%	115.0%
Total Asset	100.0%	86.8%	94.5%	98.1%	114.9%
Current Liability	100.0%	77.8%	87.4%	98.6%	114.0%
Long-term Debt	100.0%	206.5%	163.9%	179.0%	202.7%
Total Liability	100.0%	86.1%	92.0%	100.8%	115.3%
Owners' Equity	100.0%	91.2%	109.6%	81.9%	112.2%

4) Key Financial Ratios

Yr.	97	98	99	00	01	
Current Ratio	1.04	1.12	1.11	1.01	1.05	
Quick Ratio	1.03	1.11	1.10	0.99	0.83	Liquidity ratio
CFO Ratio	0.00	0.11	0.05	0.12	0.09	
Avg. Collection Period (days)	55.94	68.22	65.49	64.82	59.39	
Total Asset Turnover	2.42	2.08	2.26	2.31	2.17	Activity ratio
Gross Profit Margin	16.29%	15.27%	14.92%	14.71%	14.01%	
Operating Profit Margin	1.83%	1.57%	1.63%	1.63%	2.21%	
Net Profit Margin	1.55%	1.68%	1.39%	-1.13%	2.49%	Profitability ratio
ROA	3.73%	3.50%	3.13%	-2.61%	5.42%	
ROE	19.71%	23.48%	19.42%	-17.99%	40.76%	
Total Debt ratio	5.86	5.53	4.91	7.21	6.03	
Debt Service ratio	6.34	3.65	3.20	-1.39	4.62	Finance ratio
CAPEX ratio	0.01	7.85	0.65	1.67	1.49	
Dividend Payout ratio	40.6%	40.2%	52.1%	-38.8%	0.0%	Market ratio

current asset/current liab

quick asset/current liab

CFO/current liab

365*ave acc. receiv/revenue

revenue/ave asset

gross income/revenue

op. income/revenue

net income before tax/revenue

net profit margin*asset turnover

net income before tax/ave owners' equity

total liab/owners' equity

EBIT/interest expense

CFO/capital expenditure

dividend/net income after taxation

5) Revenue by Regions

Yr.	97	98	99	00	01
Netherlands	1,107	1,161	1,392	1,500	1,381
UK	1,145	1,302	1,377	1,469	1,709
Germany	1,411	1,088	1,023	904	932
US	1,163	1,163	401	552	450
Ireland			225	280	370
Belgium			152	189	184
Rest of World			450	570	644
Total	4,845	4,714	5,020	5,464	5,670

6) Revenue by Business Areas

Yr.	97	98	99	00	01
Constr. & property			2,321	2,445	2,543
Civil engineering			2,079	2,324	2,502
Dredging			325	411	480
Consult. & engin.			139	133	141
Others			156	151	4
Total			5,020	5,464	5,670

b) As % of Total Revenue

Yr.	97	98	99	00	01
Netherlands	22.6%	24.6%	27.7%	27.5%	24.4%
UK	23.6%	27.6%	27.4%	26.9%	30.1%
Germany	29.1%	23.1%	20.4%	16.5%	16.4%
US	24.4%	24.7%	8.0%	10.1%	7.9%
Ireland			4.5%	5.1%	6.5%
Belgium			3.0%	3.5%	3.2%
Rest of World			9.0%	10.4%	11.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

b) As % of Total Revenue

Yr.	97	98	99	00	01
Constr. & property			46.2%	44.7%	44.9%
Civil engineering			41.4%	42.5%	44.1%
Dredging			6.5%	7.5%	8.5%
Consult. & engin.			2.8%	2.4%	2.5%
Others			3.1%	2.8%	0.1%
Total			100.0%	100.0%	100.0%

24. Hochtief

Hochtief (Consolidated)

A/C period ended: 31-Dec

1) Income Statement

a) As Reported (thousands Euros)

Yr.	97	98	99	00	01	02	03
Revenue	3,225,104	3,317,491	5,078,457	9,805,036	12,212,288	12,022,299	10,534,212
COGS	2,227,688	2,295,141	3,882,789	8,125,148	9,890,044	9,514,260	8,077,842
Gross Income	997,415	1,022,350	1,195,668	1,479,888	2,322,244	2,508,039	2,456,370
Operating Expense	915,235	877,415	1,006,929	1,300,311	1,904,700	1,965,046	1,810,980
Operating Income	82,180	144,935	188,739	179,577	417,544	542,993	645,390
EBIT	66,294	234,045	215,037	25,021	37,228	90,817	165,732
Interest expense	22,571	26,858	25,205	43,693	63,251	74,273	78,346
Net income before taxation	141,265	249,616	301,027	205,013	78,370	120,921	159,459
N.I. after tax & minor int.	81,107	187,958	203,991	122,949	23,865	43,312	16,231
Dividend	43,000	47,000	59,500	59,500	35,000	38,500	45,500

Note:

Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (thousands Euros)

Yr.	97	98	99	00	01	02	03
A/C Receivable	271,394	350,263	1,207,514	1,843,401	2,320,103	2,449,074	2,419,960
Quick Asset	2,101,343	2,436,471	3,590,324	3,863,728	5,293,048	4,872,393	5,014,200
Current Asset	2,478,021	2,542,229	3,677,780	3,906,952	5,337,069	4,918,257	5,063,391
Total Asset	4,170,978	4,444,328	5,982,817	6,569,375	8,015,901	7,611,186	7,399,216
Current Liability	1,813,720	1,181,123	2,410,112	2,927,906	3,766,346	3,358,473	3,227,947
Long-term Debt	134,640	246,733	247,253	449,815	521,870	794,719	851,059
Total Liability	2,932,202	2,558,980	3,948,631	4,567,147	5,840,366	5,670,858	5,423,924
Owners' Equity	1,238,775	1,885,348	2,034,186	1,902,228	2,175,535	1,940,328	1,975,292

3) Cash Flow Profile (thousands Euros)

Yr.	97	98	99	00	01	02	03
Net CFO	N.A.	411,186	256,157	-197,822	233,079	503,376	347,702
Net CFI	N.A.	94,434	-423,361	-267,496	-316,273	-533,901	86,591
Cap. Expenditure	N.A.	82,459	89,385	145,176	490,733	335,969	263,827
Corp. Fin. Gap	N.A.	505,620	-167,204	-465,318	-83,194	-30,525	434,293

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
Revenue	100.0%	102.9%	157.5%	297.8%	378.7%	372.8%	326.6%
COGS	100.0%	103.0%	174.3%	364.7%	444.0%	427.1%	362.6%
Gross Income	100.0%	102.5%	119.9%	148.4%	232.8%	251.5%	246.3%
Operating Expense	100.0%	95.9%	110.0%	142.1%	208.1%	214.7%	197.9%
Operating Income	100.0%	176.4%	229.7%	218.5%	508.1%	660.7%	785.3%
EBIT	100.0%	363.0%	324.4%	37.7%	56.2%	137.0%	250.0%
Interest expense	100.0%	119.0%	111.7%	193.6%	280.2%	328.1%	347.1%
Net Income before taxation	100.0%	176.7%	213.1%	145.1%	55.5%	85.6%	112.9%
N.I. after tax & minor int.	100.0%	231.7%	251.5%	151.6%	29.4%	53.4%	20.0%
Dividend	100.0%	109.3%	138.4%	138.4%	81.4%	89.5%	105.8%

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
A/C Receivable	100.0%	129.1%	444.9%	605.5%	854.9%	902.4%	891.7%
Quick Asset	100.0%	116.0%	170.9%	183.9%	251.9%	231.9%	238.6%
Current Asset	100.0%	102.6%	148.4%	157.7%	215.4%	198.5%	204.3%
Total Asset	100.0%	106.6%	143.4%	157.5%	192.2%	182.5%	177.4%
Current Liability	100.0%	65.1%	132.9%	161.4%	207.7%	185.2%	178.0%
Long-term Debt	100.0%	183.3%	183.6%	334.1%	387.6%	590.3%	632.1%
Total Liability	100.0%	87.3%	134.7%	159.2%	199.2%	193.4%	185.0%
Owners' Equity	100.0%	152.2%	164.2%	153.6%	175.6%	156.6%	159.5%

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03
Current Ratio	1.37	2.15	1.53	1.33	1.42	1.46	1.57
Quick Ratio	1.16	2.06	1.49	1.32	1.41	1.45	1.55
CFO Ratio	N.A.	0.35	0.11	-0.07	0.06	0.15	0.11
Avg. Collection Period (days)	39.36	34.20	55.98	54.17	59.23	72.40	84.35
Total Asset Turnover	0.78	0.77	0.97	1.53	1.67	1.54	1.40
Gross Profit Margin	30.93%	30.82%	23.54%	15.41%	19.02%	20.86%	23.32%
Operating Profit Margin	2.55%	4.37%	3.72%	1.87%	3.42%	4.52%	6.13%
Net Profit Margin	4.38%	7.52%	5.93%	2.13%	0.84%	1.01%	1.51%
ROA	3.42%	5.79%	5.77%	3.27%	1.07%	1.55%	2.12%
ROE	11.27%	15.98%	15.36%	10.42%	3.84%	5.88%	8.14%
Total Debt ratio	2.37	1.36	1.94	2.45	2.68	2.92	2.75
Debt Service ratio	2.94	8.71	8.53	0.57	0.59	1.22	2.12
CAPEX ratio	N.A.	4.99	2.87	-1.38	0.47	1.50	1.32
Dividend Payout ratio	53.0%	25.0%	29.2%	48.4%	146.7%	88.9%	280.3%

Liquidity ratio	current asset/current liab
Activity ratio	quick asset/current liab
Profitability ratio	CFO/current liab
Finance ratio	365*ave acc. receiv./revenue
Market ratio	revenue/ave asset
	gross income/revenue
	op. income/revenue
	net income before tax/revenue
	net profit margin*asset turnover
	net income before tax/ave.owners' equity
	total liab/owners' equity
	EBIT/interest expense
	CFO/capital expenditure
	dividend/net income after taxation

5) Revenue by Regions

a) As Reported (thousands Euros)

Yr.	98	99	00	01	02	03
Germany	2,637,226	3,049,452	2,540,228	2,033,055	1,805,877	1,912,513
Rest of Europe	583,946	752,563	722,149	432,879	508,509	516,927
America	78,117	1,275,297	6,303,298	6,953,040	6,572,127	5,402,103
Asia	4,778	7,423	35,203	936,156	748,537	494,551
Australia	0	192	105	1,814,380	2,375,468	2,202,750
Africa	0	224	-15,255	1,475	-3,345	5,536
Total	3,304,067	5,085,151	9,585,728	12,170,985	12,007,173	10,534,380

b) As % of Total Revenue

Yr.	98	99	00	01	02	03
Germany	79.8%	60.0%	26.5%	16.7%	15.0%	18.2%
Rest of Europe	17.7%	14.8%	7.5%	3.6%	4.2%	4.9%
America	2.4%	25.1%	65.8%	57.1%	54.7%	51.3%
Asia	0.1%	0.1%	0.4%	7.7%	6.2%	4.7%
Australia	0.0%	0.0%	0.0%	14.9%	19.8%	20.9%
Africa	0.0%	0.0%	-0.2%	0.0%	0.0%	0.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

6) Revenue by Business Areas

a) As Reported (thousands Euros)

Yr.	98	99	00	01	02	03
Airport	3,801	23,886	2,151	10,925	21,668	1,509
Construction	2,484,419	2,950,494	2,711,780	2,160,951	1,772,480	0
Development	0	0	210,024	346,482	460,568	534,456
Americas	0	0	6,228,900	5,893,765	6,454,766	5,353,320
Asia Pacific	0	0	0	2,755,935	3,138,385	2,647,651
International	662,364	1,903,293	405,567	276,821	361,584	0
Europe	0	0	0	0	0	2,153,089
Consolidation	432,350	464,488	27,306	89,157	97,510	90,546
Total	3,582,954	5,342,161	9,585,728	12,534,036	12,306,961	10,780,581

b) As % of Total Revenue

Yr.	98	99	00	01	02	03
Airport	0.1%	0.4%	0.0%	0.1%	0.2%	0.0%
Construction	69.3%	55.2%	28.3%	17.2%	14.4%	0.0%
Development	0.0%	0.0%	2.2%	2.8%	3.7%	5.0%
Americas	0.0%	0.0%	65.0%	55.0%	52.4%	49.7%
Asia Pacific	0.0%	0.0%	0.0%	22.0%	25.5%	24.6%
International	18.5%	35.6%	4.2%	2.2%	2.9%	0.0%
Europe	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%
Consolidation	12.1%	8.7%	0.3%	0.7%	0.8%	0.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

25. Hyundai E&C

Hyundai E&C (Consolidated)

A/C period ended: 31-Dec

1) Income Statement

Yr.	99	00	01	02	03
a) As Reported (millions won)					
Revenue	5,726,955	6,384,858	6,297,303	5,443,359	5,152,272
COGS	5,126,430	5,965,559	6,231,747	5,060,456	4,678,575
Gross Income	600,525	429,299	65,556	382,903	473,697
Operating Expense	286,635	404,986	448,173	187,482	166,572
Operating Income	313,890	24,313	-382,617	195,421	307,125
EBIT	371,724	-2,476,264	-412,503	124,452	257,013
Interest expense	602,029	563,432	357,261	160,835	130,922
Net Income before taxation	-177,041	-2,986,807	-805,584	19,162	78,509
N.I. after tax & minor. int.	-120,855	-2,980,481	-809,593	19,162	78,509
Dividend	0	0	0	0	0

Note:

Taxation effect is consistency not included except dividend payout ratio.

2) Balance Sheet

Yr.	99	00	01	02	03
a) As Reported (millions won)					
A/C Receivable	2,879,932	2,475,285	1,449,128	1,113,338	935,250
Quick Asset	4,179,648	3,824,804	2,948,314	2,400,342	2,123,461
Current Asset	5,568,986	4,550,282	3,770,807	3,074,971	2,682,941
Total Asset	9,283,990	7,257,750	6,033,874	5,266,458	4,749,815
Current Liability	4,051,846	6,829,518	3,486,520	3,345,142	2,698,713
Long-term Debt	2,510,050	781,917	1,342,083	1,074,540	1,064,423
Total Liability	6,959,186	8,114,919	5,354,898	4,667,843	4,011,344
Owners' Equity	2,324,804	-857,169	678,976	598,615	738,471

3) Cash Flow Profile (millions won)

Yr.	99	00	01	02	03
Net CFO	-112,219	678,073	48,726	232,835	13,659
Net CFI	-29,607	212,466	6,500	251,798	83,301
Cap. Expenditure	80,483	47,749	17,732	76,801	41,559
Corp. Fin. Gap	-141,826	890,539	55,226	484,633	96,960

Yr.	99	00	01	02	03
b) As % of 1999 level					
Revenue	100.0%	111.5%	110.0%	95.0%	90.0%
COGS	100.0%	116.2%	121.6%	98.7%	91.3%
Gross Income	100.0%	71.5%	10.9%	63.8%	78.9%
Operating Expense	100.0%	141.3%	156.4%	65.4%	58.1%
Operating Income	100.0%	7.7%	-121.9%	62.3%	97.8%
EBIT	100.0%	-666.2%	-111.0%	33.5%	69.1%
Interest expense	100.0%	93.6%	59.3%	26.7%	21.7%
Net Income before taxation	100.0%	1687.1%	455.0%	-10.8%	-44.3%
N.I. after tax & minor. int.	100.0%	2466.2%	669.9%	-15.9%	-65.0%

Yr.	99	00	01	02	03
b) As % of 1999 level					
A/C Receivable	100.0%	85.9%	50.3%	38.7%	32.5%
Quick Asset	100.0%	86.7%	70.5%	57.4%	50.8%
Current Asset	100.0%	81.7%	67.7%	55.2%	48.2%
Total Asset	100.0%	78.2%	65.0%	56.7%	51.2%
Current Liability	100.0%	168.6%	86.0%	82.6%	66.6%
Long-term Debt	100.0%	31.5%	53.5%	42.8%	42.4%
Total Liability	100.0%	116.6%	76.9%	67.1%	57.6%
Owners' Equity	100.0%	-36.9%	29.2%	25.7%	31.8%

4) Key Financial Ratios

Yr.	99	00	01	02	03	
Current Ratio	1.37	0.67	1.08	0.92	0.99	Liquidity ratio
Quick Ratio	1.03	0.53	0.85	0.72	0.79	
CFO Ratio	-0.03	0.10	0.01	0.07	0.01	
Avg. Collection Period (days)	N.A.	153.07	113.73	85.91	72.56	Activity ratio
Total Asset Turnover	0.64	0.77	0.95	0.96	1.03	
Gross Profit Margin	10.49%	6.72%	1.04%	7.03%	9.19%	
Operating Profit Margin	5.48%	0.38%	-8.08%	3.59%	5.96%	Profitability ratio
Net Profit Margin	-3.09%	-46.78%	-12.79%	0.35%	1.52%	
ROA	-1.98%	-36.11%	-12.12%	0.34%	1.57%	
ROE	-9.64%	-407.02%	904.17%	3.00%	11.74%	Finance ratio
Total Debt ratio	2.99	-9.47	7.89	7.80	5.43	
Debt Service ratio	0.62	-4.39	-1.15	0.77	1.96	
CAPEX ratio	-1.39	14.20	2.75	3.03	0.33	Market ratio
Dividend Payout ratio	0.0%	0.0%	0.0%	0.0%	0.0%	
						current asset/current liab
						quick asset/current liab
						CFO/current liab
						365*ave acc. receiv/revenue
						revenue/ave asset
						gross income/revenue
						op. income/revenue
						net income before tax/revenue
						net profit margin*asset turnover
						net income before tax/ave owners' equity
						total liab/owners' equity
						EBIT/interest expense
						CFO/capital expenditure
						dividend/net income after taxation

5) Revenue by Regions

Yr.	99	00	01	02	03	
S. Korea	3,784,695	3,844,374	3,591,306	3,443,209	3,236,412	b) As % of Total Revenue
S. E. Asia	1,147,094	907,335	1,156,934	1,047,741	766,495	
Central Asia	715,619	1,157,909	1,107,416	764,444	1,063,622	
Rest of World	79,548	475,240	441,647	187,965	85,743	
Total	5,726,956	6,384,858	6,297,303	5,443,359	5,152,272	
						99
						00
						01
						02
						03

6) Revenue by Business Areas

Yr.	99	00	01	02	03	
Building works	1,950,856	2,248,211	2,148,737	2,291,039	2,241,715	b) As % of Total Revenue
Civil works	1,705,118	1,623,226	1,658,950	2,028,470	1,617,800	
Plant/Power	805,779	1,279,105	1,548,831	1,023,001	1,251,492	
Other	1,265,203	1,234,316	940,785	100,849	41,265	
Total	5,726,956	6,384,858	6,297,303	5,443,359	5,152,272	
						99
						00
						01
						02
						03

26. Impregilo

Impregilo (Consolidated) A/C period ended: 31-Dec

1) Income Statement

a) As Reported (thousand Euros)	97	98	99	00	01	02	03
Revenue	1,803,435	1,835,077	2,049,277	2,132,234	2,467,555	2,682,293	2,932,442
COGS	1,110,196	1,299,350	1,427,911	1,575,792	1,807,134	1,835,927	2,130,248
Gross Income	493,239	535,727	621,366	556,442	660,421	846,366	802,194
Operating Expense	438,430	466,585	550,606	596,207	575,693	708,789	620,703
Operating Income	54,809	69,142	70,760	-39,765	84,728	137,577	181,491
EBIT	51,887	77,592	75,332	-70,031	7,912	117,760	197,298
Interest expense	194,733	205,780	227,184	316,150	355,386	414,994	275,279
Net income before taxation	16,464	33,059	35,162	-130,156	42,854	41,949	115,896
N.I. after tax & minor. Int.	8,002	16,618	19,802	-79,512	40,907	25,083	50,463
Dividend	417	8,049	7,866	8,051	0	N.A.	8,200

Note: Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (thousand Euros)	97	98	99	00	01	02	03
A/C Receivable	550,160	722,863	675,493	657,109	954,628	829,012	865,949
Quick Asset	1,559,679	1,546,510	1,736,709	1,891,774	2,183,527	2,240,042	2,217,803
Current Asset	2,089,625	2,301,738	2,652,243	2,722,478	2,926,543	2,883,179	2,939,092
Total Asset	2,966,949	3,292,019	3,621,938	3,696,165	3,961,064	4,083,543	4,398,294
Current Liability	1,621,157	1,989,370	2,167,662	2,159,028	2,346,853	2,396,634	2,766,278
Long-term Debt	744,270	690,997	741,453	934,890	1,091,221	1,294,195	1,149,115
Total Liability	2,483,261	2,804,175	3,027,159	3,186,567	3,523,424	3,756,443	4,003,134
Owners' Equity	483,688	487,844	594,779	509,598	437,640	327,100	395,160

3) Cash Flow Profile (thousand Euros)

	97	98	99	00	01	02	03
Net CFO			-162,895	-96,884	76,636	144,748	538,328
Net CFI			-31,110	-25,100	92,673	140,726	-344,220
Cap. Expenditure			N.A.	N.A.	N.A.	N.A.	N.A.
Corp. Fin. Gap			-194,005	-121,985	169,309	285,473	194,108

Source: Ostris

b) As % of 1997 level	97	98	99	00	01	02	03
Revenue	100.0%	114.4%	127.8%	133.0%	153.9%	167.3%	182.9%
COGS	100.0%	117.0%	128.6%	141.9%	162.8%	185.4%	191.9%
Gross Income	100.0%	108.6%	126.0%	112.8%	133.9%	171.6%	182.6%
Operating Expense	100.0%	106.4%	125.6%	136.0%	131.3%	161.7%	141.6%
Operating Income	100.0%	126.2%	128.1%	-72.6%	154.6%	251.0%	331.1%
EBIT	100.0%	149.5%	145.2%	-135.0%	15.2%	227.0%	380.2%
Interest expense	100.0%	105.7%	116.7%	162.4%	182.5%	213.1%	141.4%
Net Income before taxation	100.0%	200.8%	213.6%	-790.6%	260.3%	254.8%	703.9%
N.I. after tax & minor. Int.	100.0%	232.7%	247.5%	-993.7%	511.2%	313.5%	630.7%
Dividend	100.0%	1930.2%	1886.3%	1930.7%	0.0%	#VALUE!	1966.4%

b) As % of 1997 level	97	98	99	00	01	02	03
A/C Receivable	100.0%	131.4%	122.8%	119.4%	173.5%	150.7%	157.4%
Quick Asset	100.0%	99.2%	111.4%	121.3%	140.0%	143.6%	142.2%
Current Asset	100.0%	110.2%	126.9%	130.3%	140.1%	138.0%	140.7%
Total Asset	100.0%	111.0%	122.1%	124.6%	133.5%	137.6%	148.2%
Current Liability	100.0%	122.7%	133.7%	133.2%	144.8%	147.8%	170.6%
Long-term Debt	100.0%	92.8%	99.6%	125.6%	145.3%	173.9%	154.4%
Total Liability	100.0%	112.9%	121.9%	128.3%	141.9%	151.3%	161.2%
Owners' Equity	100.0%	100.9%	123.0%	105.4%	90.5%	87.6%	81.7%

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03
Current Ratio	1.29	1.16	1.22	1.26	1.25	1.20	1.06
Quick Ratio	0.96	0.78	0.80	0.88	0.93	0.93	0.80
CFO Ratio	N.A.	N.A.	-0.08	-0.04	0.03	0.06	0.19
Avg. Collection Period (days)	N.A.	126.58	124.51	114.06	119.20	121.36	105.49
Total Asset Turnover	0.56	0.59	0.59	0.58	0.64	0.67	0.69
Gross Profit Margin	30.76%	29.19%	30.32%	26.10%	26.76%	31.55%	27.36%
Operating Profit Margin	3.42%	3.77%	3.45%	-1.86%	3.43%	5.13%	6.19%
Net Profit Margin	1.03%	1.80%	1.72%	-6.10%	1.74%	1.56%	3.95%
ROA	0.57%	1.06%	1.02%	-3.56%	1.12%	1.04%	2.73%
ROE	3.69%	6.81%	6.50%	-23.57%	9.05%	10.97%	32.09%
Total Debt ratio	5.13	5.75	5.09	6.25	8.05	11.48	10.13
Debt Service ratio	0.27	0.36	0.33	-0.22	0.02	0.28	0.72
CAPEX ratio	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Dividend Payout ratio	5.2%	43.2%	39.7%	-10.1%	0.0%	N.A.	16.2%

Liquidity ratio
Activity ratio
Profitability ratio
Finance ratio
Market ratio

current asset/current liab
quick asset/current liab
CFO/current liab
365*ave acc. receiv./revenue
revenue/ave.asset
gross income/revenue
op. income/revenue
net income before tax/revenue
net profit margin*asset turnover
net income before tax/ave.owners' equity
total liab/owners' equity
EBIT/interest expense
CFO/capital expenditure
dividend/net income after taxation

5) Revenue by Regions

a) As Reported (million Euros)

Yr.	97	98	99	00	01	02	03
Italy	1,160	1,470	1,617	2,226	3,028	2,321	
Europe	120	134	115	97	139	303	
America	251	263	371	289	276	276	
Africa	215	189	127	62	29	6	
Asia	295	285	326	288	57	26	
Elimination	-206	-290	-424	-494	-847	0	
Total	1,835	2,051	2,132	2,488	2,682	2,932	

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Italy	63.2%	71.7%	75.8%	90.2%	112.9%	79.2%	
Europe	6.5%	6.5%	5.4%	3.9%	5.2%	10.3%	
America	13.7%	12.8%	17.4%	11.7%	10.3%	9.4%	
Africa	11.7%	9.2%	6.0%	2.5%	1.1%	0.2%	
Asia	16.1%	13.9%	15.3%	11.7%	2.1%	0.9%	
Elimination	-11.2%	-14.1%	-19.9%	-20.0%	-31.6%	0.0%	
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

6) Revenue by Business Areas

a) As Reported (million Euros)

Yr.	97	98	99	00	01	02	03
Infrastructure	1,355	1,127	1,288	1,648	1,901		
Building	546	437	480	272	179		
Env. Sys.	233	220	379	490	536		
Concessions	99	152	227	115	276		
Property & Serv.	22	20	35	52	40		
Sundry activities	86	196	184	105	0		
Total	2,341	2,152	2,593	2,682	2,932		

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Infrastructure	57.9%	52.4%	49.7%	61.4%	64.8%		
Building	23.3%	20.3%	18.5%	10.1%	6.1%		
Env. Sys.	10.0%	10.2%	14.6%	18.3%	18.3%		
Concessions	4.2%	7.1%	8.8%	4.3%	9.4%		
Property & Serv.	0.9%	0.9%	1.3%	1.9%	1.4%		
Sundry activities	3.7%	9.1%	7.1%	3.9%	0.0%		
Total	100.0%	100.0%	100.0%	100.0%	100.0%		

27. Jacobs Engineering

Jacobs Engineering (Consolidated) A/C period ended: 30-Sep

1) Income Statement

Yr.	97	98	99	00	01	02	03
a) As Reported (US\$ thousands)							
Revenue	1,780,616	2,101,145	2,875,007	3,418,942	3,956,993	4,555,661	4,615,601
COGS	1,546,898	1,830,618	2,477,678	2,983,247	3,452,320	3,971,984	3,989,714
Gross Income	233,718	270,527	397,329	435,695	504,673	583,677	625,887
Operating Expense	160,157	184,043	289,034	311,082	360,821	411,307	428,772
Operating Income	73,561	86,484	108,295	124,613	143,852	172,370	197,115
EBIT	73,561	86,484	110,258	88,781	146,193	173,891	198,635
Interest expense	2,226	2,356	8,767	11,420	11,705	7,496	3,252
Net Income before taxation	77,449	88,784	104,522	81,322	138,206	168,754	196,939
N.I. after tax & minor. int.	46,895	54,385	65,445	50,981	87,760	109,690	128,010
Dividend	0	0	0	0	0	0	0

Note:

Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

Yr.	97	98	99	00	01	02	03
a) As Reported (US\$ thousands)							
A/C Receivable	382,051	394,841	566,005	710,979	817,160	845,360	778,056
Quick Asset	459,173	514,651	639,487	776,827	866,423	893,829	904,211
Current Asset	503,921	566,007	729,620	851,023	946,159	974,903	970,097
Total Asset	744,203	807,489	1,220,186	1,384,378	1,557,040	1,673,984	1,670,510
Current Liability	325,718	368,348	584,982	683,863	700,859	740,417	611,414
Long-term Debt	54,095	26,221	135,371	146,820	164,308	85,732	17,806
Total Liability	414,433	429,739	765,341	883,629	960,141	978,489	823,130
Owners' Equity	329,770	377,750	454,845	500,747	596,899	695,495	847,380

3) Cash Flow Profile (US\$ thousands)

Yr.	97	98	99	00	01	02	03
Net CFO	43,943	90,458	83,512	61,301	15,108	160,763	147,544
Net CFI	-69,541	-9,620	-220,639	-106,705	-63,628	-92,531	-17,656
Cap. Expenditure	44,805	46,335	235,086	68,296	55,550	75,335	22,497
Corp. Fin. Gap	-25,598	80,838	-137,127	-25,404	-48,520	68,232	129,888

b) As % of 1997 Level

Yr.	97	98	99	00	01	02	03
Revenue	100.0%	118.0%	161.5%	192.0%	222.2%	255.8%	259.2%
COGS	100.0%	118.3%	180.2%	192.9%	223.2%	256.8%	257.9%
Gross Income	100.0%	115.7%	170.0%	186.4%	215.9%	249.7%	267.8%
Operating Expense	100.0%	114.9%	180.5%	194.2%	225.3%	256.8%	267.7%
Operating Income	100.0%	117.6%	147.2%	189.4%	195.6%	234.3%	268.0%
EBIT	100.0%	117.6%	149.9%	120.7%	198.7%	236.4%	270.3%
Interest expense	100.0%	105.8%	393.8%	513.0%	525.8%	336.7%	146.1%
Net Income before taxation	100.0%	114.6%	135.0%	105.0%	178.4%	217.9%	254.3%
N.I. after tax & minor. int.	100.0%	116.0%	139.6%	108.7%	187.1%	233.9%	273.0%
Dividend	-	-	-	-	-	-	-

b) As % of 1997 Level

Yr.	97	98	99	00	01	02	03
A/C Receivable	100.0%	103.3%	153.4%	186.1%	213.9%	221.3%	203.7%
Quick Asset	100.0%	112.1%	139.3%	189.2%	188.7%	194.7%	196.9%
Current Asset	100.0%	112.3%	144.8%	188.9%	187.8%	193.5%	192.5%
Total Asset	100.0%	108.5%	164.0%	186.0%	209.2%	224.9%	224.5%
Current Liability	100.0%	113.1%	179.6%	210.0%	215.1%	227.3%	187.7%
Long-term Debt	100.0%	48.5%	250.2%	271.4%	303.7%	158.5%	32.9%
Total Liability	100.0%	103.7%	184.7%	213.2%	231.7%	238.1%	198.6%
Owners' Equity	100.0%	114.5%	137.9%	151.8%	181.0%	210.9%	257.0%

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03	
Current Ratio	1.55	1.54	1.25	1.24	1.35	1.32	1.59	Liquidity ratio
Quick Ratio	1.41	1.40	1.09	1.14	1.24	1.21	1.48	
CFO Ratio	0.13	0.25	0.14	0.12	0.02	0.22	0.24	
Avg. Collection Period (days)	67.51	67.48	62.26	69.23	70.48	66.60	64.19	Activity ratio
Total Asset Turnover	2.70	2.71	2.84	2.63	2.69	2.82	2.76	
Gross Profit Margin	13.13%	12.88%	13.82%	12.74%	12.75%	12.81%	13.56%	Profitability ratio
Operating Profit Margin	4.13%	4.12%	3.77%	3.64%	3.64%	3.78%	4.27%	
Net Profit Margin	4.35%	4.23%	3.64%	2.38%	3.43%	3.70%	4.27%	
ROA	11.76%	11.44%	10.31%	6.24%	9.40%	10.45%	11.78%	
ROE	25.26%	25.10%	25.11%	17.02%	25.18%	25.11%	25.53%	
Total Debt ratio	1.26	1.14	1.68	1.76	1.61	1.41	0.97	Finance ratio
Debt Service ratio	33.05	36.71	12.58	7.77	12.43	23.20	61.14	
CAPEX ratio	0.98	1.95	0.36	1.19	0.27	2.13	5.56	Market ratio
Dividend Payout ratio	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

current asset/current liab
quick asset/current liab
CFO/current liab
365* ave. acc. receiv./revenue
revenue/ave. asset
gross income/revenue
op. income/revenue
net income before tax/revenue
net profit margin*asset turnover
net income before tax/ave. owners' equity
total liabilities/equity
EBIT/interest expense
CFO/capital expenditure
dividend/net income after taxation

5) Revenue by Regions

a) As Reported (US\$ thousands)

Yr.	97	98	99	00	01	02	03
US	1,363,016	1,676,397	2,421,871	2,856,197	3,075,969	3,040,373	2,985,022
Europe	412,298	410,944	440,545	532,887	825,456	892,050	1,128,274
Asia & others	5,302	13,204	12,591	27,858	55,568	623,238	502,305
Total	1,780,616	2,101,145	2,875,007	3,418,942	3,956,993	4,555,661	4,615,601

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
US	76.5%	79.8%	84.2%	83.6%	77.7%	66.7%	64.7%
Europe	23.2%	19.6%	15.3%	15.6%	20.9%	19.6%	24.4%
Asia & others	0.3%	0.6%	0.4%	0.8%	1.4%	13.7%	10.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

6) Revenue by Business Areas

a) As Reported (US\$ thousands)

Yr.	97	98	99	00	01	02	03
Chemicals & Poly.	430,347	785,727	796,501	693,034	653,573	556,011	553,166
Tech. & Manufact.	335,627	128,501	173,023	213,557	332,995	187,432	464,589
Oil & Gas Refining	248,799	265,579	243,311	280,942	451,103	1,088,758	1,093,047
Federal Programs	201,643	163,474	481,302	614,048	732,362	973,514	1,070,740
Buildings	163,286	314,293	454,589	539,691	457,488	349,898	352,998
Infrastructure	11,748	11,278	218,828	238,278	246,420	325,029	288,193
Pulp & Paper	154,135	191,595	99,189	254,861	182,456	72,350	58,076
Pharm. & Biotech.	140,545	211,501	373,520	481,947	715,407	879,747	652,036
Other Businesses	28,486	33,197	34,744	102,594	185,189	122,962	76,756
Total	1,780,616	2,101,145	2,875,007	3,418,942	3,956,993	4,555,661	4,615,601

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Chemicals & Poly.	27.5%	37.4%	27.7%	20.3%	16.5%	12.2%	12.1%
Tech. & Manufact.	18.8%	6.1%	6.0%	6.2%	8.4%	4.1%	10.1%
Oil & Gas Refining	14.0%	12.2%	8.5%	8.2%	11.4%	23.9%	23.7%
Federal Programs	11.3%	8.1%	16.7%	18.0%	18.5%	21.4%	23.2%
Buildings	9.5%	15.0%	15.8%	15.8%	11.6%	7.7%	7.6%
Infrastructure	0.7%	0.5%	7.6%	7.0%	6.2%	7.1%	6.2%
Pulp & Paper	8.7%	9.1%	3.5%	7.5%	4.6%	1.6%	1.3%
Pharm. & Biotech.	7.9%	10.1%	13.0%	14.1%	18.1%	19.3%	14.1%
Other Businesses	1.6%	1.6%	1.2%	3.0%	4.7%	2.7%	1.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

28. JGC Corporation

JGC Corporation (Consolidated) A/C period ended: 31-Mar

1) Income Statement

a) As Reported (¥ millions)

Yr.	97	98	99	00	01	02	03	04
Revenue	273,494	397,159	390,283	280,620	253,724	335,246	378,064	403,361
COGS	262,454	383,826	367,076	254,076	228,419	300,053	345,785	379,534
Gross Income	11,040	13,333	23,207	26,544	25,305	35,193	32,279	30,427
Operating Income	-7,432	-3,981	5,627	11,023	8,347	19,988	17,080	15,486
EBIT	-11,522	-11,065	2,748	3,555	6,074	6,393	10,334	16,107
Interest expense	3,259	3,804	3,383	3,176	2,117	1,072	390	328
Net Income before taxation	-12,143	-12,288	2,253	4,337	7,792	8,040	11,497	17,184
N.I. after tax & minor. int.	-13,991	-13,749	134	441	4,775	4,942	6,768	10,587
Dividend	1,764	882	0	687	1,123	1,292	1,527	2,033

Note:

Taxation effect is consistently not included except dividend payout ratio

2) Balance Sheet

a) As Reported (¥ millions)

Yr.	97	98	99	00	01	02	03	04
A/C Receivable	71,181	91,464	114,497	79,716	54,300	70,805	51,164	64,235
Quick Asset	171,190	179,459	220,018	186,077	130,862	124,023	140,197	164,221
Current Asset	261,395	264,353	287,984	238,211	191,621	197,192	218,488	234,521
Total Asset	354,041	364,094	404,795	349,787	326,080	322,672	335,778	355,003
Current Liability	161,570	166,393	188,476	151,797	174,204	152,327	160,553	160,127
Long-term Debt	72,142	89,849	85,137	58,348	4,050	16,894	15,855	16,085
Total Liability	219,500	275,538	294,091	229,353	198,806	190,750	199,338	203,887
Owners' Equity	104,541	88,556	110,704	120,434	127,275	131,922	135,840	151,122

3) Cash Flow Profile (¥ millions)

Yr.	97	98	99	00	01	02	03	04
Net CFO	-35,338	20,425	-7,786	-43,500	41,883	-9,214	51,398	18,778
Net CFI	6,109	-13,485	-1,195	-2,635	-7,525	-3,944	817	-3,944
Cap. Expenditure	3,780	18,336	6,189	5,233	3,169	4,550	2,084	2,485
Corp. Fin. Gap	-29,159	6,940	-8,981	-40,865	34,258	-16,613	52,215	14,834

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03	04
Revenue	100.0%	145.2%	142.7%	102.6%	92.8%	122.6%	138.2%	149.9%
COGS	100.0%	146.2%	139.9%	98.8%	87.0%	114.3%	131.8%	144.6%
Gross Income	100.0%	120.8%	210.2%	240.4%	229.2%	318.8%	292.4%	275.6%
Operating Income	100.0%	53.6%	-75.7%	-148.3%	-112.3%	-268.7%	-229.8%	-208.4%
EBIT	100.0%	96.0%	-23.9%	-30.9%	-52.7%	-55.5%	-89.7%	-139.8%
Interest expense	100.0%	116.7%	103.8%	97.5%	65.0%	32.9%	12.0%	10.1%
Net Income before taxation	100.0%	101.2%	-18.6%	-35.7%	-64.2%	-66.2%	-94.7%	-141.5%
N.I. after tax & minor. int.	100.0%	98.3%	-1.0%	-3.2%	-34.1%	-35.3%	-48.4%	-75.7%
Dividend	100.0%	50.0%	0.0%	38.9%	63.7%	73.2%	86.6%	115.2%

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03	04
A/C Receivable	100.0%	128.5%	160.9%	112.0%	76.3%	99.5%	71.9%	90.2%
Quick Asset	100.0%	104.8%	128.5%	108.7%	76.4%	72.4%	81.9%	95.9%
Current Asset	100.0%	101.1%	110.2%	91.1%	73.3%	75.4%	83.6%	89.7%
Total Asset	100.0%	102.8%	114.3%	98.8%	92.1%	91.1%	94.8%	100.3%
Current Liability	100.0%	103.0%	116.7%	94.0%	107.8%	94.3%	99.4%	99.1%
Long-term Debt	100.0%	124.5%	118.0%	80.9%	5.6%	23.4%	22.0%	22.3%
Total Liability	100.0%	110.4%	117.9%	91.8%	79.7%	76.5%	80.1%	81.7%
Owners' Equity	100.0%	84.7%	105.9%	115.2%	121.7%	128.2%	129.9%	144.6%

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03	04	
Current Ratio	1.62	1.59	1.53	1.57	1.10	1.23	1.36	1.46	Liquidity ratio
Quick Ratio	1.06	1.08	1.17	1.23	0.75	0.81	0.87	1.03	
CFO Ratio	-0.22	0.12	-0.04	0.23	0.24	-0.06	0.32	0.12	
Avg. Collection Period (days)	98.40	74.74	96.31	126.31	96.40	68.10	58.88	51.37	Activity ratio
Total Asset Turnover	0.76	1.11	1.02	0.74	0.76	1.03	1.15	1.19	
Gross Profit Margin	4.04%	3.36%	5.96%	9.46%	9.97%	10.50%	8.54%	7.42%	Profitability ratio
Operating Profit Margin	-2.72%	-1.00%	1.44%	3.93%	3.29%	5.96%	4.52%	3.78%	
Net Profit Margin	-4.44%	-3.09%	0.58%	1.55%	3.07%	2.40%	3.04%	4.19%	
ROA	-3.37%	-3.42%	0.59%	1.15%	2.31%	2.48%	3.49%	4.98%	
ROE	-10.98%	-12.73%	2.26%	3.76%	6.29%	6.20%	8.59%	11.98%	Finance ratio
Total Debt ratio	2.39	3.11	2.66	1.90	1.56	1.45	1.47	1.35	
Debt Service ratio	-3.54	-2.91	0.81	1.12	2.87	5.96	26.50	49.11	
CAPEX ratio	-9.35	1.11	-1.26	8.22	13.22	-2.03	24.66	7.55	
Dividend Payout ratio	-12.6%	-6.4%	0.0%	155.7%	23.5%	26.1%	22.6%	19.2%	Market ratio

current asset/current liab

quick asset/current liab

CFO/current liab

365* ave. acc. receiv./revenue

revenue/ave. asset

gross income/revenue

op. income/revenue

net income before tax/revenue

net profit margin* asset turnover

net income before tax/ave. owners' equity

total liab/owners' equity

EBIT/interest expense

CFO/capital expenditure

dividend/net income after taxation

5) Revenue by Regions

No geographic segment information is disclosed as the group operates mainly within Japan.

6) Revenue by Business Areas

a) As Reported (\$ millions)

Yr.	97	98	99	00	01	02	03
Total Engineering			370,204	258,928	232,285	312,725	362,978
Chem & Catalyst			20,285	21,863	21,542	22,614	25,121
Total			390,489	280,791	253,827	335,339	378,099

Total Engineering:

design, procurement, construction and performance test services of machinery and plants for petroleum, petrochemicals, gas, chemicals, nuclear energy, metal refining, biochemical, food, pharmaceutical, medical, logistics, IT, environment conservation & pollution control.

Chem & Catalyst:

manufacturing and distribution of chemical and catalyst products and new functional material products.

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Total Engineering			94.8%	92.2%	91.5%	93.3%	93.4%
Chem & Catalyst			5.2%	7.8%	8.5%	6.7%	6.6%
Total			100.0%	100.0%	100.0%	100.0%	100.0%

29. Kajima Corporation

Kajima (Consolidated)

A/C period ended: 31-Mar

1) Income Statement

a) As Reported (¥ millions)

Yr.	97	98	99	00	01	02	03	04
Revenue	2,100,701	1,938,933	1,658,884	1,727,871	1,909,948	2,060,353	1,874,802	1,621,760
COGS	1,926,792	1,778,719	1,511,117	1,561,888	1,748,741	1,901,562	1,731,328	1,475,504
Gross Income	173,909	160,214	147,767	165,983	161,207	158,791	143,474	146,256
Operating Income	31,921	23,382	33,888	51,610	51,577	42,321	36,298	46,419
EBIT	35,613	16,127	308,184	32,123	29,649	58,470	32,440	8,451
Interest expense	26,376	24,836	22,103	16,910	17,188	15,188	11,945	10,406
Net Income before taxation	19,284	2,579	317,774	22,383	20,372	57,572	25,254	2,913
N.I. after tax & minor. int.	7,345	-7,604	-198,557	9,018	9,275	-41,153	10,111	-4,474
Dividend	8,652	8,652	7,671	6,712	6,695	6,695	5,738	4,777

Note:

Taxation effect is consistently not included, except dividend payout ratio

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03	04
Revenue	100.0%	92.3%	79.0%	82.3%	90.9%	98.1%	89.2%	77.2%
COGS	100.0%	92.3%	78.4%	81.1%	90.8%	98.7%	89.8%	76.6%
Gross Income	100.0%	92.1%	85.0%	95.4%	92.7%	91.3%	82.5%	84.1%
Operating Income	100.0%	73.2%	104.0%	161.7%	161.6%	132.6%	113.7%	145.4%
EBIT	100.0%	45.3%	-853.7%	90.2%	83.3%	-167.0%	91.1%	23.7%
Interest expense	100.0%	94.2%	83.8%	64.1%	65.2%	57.6%	45.3%	39.5%
Net Income before taxation	100.0%	13.4%	-1647.9%	116.1%	105.6%	-350.4%	131.0%	15.1%
N.I. after tax & minor. int.	100.0%	-103.5%	-2703.3%	122.8%	126.3%	-560.3%	137.7%	-60.9%
Dividend	100.0%	100.0%	88.7%	77.6%	77.4%	77.4%	66.3%	55.2%

2) Balance Sheet

a) As Reported (¥ millions)

Yr.	97	98	99	00	01	02	03	04
A/C Receivable	429,268	411,703	268,202	346,247	380,248	467,710	468,369	369,251
Quick Asset	743,515	680,479	535,913	804,851	485,291	585,347	555,434	476,857
Current Asset	1,991,280	1,784,265	1,589,172	1,635,370	1,490,258	1,389,974	1,280,679	1,109,720
Total Asset	2,868,379	2,684,328	2,402,481	2,423,542	2,438,041	2,228,712	2,024,226	1,870,279
Current Liability	1,893,419	1,662,009	1,568,885	1,616,823	1,652,635	1,475,691	1,348,427	1,172,496
Long-term Debt	448,754	508,566	450,053	407,694	343,878	327,638	299,143	288,681
Total Liability	2,472,925	2,308,548	2,219,865	2,228,533	2,183,878	2,029,757	1,849,548	1,639,296
Owners' Equity	395,454	375,780	182,616	195,009	254,163	196,955	174,678	230,983

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03	04
A/C Receivable	100.0%	95.9%	62.5%	80.7%	88.6%	109.0%	109.1%	86.0%
Quick Asset	100.0%	91.5%	72.1%	81.4%	65.3%	76.0%	74.7%	64.1%
Current Asset	100.0%	89.6%	79.8%	82.1%	74.8%	69.8%	64.3%	55.7%
Total Asset	100.0%	93.6%	83.8%	84.5%	85.0%	77.6%	70.6%	65.2%
Current Liability	100.0%	87.8%	82.7%	85.4%	87.3%	77.9%	71.2%	61.9%
Long-term Debt	100.0%	112.9%	100.3%	90.9%	76.6%	73.0%	66.7%	64.3%
Total Liability	100.0%	93.4%	89.8%	90.1%	88.3%	82.1%	74.8%	66.3%
Owners' Equity	100.0%	95.0%	46.2%	49.3%	64.3%	49.8%	44.2%	58.4%

3) Cash Flow Profile (¥ millions)

Yr.	97	98	99	00	01	02	03	04
Net CFO	76,561	5,097	54,964	86,179	54,159	15,118	57,183	50,102
Net CFI	-54,157	-11,741	2,075	39,162	-8,413	41,640	4,380	-34,651
Cap. Expenditure	41,329	40,268	50,959	42,181	46,934	18,212	26,598	22,174
Corp. Fin. Gap	22,404	-6,644	56,939	125,341	45,746	56,768	61,569	15,451

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03	04	
Current Ratio	1.05	1.07	1.01	1.01	0.90	0.94	0.95	0.95	Liquidity ratio
Quick Ratio	0.39	0.41	0.34	0.37	0.29	0.38	0.41	0.41	
CFO Ratio	0.04	0.00	0.04	0.05	0.03	0.01	0.04	0.04	
Avg. Collection Period (days)	72.80	79.16	74.80	84.90	69.42	75.11	91.12	94.26	Activity ratio
Total Asset Turnover	0.73	0.70	0.85	0.72	0.79	0.88	0.88	0.83	
Gross Profit Margin	8.28%	8.26%	8.91%	9.61%	8.44%	7.71%	7.65%	9.02%	Profitability ratio
Operating Profit Margin	15.2%	1.2%	2.00%	2.39%	2.70%	2.05%	1.94%	2.86%	
Net Profit Margin	0.92%	0.13%	-19.16%	1.30%	1.07%	-3.28%	1.35%	0.18%	
ROA	0.67%	0.09%	-12.49%	0.93%	0.84%	-2.90%	1.19%	0.15%	
ROE	4.94%	0.67%	-113.82%	11.85%	9.07%	-29.96%	13.59%	1.44%	
Total Debt ratio	6.25	6.14	12.16	11.43	8.59	10.31	10.59	7.10	Finance ratio
Debt Service ratio	1.35	0.65	-13.85	1.30	1.72	-3.92	2.72	0.81	
CAPEX ratio	1.85	0.13	1.08	2.04	1.15	0.83	2.15	2.26	
Dividend Payout ratio	117.8%	-113.8%	-3.9%	74.4%	72.2%	-16.3%	56.8%	-106.8%	Market ratio

current asset/current liab

quick asset/current liab

CFO/current liab

365* ave. acc. receiv./revenue

revenue/ave. asset

gross income/revenue

op. income/revenue

net income before tax/revenue

net profit margin* asset turnover

net income before tax/ave. owners' equity

total liab/owners' equity

EBIT/interest expense

CFO/capital expenditure

dividend/net income after taxation

5) Revenue by Regions

a) As Reported (\$ millions)

Yr.	97	98	99	00	01	02	03	04
Japan	1,882,005	1,748,937	1,476,728	1,562,579	1,720,380	1,877,431		
North America		131,431	107,106	96,979	131,206	126,150		
Europe	249,342	17,880	33,051	44,421	18,302	9,050		
Asia		41,315	42,345	23,907	39,646	48,761		
Total	2,101,347	1,939,563	1,659,230	1,727,886	1,910,134	2,061,392		

6) Revenue by Business Areas

a) As Reported (\$ millions)

Yr.	97	98	99	00	01	02	03	04
Construction	1,798,121	1,664,164	1,387,534	1,433,304	1,573,826	1,763,669	1,588,899	1,317,713
Real Estate	163,106	147,060	128,098	131,360	200,475	157,116	186,908	188,136
Others	187,251	176,916	149,601	169,032	141,052	159,386	148,277	141,361
Total	2,154,478	1,988,040	1,665,233	1,733,696	1,915,353	2,080,171	1,924,084	1,647,210

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03	04
Japan	88.1%	90.2%	85.0%	90.4%	90.1%	91.1%		
North America		6.8%	6.5%	5.6%	6.9%	6.1%		
Europe	11.9%	0.9%	2.0%	2.6%	1.0%	0.4%		
Asia		2.1%	2.6%	1.4%	2.1%	2.4%		
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03	04
Construction	83.5%	83.7%	83.3%	82.7%	82.2%	84.8%	82.6%	80.0%
Real Estate	7.8%	7.4%	7.7%	7.6%	10.5%	7.6%	9.7%	11.4%
Others	8.7%	8.9%	9.0%	9.7%	7.4%	7.7%	7.7%	8.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

30. Kandenko

Kandenko (Consolidated)

A/C period ended: 31-Mar

1) Income Statement

Yr.	99	00	01	02	03
a) As Reported (millions Yen)					
Revenue	563,498	513,478	500,489	500,036	435,132
COGS	513,142	468,677	461,812	468,379	406,074
Gross Income	50,356	44,801	38,677	33,657	29,058
Operating Expense	33,588	32,120	30,753	28,792	25,580
Operating Income	16,768	12,681	7,924	4,865	3,478
EBIT	17,476	-26,440	7,823	3,849	2,275
Interest expense	211	156	142	94	92
Net Income before taxation	18,325	-25,994	8,340	4,298	2,652
N.I. after tax & minor. int.	8,559	-19,463	3,889	1,475	223
Dividend	2,450	2,042	2,042	2,042	2,042

Note:

Taxation effect is consistently not included except dividend payout ratio.

b) As % of 1999 level

Yr.	99	00	01	02	03
Revenue	100.0%	91.1%	88.8%	88.7%	77.2%
COGS	100.0%	91.3%	90.0%	90.9%	78.1%
Gross Income	100.0%	89.0%	78.8%	86.8%	57.7%
Operating Expense	100.0%	95.6%	91.6%	85.7%	76.2%
Operating Income	100.0%	75.6%	47.3%	29.0%	20.7%
EBIT	100.0%	-151.3%	44.8%	22.0%	13.0%
Interest expense	100.0%	73.9%	67.3%	44.5%	43.6%
Net Income before taxation	100.0%	-141.8%	45.5%	23.5%	14.5%
N.I. after tax & minor. int.	100.0%	-192.3%	45.4%	17.2%	2.6%
Dividend	100.0%	83.3%	83.3%	83.3%	83.3%

2) Balance Sheet

Yr.	99	00	01	02	03
a) As Reported (millions Yen)					
A/C Receivable	85,255	84,107	83,640	80,056	80,998
Quick Asset	204,572	204,419	188,192	175,424	160,347
Current Asset	296,673	300,389	292,931	264,264	252,810
Total Asset	413,258	449,374	448,438	425,303	413,499
Current Liability	184,662	179,461	173,177	152,840	150,773
Long-term Debt	1,276	740	207	455	305
Total Liability	234,913	267,730	258,266	235,189	226,206
Owners' Equity	178,345	181,644	190,170	190,114	187,293

b) As % of 1999 level

Yr.	99	00	01	02	03
A/C Receivable	100.0%	98.7%	98.1%	93.9%	95.0%
Quick Asset	100.0%	99.9%	92.5%	85.8%	78.4%
Current Asset	100.0%	101.3%	98.7%	89.1%	85.2%
Total Asset	100.0%	108.7%	108.5%	102.9%	100.1%
Current Liability	100.0%	97.2%	93.8%	82.8%	81.6%
Long-term Debt	100.0%	58.0%	16.2%	35.7%	23.9%
Total Liability	100.0%	114.0%	109.9%	100.1%	96.3%
Owners' Equity	100.0%	101.8%	106.6%	106.6%	105.0%

3) Cash Flow Profile (millions Yen)

Yr.	99	00	01	02	03
Net CFO	11,971	12,265	-4,203	6,626	-9,520
Net CFI	-9,997	-42,346	5,195	2,760	9,558
Cap. Expenditure	13,208	6,134	6,989	5,964	3,801
Corp. Fin. Gap	1,974	-30,081	992	9,386	38

4) Key Financial Ratios

Yr.	99	00	01	02	03	
Current Ratio	1.61	1.67	1.69	1.73	1.68	Liquidity ratio
Quick Ratio	1.11	1.14	1.09	1.15	1.06	
CFO Ratio	0.06	0.07	-0.02	0.04	-0.06	
Avg. Collection Period (days)	27.84	60.19	61.17	59.74	67.55	Activity ratio
Total Asset Turnover	2.72	1.19	1.11	1.14	1.04	
Gross Profit Margin	8.94%	8.73%	7.73%	6.73%	6.88%	Profitability ratio
Operating Profit Margin	2.98%	2.47%	1.58%	0.97%	0.80%	
Net Profit Margin	3.25%		1.67%	0.86%	0.61%	
ROA	8.84%	0.00%	1.86%	0.98%	0.53%	
ROE	20.53%	-14.44%	4.49%	2.26%	1.41%	Finance ratio
Total Debt ratio	1.32	1.47	1.36	1.24	1.21	
Debt Service ratio	82.82	-169.49	55.09	40.95	24.73	
CAPEX ratio	0.91	1.51	-0.60	1.11	-2.50	
Dividend Payout ratio	28.6%	-12.4%	52.5%	138.4%	915.7%	Market ratio

current asset/current liab
quick asset/current liab
CFO/current liab
365*ave acc. receiv./revenue
revenue/ave asset
gross income/revenue
op. income/revenue
net income before tax/revenue
net profit margin*asset turnover
net income before tax/ave owners' equity
total liab/owners' equity
EBIT/interest expense
CFO/capital expenditure
dividend/net income after taxation

5) Revenue by Regions

Not disclosed

6) Revenue by Business Areas

Yr.	99	00	01	02	03	
Engineering	550,938	504,134	490,636	492,936	427,392	b) As % of Total Revenue
Trading and other	36,260	32,320	31,798	30,956	29,489	
Eliminations	-23,699	-22,976	-21,945	-23,855	-21,749	
Total	563,499	513,478	500,489	500,037	435,132	

Yr.	99	00	01	02	03
Engineering	97.8%	98.2%	98.0%	98.6%	98.2%
Trading and other	6.4%	6.3%	6.4%	6.2%	6.8%
Eliminations	-4.2%	-4.5%	-4.4%	-4.8%	-5.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

31. Kinden

Kinden (Consolidated) A/C period ended: 31-Mar

1) Income Statement

a) As Reported (millions Yen)

Yr.	99	00	01	02	03
Revenue	560,752	528,793	489,893	465,941	413,702
COGS	491,754	464,512	448,154	423,105	371,208
Gross Income	68,998	64,181	41,539	42,838	42,494
Operating Expense	36,691	36,905	36,522	37,181	35,286
Operating Income	32,307	27,276	5,017	5,656	7,208
EBIT	30,766	25,370	45,880	4,132	-10,187
Interest expense	658	532	573	353	277
Net Income before taxation	32,097	26,083	44,892	5,026	-17,576
N.I. after tax & minor. int.	14,408	13,359	-27,996	1,000	-12,819
Dividend	3,459	2,326	2,928	2,791	2,788

Note: Taxation effect is consistently not included. *2003: dividend payout ratio*

2) Balance Sheet

a) As Reported (millions Yen)

Yr.	99	00	01	02	03
A/C Receivable	30,082	87,760	130,038	88,276	94,858
Quick Asset	188,888	244,379	238,068	182,498	162,001
Current Asset	410,632	352,620	347,449	274,185	239,215
Total Asset	678,270	539,770	574,475	490,212	449,936
Current Liability	251,971	188,357	200,683	144,154	144,537
Long-term Debt	1,408	1,505	1,595	1,463	114
Total Liability	277,873	214,661	268,553	189,323	178,233
Owners' Equity	300,397	325,109	305,922	290,889	271,703

3) Cash Flow Profile (millions Yen)

Yr.	99	00	01	02	03
Net CFO	11,107	12,819	-27,304	12,222	-35,134
Net CFI	2,560	9,143	-10,683	368	8,824
Cap. Expenditure	10,180	4,981	2,584	2,826	13,093
Corp. Fin. Gap	13,657	21,962	-37,987	12,590	-26,310

4) Key Financial Ratios

Yr.	99	00	01	02	03
Current Ratio	1.63	1.87	1.73	1.90	1.66
Quick Ratio	0.75	1.30	1.19	1.27	1.05
CFO Ratio	0.04	0.07	-0.14	0.08	-0.24
Avg. Collection Period	10.02	40.67	81.17	85.51	80.79
Total Asset Turnover	1.83	0.95	0.88	0.88	0.88
Gross Profit Margin	12.30%	12.14%	8.48%	9.19%	10.27%
Operating Profit Margin	5.76%	5.16%	1.02%	1.21%	1.74%
Net Profit Margin	5.72%	4.33%	-9.19%	1.08%	-4.25%
ROA	11.08%	4.67%	-8.08%	0.94%	-3.74%
ROE	21.36%	8.34%	-14.26%	1.68%	-6.25%
Total Debt ratio	0.33	0.68	0.88	0.69	0.66
Debt Service ratio	46.76	42.85	-79.24	11.51	-85.68
CAPEX ratio	1.09	2.57	-10.57	4.32	-2.68
Dividend Payout ratio	24.0%	21.9%	-10.5%	27.8%	-21.7%

32. Kumagai Gumi

Kumagai Gumi (Consolidated) A/C period ended: 31-Mar

1) Income Statement

a) As Reported (¥ millions)

Yr.	97	98	99	00	01	02	03
Revenue	1,058,751	1,134,315	998,294	799,066	793,406	737,328	522,337
COGS	963,116	1,044,820	913,145	721,573	729,698	682,321	483,772
Gross Income	95,635	89,495	85,149	77,493	63,708	55,007	38,565
Operating Income	31,981	25,140	28,158	17,265	17,708	17,055	8,782
EBIT	19,243	-206,034	18,105	-1,125	31,157	9,116	-258,578
Interest expense	30,494	28,160	23,700	23,328	21,484	13,801	11,849
Net Income before taxation	-2,934	-227,848	-1,386	-19,889	13,449	-2,353	-266,503
N.I. after tax & minor. Int.	-7,357	-229,794	-2,528	-4,620	-2,654	2,550	-285,903
Dividend	0	0	0	0	0	0	0

Note:

Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (¥ millions)

Yr.	97	98	99	00	01	02	03
A/C Receivable	362,606	322,762	260,600	222,557	193,494	183,246	177,393
Quick Asset	486,752	442,653	376,470	351,371	273,068	247,178	249,331
Current Asset	1,297,652	1,210,806	1,063,312	911,160	867,014	451,748	355,448
Total Asset	1,892,525	1,715,256	1,549,505	1,620,405	1,219,213	933,839	576,030
Current Liability	1,182,855	1,316,353	1,164,417	1,182,987	480,064	253,132	228,561
Long-term Debt	409,231	311,807	321,871	369,970	614,068	579,037	534,128
Total Liability	1,630,099	1,684,643	1,522,589	1,601,470	1,201,808	911,926	848,525
Owners' Equity	262,426	30,613	26,916	18,935	17,805	21,913	-272,495

3) Cash Flow Profile (¥ millions)

Yr.	97	98	99	00	01	02	03
Net CFO	-5,859	-40,956	-10,388	6,935	-60,951	-12,772	-11,839
Net CFI	-87,972	-26,153	-16,078	-23,674	-12,718	41,221	58,858
Cap. Expenditure	5,868	7,514	6,592	27,936	14,849	1,915	1,726
Corp. Fin. Gap	-93,831	-67,109	-5,890	-16,739	-73,669	53,993	47,019

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
Revenue	100.0%	107.1%	94.3%	75.5%	74.9%	69.6%	49.3%
COGS	100.0%	108.5%	94.8%	74.9%	75.8%	70.8%	50.2%
Gross Income	100.0%	93.6%	89.0%	81.0%	66.6%	57.5%	40.3%
Operating Income	100.0%	78.6%	88.0%	54.0%	55.4%	53.3%	27.5%
EBIT	100.0%	-1070.7%	99.3%	-5.8%	161.9%	47.4%	-1343.8%
Interest expense	100.0%	92.3%	77.7%	76.5%	70.5%	45.3%	38.9%
Net Income before taxation	100.0%	7765.8%	47.6%	677.9%	-458.4%	80.2%	9083.3%
N.I. after tax & minor. Int.	100.0%	3123.5%	34.4%	62.8%	36.1%	-34.7%	4022.1%
Dividend							

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
A/C Receivable	100.0%	89.0%	71.9%	61.4%	53.4%	50.5%	48.9%
Quick Asset	100.0%	90.9%	77.3%	72.2%	56.1%	50.8%	51.2%
Current Asset	100.0%	93.3%	81.9%	70.2%	51.4%	34.8%	27.4%
Total Asset	100.0%	90.6%	81.9%	85.6%	64.4%	49.3%	30.4%
Current Liability	100.0%	111.3%	98.4%	100.0%	40.6%	21.4%	19.3%
Long-term Debt	100.0%	76.2%	78.7%	90.4%	150.1%	141.5%	130.5%
Total Liability	100.0%	103.3%	93.4%	98.2%	73.7%	55.9%	52.1%
Owners' Equity	100.0%	11.7%	10.3%	7.2%	6.7%	8.4%	-103.8%

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03	
Current Ratio	1.10	0.92	0.91	0.77	1.39	1.78	1.56	Liquidity ratio
Quick Ratio	0.41	0.34	0.32	0.30	0.57	0.98	1.09	
CFO Ratio	0.00	-0.03	0.01	0.01	-0.13	0.05	-0.05	
Avg. Collection Period (days)	126.85	110.27	106.65	110.35	95.70	93.25	126.00	Activity ratio
Total Asset Turnover	0.57	0.63	0.61	0.50	0.56	0.68	0.69	
Gross Profit Margin	9.03%	7.89%	8.53%	9.70%	8.03%	7.46%	7.38%	Profitability ratio
Operating Profit Margin	3.02%	2.22%	2.82%	2.16%	2.23%	2.31%	1.68%	
Net Profit Margin	-0.28%	-20.09%	-0.14%	-2.49%	1.70%	-0.32%	-51.02%	
ROA	-0.16%	-12.63%	-0.09%	-1.25%	0.95%	-0.22%	-35.30%	
ROE	-1.22%	-155.51%	-4.85%	-86.75%	73.61%	-11.91%	212.71%	
Total Debt ratio	6.21	55.03	56.57	84.58	68.25	41.62	-3.11	Finance ratio
Debt Service ratio	0.63	-7.32	0.81	-0.05	1.45	0.66	-21.92	
CAPEX ratio	-1.00	-5.45	1.58	0.25	-4.10	6.67	-6.86	
Dividend Payout ratio	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Market ratio

current asset/current liab
quick asset/current liab
CFO/current liab
365*ave acc. receiv./revenue
revenue/ave asset
gross income/revenue
op. income/revenue
net income before tax/revenue
net profit margin*asset turnover
net income before tax/ave owners' equity
total liab/owners' equity
EBIT/interest expense
CFO/capital expenditure
dividend/net income after taxation

5) Revenue by Regions

a) As Reported (\$ millions)

Yr.	97	98	99	00	01	02	03	
Japan	1,029,292	1,030,613	938,483	760,747	721,947	682,361	487,129	As % of Total Revenue
Rest of World	29,459	103,702	59,883	36,338	71,667	55,098	35,274	
Total	1,058,751	1,134,315	998,366	799,085	793,614	737,479	522,403	

6) Revenue by Business Areas

a) As Reported (\$ millions)

Yr.	97	98	99	00	01	02	03	
Construction	989,807	1,080,085	933,028	752,143	743,797	679,308	481,770	As % of Total Revenue
R. Estate & others	69,308	54,371	65,362	50,504	53,014	58,452	41,620	
Total	1,058,915	1,134,456	998,390	802,647	796,811	738,770	523,390	

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Japan	97.2%	90.9%	94.0%	95.2%	91.0%	92.5%	93.2%
Rest of World	2.8%	9.1%	6.0%	4.8%	9.0%	7.5%	6.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Construction	93.5%	95.2%	93.5%	93.7%	93.3%	92.0%	92.0%
R. Estate & others	6.5%	4.8%	6.5%	6.3%	6.7%	8.0%	8.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

33. Kvaerner

Kvaerner (Consolidated) A/C period ended: 31-Dec

1) Income Statement

a) As Reported (NOK millions)

Yr.	97	98	99	00	01	02	03
Revenue	72,962	82,290	70,864	54,472	45,011	43,643	38,986
COGS	47,964	52,576	50,928	38,086	31,417	27,790	22,502
Gross Income	24,998	29,714	19,936	16,386	13,594	15,853	16,484
Operating Expense	23,811	29,656	19,920	15,418	14,349	15,426	16,578
Operating Income	1,187	58	18	968	-755	427	-94
EBIT	1,779	925	4,692	1,243	-2,837	551	-557
Interest expense	1,350	1,353	1,102	1,036	783	438	447
Net income before taxation	1,512	-1,345	-5,500	513	-4,961	1,067	-929
N.I. after tax & minor. Int.	1,229	-1,659	-5,624	361	-4,951	877	-998
Dividend	305	0	0	0	0	0	0

Note:

Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (NOK millions)

Yr.	97	98	99	00	01	02	03
A/C Receivable	14,462	13,909	11,560	8,375	6,917	6,707	7,046
Quick Asset	18,711	17,969	14,662	10,958	10,217	11,634	13,565
Current Asset	33,661	32,391	25,958	17,463	17,790	17,527	18,771
Total Asset	59,258	54,006	44,072	32,656	28,572	30,683	31,239
Current Liability	34,727	28,557	24,141	14,943	15,476	12,503	14,054
Long-term Debt	10,703	14,197	13,106	8,258	9,296	7,932	7,550
Total Liability	47,739	45,087	39,546	25,317	26,571	22,211	23,260
Owners' Equity	10,519	8,919	4,526	7,339	2,001	8,472	7,979

3) Cash Flow Profile (NOK millions)

Yr.	97	98	99	00	01	02	03
Net CFO	-1,503	2,719	2,880	-125	-1,135	18	1,548
Net CFI	1,095	2,756	2,689	2,043	1,564	-1,373	-150
Cap. Expenditure	1,794	2,185	720	615	368	601	549
Corp. Fin. Gap	-408	5,475	-191	1,918	429	-1,355	1,398

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
Revenue	100.0%	112.8%	97.1%	74.7%	61.7%	59.8%	53.4%
COGS	100.0%	109.6%	106.2%	79.4%	65.5%	57.9%	46.9%
Gross Income	100.0%	118.9%	79.8%	65.5%	54.4%	63.4%	65.9%
Operating Expense	100.0%	124.5%	83.7%	64.8%	60.3%	64.6%	69.6%
Operating Income	100.0%	4.9%	1.5%	81.6%	-63.6%	36.0%	-7.9%
EBIT	100.0%	52.0%	-263.7%	69.9%	-159.5%	31.0%	-31.3%
Interest expense	100.0%	100.2%	81.6%	76.7%	58.0%	32.4%	33.1%
Net Income	100.0%	-89.0%	-363.8%	33.9%	-328.1%	70.6%	-61.4%
before taxation							
N.I. after tax & minor. Int.	100.0%	-135.0%	-457.6%	29.4%	-402.6%	71.4%	-81.2%
Dividend	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
A/C Receivable	100.0%	96.2%	79.9%	57.9%	47.8%	46.4%	48.7%
Quick Asset	100.0%	96.0%	78.4%	58.6%	54.6%	62.2%	72.5%
Current Asset	100.0%	96.2%	77.1%	51.9%	52.9%	52.1%	55.8%
Total Asset	100.0%	92.7%	75.6%	56.1%	49.0%	52.7%	53.6%
Current Liability	100.0%	82.2%	69.5%	43.0%	44.6%	36.0%	40.5%
Long-term Debt	100.0%	132.6%	122.5%	77.2%	86.9%	74.1%	70.5%
Total Liability	100.0%	94.4%	82.8%	53.0%	55.7%	46.5%	48.7%
Owners' Equity	100.0%	84.8%	43.0%	69.8%	19.0%	80.5%	75.9%

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03
Current Ratio	0.97	1.13	1.08	1.17	1.15	1.40	1.34
Quick Ratio	0.54	0.63	0.61	0.73	0.66	0.93	0.97
CFO Ratio	-0.04	0.10	-0.12	-0.01	-0.07	0.00	0.11
Avg. Collection Period (days)	67.53	62.92	65.59	66.79	62.00	56.97	64.38
Total Asset Turnover	1.32	1.47	1.45	1.42	1.47	1.47	1.26
Gross Profit Margin	34.26%	36.11%	28.14%	30.08%	30.20%	36.32%	42.28%
Operating Profit Margin	1.63%	0.07%	0.03%	1.78%	-1.58%	0.98%	-0.24%
Net Profit Margin	2.07%	-1.63%	-7.76%	0.94%	-11.02%	2.44%	-2.38%
ROA	2.73%	-2.40%	-11.22%	1.34%	-16.21%	3.60%	-3.00%
ROE	15.00%	-13.84%	-81.81%	8.65%	-106.23%	20.38%	-11.29%
Total Debt ratio	4.54	5.06	8.74	3.45	13.28	2.62	2.92
Debt Service ratio	1.32	0.68	-4.26	1.20	-3.62	1.26	-1.25
CAPEX ratio	-0.84	1.24	-4.00	-0.20	-3.08	0.03	2.82
Dividend Payout ratio	24.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Liquidity ratio

Activity ratio

Profitability ratio

Finance ratio

Market ratio

current asset/current liab

quick asset/current liab

CFO/current liab

365*ave acc. receiv/revenue

revenue/ave asset

gross income/revenue

op. income/revenue

net income before tax/revenue

net profit margin*asset turnover

net income before tax/ave.owners' equity

total liab/owners' equity

EBIT/interest expense

CFO/capital expenditure

dividend/net income after taxation

5) Revenue by Regions

Yr.	97	98	99	00	01	02	03
Norway	14,985.0	14,539.0	14,126.0	6,897.0	5,508.0	11,243.0	14,971.0
Rest of Europe	24,313.0	30,860.0	26,352.0	20,753.0	23,212.0	18,449.0	14,686.0
North America	13,836.0	18,323.0	17,113.0	15,815.0	12,001.0	10,563.0	7,164.0
Asia	10,764.0	9,418.0	6,440.0	5,355.0	2,546.0	2,451.0	1,682.0
Rest of world	5,719.0	7,671.0	4,833.0	5,852.0	1,744.0	937.0	483.0
Shipping	3,345.0	1,479.0	0.0	0.0	0.0	0.0	0.0
Total	72,962.0	82,290.0	70,884.0	54,472.0	45,011.0	43,643.0	38,986.0

Note:
Figures from year 97 to 99 are based upon customer location.

6) Revenue by Business Areas

Yr.	97	98	99	00	01	02	03
Oil & Gas	18,899.0	21,052.0	18,764.0	11,304.0	11,453.0	20,104.0	21,338.0
E&C	14,945.0	16,725.0	15,325.0	16,407.0	16,744.0	10,537.0	11,911.0
Shipping	11,703.0	12,579.0	11,402.0	9,815.0	11,611.0	9,459.0	6,718.0
Construction	8,279.0	10,916.0	12,441.0	10,207.0	0.0	0.0	0.0
Pulp & Paper	5,440.0	5,109.0	5,323.0	5,175.0	4,867.0	3,412.0	0.0
Other activities	15,574.0	18,103.0	6,079.0	2,304.0	1,176.0	1,070.0	1,529.0
Total	74,840.0	84,484.0	69,334.0	55,212.0	45,851.0	44,582.0	41,496.0

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Norway	20.5%	17.7%	19.9%	12.3%	12.2%	25.8%	38.4%
Rest of Europe	33.3%	37.5%	40.0%	38.1%	51.6%	42.3%	37.7%
North America	19.0%	22.3%	24.1%	29.0%	26.7%	24.2%	18.4%
Asia	14.8%	11.4%	9.1%	9.8%	5.7%	5.6%	4.3%
Rest of world	7.8%	9.3%	8.8%	10.7%	3.9%	2.1%	1.2%
Shipping	4.6%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Oil & Gas	25.3%	24.9%	27.1%	20.5%	25.0%	45.1%	51.4%
E&C	20.0%	19.8%	22.1%	29.7%	36.5%	23.6%	28.7%
Shipping	15.6%	14.9%	16.4%	17.8%	25.3%	21.2%	16.2%
Construction	11.1%	12.9%	17.9%	18.5%	0.0%	0.0%	0.0%
Pulp & Paper	7.3%	6.0%	7.7%	9.4%	10.6%	7.7%	0.0%
Other activities	20.8%	21.4%	8.8%	4.2%	2.6%	2.4%	3.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

34. Maeda

Maeda (Consolidated)

A/C period ended: 31-Mar

1) Income Statement

Yr.	99	00	01	02	03
a) As Reported (millions Yen)					
Revenue	470,802	479,761	464,340	439,756	458,855
COGS	435,209	429,909	416,479	398,271	432,755
Gross Income	35,593	49,852	47,861	41,485	26,100
Operating Expense	4,985	38,183	34,731	31,637	30,869
Operating Income	30,608	11,669	13,130	9,848	-4,769
EBIT	-32,801	-8,011	3,849	3,171	-7,990
Interest expense	2,692	2,269	2,324	2,056	1,767
Net Income before taxation	-33,073	-8,627	3,085	2,605	-8,355
N.I. after tax & minor. int.	-34,473	-5,838	-1,098	409	-7,442
Dividend	1,707	1,666	1,668	1,666	1,296

Note:

Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

Yr.	99	00	01	02	03
a) As Reported (millions Yen)					
A/C Receivable	79,667	95,621	100,318	108,125	111,095
Quick Asset	142,691	174,046	165,023	162,613	170,145
Current Asset	444,751	494,071	460,627	478,752	478,946
Total Asset	567,306	652,672	645,756	654,497	648,961
Current Liability	376,280	407,880	393,527	405,720	402,636
Long-term Debt	39,784	35,531	31,421	32,912	44,503
Total Liability	436,477	483,120	464,153	478,028	484,423
Owners' Equity	130,829	169,552	181,603	176,469	164,538

3) Cash Flow Profile (millions Yen)

Yr.	99	00	01	02	03
Net CFO	17,560	27,347	10,512	-15,934	-2,308
Net CFI	-1,718	320	-5,769	-3,386	-4,319
Cap. Expenditure	4,045	7,533	4,524	4,758	5,307
Corp. Fin. Gap	-15,842	-27,667	4,743	-19,320	-6,627

Yr.	99	00	01	02	03
b) As % of 1999 level					
Revenue	100.0%	101.9%	98.6%	93.4%	97.5%
COGS	100.0%	98.8%	95.7%	91.5%	99.4%
Gross Income	100.0%	140.1%	134.5%	116.6%	73.3%
Operating Expense	100.0%	766.0%	696.7%	634.6%	619.2%
Operating Income	100.0%	38.1%	42.9%	32.2%	-15.6%
EBIT	100.0%	24.4%	-11.7%	-9.7%	24.4%
Interest expense	100.0%	84.3%	86.3%	76.4%	65.6%
Net Income before taxation	100.0%	26.1%	-9.3%	-7.9%	25.3%
N.I. after tax & minor. int.	100.0%	16.9%	3.2%	-1.2%	21.6%
Dividend	100.0%	97.6%	97.7%	97.6%	75.9%

Yr.	99	00	01	02	03
b) As % of 1999 level					
A/C Receivable	100.0%	120.0%	125.9%	135.7%	138.4%
Quick Asset	100.0%	122.0%	115.7%	114.0%	119.2%
Current Asset	100.0%	111.1%	103.6%	107.6%	107.7%
Total Asset	100.0%	115.0%	113.8%	115.4%	114.4%
Current Liability	100.0%	108.4%	104.6%	107.8%	107.0%
Long-term Debt	100.0%	89.4%	79.0%	82.8%	111.9%
Total Liability	100.0%	110.7%	106.3%	109.5%	111.0%
Owners' Equity	100.0%	129.6%	138.6%	134.9%	125.8%

4) Key Financial Ratios

Yr.	99	00	01	02	03	
Current Ratio	1.18	1.21	1.17	1.18	1.19	
Quick Ratio	0.38	0.43	0.42	0.40	0.42	Liquidity ratio
CFO Ratio	0.05	0.07	0.03	-0.04	-0.01	
Avg. Collection Period (days)	N.A.	66.68	77.01	86.50	87.19	Activity ratio
Total Asset Turnover	0.76	0.79	0.72	0.68	0.70	
Gross Profit Margin	7.56%	10.39%	10.31%	9.43%	5.69%	
Operating Profit Margin	6.50%	2.43%	2.83%	2.24%	-1.04%	
Net Profit Margin	-7.02%	-1.80%	0.66%	0.59%	-1.82%	Profitability ratio
ROA	-5.35%	-1.41%	0.48%	0.40%	-1.28%	
ROE	-22.20%	-5.74%	1.76%	1.46%	-4.90%	
Total Debt ratio	3.34	2.85	2.56	2.71	2.94	
Debt Service ratio	-12.18	-3.53	1.66	1.54	-4.52	Finance ratio
CAPEX ratio	4.34	3.63	2.32	-3.35	-0.43	
Dividend Payout ratio	-5.0%	-28.5%	-151.9%	407.3%	-17.4%	Market ratio

current asset/current liab

quick asset/current liab

CFO/current liab

365*ave acc. receiv/revenue

revenue/ave.asset

gross income/revenue

op. income/revenue

net income before tax/revenue

net profit margin*asset turnover

net income before tax/ave.owners' equity

total liab/owners' equity

EBIT/interest expense

CFO/capital expenditure

dividend/net income after taxation

5) Revenue by Regions

Sales in Japan exceeds 90%

6) Revenue by Business Areas

Yr.	99	00	01	02	03	
Construction	424,949	418,102	394,318	414,848		
Others	65,927	57,781	56,286	56,428		
Elimination	-11,115	-11,543	-10,848	-12,420		
Total	479,761	464,340	439,756	458,856		

b) As % of Total Revenue

Yr.

99

00

01

02

03

Construction

Others

Elimination

Total

88.6%

13.7%

-2.3%

100.0%

90.0%

12.4%

-2.5%

100.0%

89.7%

12.8%

-2.5%

100.0%

90.4%

12.3%

-2.7%

100.0%

35. McDermott International

McDermott Int'l (Consolidated) A/C period ended: 31-Mar (before 2000)
31-Dec (since 2000)

1) Income Statement

a) As Reported (US\$ thousands)

Yr.	97	98	99	00	01	02	03
Revenue	3,150,850	3,674,635	3,149,985	1,877,753	1,969,806	1,748,681	2,335,364
COGS	2,878,972	3,117,279	2,543,121	1,603,771	1,715,677	1,744,138	2,252,842
Gross Income	271,878	557,356	606,864	273,982	254,129	4,543	82,522
Operating Income	-146,719	276,392	199,506	5,124	84,292	-128,239	-58,860
EBIT	-147,245	355,457	178,697	-1,748	109,390	-750,327	-64,009
Interest expense	95,100	81,454	63,262	43,709	39,663	15,124	18,993
Net income before taxation	-220,697	291,807	148,559	-9,977	92,113	-761,331	-77,849
N.I. after tax & minor. int.	-206,105	215,690	153,362	-22,092	-20,022	-776,394	-95,229
Dividend	32,824	11,177	11,878	5,993	0	0	0

Note:
Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (US\$ thousands)

Yr.	97	98	99	00	01	02	03
A/C Receivable	798,294	742,767	572,452	267,239	253,957	289,289	253,585
Quick Asset	1,132,023	1,020,778	809,601	386,299	608,869	572,735	608,855
Current Asset	1,834,327	1,596,556	1,375,366	574,528	799,499	762,905	698,527
Total Asset	4,599,482	4,501,130	4,305,520	2,025,126	2,103,840	1,278,171	1,248,874
Current Liability	1,608,756	1,461,126	1,266,411	659,726	976,916	917,049	722,831
Long-term Debt	667,174	598,182	323,774	323,157	100,393	86,104	279,682
Total Liability	4,001,622	3,631,391	3,316,419	1,248,523	1,333,730	1,694,928	1,612,051
Owners' Equity	597,860	869,739	989,101	776,603	770,110	-416,757	-363,177

3) Cash Flow Profile (US\$ thousands)

Yr.	97	98	99	00	01	02	03
Net CFO	106,647	577,737	300,285	-49,066	175,815	-9,073	-97,546
Net CFI	-234,754	-177,351	242,752	-27,991	42,184	134,519	-16,761
Cap. Expenditure	91,371	45,090	78,787	49,300	45,008	64,852	36,057
Corp. Fin. Gap	-128,107	400,366	543,037	-77,057	217,999	125,446	-114,307

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
Revenue	100.0%	116.6%	100.0%	59.6%	62.5%	55.5%	74.1%
COGS	100.0%	108.3%	88.3%	55.7%	59.6%	60.6%	78.3%
Gross Income	100.0%	205.0%	223.2%	100.8%	93.5%	1.7%	30.4%
Operating Income	-	-	-	-	-	-	-
EBIT	100.0%	-241.4%	-121.4%	1.2%	-74.3%	509.6%	43.5%
Interest expense	100.0%	85.7%	66.5%	46.0%	41.7%	15.9%	20.0%
Net Income before taxation	-	-	-	-	-	-	-
N.I. after tax & minor. int.	-	-	-	-	-	-	-
Dividend	100.0%	34.1%	36.2%	18.3%	0.0%	0.0%	0.0%

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
A/C Receivable	100.0%	93.0%	71.7%	33.5%	31.8%	36.2%	31.8%
Quick Asset	100.0%	90.2%	71.5%	34.1%	53.8%	50.6%	53.8%
Current Asset	100.0%	87.0%	75.0%	31.3%	43.6%	41.6%	38.1%
Total Asset	100.0%	97.9%	93.6%	44.0%	45.7%	27.8%	27.2%
Current Liability	100.0%	90.8%	78.7%	41.0%	60.7%	57.0%	44.9%
Long-term Debt	100.0%	89.7%	48.5%	48.4%	15.0%	12.9%	41.9%
Total Liability	100.0%	90.7%	82.9%	31.2%	33.3%	42.4%	40.3%
Owners' Equity	100.0%	145.5%	165.4%	129.9%	128.8%	-69.7%	-60.7%

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03
Current Ratio	1.14	1.09	1.09	0.87	0.82	0.83	0.97
Quick Ratio	0.70	0.70	0.64	0.59	0.62	0.62	0.84
CFO Ratio	0.07	0.40	0.24	-0.07	0.18	-0.01	-0.13
Avg. Collection Period (days)	85.45	76.54	76.20	81.61	48.29	56.70	42.42
Total Asset Turnover	0.70	0.81	0.72	0.59	0.95	1.03	1.85
Gross Profit Margin	8.63%	15.17%	19.27%	14.59%	12.90%	0.26%	3.53%
Operating Profit Margin	-4.66%	7.52%	6.33%	0.27%	4.28%	-7.33%	-2.52%
Net Profit Margin	-7.00%	7.94%	4.72%	-0.53%	4.68%	-43.54%	-3.32%
ROA	-4.91%	6.41%	3.37%	-0.32%	4.46%	-45.02%	-6.15%
ROE	-34.42%	39.77%	15.98%	-1.13%	11.91%	-430.92%	19.91%
Total Debt ratio	6.69	4.18	3.35	1.61	1.73	-4.07	-4.44
Debt Service ratio	-1.55	4.36	2.82	-0.04	2.78	-49.61	-3.37
CAPEX ratio	1.17	12.81	3.81	-1.00	3.91	-0.14	-2.71
Dividend Payout ratio	-15.9%	5.2%	7.7%	-27.1%	0.0%	0.0%	0.0%

current asset/current liab
quick asset/current liab
CFO/current liab
365*ave acc. receiv/revenue
gross income/revenue
op. income/revenue
net income before tax/revenue
net profit margin*asset turnover
net income before tax/ave. owners' equity
total liab/owners' equity
EBIT/interest expense
CFO/capital expenditure
dividend/net income after taxation

Liquidity ratio

Activity ratio

Profitability ratio

Finance ratio

Market ratio

5) Revenue by Regions

a) As Reported (millions Euros)

Yr.	97	98	99	00	01	02	03
US	1,431,868	1,888,388	1,573,896	902,279	929,800	1,045,245	1,195,182
Middle East	172,063	312,891	138,173	27,069	72,804	179,695	535,874
Asia & Australia	367,420	619,662	419,443	393,569	153,649	262,084	455,683
Canada & South America	257,285	264,846	573,764	419,052	671,708	150,013	113,632
Nigeria	0	0	0	0	23,989	51,408	24,452
UK & Denmark	322,760	364,894	134,534	78,197	55,363	27,597	0
others	599,454	424,154	310,175	57,587	62,493	32,639	10,541
Total	3,150,850	3,674,635	3,149,985	1,877,753	1,969,806	1,748,681	2,335,364

Note:

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
US	45.4%	45.9%	50.0%	48.1%	47.2%	59.8%	51.2%
Middle East	5.5%	8.5%	4.4%	1.4%	3.7%	10.3%	22.9%
Asia & Australia	11.7%	16.9%	13.3%	21.0%	7.8%	15.0%	19.5%
Canada & South America	8.2%	7.2%	18.2%	22.3%	34.1%	8.6%	4.9%
Nigeria	0.0%	0.0%	0.0%	0.0%	1.2%	2.9%	1.0%
UK & Denmark	10.2%	9.9%	4.3%	4.2%	2.8%	1.6%	0.0%
others	19.0%	11.5%	9.8%	3.1%	3.2%	1.9%	0.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

6) Revenue by Business Areas

a) As Reported (millions Euro)

Yr.	97	98	99	00	01	02	03
Marine Constr. Services	1,408,469	1,855,486	1,279,570	757,508	848,528	1,148,041	1,803,927
Gov't Operations	373,051	370,519	382,706	431,252	472,362	553,827	531,522
Industrial Op.	458,116	337,787	427,520	503,970	601,676	0	0
Power Generation System	985,430	1,142,721	1,066,217	189,568	47,778	46,881	0
Total	3,225,066	3,706,513	3,156,013	1,862,298	1,970,344	1,748,749	2,335,449

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Marine Constr. Services	43.7%	50.1%	40.5%	40.2%	43.1%	65.6%	77.2%
Gov't Operations	11.6%	10.0%	12.1%	22.9%	24.0%	31.7%	22.8%
Industrial Op.	14.2%	9.1%	13.5%	26.8%	30.5%	0.0%	0.0%
Power Generation	30.6%	30.8%	33.8%	10.1%	2.4%	2.7%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

36. NCC

NCC (Consolidated)

A/C period ended: 31-Dec

1) Income Statement

a) As Reported (million SEK)

Yr.	97	98	99	00	01	02	03
Revenue	29,507	34,483	37,623	39,368	46,653	45,810	45,424
COGS	19,460	22,268	24,332	24,960	30,507	29,940	31,834
Gross Income	10,047	12,215	13,291	14,408	16,146	15,870	13,590
Operating Expense	9,459	11,151	12,176	13,138	15,857	14,387	12,754
Operating Income	588	1,064	1,115	1,270	289	1,483	836
EBIT	270	1,110	1,364	2,415	-1,536	1,820	5
Interest expense	661	561	476	765	1,123	841	547
Net income before taxation	-204	730	1,251	2,153	-2,130	1,306	-323
N.I. after tax & minor. int.	-173	543	838	1,494	-2,269	821	-421
Dividend	163	271	433	475	236	262	262

Note:

Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (million SEK)

Yr.	97	98	99	00	01	02	03
A/C Receivable	4,605	5,460	5,291	7,140	6,960	6,401	6,145
Quick Asset	9,416	10,264	9,972	13,086	13,258	13,529	11,709
Current Asset	10,785	11,861	12,349	18,095	20,795	24,737	22,101
Total Asset	26,344	28,459	29,030	36,693	39,312	35,215	29,997
Current Liability	13,265	14,142	12,692	17,277	24,150	19,261	17,276
Long-term Debt	3,574	2,280	3,898	6,969	4,850	4,944	4,305
Total Liability	19,062	18,763	19,205	26,751	31,896	27,535	23,731
Owners' Equity	9,262	9,696	9,825	9,942	7,416	7,680	6,266

3) Cash Flow Profile (millions SEK)

Yr.	97	98	99	00	01	02	03
Net CFO	201	881	-63	279	-637	2,747	958
Net CFI	4,022	-289	-542	-2,635	91	2,308	-196
Cap. Expenditure	2,384	1,414	1,489	3,890	2,776	478	178
Corp. Fin. Gap	4,223	592	-605	-2,356	-746	5,055	762

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
Revenue	100.0%	116.9%	127.5%	133.4%	158.1%	155.3%	153.9%
COGS	100.0%	114.4%	125.0%	128.3%	156.8%	153.9%	163.6%
Gross Income	100.0%	121.6%	132.3%	143.4%	160.7%	158.0%	135.3%
Operating Expense	100.0%	117.9%	128.7%	138.9%	167.6%	152.1%	134.8%
Operating Income	100.0%	181.0%	189.6%	216.0%	49.1%	252.2%	142.2%
EBIT	100.0%	411.1%	505.2%	894.4%	-568.9%	674.1%	1.9%
Interest expense	100.0%	84.9%	72.0%	115.7%	169.9%	127.2%	82.8%
Net Income before taxation	100.0%	-357.8%	-613.2%	-1055.4%	1044.1%	-640.2%	158.3%
N.I. after tax & minor. int.	100.0%	-313.9%	-484.4%	-863.6%	1311.6%	-474.6%	243.4%
Dividend	100.0%	166.6%	266.1%	292.2%	145.2%	173.1%	173.1%

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
A/C Receivable	100.0%	118.6%	114.8%	155.0%	149.4%	139.0%	133.4%
Quick Asset	100.0%	109.0%	105.9%	139.0%	140.8%	143.7%	124.4%
Current Asset	100.0%	110.0%	114.5%	167.8%	192.8%	229.4%	204.9%
Total Asset	100.0%	100.4%	102.4%	129.5%	138.7%	124.2%	105.8%
Current Liability	100.0%	106.6%	95.7%	130.2%	182.1%	145.2%	130.2%
Long-term Debt	100.0%	63.8%	109.1%	195.0%	135.7%	138.3%	120.5%
Total Liability	100.0%	98.3%	100.6%	140.2%	167.2%	144.3%	124.4%
Owners' Equity	100.0%	104.7%	106.1%	107.3%	80.1%	82.9%	67.7%

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03	
Current Ratio	0.81	0.84	0.97	1.05	0.86	1.28	1.28	Liquidity ratio
Quick Ratio	0.71	0.73	0.79	0.76	0.55	0.70	0.68	
CFO Ratio	0.02	0.06	0.00	0.02	-0.03	0.14	0.06	
Avg. Collection Period (days)	48.74	53.27	52.15	57.63	54.84	52.91	50.41	Activity ratio
Total Asset Turnover	1.13	1.21	1.31	1.20	1.23	1.23	1.39	
Gross Profit Margin	34.05%	35.42%	35.33%	36.60%	34.61%	34.64%	29.92%	Profitability ratio
Operating Profit Margin	1.99%	3.09%	2.96%	3.23%	0.62%	3.24%	1.84%	
Net Profit Margin	-0.69%	2.12%	3.33%	5.47%	-4.57%	2.85%	-0.71%	
ROA	-0.78%	2.57%	4.35%	6.55%	-5.60%	3.50%	-0.99%	
ROE	-2.49%	7.70%	12.82%	21.78%	-24.54%	17.30%	-4.63%	Finance ratio
Total Debt ratio	2.06	1.94	1.95	2.69	4.30	3.59	3.79	
Debt Service ratio	0.41	1.98	2.87	3.16	-1.37	2.16	0.01	
CAPEX ratio	0.08	0.62	-0.04	0.07	-0.30	5.75	5.38	
Dividend Payout ratio	-94.0%	49.9%	51.7%	31.8%	-10.4%	34.3%	-66.9%	Market ratio

current asset/current liab
quick asset/current liab
CFO/current liab
365*ave acc. receiv./revenue
revenue/ave asset
gross income/revenue
op. income/revenue
net income before tax/revenue
net profit margin*asset turnover
net income before tax/ave.owners' equity
total liab/owners' equity
EBIT/interest expense
CFO/capital expenditure
dividend/net income after taxation

5) Revenue by Regions

a) As Reported (million SEK)

Yr.	97	98	99	00	01	02	03
Sweden	18,047	20,586	21,772	21,629	24,020	20,771	19,759
Denmark	4,056	4,363	6,155	6,739	8,833	8,605	7,542
Finland	2,734	3,388	3,541	4,099	4,752	5,191	5,464
Norway	3,221	4,100	3,723	4,034	6,465	5,615	6,018
Others	1,523	1,713	2,269	2,227	3,451	4,983	6,469
Total	29,581	34,160	37,460	38,728	47,521	45,165	45,252

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Sweden	61.0%	60.3%	58.1%	55.8%	50.5%	46.0%	43.7%
Denmark	13.7%	12.8%	16.4%	17.4%	18.6%	19.1%	16.7%
Finland	9.2%	9.9%	9.5%	10.6%	10.0%	11.5%	12.1%
Norway	10.9%	12.0%	9.9%	10.4%	13.6%	12.4%	13.3%
Others	5.1%	5.0%	6.1%	5.8%	7.3%	11.0%	14.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

6) Revenue by Business Areas

a) As Reported (million SEK)

Yr.	97	98	99	00	01	02	03
Construction					38,908	34,966	36,786
Property Develop.					2,328	4,150	2,052
Roads					8,106	8,341	7,919
Altima					1,545	1,390	1,268
Others & elim.					-3,366	-3,682	-2,773
Total					47,521	45,165	45,252

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Construction					81.9%	77.4%	81.3%
Property Develop.					4.9%	9.2%	4.5%
Roads					17.1%	18.5%	17.5%
Altima					3.3%	3.1%	2.8%
Others & elim.					-7.1%	-8.2%	-6.1%
Total					100.0%	100.0%	100.0%

37. Nishimatsu Construction

Nishimatsu Constr. (Consolidated) A/C period ended: 31-Mar

1) Income Statement

a) As Reported (\$ millions)	00	01	02	03
Revenue	562,089	529,392	516,544	506,009
COGS	512,648	480,320	477,114	465,704
Gross Income	49,441	49,072	39,430	40,305
Operating Expense	29,071	29,868	28,081	26,274
Operating Income	20,370	19,406	11,369	14,031
EBIT	15,510	12,184	-6,254	10,338
Interest expense	913	1,401	989	986
Net Income before taxation	16,277	12,602	-5,753	10,799
N.I. after tax & minor int.	8,422	6,202	-4,875	4,514
Dividend	2,766	2,780	2,780	2,502

Note:

Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (\$ millions)	00	01	02	03
A/C Receivable	143,004	134,732	108,406	111,585
Quick Asset	230,147	211,744	171,545	185,431
Current Asset	803,558	586,864	513,633	530,584
Total Asset	762,514	778,844	721,529	736,446
Current Liability	506,567	487,215	455,166	482,321
Long-term Debt	64,730	66,462	64,611	58,250
Total Liability	588,171	582,957	541,034	559,603
Owners' Equity	174,343	195,887	180,495	176,843

3) Cash Flow Profile (\$ millions)

	00	01	02	03
Net CFO	23,534	41,077	8,841	470
Net CFI	-22,766	-22,879	-18,034	-17,561
Cap. Expenditure	12,484	12,577	10,483	10,691
Corp. Fn. Gap	768	18,198	-9,193	-17,091

b) As % of 2000 level

Yr.	00	01	02	03
Revenue	100.0%	94.2%	91.9%	90.0%
COGS	100.0%	93.7%	93.1%	90.8%
Gross Income	100.0%	99.3%	79.8%	81.5%
Operating Expense	100.0%	102.0%	96.5%	90.4%
Operating Income	100.0%	95.3%	55.8%	68.9%
EBIT	100.0%	78.6%	-40.3%	66.7%
Interest expense	100.0%	153.5%	109.4%	108.0%
Net Income	100.0%	77.4%	-35.3%	68.3%
before taxation				
N.I. after tax & minor int.	100.0%	73.6%	-57.9%	53.6%
Dividend	100.0%	100.5%	100.5%	90.5%

b) As % of 2000 level

Yr.	00	01	02	03
A/C Receivable	100.0%	94.2%	75.8%	78.0%
Quick Asset	100.0%	92.0%	74.5%	80.6%
Current Asset	100.0%	93.9%	85.1%	87.9%
Total Asset	100.0%	102.1%	94.6%	96.6%
Current Liability	100.0%	96.2%	89.9%	95.2%
Long-term Debt	100.0%	102.7%	99.8%	90.0%
Total Liability	100.0%	99.1%	92.0%	95.1%
Owners' Equity	100.0%	112.4%	103.5%	101.4%

4) Key Financial Ratios

Yr.	00	01	02	03	
Current Ratio	1.191	1.163	1.128	1.100	Liquidity ratio
Quick Ratio	0.454	0.435	0.377	0.384	
CFO Ratio	0.046	0.084	0.019	0.001	
Avg. Collection Period (days)		95.745	85.903	79.343	Activity Ratio
Total Asset Turnover		0.687	0.689	0.694	
Gross Profit Margin	8.80%	9.27%	7.53%	7.97%	Profitability Ratio
Operating Profit Margin	3.62%	3.67%	2.20%	2.77%	
Net Profit Margin	2.90%	2.38%	-1.11%	2.13%	
ROA		1.64%	-0.77%	1.48%	Finance ratio
ROE		6.81%	-3.06%	6.04%	
Total Debt ratio	3.374	2.976	2.998	3.164	
Debt Service ratio	16.988	8.697	-6.260	10.485	Market ratio
CAPEX ratio	1.885	3.266	0.843	0.044	
Dividend Payout ratio	32.84%	44.82%	-57.03%	55.43%	

38. Obayashi Corporation

Obayashi Corp. (Consolidated) A/C period ended: 31-Mar

1) Income Statement

a) As Reported (\$ millions)

Yr.	97	98	99	00	01	02	03
Revenue	1,541,485	1,487,495	1,379,840	1,132,028	1,313,348	1,403,671	1,341,004
COGS	1,379,891	1,345,920	1,246,493	1,013,774	1,189,235	1,303,802	1,232,115
Gross Income	161,594	141,575	133,347	118,254	124,113	99,869	108,889
Operating Income	43,835	39,796	35,721	28,802	35,314	17,622	28,491
EBIT	43,835	39,796	35,721	28,802	35,314	17,622	28,491
Interest expense	10,681	8,619	8,028	8,013	6,619	5,411	4,801
Net Income before taxation	30,857	25,237	20,697	12,736	27,211	17,980	11,839
N.I. after tax & minor. int.	13,622	11,723	8,893	5,711	-6,466	-74,079	3,124
Dividend	5,962	5,961	5,961	5,961	5,910	5,797	5,038

Note: Taxation effect is consistently not included except dividend payout ratio.

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
Revenue	100.0%	96.5%	89.5%	73.4%	85.2%	91.1%	87.0%
COGS	100.0%	97.5%	90.3%	73.5%	86.2%	94.5%	89.3%
Gross Income	100.0%	87.6%	82.5%	73.2%	76.8%	61.8%	67.4%
Operating Income	100.0%	90.8%	81.5%	65.7%	80.6%	40.2%	65.0%
EBIT	100.0%	90.8%	81.5%	65.7%	80.6%	40.2%	65.0%
Interest expense	100.0%	80.7%	75.2%	75.0%	62.0%	50.7%	44.9%
Net Income before taxation	100.0%	81.8%	67.1%	41.3%	88.2%	58.3%	38.4%
N.I. after tax & minor. int.	100.0%	86.1%	65.3%	41.9%	-47.5%	-543.8%	22.9%
Dividend	100.0%	100.0%	100.0%	100.0%	99.1%	97.2%	84.5%

2) Balance Sheet

a) As Reported (\$ millions)

Yr.	97	98	99	00	01	02	03
A/C Receivable	355,987	302,675	285,558	241,802	301,897	353,488	333,343
Quick Asset	679,509	615,990	522,710	498,155	409,174	469,797	451,752
Current Asset	1,851,028	1,686,044	1,452,252	1,353,471	1,233,571	1,238,511	1,208,812
Total Asset	2,430,025	2,267,861	2,070,469	2,060,935	2,197,081	2,044,654	1,948,578
Current Liability	1,857,465	1,677,098	1,430,937	1,368,457	1,407,986	1,447,361	1,420,174
Long-term Debt	194,727	208,312	252,049	260,609	228,570	174,199	117,028
Total Liability	2,128,467	1,960,852	1,780,799	1,731,405	1,791,673	1,740,522	1,675,332
Owners' Equity	301,558	307,009	309,670	329,530	405,408	304,132	273,246

b) As % of 1997 level

Yr.	97	98	99	00	01	02	03
A/C Receivable	100.0%	85.0%	74.6%	67.9%	84.8%	99.3%	93.6%
Quick Asset	100.0%	90.7%	76.9%	73.3%	60.2%	69.1%	66.5%
Current Asset	100.0%	91.1%	78.5%	73.1%	66.6%	66.9%	65.3%
Total Asset	100.0%	93.3%	85.2%	84.8%	90.4%	84.1%	80.2%
Current Liability	100.0%	90.3%	77.0%	74.8%	75.8%	77.9%	76.5%
Long-term Debt	100.0%	107.0%	129.4%	133.8%	117.4%	89.5%	60.1%
Total Liability	100.0%	92.1%	82.7%	81.3%	84.2%	81.8%	78.7%
Owners' Equity	100.0%	101.8%	102.7%	109.3%	134.4%	100.9%	90.6%

3) Cash Flow Profile (\$ millions)

Yr.	97	98	99	00	01	02	03
Net CFO	100,185	37,633	32,342	76,001	70,434	34,385	17,072
Net CFI	-30,477	-24,348	3,705	4,102	21,366	19,212	32,151
Cap. Expenditure	19,372	16,701	16,826	13,577	13,697	8,347	5,450
Corp. Fin. Gap	69,708	13,285	36,047	80,103	91,799	53,597	49,223

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	03	
Current Ratio	1.00	1.01	1.01	0.97	0.88	0.86	0.85	Liquidity ratio
Quick Ratio	0.37	0.37	0.37	0.36	0.29	0.32	0.32	
CFO Ratio	0.05	0.02	0.02	0.05	0.05	0.02	0.01	
Avg. Collection Period (days)	84.76	80.81	75.16	81.79	75.55	85.21	93.47	Activity ratio
Total Asset Turnover	0.63	0.63	0.64	0.55	0.62	0.66	0.67	
Gross Profit Margin	10.48%	9.52%	9.66%	10.45%	9.45%	7.11%	8.12%	Profitability ratio
Operating Profit Margin	2.84%	2.68%	2.59%	2.54%	2.69%	1.26%	2.12%	
Net Profit Margin	2.00%	1.70%	1.50%	1.13%	2.07%	1.28%	0.88%	
ROA	1.26%	1.07%	0.95%	0.62%	1.28%	0.85%	0.59%	
ROE	10.36%	8.29%	6.71%	3.98%	7.40%	5.07%	4.10%	
Total Debt ratio	7.06	6.39	5.69	5.25	4.42	5.72	6.13	Finance ratio
Debt Service ratio	4.10	4.62	4.45	3.59	5.34	3.26	5.93	
CAPEX ratio	5.17	2.25	1.92	5.80	5.14	4.12	3.13	
Dividend Payout ratio	43.8%	50.8%	67.0%	104.4%	-91.4%	-7.8%	161.3%	Market ratio

current asset/current liab
quick asset/current liab
CFO/current liab
365*ave acc. receiv./revenue
revenue/ave.asset
gross income/revenue
op. income/revenue
net income before tax/revenue
net profit margin*asset turnover
net income before tax/ave.owners' equity
total liab/owners' equity
EBIT/interest expense
CFO/capital expenditure
dividend/net income after taxation

5) Revenue by Regions

Revenue generated from Japan has been staying consistently at 90% level, while other countries make up the remaining 10%.

6) Revenue by Business Areas

a) As Reported (\$ millions)

Yr.	97	98	99	00	01	02	03
Construction	1,477,170	1,424,889	1,344,796	1,081,923	1,264,063	1,357,364	1,305,034
Real Estate	70,745	70,748	46,294	55,096	44,926	44,063	41,819
Others			11,174	11,390	11,390	11,365	22,014
Total	1,547,915	1,495,637	1,391,090	1,148,193	1,320,379	1,412,792	1,368,867

b) As % of Total Revenue

Yr.	97	98	99	00	01	02	03
Construction	95.4%	95.3%	96.7%	94.2%	95.7%	96.1%	95.4%
Real Estate	4.6%	4.7%	3.3%	4.9%	3.4%	3.1%	3.0%
Others				1.0%	0.9%	0.8%	1.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

39. Obrascon Huarte Lain

OHL (Consolidated)

A/C period ended: 31-Dec

1) Income Statement

a) As Reported (thousands Euros)

Yr.	97	98	99	00	01	02
Revenue	438,331	753,351	1,505,532	1,796,335	1,354,763	1,858,382
COGS	281,403	497,157	1,049,926	1,164,828	1,201,178	1,181,053
Gross Income	156,928	256,194	555,606	631,507	153,585	697,329
Operating Income	23,152	48,015	72,284	110,226	134,300	68,442
EBIT	23,840	41,464	36,517	96,420	88,035	77,735
Interest expense	10,734	8,198	20,663	29,822	45,387	45,664
Net Income before taxation	17,308	38,098	27,544	77,037	55,460	46,368
N.I. after tax & minor. Int.	12,210	37,347	26,000	73,540	47,861	42,137
Dividend	N.A.	N.A.	N.A.	N.A.	18,385	11,641

Source: Osiris

Taxation effect is consistently not included except dividend payout ratio.

2) Balance Sheet

a) As Reported (thousands Euros)

Yr.	97	98	99	00	01	02
A/C Receivable	333,266	335,954	835,347	946,660	1,154,011	854,627
Quick Asset	361,945	427,909	977,757	1,147,308	1,349,890	1,057,139
Current Asset	448,619	730,440	1,545,262	1,760,112	1,801,468	1,780,415
Total Asset	483,071	889,528	1,883,722	2,309,647	2,600,489	2,640,836
Current Liability	397,194	585,566	1,284,621	1,435,343	1,493,523	1,420,730
Long-term Debt	14,476	97,857	134,513	302,153	506,687	656,879
Total Liability	414,293	708,485	1,453,986	1,813,752	2,103,698	2,175,714
Owners' Equity	68,778	181,043	429,736	495,895	496,791	465,122

Source: Osiris

3) Cash Flow Profile (thousands Euros)

Yr.	97	98	99	00	01	02
Net CFO			-585,374	-109,354	-164,240	691,621
Net CFI			-21,763	-33,723	1,305	-71,173
Cap. Expenditure			N.A.	N.A.	N.A.	N.A.
Corp. Fin. Gap			-607,137	-143,077	-162,935	620,448

Source: Osiris

b) As % of 1997 level

Yr.	97	98	99	00	01	02
Revenue	100.0%	171.9%	366.3%	409.6%	309.1%	424.0%
COGS	100.0%	176.7%	373.1%	413.9%	426.9%	412.6%
Gross Income	100.0%	163.3%	354.1%	402.4%	97.9%	444.4%
Operating Income	100.0%	207.4%	312.2%	476.1%	580.1%	295.6%
EBIT	100.0%	173.9%	153.2%	404.4%	360.9%	326.1%
Interest expense	100.0%	76.4%	192.5%	277.8%	422.8%	425.4%
Net Income before taxation	100.0%	220.1%	159.1%	445.1%	320.4%	267.9%
N.I. after tax & minor. Int.	100.0%	305.9%	212.9%	602.3%	392.0%	345.1%

b) As % of 1997 level

Yr.	97	98	99	00	01	02
A/C Receivable	100.0%	100.8%	250.7%	284.1%	346.3%	256.4%
Quick Asset	100.0%	116.2%	270.1%	317.0%	373.0%	292.1%
Current Asset	100.0%	162.8%	344.4%	392.3%	401.6%	396.9%
Total Asset	100.0%	184.1%	389.9%	478.1%	538.3%	546.7%
Current Liability	100.0%	147.4%	323.4%	361.4%	376.0%	357.7%
Long-term Debt	100.0%	676.0%	929.2%	2087.3%	3500.2%	4537.7%
Total Liability	100.0%	171.0%	351.0%	437.8%	507.8%	525.2%
Owners' Equity	100.0%	263.2%	624.8%	721.0%	722.3%	676.3%

4) Key Financial Ratios

Yr.	97	98	99	00	01	02	
Current Ratio	1.13	1.25	1.20	1.23	1.21	1.25	Liquidity ratio
Quick Ratio	0.91	0.73	0.76	0.80	0.90	0.74	
CFO Ratio	N.A.	N.A.	-0.46	-0.08	-0.11	0.49	
Avg. Collection Period (days)	238.32	162.12	133.14	181.04	282.98	197.26	Activity ratio
Total Asset Turnover	1.00	1.10	1.16	0.86	0.55	0.71	
Gross Profit Margin	35.80%	34.01%	34.61%	35.16%	11.34%	37.52%	Profitability ratio
Operating Profit Margin	5.28%	6.37%	4.50%	6.14%	9.91%	3.68%	
Net Profit Margin	3.95%	5.06%	1.72%	4.29%	4.09%	2.50%	
ROA	3.95%	5.55%	1.99%	3.67%	2.26%	1.77%	
ROE	27.39%	30.50%	9.02%	16.65%	11.17%	9.64%	Finance ratio
Total Debt ratio	6.02	3.91	3.38	3.66	4.23	4.68	
Debt Service ratio	2.22	5.06	1.77	3.23	1.90	1.70	
CAPEX ratio	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
Dividend Payout ratio	N.A.	N.A.	N.A.	25.0%	24.3%	25.0%	Market ratio

current asset/current liab

quick asset/current liab

CFO/current liab

365*ave acc. receiv/revenue

revenue/ave.asset

gross income/revenue

op. income/revenue

net income before tax/revenue

net profit margin*asset turnover

net income before tax/ave.owners' equity

total liab/owners' equity

EBIT/interest expense

CFO/capital expenditure

dividend/net income after taxation

5) Revenue by Regions

a) As Reported (thousands Euros)

Yr.	97	98	99	00	01	02
Spain				1,570,618	1,545,570	
Rest of World				289,202	226,396	
Total				1,859,820	1,771,966	

6) Revenue by Business Areas

a) As Reported (thousands Euros)

Yr.	97	98	99	00	01	02
Civil Engineering				901,805	837,250	
Buildings				613,169	623,773	
Diversification				344,846	310,943	
Total				1,859,820	1,771,966	

b) As % of Total Revenue

Yr.	97	98	99	00	01	02
Spain				84.5%	87.2%	
Rest of World				15.5%	12.8%	
Total				100.0%	100.0%	

b) As % of Total Revenue

Yr.	97	98	99	00	01	02
Civil Engineering				48.5%	47.2%	
Buildings				33.0%	35.2%	
Diversification				18.5%	17.5%	
Total				100.0%	100.0%	