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Strategic entry mode selection and underlying financing capabilities

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Evidence from the US and EU pharmaceutical industry

Academic supervisor: Peter Schrøder, Novozymes

Author: Anders Peter Bjorholm

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Abstract

This thesis examines whether entry mode strategy is associated with underlying financing capabilities, by an empirical analysis of US and EU pharmaceutical corporations. The theoretical framework applied encompasses; transactions cost economics, capital structure literature, and real options theory. The theoretical insights are applied intuitively to the factors that influence entry mode strategy. The data sample contains 89 pharmaceutical corporations, which are sorted into subgroups on geographical dispersion, and three corporate entry mode strategies; wholly owned mode, joint venture mode, and balanced mode. The theoretical assessment suggests that wholly owned modes, will ensure governance of technological knowhow and strong coordination within the subsidiary. Joint venture mode entails that initial investment and risk is shared with a partner, and that skills can be acquired. In addition, a joint venture incorporates strategic flexibility through the option to expand business activities, if the joint venture is profitable. Balanced mode is an intermediate of wholly owned and joint venture mode.

8 linear regression models were applied in the empirical analysis, where profit margin and return on assets was explained by, cash flow ratio, long term debt to equity ratio, and current ratio. Accounting beta for return on assets was estimated to determine a relative risk measure for the pharmaceutical corporations.

It was found that cash flow ratio has a clear positive impact on joint venture modes across the regression results, which supports that there is an evident pattern between strategic flexibility and performance, in an entry mode context. Long term debt to equity ratio reports very mixed performance patterns, across the regression results. This provides some support for the theorized perspective on capital structure, as it is suggest that capital structure should be estimated with respect to corporate context. Current ratio is reported to have a mixed and negative relationship to performance. Hence, entry mode strategy is associated with underlying financing capabilities within the pharmaceutical industry.

1. Introduction

Throughout the past decade much attention from scholars and firms has been on the aspects of globalization. New markets evolve and thus new demand for commodities and services is growing, as well as supply of resources and intellectual know-how entails new challenges for companies. Corporate exposures are broad and vary from factors such as environmental hazards, volatile markets further to operational- and strategic risks like; changing demand, competitive movement and technological shifts (Miller, 1998).

Professional disciplines and techniques have been developed in order to adhere to these factors. That may be financial hedging, compliance, insurance etc. A commonality among these is that they rely on quantifiable data and past incidents, by which corporations can determine their risk exposures and design practices with regard to. These instruments may provide some integrated systems. Although, given that many risks is truly exogenous to firms and are inherent to social, technological, and economic factors beyond managerial influence they are hard to measure and forecast (Bettis and Hitt, 1995). Changes are abrupt, unique and may evolve in quite distinct ways. Given that these strategic exposures are contextual and firm-specific, the application of standardized instruments and risk management practice will not offer superior dynamic managerial capabilities alone.

D'Aveni (1994) argues that the global business environment is hypercompetitive which entails conditions characterized by continuous innovation and constant technological advancements. A way to grasp strategic opportunities or alternative investment choices relies on the ability to develop viable business development options (McGrath, 1997), and thus attain competitive advantages through the utilization of valuable, rare, inimitable firm-specific resources (Barney, 1991).

With respect to the prior elaborated challenges, this thesis proposes an analysis of the pharmaceutical industry. The following section presents an initial overview of the pharmaceutical industry. This is followed by some comments on industry challenges, which sets the perspective of this thesis.

1.1 Pharmaceutical industry overview

The manufacturers of pharmaceutical products market a diverse range of products for human and veterinary treatment (Gale, 2007). The industry output is predominantly focused on two lines. One line is pharmaceutical preparations for dental, medical, or veterinary professionals. These are prescription drugs. The other line is over the counter drugs (OTC), which can be bought openly in the public (Gale, 2007).

The pharmaceutical industry has in general been subject to considerable growth in terms of sales volume. IMS Health[1] reports the global pharmaceutical market to be US$ 956 billion in 2011, with a growth over the previous year at 5,1 pct. The trend in the period 2003-2011 are that sales growth is slowing down, although from high levels as growth was at 9,0 pct. in 2003.

During the last decade mergers and acquisitions activity has been strong, which has led to the classical conjunction that the industry is under consolidation. On the contrary, new segments within the industry account for the greatest relative growth rate, that being generics, biotech and life-sciences services (McKinsey Quarterly, 2011). Whereas, the large pharmaceutical corporations has not provided any substantial aggregate growth over the period considered (McKinsey Quarterly, 2011). Given that health care spending relative to GDP, are increasing in many countries while governmental budgets are under massive pressure due to the economic climate, associated cost for pharmaceutical product will be put under scrutiny (Gale, 2007; McKinsey Quarterly, 2011). Another implication for pharmaceutical corporations is that regulators are getting still more critical in their pricing, giving access to markets, and accept sequential products without significant evidence for incremental benefits (Gale, 2007; McKinsey Quarterly, 2011).

This indicates that the large pharmaceuticals need to evaluate their strategic decisions, on how they can spur new growth to their existing business, or generate new business activities. A critical aspect for corporate managers in this context, relates to the penetration and coordination of new markets i.e. the choice of entry mode and governance of foreign subsidiary investments, with respect to the environment depicted above. As companies continue to enter new markets and search for competitive advantages, the global exposure

[1]IMS Health: http://www.imshealth.com/portal/site/ims

raises intriguing questions and challenges for firm management to secure a flexible organizational setup.

Therefore, the objective of this thesis is to assess the entry mode decision, through the lens of relevant theoretical perspectives. The theoretical framework developed for this analysis rest on insights from transaction cost economics, capital structure literature, and real option theory. The entry modes assessed in the analysis is wholly owned modes and joint venture mode

The previous section has proposed intriguing challenges for the pharmaceutical industry, in an entry mode context. These challenges have been condensed to an overall research problem, which is presented in the next section.

1.2 Research problem and sub-problems

The paragraph below offers the main research problem assessed in this thesis.

1.2.1 Problem statement:

Is entry mode strategy in pharmaceutical industry associated with underlying financing capabilities?

The problem statement will be answer through the thesis, with respect to the introduced theoretical framework. Furthermore, the problem statement will be specified for empirical analysis by a main hypothesis, and three sub-hypotheses, in section 7.7. This will form a platform, by which the findings can be concluded.

1.3 Thesis scope

In this thesis, it will be investigated if entry mode strategy in the pharmaceutical industry is associated with underlying financing capabilities. In order to address this, a conceptual theoretical framework is developed. As entry modes can be analyzed from various theoretical perspectives, the applied literature is limited to transaction cost economics, capital structure literature, and real option theory. As the proposed analysis focus on the aggregate level, no specific calculation for a target entry mode investment will be conducted, as it is outside the scope of this thesis. The objective of the thesis is moreover not to determine a better entry mode, but to identify whether entry modes are associated to financing capabilities.

The thesis refrains from analyzing entry modes on a country level, as it would necessitate an extensive analysis, given that some of the pharmaceuticals in the sample control subsidiaries in multiple countries. Furthermore, company specific events are not included as it is outside the aggregate perspective of the scope.

The data sample employed is based on annual accounting data. Given that the analysis in this thesis, considers a dataset of both US and European pharmaceutical corporations, an assessment of the underlying accounting components would be ambiguous and distorted, as accounting standards varies cross the sample.

There will be no considerations on product specifics, in terms of entry mode, as it would require extensive knowledge on the in sample corporations product portfolio.

The next section will explain the thesis structure and the progression throughout the thesis.

1.4 Structure

The thesis is structured into three progressive chapters. The first chapter presents a brief review of previous entry mode literature, and offers prior empirical evidence on past performance of entry modes. The prior empirical evidence is presented along with insights from the strategic management literature.

The first chapter also encompasses a theoretical framework from which the analytical perspective is derived. The theoretical framework consists of three theoretical perspectives, which are presented and discussed in the following progression; transaction cost economics, capital structure literature, and real option theory. The key insights from the theoretical framework will facilitate the variables applied for the analysis.

The second chapter includes the empirical analysis conducted in this thesis. The chapter is composed into eight sections, which presents the data sample and the selected accounting variables relevant for the research perspective. The accounting variables are explained and decomposed for insights on their functional form.

The following section presents a beta test, in order to determine relative accounting betas for the corporations in the data sample. This is followed by a section, where the dummy variables are determined. This will subgroup the data sample into groups on global or international presence, as well as corporations aggregate entry mode strategy.

These theoretical proponents are formulated into one main hypothesis and three sub-hypotheses. These will determine the answer to the proposed research problem.

The next section presents, the statistical properties of the data. This includes a correlation test, chi-squared test, and Durbin-Watson D-test, to control for normality in the proposed data sample.

The next section of the chapter, presents eight linear regression models, based on the accounting variables that were proposed on the basis of the prior theoretical framework.

The last chapter presents the results from the empirical analysis and a discussion of the results, in relation to the theoretical framework provided. The chapter and thesis is summarized a discussion and a conclusion.

2. Literature review - past findings

In this section, a brief literature review of the past relevant findings, within the academic literature, will be provided in perspective of this thesis. The following section, will present findings from entry mode literature with focus on joint venture- and wholly owned modes, as these modes are the entry modes considered in this thesis.

2.1 Entry modes

The following subsections, reports some empirical findings on entry mode performance, and compares the characteristics of the wholly owned mode and joint venture. This review will furthermore provide insights on the strengths and weaknesses of the two modes, which will be applicable in the assessment of how pharmaceutical corporations can determine their entry mode strategy.

2.1.1 Performance of entry modes

Prior studies within the entry mode literature have suggested that ownership-based entry modes such as acquisitions, joint ventures and new ventures perform quite poorly (Woodcock, Beamish and Makino, 1994). Early insights argue that corporate choices on entry mode, is conditional upon international experience and product diversification. In addition, cultural effects between host and home country influence the decisions regarding the chosen entry mode (Davidson, 1980).

More recent studies find that industry and firm specific factors such as, firm size, research and development intensity, industry growth and the intra industry competition influence entry mode decision for wholly owned modes (Zejan, 1990).

2.1.2 Comparison of wholly owned modes and joint venture modes

When comparing joint venture and wholly owned entry modes Anderson and Gatignon (1986) propose that geographic location factors, the degree of firm multinationality, and research and advertising intensity may influence the decision on whether, a corporation determines to venture a market by a joint venture or wholly owned subsidiary. In addition, Kogut and Singh

(1988) extended the insights to cover three ownership-based entry modes: joint venture, acquisition and new venture. Furthermore, there could be internalization advantages related to the various entry modes (Woodcock, Beamish and Makino, 1994).

For the new venture mode, by some authors abbreviated as greenfields, a new wholly owned subsidiary is set up in the entered country. Findings suggest that this mode is superior to the acquisition mode, as lesser failures are detected for new venture modes (Li and Guisinger, 1991). Corporations pursuing the new venture mode rely on their inherent capabilities, historic achievements and already developed resources. Woodcock, Beamish and Makino (1994), states that multinational experience is related to the wholly owned mode. This suggests that corporations with appropriate resources, herein the aspect of multinational experience, will further support corporations to pursue wholly owned subsidiary modes, when entering a new country.

The performance of acquisition modes has in ex ante studies been found to generate mixed returns to acquires and positive returns to sellers (Jensen and Ruback, 1983). This may fail to incorporate long term gain and synergies, which may become visible over time, as the main focus is on short-term stock market reactions. Ex post studies of acquisitions, suggest that the acquiring company in general face negative returns. The main reason seems to be that it is very hard to align organizational cultures and strategic implementations cross companies (Chatterjee, 1992).

Joint ventures is defined by Harrigan (1988) as; "business agreements whereby two or more owners create a *separate entity"*. This definition shares the characteristics of the definition that Kogut (1988) offers: "… a joint venture occurs when two or more firms pool a portion of their resources within a common legal organization. Conceptually, a joint venture is a selection among alternative modes by which two or more firms can transact". Additionally, Harrigan (1988) argues that effective joint venture strategies must adapt to demand uncertainty, customer traits, infrastructure development, production technology, volatility of competitor behavior, and the nature and scope between the specific venture and its joining corporations. Given these factors, the form, focus, and duration of joint venture between corporations should vary cross industries (Harrigan, 1988).

The managerial decision on which entry mode is the more viable, relates to a trade-off between cost of mode control and cost of mode resource commitment (Anderson and Gatignon, 1986). In this context resources may be tangible such as manufacturing site and capital, or intangible such as operational or technological know-how. In general, the relationship can be formulated by, the greater degree of ownership, the larger resource commitment i.e. capital invested or organizational knowledge allocated to the subsidiary. A joint venture mode will thus minimize resources committed relative to a wholly owned subsidiary, given that the overall commitment will be shared with at least one partnering corporation.

This may entail that corporations without adequate resources, which may either be financial strength or market know-how, would search for a partner to share dedicated resources with and hereby reduce strategic risk, rather than entering through a wholly owned subsidiary.

2.1.3 Entry mode risk factors

The key difference between joint venture and wholly owned mode through acquisition, relates to the partner relationship. If corporations pursue a joint venture, they inevitably provide access to some of their resources as they will share knowledge or specific assets when cooperating. This would not be the case in an acquisition, as the acquirer in general will obtain the control and rights. Given the associated strategic risk in a joint venture mode, corporations in search of (a) partner(s) need to consider whether they are willing to grant access to internal resources. If they decide to do so, this should be reciprocated by partnering corporations, in order to secure a mutual commitment (Hendrikse, 2003).

A Corporation's willingness to allow access to its resources is highly dependent on the perceived risk of exposing specific resources. If the resources are considered highly critical and core, and a partner firm could gain competitive advantages by expropriation of these resources, an entering corporation would be reluctant to share such resources with the partner. Thus, only non-core or resources that are very difficult to imitate may be shared with a partnering firm (Woodcock, Beamish and Makino, 1994). This suggestion is supported by Hamel (1991), as he proposed, that over a longer time period, the attractiveness of a long-term joint venture and the competitiveness of a corporation will be threatened, if core resources are shared.

The selection of entry mode is affected by the risk of losing control, or exposing core resources. If the perceived contractual risk is considered to be high, corporations will mitigate this by opting for more controlling rights i.e. choosing a wholly owned a subsidiary as the entry mode. This may also be the case if the risk of tacit knowledge expropriation, by a partner is high. Then the corporation will govern their investment through a wholly owned subsidiary (Agarwal and Ramaswami, 1992).

In general, corporations will govern their core resources or competencies as it is fundamental for long-term competitive advantage (Prahalad and Bettis, 1986). The risk of losing a future competitive advantage, may force corporations to seek protection through the wholly owned mode, if the perceived risk of transferring a critical resource to a partner is considered high. Although the former relationship is well developed, Kogut (1988) provides evidence for strong performance of joint venture modes in research intensive industries. This suggests that corporations with strong capabilities within research and development are less vulnerable to loss, as the tacit nature of advanced capabilities seems hard to codify and imitate (Teece, 1982).

2.1.3.1 Summary of prior literature

The previous empirical results and literature on entry mode, has introduced the importance of risk and uncertainties when determining entry mode strategy. By wholly owned modes, corporations will secure protection of their core resources, and thus mitigate the risk of expropriation by controlling the rights for the subsidiary (Hendrikse, 2003). Joint venture is considered an entry mode option, if there are pressure on cost, as a joint venture will share the overall costs. Furthermore, a joint venture can combine capabilities of the venturing partners, which may entail strong performance, if the venturing partners fit each other, and if the design of venture is contingent upon the given industry.

The literature also indicate that entry mode should be determined with respect to the associated risk of the given venture i.e. there is a risk relationship between selection of mode and the perceived risk. High risk should be mitigated through wholly owned modes, whereas joint venture is a likely to be a viable option if risk is low.

An interesting insight, in terms of this thesis, is the performance of joint ventures in research intensive industries, which suggest that joint venture will provide strong performance within the pharmaceutical industry (Kogut, 1988).

In sum, there are theoretical and empirical support for the selection of entry mode, must be adjusted to the particular industry, firm and country factors that the venturing company enters.

In the next section the theoretical framework will be introduced.

Theoretical framework

In this section, the theoretical framework is presented. The framework will be the main reference when determining the hypotheses, which the subsequent chapter will analyze by an empirical data sample.

First section develops the fundamentals of transaction cost economics. These insights will be applied to the entry mode decision, and thus the associated implications of wholly owned modes or joint venture modes will be discussed. The underlying components of transaction cost economics will be incorporated in the choice of variables applied in the empirical analysis. The criteria by which the dummy variables on entry mode strategy are generated, are based the theoretical finding from this section.

The second section, present findings related to capital structure and the role of financial slack as a strategic resource. Later in this section, asset beta is discussed, as it provides some inputs to the assessment of relative business risk with respect to the pharmaceutical industry. This will provide the foundation for the estimation of a risk variable, which is incorporated in the analysis of the data.

Third, the application and underlying theoretical intuition of real options theory will be presented. The presentation of real options will provide an intuitive application of the theory, as a strategic tool when assessing entry mode strategy. The fundamental properties of the real option theory lead to the notion, that a joint venture can be considered as a real growth option.

The insights from the three sections will be applied in the discussion of the results, generated by the empirical analysis, and related to the implications for entry mode strategies within the pharmaceutical industry.

The next section develops the fundamentals of transaction cost economics, and discusses it in an entry mode perspective.

3. Transaction Cost Economics - Governance of entry modes

In the following section, the fundamental implications of Transaction Cost Economics[2] will be assessed with respect to the associated cost of entry mode forms.

3.1 Short definition of TCE

The concept of TCE was introduced by Ronald Coase in 1937, by the classic transaction-cost problem; "when do firms produce to their own need, and when do they procure in the market?" (Williamson, 1991). In other words, this entails whether a firm integrate forward, backward or laterally. The main argument was that, the transaction-cost difference between a market and internal hierarchy were the primary focal point when deciding to use markets or hierarchical forms for the given transaction.

TCE differs from the neoclassical theory of the firm, where the firm is considered as a production function which main objective is profit-maximization. By the traditional view, the company is mainly defined by economies of scale and scope, and its function is to transform input to output. Through the lens of TCE, the firm is regarded a as governance structure. TCE assumes that agents, e.g. employees, are subjects to bounded rationality and thus opportunistic in their behavior (Simon, 1961). The definition of bounded rationality was given by Simon (1961): "intendedly rational, but only limitedly so", and that opportunistic behavior is deliberately seeking self-interest. The consequence hereof, is that contracting will be incomplete, given that agents act unintended, or they pursue goals not described in the contractual agreement with the firm. In order to adhere to these behavioral assumptions, the firm must construct an economic organization that economizes on bounded rationality, and still mind the hazardous opportunistic behavior of agents (Williamson, 1991).

3.2 TCE Framework

TCE provides three generic forms of economic organization – *market, hybrid,* and *hierarchy* (Williamson, 1991). As pointed out in the scope of this thesis, the attention is on the characteristics of wholly owned modes and joint venture modes. These forms are critical in

[2] Transaction Cost Economics, now abbreviated as TCE.

the proposed analysis, and will provide the fundamental framework for the assessment of how pharmaceutical corporations govern their subsidiaries, and hence determine their entry mode strategy.

The theoretical framework of economic organization, and the three modes; market, hybrid and hierarchy, will be determined below. In order to determine the characteristics of these three modes, the features, by which they are assessed, will be elaborated. The three features are; adaptability, incentive intensity, and administrative control.

Adaptability has two forms. The first can be denoted (A) for the ability to adapt to changes in demand or supply, as to maximize utility and profits, respectively (Hayek, 1945 and Williamson, 1991). The second is denoted (C) for cooperation, which is the ability to establish coordinated investments that entail an adaptive internal coordinating mechanism.

Markets are the most adaptable (A) form, as buyers and suppliers will autonomously reposition their supply and demand, given that they do not have any bilateral dependency they have high-powered incentives to reduce costs and adapt efficiently (Williamson, 1991).

Bilateral dependency in turn, will raise opportunities for corporations to generate gains through a hierarchy structure. In comparison to the market, hierarchy will enable an organization to cooperate along the value-chain to adhere to environmental changes which should support an adaptive (C) advantage over the market, as dependency builds over time (Williamson, 1991). The advantage comes at a cost, as an internal hierarchy entails added bureaucratic cost to administrative control mechanisms that may be monitoring, career rewards and penalties (Williamson, 1991).

In comparison the incentives of the market form are high-powered, in contrast to the hierarchical form. The incentives in hierarchical forms are typically flat or low-powered, as changes in work effort, will not immediately change compensation. Effort may in a pharmaceutical industry context, be commitment to a research project. Although, misalignment will often damage long-term promotion prospects and thus the unwillingness to cooperate will be mitigated by internal controls within the firm (Williamson, 1991; Hendrikse, 2003).

Aside from the aforementioned attributes, the enforceability of contracts, here noted as Contract law in table 1, is the strength, by which a firm can impose details in contracts. For a market transaction, contracts will often describe purpose and quality of the transaction, and thus the lack of contract fulfillment can be determined by court. Oppositely, within a hierarchy, internal disputes of the same nature, cannot be taken to court, and hence the hierarchy i.e. the firm will be the ultimate power (Williamson, 1991).

3.2.1 Hybrid form ~ Joint venture

Joint venture shares the traits of the hybrid form, and thus exhibits the following adaptability characteristics.

The hybrid form provides an intermediate mode of the characteristic and attributes, which the market and hierarchy form exhibit. In hybrid form the ownership is autonomous, and thus the incentives should encourage the adaption to type (A), as above. However, bilateral dependency in a hybrid form will lead to long-term contracts, which is supported by administrative mechanisms. These controls will move the governance structure towards type (C) adaption, which will decrease incentives.

3.2.2 Hierarchical form ~ wholly owned mode

Wholly owned ventures shares the traits of the hierarchical form, and thus exhibits the following adaptability characteristics.

Adaptability to disturbances is less costly within a hierarchical form, because contracts can be relaxed, as less documentation is required (Williamson, 1991). Internal disputes can be solved by management orders, which may be more difficult outside firm boundaries, as additional stakeholders may interfere. Deeply rooted information should also be easier accessible and shared within the corporations boundaries. Internal dispute resolution is supported by a more informal organization (Barnard, 1938 and Scott, 1987). Corporations have incentive instruments such as, career rewards and profit sharing, which can promote team orientation, and thus strengthen cooperation. These prior listed advantages of the hierarchy over hybrid, will support cooperative adaption (C), but also infer higher bureaucratic costs (Williamson, 1991).

In sum, internal organizing decreases the intensity of incentives as well as costs, but provides cooperative advantages and power of control mechanisms. These characteristics are shown in table 1 below.

Attributes of market, hybrid, and hierarchy governance structures*			
	Governance structure		
Attributes	Market	Hybrid	Hierarchy
Instruments			
Incentive intensity	++	+	0
Administrative controls	0	+	++
Performance attributes			
Adaptability (A)	++	+	0
Adaptability (C)	0	+	++
Contract law	++	+	0
* ++ = Strong; + = Semi-strong; 0 = Weak			

Table 3.1 – Source: Williamson, 1991

3.2.3 Operational transaction cost insights

In next subsection, some operational insights on how to govern subsidiaries are presented. The operational aspects of the transaction are important when deciding modes of governance, and hence the entry mode strategy. Several dimensions such as frequency of transaction, the uncertainty that a given transaction is subject to, and the assets specificity of the given article or service function, will be discussed in the following subsection.

Asset specificity relates to which degree an asset, or a specific investment in an asset, can be redeployed to alternative use, by another user without loss of productive value (Williamson, 1991). Several distinctive characteristics are attributed to the specificity, as listed (Hendrikse, 2003; Williamson, 1991):

- Specificity of site
- Physical asset specificity
- Human-asset specificity
- Brand name capital
- Dedicated asset

- Temporal investments

The listed dimensions operationalize the scope of the assets specificity, as the above suggest that assets specificity is multidimensional, as it covers aspects such as geographical location or neighboring infrastructure, specialized instruments critical for production, and knowledge or routine of a human resource (Ahsan and Musteen, 2011; Kogut, 1988).

Although assets specificity exhibits various forms, the common outcome of the relationship and bilateral dependency increase, as the specificity of transaction enhance. The relationship can be expressed by denoting the following (Williamson, 1991):

$M = M(u;\theta), X = X(u;\theta), H = H(u;\theta)$

The reduced forms above represent market, hybrid and hierarchy. These express governance cost as a function of assets specificity, u, and a shifting parameter θ.

If it is assumed that the modes are at the same level of asset specificity, then the relation will be:

$M(0) < X(0) < H(0)$ and $M' > X' > H' > 0$

The figure below serves as an illustration of the relationship between assets specificity, related governance costs, and forms of governance modes.

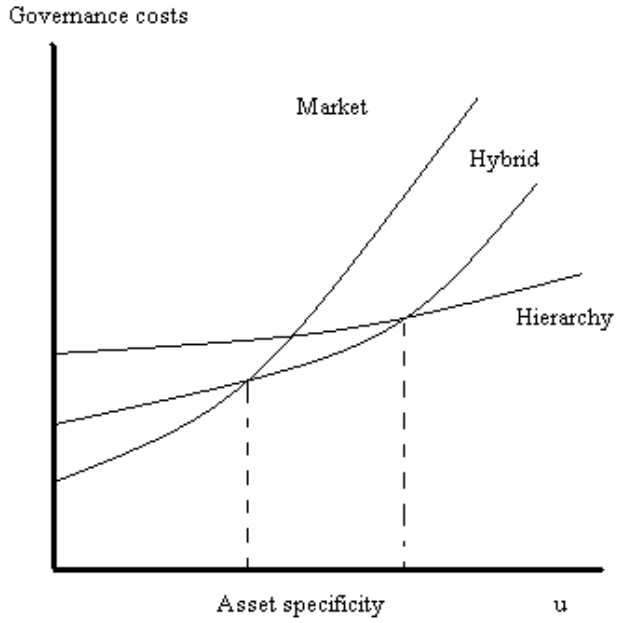


Figure 3.1 - Governance costs as a function of assets specificity (Williamson, 1991).

The visualization of the relationship above, gives the intuitive suggestion that when minimizing governance cost, the curve in-between the two scattered lines in figure 4, is at the level of asset specificity where management should opt for a hybrid governance form - such as the joint venture mode.

The distinction in the operationalization of TCE is whether the subsidiary is wholly owned or jointly owned by other investors, co-investors or corporations. The prior can be characterized as the generic form; hierarchy, whereas the latter can be characterized as the generic form; joint venture, given that it shares common attributes like the presented hybrid form. Non-subsidiary entry modes such as local sales agents, is a market function and thus characterized as the generic market form that may be licensing, export etc which is outside the scope of this thesis.

3.2.4 Managerial implications

In this section, a number of managerial implications with respect to the TCE framework, developed above will be presented. A general application of TCE factors that influence entry mode decisions will be discussed, and extended by considerations on institutional and cultural uncertainty corporations are exposed to when determining entry modes.

For a corporation, the primary tenet of TCE is that it assesses the cost of whether to integrate the subsidiary activities within its own boundaries or along a partner, when entering a new country or market. As developed above, the cost is a composition of search and negotiation with the appropriate partner in the given host country, in addition to the costs of monitoring the partner performance, with respect to the agreed contractual terms. Thus, from an entry mode perspective, TCE focus on the behavioral uncertainty of the potential partner. When corporations venture abroad environmental differences, cultural or institutional, generate information asymmetries between home and host country. This entails exogenous and endogenous uncertainties that the venturing corporation need adhere to, by evaluating strategic decisions in respect to these factors, and their possible influence. The intuitive application of figure 1, in a managerial context, is that corporation will use collaborative ventures, if transactions cost are considered low, and the opposite if they are high, corporations will internalize operations, consistent with prior research (Brouthers, 2002). Joint venture mode - the hybrid form of figure 1 - would then be the objective decision if

detected partner opportunism, asset specificity, and related uncertainty is considered low (Anderson and Gatignon, 1986).

Asset specificity, particularly in the form of knowledge may often be considered of great importance to competitive advantage. Corporations will tend to govern the assets that facilitate their competitive advantage, and therefore internalize the deployed knowledge embedded assets by a wholly owned mode. The hierarchical form will govern against the high transaction cost associated with monitoring and controlling, which a hybrid or market mode may entail. These modes could prompt the threat of opportunistic behavior, as elaborate previously. Opportunistic behavior could be in the form of shirking, free-riding or expropriation of technological know-how (Hendrikse, 2003).

Shirking by a partner may force the corporation to over-commit resources in order to gain the desired return or insights from the given investment, or in more practical terms: "to get things done" (Hendrikse, 2003).

Corporations with strong pharmaceutical brands may be confronted by free-riding issues, as partners could misappropriate the brand association, which leads to negative hazards of brand erosion (Ahsan and Musteen, 2011; Woodcock, Beamish and Makino, 1994).

Unwarranted technological dissemination of a corporation's asset is a major threat within knowledge intensive industries like pharmaceuticals, which has been covered to some extent in previous sections. This is an aspect pharmaceutical corporations need to adhere to when deciding their entry mode.

The next subsection presents, some institutional and cultural factors that can affect the choice of entry mode strategy.

3.2.5 Institutional and cultural factors

TCE predominant role has been the examining of behavioral uncertainties i.e. threats of being expropriated by a partner. In a global context, the importance of local culture in governance perspective of entry modes has become a considerable factor, for venturing corporations. The globalization process extends some of the uncertainties depicted above, which has also been

suggested in academic literature, when determining entry mode choice (Brouthers, 2002). These considerations are addressed in the next subsection.

Institutional factors that influence transaction cost are prescribed to the legal and regulatory, political, and macroeconomic-uncertainty (Ahsan and Musteen, 2011). Legal and regulatory uncertainties refer to the problems that arise when corporations need to adhere and conform to. These are multifaceted, and encompass: "restriction on ownership of subsidiary, the possibilities of repatriation of profits and weak protection of intellectual property rights" (Ahsan and Musteen, 2011). Together, these factors impact transparency and predictability on how to conduct business, which may cause inconsistent forecasting. Instable political climate, will add to uncertainty of legislation and regulation, as these could change dramatically by political crisis. The two prior factors to uncertainty affect macroeconomic uncertainty. Macroeconomic uncertainty will make it difficult to forecast economic fluctuations, an example being price volatility on commodities (Ahsan and Musteen, 2011; Kogut, 1988, Kogut and Singh, 1988).

National culture defines native values, beliefs and customs, and institutions prescribe host-countries laws and regulation (Ahsan and Musteen, 2011). Kogut and Singh (1988), express that venturing corporations relies on host-country partners, as this may help them to understand local business processes, and thereby navigate through the uncertainties that distinct cultures can cause. Though, this may expose corporations to partner uncertainty, when relying on their guidance, as the TCE framework suggest that it might be complicated to find, assess, and monitor a partner in a distant country. This will in turn give rise to opportunistic and self-seeking behavior of local partners, due to the presence of asymmetric information (Ahsan and Musteen, 2011; Kogut and Singh, 1988).

Supplier uncertainty is also an issue that needs to be considered in the entry mode decision, although it differs to some extent from the discussed partner uncertainty. Critical focus is on, whether the supplier base can supply resources of adequate quality in time, as this could have serious implications for procurement within the local value-chain, and thus the final output of the given subsidiary. A possible solution to supplier uncertainty could be vertical integration of the supply base. As developed above, a vertical integration would internalize a supplier and be considered an application of the hierarchy mode, which should ensure coordination and remove contractual disputes through fiat. Although a viable solution in some cases,

corporations may be reluctant to allocate significant resources to integrate a supplier, if it is not considered a genuine addition to overall competitive advantage. Additionally, this would erode the upsides of the market competition in the supplier base. In sum, this would add to the overall transaction costs, due to the mitigation of supplier uncertainty associated with the entry (Ahsan and Musteen, 2011; Kogut, 1988).

Thereby, a pattern within international entry modes is present. The theorized relationship is that, in the presence of strong institutions, and corporations can rely on partners and utilize market and hybrid modes, as joint ventures. When institutions are weak, it will have a detrimental impact on the utilization of market and hybrid forms. Furthermore, in terms of the TCE perspective, weak institutional environments will amplify information asymmetry, and thus partner riskiness (Brouthers, 2002).

3.3 Associated cost of entry modes

The following subsections give strategic perspectives on, the associated cost by pursuing a wholly owned or joint venture mode strategy, respectively.

3.3.1 Wholly owned modes

An entry through acquisition of a corporation, in the host market, may be the selected entry strategy for many reasons. One may be the need to gain access to a market. Acquisitions have some erroneous traits, which have been shortly addressed earlier in the thesis, in perspective of TCE, given that the emphasis is on cost minimization of the given transaction. Several costs are associated with the acquisitions mode. An acquisition represents an inefficient market transaction, as it is a singular and unique occurrence. The costs encompass searching for the appropriate acquisition target, and the associated risk of paying too much for the target corporation, given the asymmetric information problem between the target firm and the acquirer. The acquiring corporation may lack knowledge of the resources that is purchased, opposed to the target that has got an information advantage, due to their superior knowledge about the given industry, market or technology (Woodcock, Beamish and Makino, 1994). The inequality of knowledge between the entities will tend to push up the asking price, as the seller could ask a price in excess of the business value. The suboptimal choice of the acquisition mode is supported by Teece (1982), as he infers that when comparing acquisition-

and new venture modes, the new venture will have excess resources to develop the new venture. The additional resources available should, if utilized efficiently, improve the overall value of the corporation.

The data sample assessed in the empirical analysis does not provide information, on whether subsidiaries are acquisitions or new ventures. They are therefore treated as wholly owned modes.

3.3.2 Joint venture

The general TCE explanation for joint ventures, relates to how corporations should organize its boundaries with other partners. The dominant criterion for a joint venture, in a TCE perspective, is still on how to organize an economic minimization of production and transactions costs.

Joint ventures should minimize the risk of overpayment in contrast to acquisitions. The transaction process will be ongoing, and thus the information between joining entities is symmetric, or will incur the same problems, if inducing to high payment or commitment to the joint venture (Woodcock, Beamish and Makino, 1994). A joint venture shares some of the same properties of the prisoner's dilemma, as neither joining entity may want the other to retaliate in future transactions between the entities. That could quite well be the outcome, if one decides to cheat, as the other may likely want to reciprocate this, and the aspect of this economic mechanism should enforce alignment in the joint venture. Furthermore, a joint venture presents a positive economic motivation for the joining entities. Within a joint venture, resources are shared, that may be market access, knowledge or profits. Consequently, partners will be hesitant to cheat, as this could have negative impact on the shared resources. In this case, substantial support for a joint venture is present as benefits will accrue to all parties (Hendrikse, 2003; Woodcock, Beamish and Makino, 1994).

Asymmetric retaliatory positions in a joint venture, where one partner holds a stronger resource position in the relationship, may cause the partner to cheat. This relationship can lead to the expropriation of resources as discussed above (Hendrikse, 2003).

3.3.2.1 Summary of transaction cost economics

In this section, a TCE framework has been developed with respect to corporate entry mode strategy. The underlying mechanisms of TCE and the characteristics of the governance modes, has provide the following insights.

The organization and governance of international entry modes is influenced by the strategic importance of given research and development or marketing resources committed to target subsidiary. This is consistent to the proposed notion of asset specificity – high specificity entail stronger control, less specificity, reduced form of control.

The capabilities of the ventured foreign country and partners influence the committed resources to the given subsidiary. This means that high uncertainty will support strong subsidiary control through hierarchical structures, i.e. wholly owned modes. Vice versa, low uncertainty will support lesser internal governance mechanisms, and thus application of market forms such as joint venture is supported.

The main problem for corporate managers is to determine the economic organization that offers superior adaption to the continuously changing environment, in which the corporations conduct their business. To counteract maladaptive organizing, alignment of long-term bilateral dependency should be incorporated in the organization of the corporation.

In the perspective of this thesis, the previous theoretical insights developed an explanation, of the underlying transaction cost associated with wholly owned and joint venture entry modes. The insights will be used in the determination of variables applied in the empirical analysis of the pharmaceutical industry. In the final discussion of the results, the developed insights will be addressed to determine whether theory and empirical results are consistent. This will explain if TCE should be considered of high importance for pharmaceutical corporations when they determine entry strategy.

The next section, adds theoretical insights to the theoretical framework, from literature on capital structure.

4. Capital structure

Insights from literature on capital structure are introduced, in order to provide a foundation by which corporate financing capabilities can be determined. This is applied to establish if there is a theoretical pattern between corporate finance decisions and entry mode strategy. By applying notions from capital structure literature to the empirical analysis, it can possibly explain the interrelationship between entry mode strategy and financing decisions, within the pharmaceutical industry. In addition, a measure of relative asset risk is discussed, which will offer an approach to determine if there is a relationship between entry mode and business risk. In general, the focus in capitals structure literature has been on the corporate financial policy, and thus managerial issues, with regard to the entry mode context may have been given less attention. The objective of this section and the empirical analysis is to add, some insights to this perspective.

The section is introduced by some basic principles from corporate finance literature on capital structure.

4.1 Capital structure and financial leverage

Much academic attention has been directed towards the role of capital structure and firm performance, and the discussion of best fit and the use of debt finance continue to suffice within academia. The fundamental work of Miller and Modigliani (1958, 1963) has led to modern understanding of capital structure. The proposition has since it was published been scrutinized by academic scholars and put under the lens of agency theory and transactions cost economics. This has led to several perspectives on the applicability of debt and equity financing.

The basic mechanisms of capital structure are presented, for added impetus to the assessment and discussion of the capital structure role. Capital structure is a term for the financing sources, that the corporation relies on for their business activities. In brevity two sources are considered, *debt* and *equity* financing. Some insights will be provided as illustrative contributions to the introduction of capital structure and its importance in a strategic perspective.

The basics of corporate finance state the market value of the company to be determined by the aggregate market value of the outstanding debt and equity (Brealey et al., 2008).

$$Value = Debt + Equity$$

The equation above is uncomplicated, but in this case also extremely simplified. In this thesis the concern is on what implications the composition of debt and equity can have on strategic choices. Proposition 1 of Miller and Modigliani (1958, 1963) implies that composition is irrelevant as the value of a corporation is determined by the left side of a corporation's balance sheet – the real assets. Not the issued debt and equity to buy the assets (Brealey et al., 2008). Though, the underlying assumption behind this rationale is that corporations and individuals can borrow and lend at an identical risk-free rate of interest (Brealey et al, 2008).

Miller and Modigliani's (1958) basic theorem – proposition 1 - stipulates that given a certain market price process (the first principle of the random walk process[3]), an efficient market, and the absence of tax, bankruptcy costs, asymmetric information and agency costs, the value of a firm is unaffected by how it is financed i.e. the degree of equity or debt and dividend policy is considered irrelevant (Brealey et al., 2008). In their following paper, Miller and Modigliani (1963) adhere to the drastic assumption of no taxes, and introduce an approach when interest expenses are tax deductable. In situations where tax is deductable, increased financial leverage will increase the value of a corporation. This introduction of tax deductibility entail a trade-off choice on whether to increase the risk of bankruptcy due to added debt and the associated tax advantage this will give (Brealey et al., 2008).

These fundamental assumptions are rather theoretical and the absence of tax is definitely an erroneous assumption in the "real" world. The assumed equal information about corporate investment potential, between investors and corporate managers, are naïve. This was assessed by Myers and Majluf (1984) who deemed that capital structure is composed with regard to the underlying investment, and its profitability. Hence internal funds would finance good projects, as opposed to less attractive projects, which would be pursued through debt if additional funds are needed. This indicates a "pecking order" for corporate financing sources (Brealey et al., 2008; Myers and Majluf 1984).

[3] See for further elaboration of the mathematical properties, Samuelson, Paul (1965). "Proof That Properly Anticipated Prices Fluctuate Randomly". Industrial Management Review 6: 41–49.

The two propositions above are conflicting. Given that Miller and Modigliani (1963) propose that economic profitability and leverage is proportional, as there are increasing tax advantages. In contrast, the proposal of Myers and Majluf (1984) suggest that there is an inverse relationship between performance and leverage, as internal funds will be the financing source for projects with the highest return.

Jensen and Meckling (1976) suggest that corporations may be exposed to agency problems, when pursuing equity financing, as management may consider benefits prior to construction of investment projects, and thus not provide sufficient returns for shareholders. Issue of additional equity, or sole equity financing for added financial flexibility, may expose shareholders to dubious corporate financing decisions, as management could invest in highly risky projects or follow own objectives (Jensen, 1986). Critical behavior could impose an overinvestment issue, if all projects are pursued without sufficient consideration to the generation of returns to shareholders. This indicates that there may be a discrepancy between investor and management interest, which can influence the choice of financing sources for business activities. Thus, it is suggested that some levels of debt can mitigate some of this adverse management behavior. Extreme levels of debt financing may impose unwarranted pressure on management, as they may then be reluctant to commit resources for new ventures or business activities (Brealey et al., 2008). The downside of this behavior is that management surpasses a critical business opportunity that could lead to future cash flows and potential competitive advantages (Barney, 1991).

The described theoretical insights exhibit conflicting perspectives on capital structure composition. In general, they provide perspectives on the overall corporate setting, which determine how corporations can compete and operate their business activities. In the section below, a desegregation of risk will be conducted. This adds to the understanding on how financing source can be related to their underlying risk.

4.1.1 Risk properties

Risk can be segregated into two distinctive groups, either related to business risk or financial risk. This is determined by the underlying sources of the associated risk. Business risk is related to the uncertainties of the business environment that a corporation operates within, whereas financial risk is related to the provider and user of the funds (Ward, 1993).

Respectively, providers are investors, lenders, and shareholders, and users are the corporate management. In this conjunction, debt is considered to be risky for corporate management as it consecutively requires regular payment on debt claims, to keep creditors from evoking their rights. Equity is on the opposite considered risky to shareholders, as equity also represents a buffer that ensures the service of debt obligations if the corporation files for bankruptcy (Brealey et al., 2008; Wild et al., 2007).

In sum, the lower financial risk that equity financing will entail, should provide the best conditions for risky business activities as the equity buffer will give flexibility on how, and when, to pursue risky activities. In environments where business uncertainty are deemed more extensive, this capital structure may constitute viable for the strategic flexibility, as corporation may be able to respond faster as they can commit resources straight away from the equity buffer. Alternatively, in less uncertain business environments higher proportions of debt may be viable, as cash flows might be more stable and thus the equity cushion for disruptive flows are less valuable, and will not provide the possible effects of tax deductibility (Andersen, 2005).

As the section above proposes, capital structure is a critical strategic issue for a corporation and that strategy and financing is interlinked to the operating activities. In order to develop the framework further, the implied mechanics of capital structure is briefly introduced, in the following subsection.

4.1.2 Mechanics of capital structure

Corporate finance literature offers insights on how debt and equity, can determine business activities. There is a relationship between risk and return, which means that an investor will require a higher return if exposed to additional risk. The theoretical relationship is applicable for capital structure (Brealey, 2008). The theoretical proponents suggest, that leverage will increase the earnings per share, but not the share price of a corporation (Brealey, 2008). The reason is that, by the introduction of leverage, an investor will expect a higher return, which by discounting earnings will equalize the change (Brealey, 2008). The relationship is showed below.

$$Expected\ retrun\ on\ assets = r_A = \frac{Expected\ operating\ income}{Market\ value\ of\ all\ securities}$$

Under the Miller and Modigliani (1958) Proposition, the assumption was perfect capital markets which entail a corporation's decision to borrow, will not affect operating income or market value of its securities. Thus, the borrowing will not influence expected return on assets, r_A. The expected return on the ex post introduction of debt can be determined by (Brealey et al., 2008):

$$\begin{aligned} &Expected\ return\ on\ assets \\ &\quad = (Fraction\ of\ debt \times expected\ return\ on\ debt) \\ &\quad + (fraction\ of\ equity \times expected\ return\ on\ equity) \end{aligned}$$

That is;

$$r_A = \left(\frac{D}{D+E} \times r_D\right) + \left(\frac{E}{D+E} \times r_E\right)$$

This formula is known as the cost of capital or the weighted-average cost of capital (WACC), and is fundamental to how capital structure is composed. The formula will compute the return that a corporation needs to generate, to satisfy their debt and equity holders. Though, Miller and Modigliani (1963) developed a sequential proposition – Proposition 2. In this proposition, tax deductibility is introduced below, where r_D and r_E denotes expected returns on debt and equity respectively, T_c denotes marginal rate of corporate tax, and D and E denotes the market values of debt and equity (Brealey et al, 2008):

$$After\ tax\ WACC = r_D(1 - T_c)\frac{D}{V} + r_E\frac{E}{V}$$

When tax deduction is possible, added debt will theoretically imply decreasing WACC i.e. a higher debt-to-equity ratio will decrease the after-tax WACC. The relationship is sketched in figure 2 below.

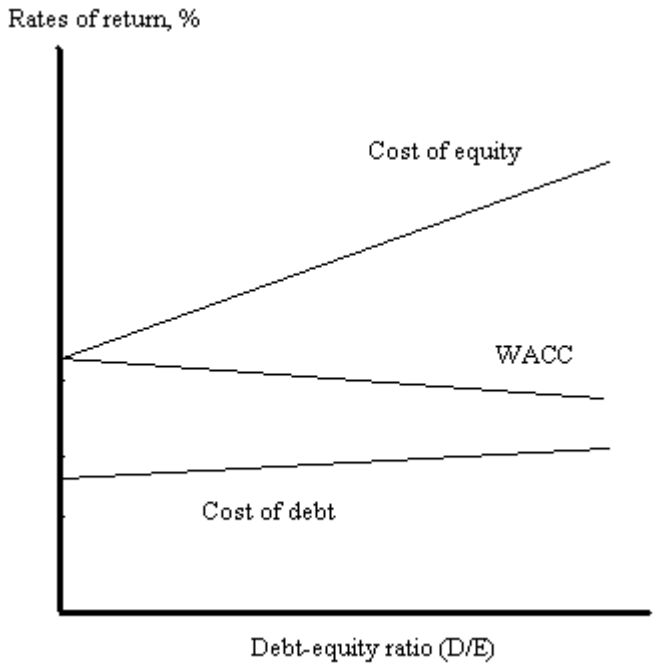


Figure 4.1 – Rates of return to debt-to-equity ratio, source: (Brealey, 2008)

Figure 2 includes a sketched trend lines for the cost of equity and cost of debt. Both lines exhibit increasing trends as debt-to-equity ratio is increased. This relation ship is determined by the equation below, which determines the expected return on equity, r_E, and is a remodeled form of the equation on expected return on assets.

$$Return\ on\ equity = r_E = r_A + (r_A - r_D)\frac{D}{E}$$

From this equation, the debt-to-equity ratio explains, that added leverage will increase the expected return on equity. It is notable, that cost of debt is also increasing by the debt-to-equity ratio, as creditors will tend to ask for additional compensation as financial risk is increased (Brealey et al., 2008). Figure 2 should only be considered a sketching, as in a "real world" context cost may not be explained by a linear trend-line, and will probably vary between industries. This is outside the scope of this thesis to answer.

The prior section has developed the basic principles of capital structure. The assessment of capital structure is applied in the empirical analysis on the pharmaceutical industry. This will provide measures on the underlying capital structures in the data sample, and shed light on the whether there is a pattern between financing decisions and entry mode strategy.

Prior in this section, the concepts of financial risk and business risk were introduced. In order to further asses these risk concepts, a presentation of asset beta presented below.

4.1 Asset beta – business risk and financial risk

As covered in previous sections risk determines the associated return that an investor will require for the given investment. Beta is a measure of risk, or rather a relative risk measure, as it is determined by, the correlated volatility of an asset with respect to the volatility of the benchmark, which the given asset is compared to (Copeland, 2005). The formula is presented below.

$$Asset\ beta = \beta_a = \frac{Cov(r_A, r_B)}{Var(r_B)}$$

Above r_A subscribes the rate of return, r_B subscribes the return on the benchmark, and $Cov(r_A, r_B)$ is the covariance between the two rates of return. $Var(r_B)$ is the variance of the return on the benchmark. Hence, asset beta is a relative expression for risk. A high beta value will thus entail higher relative risk.

Even though the features of business risk and financial risk has been briefly presented, some additional perspectives on their underlying factors are developed in the following subsection.

4.1.1 Business risk

Business risk is determined by the uncertainties of the business environment that a corporation operates within. Thus, risk may be associated to how volatile the stream of cash flows is on an asset. Furthermore, if investment projects are long-term cash flow projects, then they are more vulnerable to competitive shifts. Shifts may be driven by technology change or changes in demand. This implication is critical when assessing strategic investments, as it these risk factors can influence the viability of investments, as they may not generate initial forecasted returns.

In perspective of the pharmaceutical industry, this should be considered a significant risk component. The time horizon for investment projects in the pharmaceutical industry tend to be very long, hence pharmaceutical corporations are subject to high business risk.

4.1.2 Financial risk

Financial risk is related to the provider and user of the funds. By the introduction of debt, financial risk is increased as higher debt-to-equity ratio is increased. Creditors will then tend to ask for higher interest payments, as they are now exposed to added financial risk. Evidently, shareholders will also require higher returns as their shares are also exposed to additional financial risk (Brealey, 2008).

The basic relationship is determined by the formula below.

$$Asset\ beta = \beta_a = \beta_{portfolio\ of\ debt\ and\ equity} = \beta_D \frac{D}{V} + \beta_E \frac{E}{V}$$

As proposed, the relationship between leverage and expected equity return, and equity risk has been presented. In brevity the relationship stipulates that increased debt, and thus financial risk, will increase expected return on investment. Furthermore, it has been showed that business risk can influence returns on investment projects, and needs to be assessed extensively with respect to capital structure.

The proponents of business risk, and how corporations may operate within dynamic environments, will be considered in the next section on real options theory.

In the next section, financial slack is determined and its interrelationship with capital structure decisions is discussed.

4.2 Financial slack

Financial slack is a term for having cash, marketable securities, readily saleable real assets, and access to debt or bank financing (Brealey, 2008). In this context, access is determined by how lenders perceive a corporations financial situation. If financing is conservative, lenders will consider a debt investment to be safe (Brealey et al., 2008; Wild et al., 2007). Daniel (2004) extends this definition by suggesting that, added slack is a cushion of resources that a corporation can deploy in a discretionary manner, to counter competitor moves and exploit opportunities. This is important, as corporations will be able to pursue investments, when profitable investment projects arise. This should add to the overall strategic flexibility and profitability of a corporation, as the value of a corporation relies on capital investment and

operating decisions, to a greater extent than on its financing (Brealey, 2008). Hence, a corporation should secure sufficient financial slack, if they have multiple investment opportunities or growth options. Though, extensive financial slack may not be viable, as corporate managers may follow to many projects, and thus impose an overinvestment problem (Jensen, 1986). Jensen (1986) further suggest that if managers have very large fractions of free cash flows at their disposal, they might invest too heavily in mature business or irrelevant acquisitions. Debt will impose interest payments and contractual obligations, which may provoke stronger scrutiny on investment decisions.

Bourgeois (1981) argues that financial slack improves performance within a given range, but will impede performance, if beyond the required range. This comprises a curvilinear relationship, which indicates that corporations should, ideally, provide sufficient resources to address unanticipated opportunities and threats. Though, limitations on readily resources should mitigate opportunistic management behavior.

4.2.1.1 Summary on capital structure

In the previous section, the determinants of capital structure have been discussed. This has provided some applicable insights on how business activities are financed, and may thus entail an explanation on the interrelationship between financing capabilities and entry mode strategy. The empirical analysis of the pharmaceutical industry will therefore incorporate variables related to financing decisions. The variables are specified in chapter 2.

The next section, introduce insights from real option theory, to the theoretical framework. This will illustrate the associated growth option, by venturing through a joint venture mode.

5 Real Options Theory - Strategic flexibility by joint venture mode

In this section, the TCE and capital structure framework is extended by insights on Real Options Theory[4]. TCE primarily address the behavioral uncertainty of a partner, and the general perspective is to minimize uncertainty and thus the potential negative costs. ROT incorporates strategic behavior and organizational knowledge perspectives into the entry mode decision, as it considers an alternative upside assessment of uncertainties. This will provide additional impetus to the strategic aspects of entry mode decisions.

In perspective of the scope of this thesis, the ROT is introduced to the theoretical framework, as it defines some shared characteristics between the proponents of a real option and joint venture mode. Therefore, the purpose of this section is to develop the characteristics of real options in order to apply these on the joint venture mode. The insights derived from this, is applied in the empirical analysis of the pharmaceutical industry.

5.1 Short definition of real options

ROT stems from the financial decision making literature. Its focus is on the management of costs related to uncertainty, a common attribute of the TCE as well. However, ROT lends from financial options theory as it stipulates; undertaking a small investment gives the right, but not the obligation, to pursue or terminate a possible investment action in the future (Ahsan and Musteen, 2011; Brouthers et al., 2008; Copeland et al., 2005). Copeland et al. (2005) presents real options as a tool for "Multiperiod Capital Budgeting under Uncertainty", which covers the application of real options as an extension to the classical net present value rule that incorporates the value of flexibility.

The theoretical methodology of ROT incorporates a deferral option to the net present value (NPV) rule. The NPV-model for decision making:

$$NPV = -I_0 + \sum_{t=1}^{N} \frac{E(FCF_t)}{(1+WACC)^t} > 0$$

[4]From now abbreviated as ROT.

The intuitive applicability of the NPV rule is rather simple, and may also be the main reason for its prevalence. It determines the expected cash flows over a given project's life, and discounts them at the estimated weighted average cost of capital (WACC[5]), and then subtracts the initial investment, I_0. If the answer is positive then the assumption is that the value of the corporation goes up, and the wealth of the shareholder i.e. the project should be carried out (Copeland et al., 2005).

5.1.1 Real options example

In order to illustrate the applicability of ROT, a simple example will be presented below. This will also envision the intriguing upside to ROT in comparison with NPV.

The much celebrated work of Dixit and Pindyck (1994) on capital budgeting decisions under uncertainty, show the value of a deferral option, by the following example:

Today an investment can be undertaken at the cost of 1600 paid at the end of the year, the currency is irrelevant for this example. The cash flow is expected to be worth either 300 or 100 with 50-50 probability. Once the price level is known it will stay at this given price forever. WACC is assumed to be 10%. Inserting into the NPV-model:

$$NPV_1 = -1600 + \big(0{,}5(300) + 0{,}5(100)\big) + \sum_{t=1}^{\infty} \frac{\big(0{,}5(300) + 0{,}5(100)\big)}{(1 + 0{,}1)^t}$$

$$= -1600 + 200 + \frac{200}{0{,}1} = 600$$

Discounted back to $t = 0$;

$$NPV_0 = \frac{600}{1{,}1} = 545{,}5$$

As noted above, if $NPV > 0$, then the project is accepted. But if extended by an option to defer until the next year, additional knowledge may be available and thus provide further information on the viability of the investment opportunity.

[5]Weighted Average Cost of Capital, $= r_D * (1 - T_c) * \frac{D}{V} + r_E * \frac{E}{V}$, as developed in the section on capital structure.

Suppose that the cost of the initial investment increase to 1800 if it is decided to defer, and monitor the investment decision. If prices are 300 after a period, then the present value of the investment equals:

$$PV_1 = -1800 + 300 + \frac{300}{0{,}1} = 1500$$

Discounted at 10% and weighted by the given probability of 50%, gives the NPV of the project, with an option to defer:

$$NPV_{option} = \frac{1500}{1{,}1} 0{,}5 = 681{,}80$$

And thus the value of the deferral option is given by:

$$681{,}80 - 545{,}5 = 136{,}3$$

If the prices had been 100 instead of 300, the value of the project would have been given by;

$$PV_1 = -1800 + 100 + \frac{100}{01} = -700$$

This would provide the option after, one period, to reject the project.

A quite interesting perspective to real option investment decisions is that, greater uncertainty on price, will add value to the option. Exemplified by a widening gap between prices, say 500 or 0:

$$NPV_1 = -1600 + \big(0{,}5(500) + 0{,}5(0)\big) + \sum_{t=1}^{\infty} \frac{\big(0{,}5(500) + 0{,}5(0)\big)}{(1 + 0{,}1)^t}$$

$$= -1600 + 250 + \frac{250}{0{,}1} = 1150$$

Discounted back to $t = 0$;

$$NPV_0 = \frac{600}{1{,}1} = 1045{,}45$$

The upside price of 500 with a probability of 50%;

$$PV_1 = -1800 + 500 + \frac{500}{0{,}1} = 3700$$

Discounted at 10%, and weighted by the given probability of 50%, gives the NPV of the project with an option to defer;

$$NPV_{option} = \frac{3700}{1{,}1} 0{,}5 = 1681{,}82$$

And thus the value of the deferral option under higher uncertainty is given by;

$$1681{,}82 - 1045{,}45 = 636{,}37$$

Whereas the downside if the prices had been 0 instead of 500, the value of the project would have been given by;

$$PV_1 = -1800 + 0 + \frac{0}{0{,}1} = -1800$$

In summary this example shows, that there can be an upside to uncertainty, which raises some managerial implications to the discussion of previous findings within the TCE framework. The upside of uncertainty will be further developed below, and intuitive application of ROT will be incorporated to entry mode decision.

5.1.2 Types of Real Options

ROT may be applied to various situations, and incorporated to specific strategic decisions. In the section below, some different types will be listed along with their applicability. The ROT terminology, in this subsection, lends from the financial options theory. Therefore, some basic terms will be provided.

Call Option; gives its owner a right, but not the obligation, to buy a given share of stock in an underlying company, at a fixed price, within a specified time period (Copeland et al., 2005).

Put Option; the opposite of a call option. Its owner has the right, but not the obligation to sell a given share of stock in an underlying company, at a fixed price, within a specified time period (Copeland et al., 2005).

Based on these notions, various real options can be developed. Although, there are some major differences in the properties of financial options and real options, the primary difference rest on the underlying risky asset of the option. For real options, the underlying risky asset is a physical asset that is directly affected by managerial decisions (Copeland et al., 2005). For financial options, the underlying asset is another security traded in a capital market (Copeland et al., 2005). This entail, that a real option will give the investing corporation access to proprietary "inside" knowledge on the underlying asset. Furthermore, it may give sole access to a limited resource, which may either be physical or knowledge. Lastly, real options could also foster properties of learning curve advantages which, by suitable utilization, may generate a competitive advantage (Brouthers et al., 2008).

Below some potential compositions of ROT is be presented. This will by any means not provide all possible combinations, but still provide insights on the operationalization of ROT. The examples are provided in order to establish the fundamental applicability of the theory, as empirical analysis in this thesis will apply the intuitive methodology, and not determine a specific calculation.

Expansion options; a call option on an underlying asset, which assume precommitment of a corporations investments growing with respect to increasing demand over the given time period. The exercise price of an expansion option is the cost of the specific investment to expand, which is determined by a multiple of the value of the underlying risky asset (Copeland et al., 2005). Such an investment could be debottlenecking operations within a manufacturing unit.

Contraction options; a put option, which gives the option to receive a cash payment, for abandoning the use of an asset, or some part of an asset (Copeland et al., 2005). A contraction option could be a sublease of a manufacturing facility to a third party. In this case, the present value of the cash flow is the exercise price of the put option.

Abandonment options; gives the owner of an asset the option to sell it at a given price, which may vary over time, rather than continuing to hold the asset (Copeland et al., 2005). This is a quite important determinant for flexibility and thus a key option in research and development intensive industries. A case may be the lack of fruitful results in phase studies when developing a new pharmaceutical drug, or difficulties when generating trial data for

marketing approval of a product. Acquisitions that fail to provide substantial returns may be sold at a discount, and can also be classified as an abandonment option.

Extension options; an option that will extend the life of a project. Here the cost of the extension is the exercise of the option (Copeland et al., 2005). Extension options could be further funding or added resources for a project.

Deferral options; will give the holder of the option the right to defer the initiation of a project. This type of real option can be utilized as a strategic positioning tool. That may be acquisition of access to a specific (natural) resource or a distribution network through a brand. An acquisition can deny the access of a competitor to a specific asset or market, or make the route more complex and demand additional resources. Furthermore, in a strategic context the option may grant the right to defer the option until utilization of the underlying asset is viable or the right product mix has been developed. Another aspect, is the development of the underlying market, which may not have commercial value at the time of acquisition, but in time may develop into a lucrative market and thus raise the value of the option, as showed in the prior example of this section. The exercise price of a deferral option will typically be the development cost of the asset. The value of the option is affected by price uncertainty as well as information on market potential. These two components entail a quite interesting tradeoff, as price uncertainty will raise the value to defer i.e. the value of a deferral option. Whereas, increasing market potential uncertainty will reduce the value of deferral. The tradeoff between the components by which the deferral option value is generated, means that there is a possible optimal composition and thus a critical decision when determining the option and strategic behavior (Copeland et al., 2005).

Compound options; are options on other options. Compound options are phased investments as a research and development program, new product development or large plant constructions. The common trait for compound options is the ability to defer or abandon at the end of each phase during the investment (Copeland et al., 2005).

The brief description of possible combinations and ways to operationalize real options, gives some practical insights where utilization of real options is possible. The possible combinations are numerous and could be fitted to a specific context, and a generalization of

application is rather ambiguous. Though, it has been shown that ROT can add strategic flexibility within an uncertain business environment that corporations need to navigate.

In the subsection below, the intuitive application of real options as a strategic capability for joint venturing is discussed.

5.2 Strategic flexibility – joint venture mode

In this thesis, the research primarily concerns whether entry mode strategy in the US and European pharmaceutical industry is associated with underlying financing capabilities. In this subsection further attention will be addressed to how real options can be used as a facilitator of strategic flexibility for joint ventures, in the entry mode context. This provides a perspective on the feasibility of joint venture modes in comparison to wholly owned modes. The findings in this section will be applied to the determinants, of entry mode strategy, in the empirical analysis of the US and EU pharmaceutical industry in chapter 2.

The subsection is introduced by some considerations, of how joint ventures can be used for strategic moves.

5.2.1 Joint venture for strategic moves

Choice of entry mode can be considered a competitive positioning move, whether the driving motivation for the move is related to technology, product or access to new distribution channels. Therefore, the choice of entry mode will be determined on the availability of the given asset on the target market. Strategic behavior relates to the choice that position the corporation in the competitive environment. This means that through strategic behavior corporations take strategic actions to maximize profits through improvement of competitive position (Kogut, 1988). Joint venturing can be motivated by strategic behavior in the sense that it is a viable option if a corporation wants to hinder entry of a competitor or erode their position in a market (Kogut, 1988). Such behavior may be through vertical integration of a supplier critical to a competitor's value chain. Motives are not necessarily driven by impeding competitor position, but can be driven innovative aspirations on product development or intellectual knowledge assets.

As suggested in the previous section regarding TCE, entry into a new market is characterized by uncertainty. Uncertainty is multifaceted, but a critical aspect is embedded to uncertain demands, as this dimension is a key proponent for commercial success i.e. returns on investment for setting up a given entry.

This will be considered in the following section, where joint venture is theorized to share characteristics of a real option.

5.2.2 Joint venture as a real option

Kogut (1991) propose that a corporation's initial investment in a new market, can be considered as the right to expand the venture in the future, although not necessarily. The right to expand is an example of a real option. The investment in new industry operating facilities highlights the similarity, as the investment may entail future opportunities. The value of the investment will be determined by the option to expand, which may account for the significant part of the overall project value (Kogut, 1991). Corporations may not have the competencies or resource to expand and operate all interesting business opportunities. A partner may in this case bring strategic assets, like technology or tacit knowledge, which could enhance the upside of the venture. A partner will also share the business risks associated with the venture, an ability covered prior in this thesis. Risk sharing is an attractive proponent of the joint venture relationship, though an additional upside is the decreased total investment. In contrast to initial acquisition of an entire entity or a greenfield operation, the joint venture will share the cost between the venturing partners. In sum, joint venture offers an attractive mechanism for real option investment, especially for expansion in risky markets (Kogut, 1991).

Joint ventures may be faced by a critical and difficult decision. If the real option is exercised for further development of the underlying activity, additional resources need to be allocated for the investment. This will force the partners to renegotiate. The outcome is determined by the prospects of the venture. The partner who ascribes the highest value of the option on the underlying venture, will probably buyout the other. The exercise of the option can be motivated by industry conditions, such as competitive moves, or favorable growth by prospering new business activities (Kogut, 1988, 1991).

Joint venture can through the lens of real options be decomposed into the following relationship: Two entities, A and B, enter a joint venture partnership agreement. The partners have two options each, one option to buy, and one to sell. These respectively represent a call and a put option. It is commonly agreed upon joint venturing, which entity that holds the right to the call option and the put option (Kogut, 1991). In practice this means, if one entity leaves the joint venture, the other entity has the right to acquire their shares with respect to predefined price clauses (Kogut, 1991). Thus, no third entity can buy the shares, if the call option is exercised by the entity that wants to continue the business activity. Joint ventures are real options, due to their economic opportunity for future expansion and growth, not because of their legal assignation (Kogut, 1991). Furthermore, Kogut (1991) propose a decomposition of the joint venture proponents that generate the value of the venture. The relationship is established below.

$$V_i = Z_i(C, \theta) + O_i(C, \theta)$$

Here V is the value of the given venture estimated by the ith corporation, $Z_i(C, \theta)$ determines the value of the given assets in their current employment, $O_i(C, \theta)$ is an estimate of the value of the future growth opportunities, and θ is a measure for the current value of an uncertain state variable.

The two components $Z_i(C, \theta)$ and $O_i(C, \theta)$ are different in the sense that $O_i(C, \theta)$ is not determined by the discounted cash flows of expected earnings, since the corporation preserves the flexibility to decide on which investment alternatives to pursue. An alternative could be not to invest, at all, or utilize one of the various compositions of real options described earlier in this section.

The interpretation of this relationship is that the valuation of the joint venture may differ between the two involved entities. The valuation rests on the assets and the embedded option, and may therefore be influenced by current assets, or business opportunities, accessible to one of the entities. In other words, the assets and the option can have a higher value for a venturing partner, if it has a better redeployment value within own corporate boundaries. An example might be that a technology developed within a joint venture, has higher utility for one of the partnering corporations, as it complement an already existing product portfolio. If there is not considerable upside value, the entities may choose to continue the joint venture, and wait for possible future change that is more favorable. This emphasize that the downside

risk is not necessarily critical when entering a joint venture, from a ROT perspective. The qualitative application of real options is developed into further detail by examining two opposing situations, an option to wait and an option to expand.

5.2.3 Joint venture flexibility - option to wait, option to expand

Investment decisions will in terms of the real option perspective, often involve assessment of either waiting or expanding a specific project. Clearly there is a value in waiting to exercise an option. By committing resources, this may be intellectual resources like engineers, straight away for uncertain projects; there is a risk that the market will not develop. This will hinder the allocation of the given resources to other, potentially better projects. From this point, it seems more inviting to await and discover, if market potential or technology develops in favor of an investment. Though, there might be considerable gains of knowledge and know-how about a technology, if investment is carried out initially. This should generate a valuable call option for expansion in the future, if factors evolve in support of the project.

A joint venture will in this perspective, create a pool of resources from the joining partners. The value of an option to expand is expected to be high for new technologies and markets, as the upside is considerable, given that no corporations has the current skill or knowledge. The joining partners are likely to bring complementary skill, which should not only share the investment cost, but also add competencies that further lowers the overall costs of the investment (Kogut, 1988, Kogut 1991). Hence, joint venture offers a mechanism for resource commitment flexibility and strategic flexibility.

When the commercial attractiveness of the given product or technology is established, the option should be exercised. This will probably entail an acquisition of the venture. During the period of the joint venture, the acquiring partner has had the time to learn and gain experience from the other partner, as well as gaining local market knowledge, at a lower cost than would be the case for a wholly owned mode entry mode. Teece (1987) suggests that, the divesting corporation will sell its part of the venture, as it will realize a capital gain, and it may not have the organizational capabilities to market the technology. This is an interesting perspective in terms of the pharmaceutical industry, as large pharmaceutical will benefit from this theoretical application.

The success of the joint venture is determined by whether a partner purchases the joint venture. A partner will purchase the venture, if the joint venture value exceeds the value of comparable assets on the given market (Kogut, 1991). Ex post the joint venture, the "true" value should now be known by the partners, given the symmetric information relationship (Hendrikse, 2003). Thus, the better information will lead to a valid valuation of the joint venture, which should lead to acquisition if the asset has a strategic importance (Kogut, 1991).

The applicability of real option as a driver for joint venture entry mode strategy has now been discussed. It was suggested that, by considering joint ventures as a real option would entail strategic flexibility for future growth options.

Below the general theoretical finding will be summarized.

5.2.3.1 Summary on real option theory

The previous section, has introduced the key components of ROT. A key component is related to the associated uncertainty of a given investment. The general intuitive notion of the theory, suggest a positive relationship between uncertainty and option value i.e. the upside potential of an investment. In perspective of this thesis, it has been highlighted why joint venture mode, can be considered a real option. This interrelationship will be considered in the empirical analysis of the US and EU pharmaceutical industry, in the following chapter.

In the following section, the key insights from the theoretical framework will be presented. This will lead to a deduction of four hypotheses later in the thesis, which will be analyzed on the basis of the results generated by the empirical analysis.

Theoretical propositions

The previous theoretical framework of prior literature and theory, has led to the proposition of some theoretical aspects, which could assess the underlying determinants that may influence choice of entry mode strategies for US and EU pharmaceuticals. In the analysis, of the proposed research problem, the following determinants were detected to possibly influence entry mode strategy.

- The internal coordination mechanism and intellectual protection is stronger for wholly owned modes, whereas joint venture modes shares investment risk with a partner.
- Capital structure suggests low debt ratio may provide financing flexibility, for interesting investment projects. Though, it is also suggested that capital structure should be determined with respect to given business context.
- Financial slack is considered valuable, as it allows a corporation to pursue a business opportunity when it arises.
- Business risk is considered a critical component within a pharmaceutical context, and thus corporations need to organize and assess strategy with respect to this.
- By assessing joint venture by real options intuition, joint venture can add strategic flexibility through future growth options.

With respect to the determinants above, the next chapter introduces variables on geographical dispersion, corporate entry mode strategy, and accounting data on performance and capital structure, to the thesis. These will be applied as the main drivers in the empirical analysis.

6 Empirical analysis and statistical methodology

In this chapter, the methodology applied for the empirical analysis is presented.

The section is structured as follows. First, a description of data applied in the analysis. Second, the dependent and explanatory variables are presented. Third, the beta analysis and it underlying components is introduced. Fourth, the dummy variables are defined with respect to geographic dispersion and corporate entry mode strategy. Fifth, the applicability of the dataset for linear regression analysis is discussed. Hereby, it is examined whether the data has a consistent fit, in order to confirm the viability of the use of OLS linear regression model for analysis. Sixth, the applied methodology is discussed. Seventh and final subsection, will present the result from the analysis.

6.1 Data selection

In this subsection, the data applied for the analysis of the proposed hypotheses will be determined. The data sample was downloaded from the Orbis – Bureau Van Dijk database[6]. The database provides information on corporations subsidiary control i.e. ownership share, which is critical in the analysis of subsidiary governance and thus entry mode strategy.

The downloaded sample returned information on pharmaceutical corporations based in the United States and Europe. Annual accounting data was extracted from the database on following accounts: operating revenue, profit/loss before tax, operating profit/loss before tax, cash flow, total assets, current assets, current liabilities, shareholder funds, long term debt, and number of patents. Furthermore, information on volume of subsidiaries, their location, and ownership share was extracted from the database. A two digit NACE code was selected, the code selected was 21 for "Manufacture of basic pharmaceutical products and pharmaceutical preparations"[7]. The selected country ISO code encompassed US and EU. A minimum criterion for operating revenue was set to 10.000.000 US $, to filter for non-operating businesses very small entities. An assessment of data quality was conducted, and observations that returned "n.a." were removed from the final sample set. The total sample

[6] Bureau Van Dijk: http://www.bvdinfo.com/Products/Company-Information/International/Orbis

[7] Statistical Classification of Economic Activities in the European Community: http://ec.europa.eu/environment/emas/pdf/general/nacecodes_en.pdf

size was after assessment of quality limited to, n = 89, of respectably a US sample size of, n = 36 and an EU sample size of, n = 53. In this sample 69 of the total sample had operating revenues in excess of 100.000.000 US $. The time period considered is 2005-2010, which entail 6 observations per corporation.

The dataset was considered relevant as US and European pharmaceuticals encompass large corporations which look for growth options to develop new business activities, in new markets or by new products. This will moreover lead to new entries on new markets by either wholly owned venture or joint venture, as proposed in previous sections. Furthermore, these continents are developed markets and account for majority of the total revenue (Gale, 2007). By selecting pharmaceuticals from these continents, the scope will evidently be on entry mode strategy for the mature corporations. Thus, the dataset should be consistent with the proposed research problem, and of high quality.

As the pharmaceutical industry has been subject to considerable consolidation in recent decades, through large strategic mergers, it is expected that the new joint post merged entities will account for large market shares and large operating revenues. The data sample is therefore expected to contain some very large corporations in comparison to the general size of the other corporations in sample.

From the data sample the following variables was estimated. The variables have been selected in order to verify the relationship between the determinants developed within the theoretical framework. The variables applied in the regression analysis are determined below.

6.2 Dependent variables

The two variables listed on profit margin, and return on assets, are measures of organizational performance. The subsection adds insights on the decomposition of the variables, and its applicability in terms of the assessment of profitability and entry mode strategies.

6.2.1 Profit margin

In this thesis the independent variable *Profit margin* is defined as:

$$Profit\ margin = \frac{Operating\ profit/loss\ (Earnings\ Before\ Interest\ and\ Taxes)}{Operating\ revenue\ (Turnover)}$$

The output from the equation above will be a ratio measure that illustrates the overall operating profitability of the given company. A decomposition of the margin measure will show the function and the underlying drivers that influence the profit margin.

6.2.2 Decomposition of profit margin

Wild et. al (2007) decomposes the profit margin into the following components:

$$Pretax\ Profitmargin = Pretax\ sales\ Profitmargin + Pretax\ other\ Profitmargin$$

$$Pretax\ sales\ Profitmargin =$$

$$\frac{Gross\ margin}{Sales} - \frac{Selling\ expense}{Sales} - \frac{Administration\ expense}{sales} - \frac{R\&D}{Sales}$$

$$Pretax\ other\ Profitmargin =$$

$$\frac{Equity\ income}{Sales} \pm \frac{Special\ items}{Sales} \pm \cdots$$

The Gross margin measure is a key performance measure and is computed by revenue less cost of sales. It needs to cover all costs, as a positive balance between the components will determine the earnings of the period. Furthermore, Gross margin is critical in the use for future expenses important to the business. Such expenses could be research and development of future products or marketing campaigns, which intensity varies cross industries, but often rather extensive within the pharmaceutical industry. The underlying drivers of the Gross margin, is a combination of:

- Increase/decrease in sales volume
- Increase/decrease in target unit sales price
- Increase/decrease in cost per unit.

Given that the analysis in this thesis consists of a dataset of both US as well as European pharmaceutical corporations, an assessment of the underlying components would be ambiguous and distorted as accounting standards varies cross the sample. Thus a comparative analysis on this level of decomposition would not provide a reliable measure.

Selling expenses to revenue may vary to a great extent cross industries. Although the varying standards make it hard to incorporate in comparative analysis, the interesting aspect will in general be increases in selling expenses, which in turn should be supported by an increase in revenues. If not, such development will diminish profitability. In an entry mode context, increasing selling expenses may likely to be associated with the choice of entry mode. Thus the expenses incurred for the given entry mode should at least be covered over time by the additional revenue the entry generates. The associated marketing activities are discretionary, and data is not commonly available for such an analysis. Though, a massive upward trend in selling expenses to improve sales will signify that the given corporation may encounter lack of profitability.

Administrative expenses cover general costs like salary and rent. In knowledge extensive industries like the pharmaceutical, expenses are often considered to be high, as research and development in general requires a highly skilled workforce as well advanced manufacturing plants.

6.3 Return on Assets – ROA

In this thesis the independent variable *ROA* is defined as:

$$ROA = \frac{(Earnings\ Before\ Interest\ and\ Taxes) - taxes}{Total\ assets}$$

Return on Assets is part of the Dupont System[8], and can be decomposed into the following.

$$ROA = \frac{EBIT - taxes}{assets} = \frac{sales}{assets} \times \frac{EBIT - tax}{sales}$$

The operational perspective on ROA is that it is a function of margin and turnover. An increase in ROA may stem from an increase in profit margin at a constant turnover, or vice versa. Though this interpretation seems straightforward, but the underlying drivers are not independent. Profit margin is a function of sales: $(unit\ selling\ price \times units\ sold)$ and operating expenses or $(\frac{EBIT-tax}{sales})$. In addition, turnover is also a function of sales: $(sales \div assets)$. The impact of an increase in profit margin by a raise of selling price may impact

[8] See appendix 11.2 for visualization of the Dupont System.

units sold. Furthermore, less marketing expenses could negatively impact market demand for the products. This interdependent relationship between the underlying drivers of ROA signifies that all corporate disciplines need to be in line to improve ROA.

ROA estimates the earnings derived from the assets that the corporation controls. In general the ROA measure indicates operating efficiency before leverage effect. The balance sheet of pharmaceuticals often carries large volumes of intangibles as this covers patents and intellectual technical knowledge that may have considerable value for the business (Wild et. al 2007). The profit margin for pharmaceuticals will be influenced by the turnover of assets i.e. low turnover and low sales-to-asset ratio promote high profit margins for the corporation to stay profitable.

6.3.1 Decomposition of return on assets

Even though the total assets depends on the book value of the assets there might be an imbalance as this may not correspond to the actual market value of the given asset. Total assets are an aggregate measure and consequently incorporate various asset classes, and may thus blur the business operating profitability measure.

Intangible assets are characterized by high uncertainty of benefits in the future and the lack of physical presence. Intangible assets are often imbedded into a company, and may have indefinite benefit periods. Additionally, the valuation of intangible assets will often have large changes over time based on competitive influence. Though, the general valuation rule is that the historical cost is the valuation for purchased intangibles, such as rights, brands, licenses, and technologies.

Unidentifiable intangibles are either internally generated intangibles like product know-how or may be purchased but are hard to identify. Goodwill is an example. In a situation where a company acquires another company or division, it has to allocate the paid amount to all identifiable assets which encompass intangibles according to fair market valuation. Excess value is allocated to the unidentifiable intangible asset class called goodwill[9] (Wild et. al 2007). Goodwill is sizeable and will be recorded at the purchase price, whereas internally

[9] Accounting definition of goodwill: "Goodwill is the excess of cost over fair market value of net asset acquired in a purchase transaction. No attempt is made to explicitly identify components of this asset or the economic values assigned to them. Whatever has been paid for and that cannot be separately identified is assigned to goodwill" (Wild et. al 2007, pp. 259)

developed goodwill will not be on the balance sheet. Goodwill can stem from multiple abilities and qualities inherent to the business activities. Such activities may provide organizational strengths, effectiveness, and efficiency. Goodwill entail earning power, or in perspective future excess earnings (Wild et. al 2007).

Intangibles are often associated with riskiness, as the estimation of true value is rather difficult. Evidently, the fact that considerable goodwill may exist off the balance sheet make an assessment hard as the book value of intangibles may be misvalued. Yet, as described above goodwill should be a facilitator of excess earnings. If this is not the case, the aspect of determining a fair value for goodwill is of less importance.

In the analysis of intangibles, the corporate management may also "manage" the amortization of intangible assets. Their attitude towards amortization could be influenced by the fact that less amortization will increase reported earnings. The period over which the intangibles are amortized may thus be pushed to exceed the true benefit period of the asset.

In an entry mode perspective, acquisition of un-marketed pharmaceutical research and development projects on a given market may fail to determine fair value of synergies of a corporation with vast experience in bringing a product to the market and developed marketing channels. In such cases, the acquiring corporation may have an interest in assigning considerable goodwill to the balance. Moreover, goodwill can be disposed or written-off, but given the vague nature of goodwill, this will often be reported during periods where less market reaction is anticipated – to the benefit of the corporation.

As this thesis is concerned about the entry mode decision and its underlying financial drivers, the overall capabilities of the corporation is of interest. Therefore an aggregate measure that incorporates all assets and their influence on the business, from tangible to intangible assets is integrated into the profitability measure *ROA*. Furthermore, classification and estimation of asset type and value varies cross accounting practices (Wild et. al 2007), which would prompt decomposition difficulties given the overall scope of this thesis as it only considers US and European corporations.

The introduction of the two dependent variables provides measures on profitability, *profit margin*, and operating efficiency, *return on assets*. The analysis of economic returns rather than market returns is consistent with the approach of Simerli and Li (2000), and Andersen

(2005). The estimated variables and their interrelationship will be explained by the explanatory variables assessed below.

6.4 Explanatory variables

This subsection will provide measures for financial leverage, and ability to generate cash flows from operations.

6.4.1 Current Ratio

The explanatory variable current ratio is defined by the following:

$$Current\ ratio = \frac{Current\ assets}{Current\ liabilities}$$

The current ratio is a relative liquidity measure. Liquidity refers to the availability of resources to adhere to short-term cash requirements. The short-term liquidity ratio, also known as liquidity risk, is influenced by the in and outflows of cash. Liquidity is a measure for the ability to convert assets to cash or the ability to attain cash for short-term obligations. The notion of short-term covers a period of up to one year, although it is identified as the operating business cycle.

6.4.2 Decomposition of the current ratio

Current assets are defined as cash and other assets that can reasonably be converted into cash or sold or used within one operating business cycle of a company. On the balance sheet, current assets will have the form of cash, accounts receivables, inventory, and marketable securities that matures within the subsequent fiscal year. *Current liabilities* encompass the economic obligations that are expected to be met within a relatively short period, typically one year. The liabilities will often include notes payable, short-term bank loans, accrued expenses, and the portion of long-term debt that mature within the period. The excess of current assets to current liabilities is called *working capital.* The working capital will be interpreted as a safety cushion for financial stakeholders, to have their interest covered. Loan agreements and the issuing of corporate debt, will often state minimum levels of working

capital for maintenance of the obligations. Thus the cost of debt can be affected by working capital levels, which may change the cost of capital unfavorably.

The current ratio multiple indicate the ability of a company, to cover current liabilities. The greater multiple level, the greater assurance for payment of current liabilities. The current ratio will also provide an indicative multiple on the liquid buffer. Higher levels will be associated with less risk, and vice versa. Environmental uncertainties or abrupt shocks that cause drastic shifts in cash flows or require extraordinary outlays to sustain stable operation of business activities can be mitigated by a substantial level of liquid assets.

Lack of liquidity can prevent a corporation from pursuing strategic initiatives that may arise from profitable opportunities, or the ability to counteract competitor movement. Capital-intensive projects may be postponed as such initiatives will put the liquidity ratio under pressure. In cases of excessive liquidity problems, a corporation may be forced to sell assets or offload investments, in order to cover current liabilities.

Liquidity issues can also affect suppliers and customers, as lack of short-term liquidity can postpone payment of the supplier base and damage reputation due to lacking service of customers.

Though, there are some pitfalls to the current ratio. Given that the current ratio is a static measure, it will not address or predict the future pattern of cash inflows and outflows. Additionally, the adequacy of future cash inflows or outflows is not reflected in the current ratio measure. The underlying drivers of liquidity are sales, profits, and cash expenses. These inflow factors are not considered in the current ratio, and consequently the current holdings of cash or equivalents, will not give a reliable indicator for future liquidity.

6.4.3 Numerator of current ratio

When scrutinizing the current ratio measure through decomposition of the input variable, the numerator of the equation offers the following insights. Cash and cash equivalents, is as noted above often held as a cushion for short-term imbalances, caused by business downturn. Cash holdings are a nonearning asset or may only yield very low returns if in the form of cash equivalents. This prompts corporations to minimize holdings of such assets, as it is not

generally associated with normal levels of business activities. Credit lines to banks will often serve as the cash buffer.

Therefore corporation will tend to hold marketable securities, instead of excessive cash holdings, as these in general generate higher returns. Though, marketable securities are exposed to additional risk and may impose added liquidity risk if the underlying assets are affected by financial market crashes.

Accounts receivables is directly associated to sales, although not proportionally. An important aspect of accounts receivables is that it decreases when collected, which will impact the impact the current ratio negatively. Therefore, new credit should be issued subsequently to maintain a steady level.

Inventories are to great extent determined by expected sales, and thus also driven by sales like accounts receivables. Sales are a function of supply and demand, which can influence the asset's market value of inventories. The cash inflows generated by sale of inventory are determined by profit margin and sales volume, which may vary over time as these factors are subject to market conditions. This relationship is not directly observable in the current ratio, though it is a vehicle for future cash flows.

The denominator of the current ratio measure, are current liabilities. Current liabilities will predominantly be defined by sales, as sales is a primer of payables given that purchase of input resources are necessary to maintain inventory. If sales are less suspicious to drastic changes the process of paying for current liabilities is a refunding activity.

Overall the discussion of the current ratio has formed some insights on the applicability and drawbacks to the measure. First, liquidity is primarily dependent on prospective cash flows as cash and cash equivalents are not necessarily a credible source for assessment of a corporation's liquidity. Second, the balance of working capital and patterns of future cash flows has no direct relationship. Third, the corporate policies on management of receivables and inventory are predominantly focused on efficient and profitable utilization of assets prior to liquidity measures.

6.4.4 Cash Flow ratio

In addition to the current ratio a ratio for cash flow is applied. The variable and its input are presented below.

$$Cash\ flow\ ratio = Cash\ flow \div Operating\ revenue$$

The cash flow ratio indicates the ability to generate cash flows from operations. The ratio can add to the evaluation criteria of how efficient corporations operate internal cost and thus the liquid aspects of operations. Furthermore, the measure can specify corporations' ability to turn revenue into profits and net cash flow. Hence, a high ratio will often imply that the operations are well managed as the given company is able to turn a higher fraction of revenue into profits and net cash flows for future investments or maintenance of debt and other liabilities. If the cash flow ratio exhibits a stable or increasing trend, this could indicate a consistent and well managed corporation, or vice versa. A decomposition of cash flow is presented below.

6.4.5 Decomposition of cash flow

$$\begin{aligned} Net\ cash\ flow \\ &= Net\ income + Depreciation\ and\ amortization\ expense \\ &\pm Gain(loss) on\ assets\ sale \\ &\pm Cash\ generated\ by\ current\ assets\ and\ liabilities \end{aligned}$$

Where net income decomposed is given by:

$$\begin{aligned} Net\ income = Sales - Expenses\ other\ than\ depreciation\ and\ amortization \\ - Depreciation\ and\ amortization \end{aligned}$$

As the decomposition shows, cash flows are a mix of income and balance sheet factors. Net income are adjusted for noncash income and expenses and then adjusted for cash steams caused by balance sheet transactions.

Cash flow analysis has some implicit drawbacks. In the reporting of cash flow, disclosure of discontinued or extraordinary items is not required. Inflow and outflow of interest payments are classified operating cash flows, which could be considered investing or financing

activities. Furthermore, taxation on income is classified as operating cash flow. In cases where realized tax benefits are extensive, analysis of cash flows will be bias interpretation of the cash flow ratio due to the considerable gain or cost. This can also be the case as realized gains or loss on investments will blur assessment of operating activities.

6.4.6 Long-term debt to Equity Capital ratio

A measure for solvency is introduced to the analytical framework. Solvency refers to the long-term credit situation of a corporation. Business activities whether they are financing, investing or operation affect the overall solvency. In this thesis the long-term debt to equity capital ratio determines the relationship of long-term debt obligation, which usually encompasses all noncurrent liabilities, to equity capital. This measure is applied as an explanatory variable of capital structure. The ratio is defined below.

$$Capital\ structure\ ratio = Longterm\ debt\ to\ equity \div Shareholders' equity$$

The ratio express how the given corporations' sources of financing for business activities. A ratio in excess of 1:1 suggests that the target corporation relies on debt financing rather than equity capital. There may be multiple reasons to choices of financing sources, as also discussed in the theoretical framework section presented in a previous section. Thus this section will refrain from a theoretical perspective on capital structure but instead focus on the application and operationalization of the theme.

In general, the ratio analysis presents an explicit measure of capital structure riskiness. The associated risk interpretation stems from that introduction of debt which will impose fixed charges of interest and repayment of debt.

The application of a ratio analysis is considered viable, as the ratios are relative measures and therefore applicable for analytical assessment of the relative performance and levels of leverage of the in sample corporations.

In the next subsection, an analysis of beta is presented.

6.5 Beta analysis – measure for business risk

In this subsection, a possible method for the estimation of business risk is developed. Business risk has been discussed within the theoretical framework presented in previous sections. Herein, it was suggested that business risk is a conjunction of uncertainties in the business environment that a corporation operates within. This can be related to systematic risk, which is a notion for the aggregate risk of the market, which may indicate changes in business cycles. The underlying components are to a great extent identical. Moreover, the notions are determined with respect to the case applied to. In this thesis, it will be estimated by the aggregate variance of the data sample. In support of this approach, Bowman (1979) infers that the market-based measure of systematic risk is directly related to the accounting beta. This confirms the applicability of accounting beta, for the analysis on relative performance of the in sample pharmaceuticals. As developed in a previous section, beta can be determined by:

$$Accounting\ beta = \beta_a = \frac{Cov(r_A, r_B)}{Var(r_B)}$$

r_A subscribes the rate of return of the target corporation, r_B subscribes the return on the aggregate industry, and $Cov(r_A, r_B)$ is the covariance between the two rates of return. $Var(r_B)$ are the variance of the return on the benchmark. The beta for ROA will be presented in the results section. These measures should provide indicative results on whether corporation can manage their business activities with respect to market risk, and thus the environmental uncertainties their business operations are exposed to. (The calculations can be found in the enclosed MS Excel spreadsheet.)

In the next section, the construction of the applied dummy variables is explained.

6.6 Defining the Dummy variables

In this subsection, the criterion by which the data sample is sorted will be determined. The data sample is sorted into the following subgroups; home continent[10] and geographic dispersion. Subsequently, the corporations are sorted into three corporate entry mode strategy subgroups; wholly owned mode, joint venture mode, and balanced mode. These are sorted on

[10] The continent code is determined by general approved ISO codes. See enclosed CD for overview.

aggregate data, of shareholdings in subsidiaries. The criteria, by which the corporations are sorted, are as follows:

6.6.1 Home continent

The first sorting criteria; the continent on which the corporate headquarters is located, which for the data sample in this thesis is either the US or EU.

6.6.2 Global dispersion

A corporation is considered to be global, if its subsidiaries are located on three or more continents.

6.6.3 International dispersion

A corporation is considered to be international, if its subsidiaries are on two continents.

The criteria determining corporate entry mode strategy is given by:

6.6.4 Wholly owned mode

A corporation is determined to pursue a wholly owned mode strategy if 75 pct. or more of its subsidiaries is controlled by 95 pct. shareholdings or excess.

6.6.5 Joint venture mode

A corporation is determined to pursue a joint venture mode strategy if 75 pct. or more of its subsidiaries is controlled by less than 95 pct., but more than 5 pct. shareholdings.

6.6.6 Balanced mode

A corporation is determined to pursue a balanced mode strategy if less than 75 pct. of its subsidiaries are controlled consistently with the entry mode strategies presented above. Thus, a balanced entry mode strategy is weighted strategy of both wholly owned and joint venture modes.

The criteria determining whether a subsidiary is wholly owned or a joint venture is consistent with the approach of Brouthers et al. (2008). Though, this approach does not control for, the given subsidiaries are an acquisition or a greenfield, which is outside the scope of this thesis to assess and also consistent with previous research (Woodcock, Beamish and Makino, 1994).

On an aggregate level the sorting of corporations provide the following overview, depicted in table 7.1 below, of the sample in regard to the criteria:

Aggregate overview of criteria				n = 89
	Entry mode strategy			
	WO (gov>75%)	**JV (gov>75%)**	**Balanced**	Total:
US - Global	4	14	2	20
US - International	2	5	9	16
EU - Global	8	0	8	16
EU - International	13	6	18	37
Total:	27	25	37	89

Table 7.1 – overview of US and EU pharmaceuticals sort on entry mode strategy, source: own estimation (See enclosed CD for MS Excel Spreadsheet)

In the next section, the hypotheses for this thesis are stated.

6.7 Hypotheses

This section, serves as a recouping of the previous sections. The main hypothesis that is tested will be formulated, as well as three sub-hypotheses. These will offer the foundation on which the research problem is answered.

6.7.1 H1:Main hypothesis

Entry mode strategy in the US and EU pharmaceutical industry is associated with underlying financing capabilities.

8 tests are conducted to determine whether there is a relationship between underlying financing capabilities and entry mode strategy. Each test introduces alternative combinations of dependent and explanatory variables to support the acceptance or rejection of the main hypothesis.

All hypotheses are tested with respect to corporate entry mode strategy and geographical dispersion, which means that there are three results, for every sub-hypothesis.

In order to test the proposed main hypothesis, the following sub-hypothesis is stated to verify the acceptance or rejection of H1.

6.7.2 Sub-hypothesis:

H2.1 There is a positive relationship between liquidity and performance.

This is tested in the models 1, 3, 4, 5, 7, and 8.

It is expected that, current ratio will have a positive influence on corporate flexibility measured as profit margin and return on assets. Current ratio is a component of financial slack, which was theorized to add strategic flexibility as corporations can pursue business opportunities without raising the debt ratio.

H3.1 capital structure affects performance.

This is tested in the models 2, 3, 4, 6, 7, and 8.

In this hypothesis, there is a distinction between debt and equity, which is incorporated in the applied variable. In this sub-hypothesis, mixed results are expected, as previous research and theory on one hand suggests that there are positive effects of introducing some debt. This is due to the tax benefits. On the other hand, excessive debt loads impose additional risk and costs for maintaining the debt and interest payments. Furthermore, increased debt ratio, will also increase the expected return on equity as the corporation is considered more risky by shareholders. This will evidently lead to higher cost of capital i.e. increased WACC.

H4.1 Available cash flows provide pivotal performance drivers.

This is tested in the models 1, 2, 4, 5, 6, and 8.

It is expected that, available cash flows will have a positive impact on corporate flexibility. Therefore, high ratios of available cash flow will entail that corporations can pursue business opportunities without raising the debt ratio.

6.8 Statistical properties of the data

The dataset is now described. In this section the statistical properties of the data applied in this thesis will be assessed. The assessment of the data is considered in order to confirm the application of linear regression analysis.

It is expected that the properties of the data follow a normal distribution; the level of confidence interval is set to 95%. To control for this, tests on normality of the data sample is determined below.

6.8.1 Correlation test

In order to test the normality of the data sample, the correlation between the variables has been computed, by the following equation (Gujarati, 2003):

$$corr(X,Y) = \rho = \frac{cov(X,Y)}{\sigma_X \sigma_Y}$$

Above, ρ, is a measure of linear association between two variables, $cov(X,Y)$, is the covariance between two variables, and, $\sigma_X \sigma_Y$, are measure for the given variables variance. Table 7.2 below, shows the computed correlations estimates of the period's (2005-2010) means between the suggest variables. In general, the correlations are low; although the correlation between profit margin and cash flow ratio is almost perfectly positively correlated i.e. an increase in cash flow ratio will be followed by an approximately identical increase in profit margin. Though, this was expected as the underlying components are the same, which was developed in the decomposition of the two variables in the previous section. Cash flow ratio is kept for analytical purposes, as the analysis will combine the suggest variables and thus should not impose major biases for the overall analysis.

Correlation estimate for variables	
	Corr. Coef.
Corr(Profit margin, Current ratio)	-0,10750
Corr(Profit margin, Cash-flow ratio)	0,99998
Corr(Profit margin, Long term debt-equity ratio)	0,01821
Corr(ROA, Current ratio)	0,01807
Corr(ROA, Cash-flow ratio)	-0,24424
Corr(ROA, Long term debt-equity ratio)	-0,23225
Corr(Current ratio, Cash-flow ratio)	-0,09809
Corr(Current ratio, Long term debt-equity ratio)	-0,09033
Corr(Cash-flow ratio, Long term debt-equity ratio)	0,01932

Table 7.2 – Correlation estimate for variables, source: own estimation (See enclosed CD for MS Excel Spreadsheet)

6.8.2 Chi-squared test

A chi-squared test is provided in confirm whether the normality of the dataset. Chi-square test of significance assesses the acceptance or rejection of the null hypothesis, which in brevity implies whether the data can be determined to follow a normal distribution or not. Under the normality assumption of the data, the variable below follows the chi-square distribution (Gujarati, 2003):

$$\chi^2 = (n-2)\frac{est.\sigma^2}{\sigma^2}$$

Then the chi-square distribution is used to establish the confidence interval for, σ^2:

$$PR\left[(n-2)\frac{\hat{\sigma}^2}{\chi^2_{\alpha/2}} \leq \sigma^2 \leq (n-2)\frac{\hat{\sigma}^2}{\chi^2_{1-\alpha/2}}\right] = 1-\alpha$$

$\chi^2_{\alpha/2}$ and $\chi^2_{1-\alpha/2}$ are the two critical values of χ^2. By this calculation in SAS Enterprise Guide it can be determined if the data is within the region of acceptance, in this instance 95% region of acceptance. In the test of the data sample, the general findings are that the models can be accepted. The models are presented later in this section:

Chi-square test								
		alpha = 0,05			chi-square distribution (Gujarati, 2003):		- two variable	5,99147
		df = 2					- three variable	7,81473
Models:	1	2	3	4	5	6	7	8
accept	85	87	87	89	86	87	88	89
reject	4	2	2	0	3	2	1	0

Table 7.3 – chi-squared test, source: own estimation (See enclosed CD for MS Excel Spreadsheet)

Evidently, the chi-squared test has not raised concerns on the application of linear regression for analytical purposes. The critical region for the chi-square test on significance is noted on the upper-right area of table 7.3 above. Though, since the number of observations in the dataset is small it may not provide the best assessment of the sample.

The last test on statistical properties is determined by a Durbin-Watson test, which is a test for autocorrelation.

6.8.3 Durbin-Watson D-test

The Durbin-Watson test is applied in order to test for autocorrelation between the variables. Autocorrelation is often observed in time-series data, which is also the nature of the data sample in this thesis. Therefore, successive observations are prone to exhibit intercorrelation, which is a violation of the assumptions on linear regression models. If the data sample exhibit strong tendencies towards autocorrelation, it may distort the analysis and the properties on which the analysis is conducted. The Durbin-Watson test statistic is estimated by (Gujarati, 2003):

$$D = \frac{\sum_{t=2}^{T}(e_t - e_{t-1})^2}{\sum_{t=2}^{T} e_t^2}$$

e_t , is the residual related to the given observation at time, t. T , is the number of observations in the sample. In general, low values of D suggest that the successive error terms are closely related in value or positively correlated. A Durbin-Watson D of lesser value than 1 thus entails an issue in terms of linear regression analysis. If reported D is higher than 2, this may indicate that the successive error terms different in value or negatively correlated (Gujarati, 2003).

Calculations of the Durbin-Watson D-test were done in SAS Enterprise Guide, as part of the regression analysis. Table 7.4 below lists the number of observations in the sample that has a D-test value less or equal to 1, or higher or equal to 3, with respect to regression model.

Durbin-Watson D-test							n =	89
Criteria/Models:	1	2	3	4	5	6	7	8
1 or less than 1	4	7	3	3	5	6	4	4
3 or higher than 3	9	6	6	13	5	10	7	10
1 or less than 1 (pct. of sample)	4,49	7,87	3,37	3,37	5,62	6,74	4,49	4,49
3 or higher than 3 (pct. of sample)	10,11	6,74	6,74	14,61	5,62	11,24	7,87	11,24

Table 7.4 – Durbin-Watson D-test, source: own estimation (See enclosed CD for MS Excel Spreadsheet)

From the table it can be summarized that the data sample in general does not exhibit tendencies towards autocorrelation. The concern is predominantly on D-test values lesser or equal to 1. The results from the Durbin-Watson D-test on autocorrelation, is found to be applicable in the detection of autocorrelation. Autocorrelation does not seem to be a critical issue within the dataset, as detected intercorrelation is low, and thus it does not violate the general assumptions for linear regression analysis.

6.8.3.1 Summary – statistical properties of the data

The previous subsection has offered an assessment of the normality, of the proposed data sample for analytical purposes in this thesis. In general, the test has returned satisfying findings on the statistical properties of the data, in terms of linear regression analysis. With respect to the estimated test results of correlation coefficients, chi-squared test, and Durbin-Watson D-test a linear regression analysis is viable.

Though, there are some issues regarding the proposed dataset. As the data only provides 6 observations of each variable for 89 corporations, it may not offer a sufficient data material for a critical analysis of the variables. The time period and nature of the data (annual accounting data), may also entail some issues, as it is subject to exogenous factors such as business cycles or an impact of the financial crisis in 2008. Furthermore, changes in accounting standards may evidently change the reported annual accounting data. In sum, there is a considerable range of factors that will lead to non-stationary data sample.

In the next section, an application of beta analysis is presented as an instrument for the measurement of business risk.

6.9 Regression model selection

In this section the choice of regression model is determined. This thesis encompasses 8 regression models, which incorporates the previously presented variables, which was suggested to offer insights on the interrelation between profitability and underlying financing capabilities.

After sorting for lacking data ranges and determining characteristic of international presence in the data sample, the final dataset was limited to 89 pharmaceutical corporations. Global pharmaceutical corporations, US sample size, n = 20 and EU sample size, n = 16. International pharmaceutical corporations, US sample size, n = 16 and EU sample size, n = 37. See appendix 11.1, for lists of the corporations in the sample.

8 regression models were estimated, in order to incorporate the suggested variables. This entailed 6 two-variable regression models, and 2 three-variable regression models. The models are listed in the table 7.5 below:

Regression models

	Dependent variable	Explanatory variables
Model nr.:		
1	Profit margin	Cash flow ratio + Current ratio
2	Profit margin	Cash flow ratio + Long term debt to equity ratio
3	Profit margin	Current ratio + Long term debt to equity ratio
4	Profit margin	Cash flow ratio + Long term debt to equity ratio + Current ratio
5	Return on assets	Cash flow ratio + Current ratio
6	Return on assets	Cash flow ratio + Long term debt to equity ratio
7	Return on assets	Current ratio + Long term debt to equity ratio
8	Return on assets	Cash flow ratio + Long term debt to equity ratio + Current ratio

Table 7.5 – list of regression models applied.

In the next section, the selection of relevant regression model is discussed and the proposed regression models are presented.

6.9.1 Estimation method of OLS

The chosen regression is ordinary least square (OLS) regression. This is in general a much used model for economic analyses (Gujarati, 2003), and consistent with complementary academic approaches (Andersen, 2005; Simerli and Li, 2000). The OLS model determines the

linear regression line by minimizing the squared error terms, between the regression line and the observations. The general model is determined by:

$$Y_i \sim N(\mu_i, \sigma^2)$$

Where μ_i is estimated by:

$$\mu_i = \beta_0 + \beta_1 x_{i1} + \cdots + \beta_k x_{ik}$$

In this analysis the t statistics are tested, as they will provide an explanation on whether the null hypothesis is accepted or rejected, i.e. assess whether there is pattern in the relationship between profitability and financing capabilities.

The t statistics T_j are computed in accordance to the approach of Gujarati (2003):

$$T_j = \sqrt{N}\frac{\mu_j}{\sigma_j}$$

Where μ_j is estimated by:

$$\mu_j = \frac{1}{N}(T_{i,j} + \cdots + T_{N,j})$$

And σ_j is determined by:

$$\sigma_j = \sqrt{\frac{1}{N-1}[(T_i - \mu_j)^2 + \cdots + (T_N - \mu_j)^2]}$$

The regressions were conducted in SAS Enterprise Guide 4.3. An approach where every single corporation was regressed for every model proposed. Furthermore, cross-sectional regressions were applied to determine the aggregate relationship of the variables. Here the variables were averaged for the observed period 2005-2010. Thus the analyses comprise a time-series analysis and a cross-sectional analysis.

The regression results are reported in consolidated form, in appendix 11.1, due to the vast volume of data. The entire regression output of data is enclosed on the CD-rom.

7 Results

In this section, the result from the regression analysis is presented. The results presented, are the significant averaged parameter values from the linear regression analysis conducted. The most critical outliners have been eliminated from the averages. The results are presented with reference to geography and the defined aggregate entry mode strategies.

7.1 Presentation of regression models

7.1.1 Model 1 – Profit margin = Cash flow ratio + Current ratio:

	Entry mode strategy - Wholly Owned				Entry mode strategy - JV				Entry mode strategy - Balanced			
	Parameter est. Current Ratio Average	ACCEPTED T-TEST	Cash flow Average	ACCEPTED T-TEST	Parameter est. Current Ratio Average	ACCEPTED T-TEST	Cash flow Average	ACCEPTED T-TEST	Parameter est. Current Ratio Average	ACCEPTED T-TEST	Cash flow Average	ACCEPTED T-TEST
US Global	0,0231	3	35743,0	2	0,0087	13	18669,8	6	-0,0386	2	205278,0	1
US International	0,0098	2	52690,7	1	0,0038	5	0,1851	2	-0,0277	9	0,4570	4
EU Global	0,0859	8	58846,9	3	N.A.	N.A.	N.A.	N.A.	-0,3523	8	53848,0	6
EU International	-0,1023	12	23919,1	8	0,1849	8	0,4005	2	-0,0359	16	17657,6	13

Table 8.1 – Regression results Profit margin = Cash flow ratio + Current ratio

Form the table above it is noted that the parameter for cash flow ratio is positive for entry mode strategies. It is observed that there is high dispersion between the reported cash flows. In general, the findings on cash flow ratio suggest that there is a positive relationship between profitability and increasing cash flow ratio, for all the tested models. Though, there are some major outliers in the results.

This finding is consistent with the theory introduced, within the theoretical framework. Here it was elaborated, that the underlying components of financial slack would have positive effect on performance. A possible explanation for this is that available cash flows can be funneled into positive NPV projects, without concerns on financing sources.

Besides the positive relationship, the results do not provide any evidence for a relationship between cash flow ratio and the three entry mode strategies. This is not consistent, with neither the elaborated theory nor the stated expectation for the hypothesis. Here it was

suggested that increasing cash flow ratio, would have pivotal effect on the profitability of joint venture mode strategy, due to increasing corporate flexibility.

The results from the linear regression analysis, in general show a negative effect of current ratio for balanced entry mode strategies. This pattern is particular clear, in model 1. The results are more mixed in the other regression models, where the current ratio parameter is included. Furthermore, there is negative pattern between current ratio and EU International corporations, for wholly owned entry mode and balanced entry modes. The negative pattern in model 1 may be due to lacking management capabilities or knowledge on the coordination of joint ventures.

In general the mixed findings are in accordance, with the introduced theoretical implications. Here it was suggested by ROT that corporations will benefit from joint venturing due to added investment flexibility, whereas TCE propose that joint venturing has lesser coordinating capabilities than wholly owned modes. It was theorized that coordination capabilities would be stronger within corporate boundaries i.e. wholly owned modes would benefit from better coordination abilities. In addition, it was introduced that there might be some governance issues when joint venturing with partners, as contract negotiation and determination of strategy may be rigid.

Hence, the mixed findings for current ratio support the ambiguity of the theoretical framework, as no consistent result are derived for the regression analysis.

7.1.2 Model 2 - Profit margin = Cash flow ratio + LT debt to equity ratio:

	Entry mode strategy - Wholly Owned				Entry mode strategy - JV				Entry mode strategy - Balanced			
	Parameter est. Cash flow Average	ACCEPTED T-TEST	Parameter est. LT DEBT/EQUITY	ACCEPTED T-TEST	Parameter est. Cash flow Average	ACCEPTED T-TEST	Parameter est. LT DEBT/EQUITY	ACCEPTED T-TEST	Parameter est. Cash flow Average	ACCEPTED T-TEST	Parameter est. LT DEBT/EQUITY	ACCEPTED T-TEST
US Global	-426627,0	1	107677,1	3	30441,5	6	-0,0333	13	0,1885	1	-0,4774	2
US International	0,5130	1	-0,0312	2	44323,1	3	0,0528	4	0,3134	4	124786,3	9
EU Global	109627,6	2	160367,7	6	N.A.	N.A.	N.A.	N.A.	19930,8	7	19310876,3	6
EU International	41947,3	7	51266,9	12	-874114,2	2	-57160,3	5	18373,5	13	0,0733	12

Table 8.2 - Regression results Profit margin = Cash flow ratio + LT debt to equity ratio

Results are positive for cash flow ratio, except for two outliers. This is consistent with the theoretical framework.

The general pattern for long term debt to equity ratio seems to be negative for US pharmaceuticals whereas it has a positive impact for EU pharmaceuticals. The results reported are mixed in the models where long term debt to equity is a component of the regression. The mixed results are to some extent consistent with the expected results, as there theoretical insights are not aligned.

The theoretical perspective proposes that some fraction of debt may be desirable, as there are tax deduction benefits. Excessive debt ratios will diminish financing flexibility, and is thus not considered prudent in context of the pharmaceutical industry, as corporations are exposed to considerable business risk. A combination of high debt ratio and high business risk will inevitably entail high costs of capital, and therefore decrease financing flexibility and performance.

7.1.3 Model 3 - Profit margin = Current ratio + LT debt to equity ratio:

	Entry mode strategy - Wholly Owned				Entry mode strategy - JV				Entry mode strategy - Balanced			
	Parameter est. Current ratio	ACCEPTED T-TEST	Parameter est. LT Debt to equity	ACCEPTED T-TEST	Parameter est. Current ratio	ACCEPTED T-TEST	Parameter est. LT DEBT/EQUITY	ACCEPTED T-TEST	Parameter est. Current ratio	ACCEPTED T-TEST	Parameter est. LT DEBT/EQUITY	ACCEPTED T-TEST
US Global	133601,7	3	-121844,0	4	0,0477	13	-10636,2	12	-0,0137	2	-0,3694	1
US International	0,0862	2	-0,0414	2	-0,0471	5	-0,0327	4	-63694,7	7	524399,2	8
EU Global	0,0865	5	148278,2	7	N.A.	N.A.	N.A.	N.A.	0,0340	8	18928897,2	5
EU International	-18732,5	13	94057,4	10	203213,1	6	0,1564	6	-9505,4	16	305049,7	14

Table 8.3 - Regression results Profit margin = Current ratio + LT debt to equity ratio

The results from regressing model 3, provides mixed results for current ratio, on entry modes and geographical location. Therefore, no distinct influence of liquidity is determined in model 3.

The results of LT debt to equity, is positive for EU pharmaceuticals whereas negative for US pharmaceuticals. This pattern is clear in model 3, as all parameters for US pharmaceuticals are negative, except for one outliner. All parameter for EU pharmaceuticals are positive. The interpretation is that EU pharmaceuticals will increase profitability by an increased debt ratio, while US pharmaceuticals will be negatively impacted by a higher debt ratio. The analogous proposition could then be that US pharmaceuticals should lower their debt ratio, and EU pharmaceuticals should raise their debt ratio, as it would conceptually benefit performance. This suggestion is not prudent, as it is based on aggregate data. As elaborated in the

theoretical framework, capital structure should be aligned with the specific corporate context and associated business risk.

7.1.4 Model 4 - Profit margin = Cash flow ratio + LT debt to equity ratio + Current ratio:

	Entry mode strategy - Wholly Owned						Entry mode strategy - JV						Entry mode strategy - Balanced					
	Parameter est.		Parameter est.		Parameter est.		Parameter est.		Parameter est.		Parameter est.		Parameter est.		Parameter est.		Parameter est.	
	Cash flow ratio	ACCEPTED T-TEST	LT Debt to equity	ACCEPTED T-TEST	Current ratio	ACCEPTED T-TEST	Cash flow ratio	ACCEPTED T-TEST	LT Debt to equity	ACCEPTED T-TEST	Current ratio	ACCEPTED T-TEST	Cash flow ratio	ACCEPTED T-TEST	LT Debt to equity	ACCEPTED T-TEST	Current ratio	ACCEPTED T-TEST
US Global	-99424,5	2	-60452,3	3	0,0386	2	58735,7	8	-0,0251	14	0,0035	12	0,1292	1	-55923,5	2	0,0240	2
US International	0,3960	1	-0,0361	2	0,0166	2	0,1914	2	0,0329	3	-0,0027	4	23588,9	7	0,0329	3	-0,0027	4
EU Global	46028,2	5	0,0133	6	0,0813	7	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	7037,2	5	-0,2309	4	0,0088	6
EU International	-0,0311	7	-0,0088	12	-0,0621	13	0,6459	1	40698,9	5	-0,0281	6	0,1578	13	0,1052	14	-0,0081	14

Table 8.4 - Regression results Profit margin = Cash flow ratio + LT debt to equity ratio + Current ratio

Model 4 presents the results from the three-variable linear regression. Cash flow reports mixed influence on wholly owned modes, but exclusively positive for joint venture and balanced entry mode strategies.

This is in accordance, with the insights on financial slack, and may grant some support for the notion that joint venturing has a positive effect on strategic flexibility, which is coherent with ROT.

The relationship between performance and long term debt to equity has a negative impact, on wholly owned modes, and specifically for US global pharmaceuticals. This might suggest that, debt limits the flexibility for a pharmaceutical competing on a global scale. This is consistent with the findings from model 2 and 3.

The results on current ratio show that, liquidity is beneficial for wholly owned modes and US global pharmaceutical corporations.

7.1.5 Model 5 - ROA = Cash flow ratio + Current ratio:

	Entry mode strategy - Wholly Owned				Entry mode strategy - JV				Entry mode strategy - Balanced			
	Parameter est. Cash flow ratio	ACCEPTED T-TEST	Parameter est. Current ratio	ACCEPTED T-TEST	Parameter est. Cash flow ratio	ACCEPTED T-TEST	Parameter est. Current ratio	ACCEPTED T-TEST	Parameter est. Cash flow ratio	ACCEPTED T-TEST	Parameter est. Current ratio	ACCEPTED T-TEST
US Global	0,1642	2	-0,0042	4	0,2391	9	-0,0025	12	0,7529	2	-0,0425	2
US International	0,5806	1	0,0024	2	40107,7	3	0,0706	5	0,2637	8	0,0086	7
EU Global	65977,1	5	0,0799	8	N.A.	N.A.	N.A.	N.A.	1,2029	5	92225,8	7
EU International	-6,0870	6	-0,0139	11	50980,5	2	-0,0331	6	70124,5	11	0,0072	16

Table 8.5 - Regression results Return on assets = Cash flow ratio + Current ratio

Model 5 regression reports a general positive relationship between cash flow and profitability. These results are consistent with prior findings, and the theorized interrelationship, that cash flow will add to strategic flexibility.

Current ratio is reported to be negative for US global pharmaceutical corporations, this result conflicts with the general findings from the previous models. Moreover, this contradicts the theorized relationship between liquidity and performance. The other component of flexibility, cash flow, was found have positive impact, which implies that there are contradicting relationships in model 5.

US international and EU global both report positive parameters for all entry mode strategies.

7.1.6 Model 6 - ROA = Cash flow ratio + LT debt to equity ratio:

	Entry mode strategy - Wholly Owned				Entry mode strategy - JV				Entry mode strategy - Balanced			
	Parameter est. Cash flow ratio	ACCEPTED T-TEST	Parameter est. LT debt to equity	ACCEPTED T-TEST	Parameter est. Cash flow ratio	ACCEPTED T-TEST	Parameter est. LT debt to equity	ACCEPTED T-TEST	Parameter est. Cash flow ratio	ACCEPTED T-TEST	Parameter est. LT debt to equity	ACCEPTED T-TEST
US Global	0,3607	1	-0,1111	2	0,3347	8	-0,0896	8	0,7529	2	-0,4209	1
US International	0,5806	1	-0,0347	2	-0,0723	3	-0,0256	4	0,1468	8	-0,0363	9
EU Global	-94502,6	2	262597,6	8	N.A.	N.A.	N.A.	N.A.	107705,8	6	0,0916	7
EU International	-0,0139	6	20757,4	11	194907,5	2	-324006,3	5	87379,8	10	146990,9	13

Table 8.6 - Regression results Return on assets = Cash flow ratio + LT debt to equity ratio

Results from model 6 show that, cash flows have a positive relationship to entry modes, where joint venture is a key strategic component. This support ROT, as it implies that there is a positive relationship between financing- and strategic flexibility, and performance.

In addition, results from model 6 adds further support to the overall results, that LT debt to equity, is positive for EU pharmaceuticals whereas negative for US pharmaceuticals. Hence, results are aligned with the general findings in model 2, 3, and 4.

7.1.7 Model 7 - ROA = Current ratio + LT debt to equity ratio:

	Entry mode strategy - Wholly Owned				Entry mode strategy - JV				Entry mode strategy - Balanced			
	Parameter est.		Parameter est.		Parameter est.		Parameter est.		Parameter est.		Parameter est.	
	Current ratio	ACCEPTED T-TEST	LT debt to equity	ACCEPTED T-TEST	Current ratio	ACCEPTED T-TEST	LT debt to equity	ACCEPTED T-TEST	Current ratio	ACCEPTED T-TEST	LT debt to equity	ACCEPTED T-TEST
US Global	0,1911	3	0,6375	4	0,2444	8	-0,1555	9	-0,0152	2	-0,1937	1
US International	0,0356	2	-0,0639	2	0,0554	5	-0,0592	4	0,0350	8	-0,1063	8
EU Global	0,0929	5	260126,1	7	N.A.	N.A.	N.A.	N.A.	0,0036	7	6761964,6	6
EU International	-0,0927	10	-0,2093	12	0,1048	6	0,0472	6	0,0962	17	-0,1105	15

Table 8.7 - Regression results Return on assets = Current ratio + LT debt to equity ratio

Model 7 replicates the general results from model 3 on entry mode strategies and geographic dispersion, although current ratio has a better relationship to performance.

7.1.8 Model 8 – ROA = Cash flow ratio + LT debt to equity ratio + Current ratio:

	Entry mode strategy - Wholly Owned						Entry mode strategy - JV						Entry mode strategy - Balanced					
	Parameter est.		Parameter est.		Parameter est.		Parameter est.		Parameter est.		Parameter est.		Parameter est.		Parameter est.		Parameter est.	
	Cash flow ratio	ACCEPTED T-TEST	LT Debt to equity	ACCEPTED T-TEST	Current ratio	ACCEPTED T-TEST	Cash flow ratio	ACCEPTED T-TEST	LT Debt to equity	ACCEPTED T-TEST	Current ratio	ACCEPTED T-TEST	Cash flow ratio	ACCEPTED T-TEST	LT Debt to equity	ACCEPTED T-TEST	Current ratio	ACCEPTED T-TEST
US Global	0,5565	2	-0,0547	3	-0,0496	3	0,1197	8	-0,1218	10	-0,0013	11	0,0137	1	-111847,0	1	0,0140	2
US International	0,5221	1	-0,0401	2	-0,0011	2	37988,4	3	-0,0525	3	0,0714	4	60860,6	7	-0,0546	9	-0,0020	7
EU Global	196571,9	5	-0,0658	5	0,0410	6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	47638,1	6	2288847,9	7	-0,0369	7
EU International	0,0129	7	-30182,2	12	-18582,6	11	61155,0	2	-196791,1	5	0,0010	6	43924,4	13	147779,4	13	-0,0058	16

Table 8.8 - Regression results Return on assets = Cash flow ratio + LT debt to equity + Current ratio

Model 8 confirms the positive relationship between cash flow and performance, a cross all aggregate entry mode strategies and geographic dispersion. This supports the theoretical framework.

Long term debt to equity is reported to have negative effect for all entry mode strategies, but has a positive relationship on EU pharmaceuticals that pursue a balanced entry mode strategy.

These results imply contradicting findings, given that debt to equity ratio was reported to have positive relationship in general, for EU pharmaceuticals.

Current ratio reports minor negative relationships on performance, across geographical dispersion and entry mode strategy.

The next subsection presents a few descriptive assessments of the diagrams below. The diagrams illustrate the relation between Beta ROA, and the explanatory variables, estimated by mean values form the period 2005-2010.

7.2 Beta ROA – illustrative relation to explanatory variables

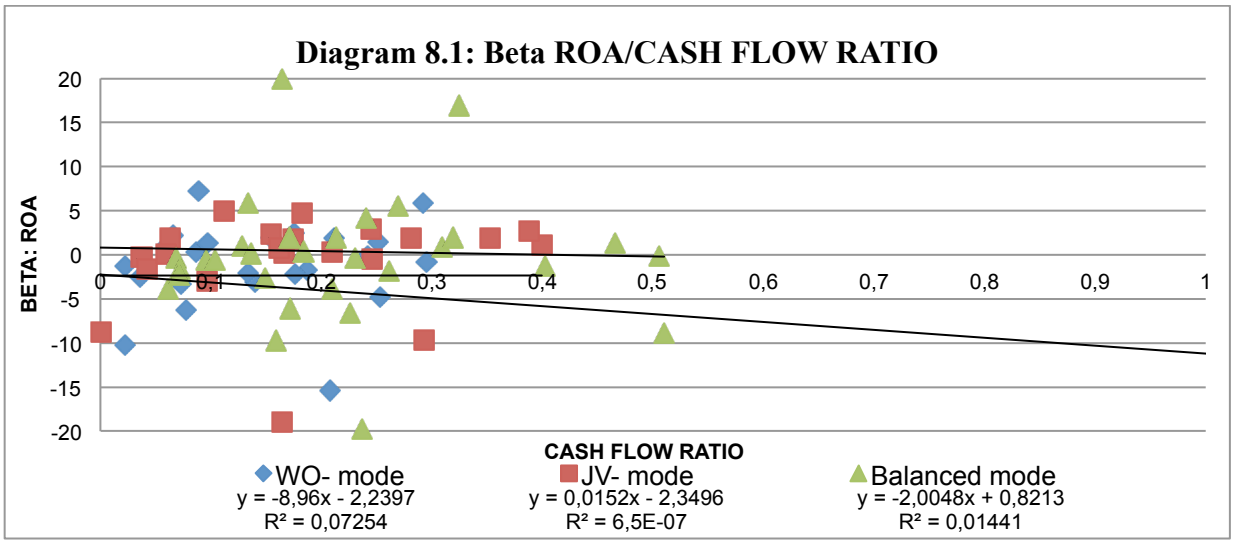
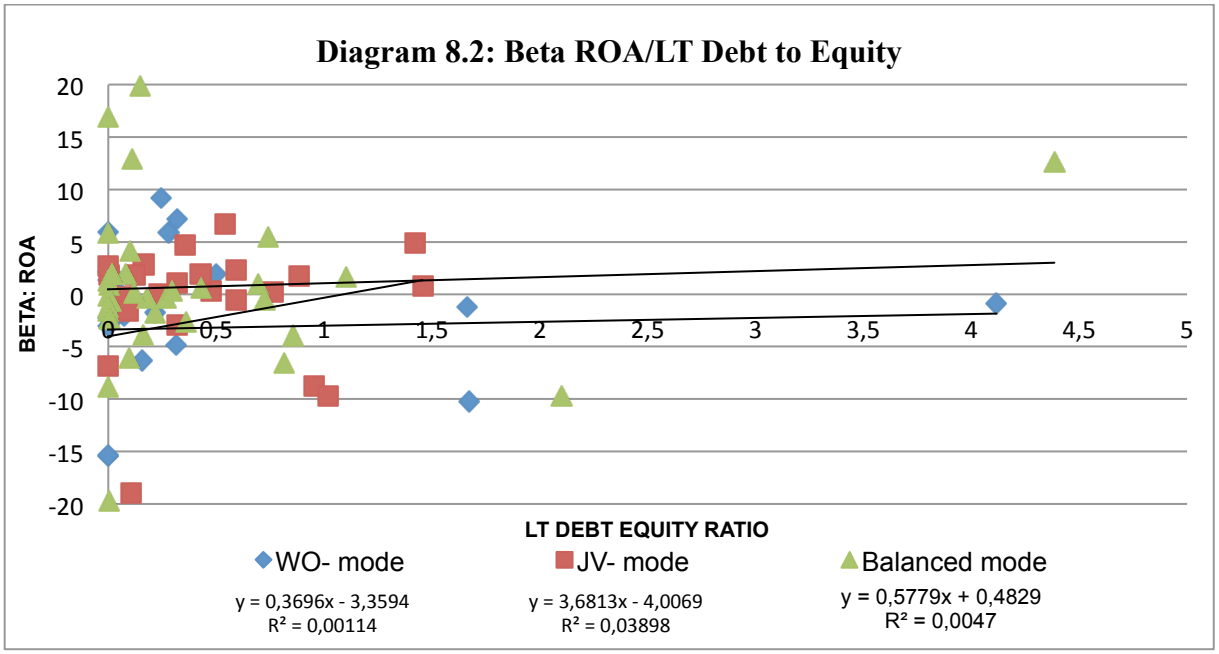


Diagram 8.1, illustrates the relationship between Beta ROA and cash flow ratio. The dataset does not provide a viable assessment of the expected findings.

It was expected that, increasing cash flow ratio would decrease beta i.e. decrease relative business risk. The slope for joint venture mode is positive and has a negative intercept, while balanced mode has a negative slope and a positive intercept. This may show the relationship to some extent, as Beta ROA will narrow in by increasing cash flow ratio. The R-squared values, though, does not compute a useful linear explanations for the dataset.

Note that the variation within the data set is large. This may be due to few observations, given that data are posted annual accounting results.

Diagram 8.2 below, illustrates the relationship between Beta ROA and long term debt to equity.



It was expected that increasing debt to equity ratio would promote a higher beta value, as associated relative risk would increase. Therefore, the findings are quite surprising. The results illustrate that the relationship seems to be inverse, which at first glance is puzzling. The explanation is found in the dataset. The dataset reveals that the estimated aggregate sales, for the pharmaceutical market, have increased every year over the period observed. This entails that the plotted points exhibiting high positive Beta ROA values, has performed in excess of the market. Therefore, there is found some support for positive effects from low debt to equity ratios, as an upward trend for debt ratio approaching 0 is observed in diagram 8.2. Furthermore, it is observed that there is a grouping of markings at Beta -10, and debt to equity ratio >1. The results are not substantial, in order to conclude, that increasing debt to equity ratio would promote a higher negative beta values. Even though it provides some support for the hypothesis thst capital structure has an effect on performance.

The diagram.3 of Beta ROA and current ratio is enclosed in appendix 11.2, as it does not provide additional insights to the presented results.

7.2.1.1 Summary on the results from regression analyses

In the previous section, the results from the eight linear regression models have been presented. In addition, two diagrams illustrating the relationship between Beta ROA and long term debt to equity ratio, and cash flow ratio were presented. The overall findings are summarized below.

Current ratio results from the linear regression analysis, in general show a negative effect of current ratio for balanced entry mode strategies, and mixed effect for wholly owned modes and joint venture modes. These results contradict the theoretical suggestion, that liquidity has a positive effect on performance. An explanation could be that high value of current assets, not necessarily provide pivotal performance, given that the primary objective is to cover short term expenses and ensure smooth daily operations. Some explanation can be derived from the definition, as it propose that current assets are forms of cash, accounts receivables, inventory, and marketable securities that matures within the subsequent fiscal year. Thus, current assets does not formulate the generation of valuable, rare, inimitable firm-specific resources, which are the proponents of competitive advantages (Barney, 1991). Competitive advantages are likely to be embedded to intangible assets and goodwill, especially for pharmaceutical corporations, as patents and product knowledge a key drivers for their competitiveness and profitability.

Therefore the sub-hypothesis H2.1, is rejected. The hypothesis is rejected as the presented results fails to confirm the theorized relationship between liquidity and performance.

The general pattern for long term debt to equity ratio seems to be negative for US pharmaceuticals, whereas it has a positive relationship for EU pharmaceuticals. The overall results reported from the models where long term debt to equity is included as explanatory variable, exhibits a mixed pattern. The mixed results are to some extent consistent with the expected results, as the theoretical insights are not aligned.

Hence, the sub hypothesis H3.1, is accepted, as capital structure affects performance within the pharmaceutical industry.

The results on the relationship between cash flow ratio and performance are in general positive and consistent throughout the regression analyses. An interesting finding relates to

joint venture and balanced entry mode strategies, as these modes especially, seem to have a clear positive relationship to cash flow ratio. This is in support of the theorized strategic flexibility, and thus profitability of joint venture, as it provides a future growth option.

The sub-hypothesis H4.1, is accepted as increasing cash flow ratio enhance performance and remain a pivotal performance driver.

In the previous subsection, the relationship between Beta ROA and the explanatory variables was assessed. The general picture was blurred, although there where some findings that supported the theorized relationship. Increasing cash flow ratio seems to have some positive impact on business risk, as it leads to a minor decrease. Furthermore, by assessing the underlying dataset, it was found that low long term debt to equity may have a positive effect on performance. This is consistent with the hypothesized relationship.

The overall assessment of this thesis, main hypothesis H1, is determined on the following findings.

Wholly owned mode

Current ratio has a mixed impact on performance for wholly owned modes. This is also the consistent pattern for the four geographical regions considered in the analysis. Cash flow ratio has a positive impact on performance for wholly owned modes, which is consistent across all geographic regions. Finally, long term debt to equity is found to have mixed influence on performance across geography. US pharmaceuticals are in general negatively affected, whereas EU pharmaceuticals are positively affected.

Joint venture

Current ratio has a mixed impact on performance for joint venture modes. This is also the consistent pattern for the four geographical regions considered in the analysis. Cash flow ratio is found to have a clear considerable affect on performance. This supports the theorized relationship between joint venture and strategic flexibility, as it provides a future growth options. The pattern for long term debt to equity ratio is mixed for joint venture modes across geography.

Balanced mode

Current ratio has a general negative impact on balanced entry mode strategies, which is the pattern across geography. Cash flow ratio is determined to have a clear positive affect on performance for balanced entry modes, and consistent across geography. Finally, Long term debt to equity ratio reports very mixed result, which may imply that capital structure, is specified with respect to corporate business environment. There is no clear pattern on whether capital structure affects entry mode strategy, or vice versa.

These overall reported findings support the main hypothesis H1, and thus the statement: *"Entry mode strategy is associated with underlying financing capabilities",* is accepted. And thereby answers the problem statement.

8 Discussion and conclusion

Discussion

In the present section, a discussion of the thesis is presented.

Within academic literature, much attention has been directed towards entry mode choice in conjunction with various theoretical perspectives (Brouthers et al., 2008; Woodcock, Beamish and Makino, 1994). This thesis has extended the perspective of the research, by assessing the underlying financing capabilities, with respect to entry modes.

The theoretical framework of this thesis encompass, transaction cost economics (TCE), capital structure literature, and real option theory (ROT). These theoretical perspectives were the main drivers for the components, employed in the analysis.

Based on the prior proposal, an empirical analysis of the US and EU pharmaceutical industry was conducted. The introduction of three explanatory variables related respectively to; liquidity, capital structure, and cash flow from operations, provided the basis for an analysis of the underlying corporate financing capabilities. In addition, the data sample was sorted on geographic dispersion, and corporate entry mode strategy determined by shareholdings in subsidiaries. These dimensions introduced strategic perspectives to the analysis, which offered some interesting findings.

A clear positive pattern was detected for joint venturing and cash flow ratio, which signifies that joint venturing is a prudent choice for entry mode strategies within the pharmaceutical industry. The conceptual explanation is that joint ventures minimize downside risk, as the initial investment committed is shared. Moreover, the total investment is delayed until further information is accrued, which is key when research and development cost are high. Joint venture shares the attribute of access to proprietary market knowledge, like wholly owned mode (Brouthers, 2008; Kogut 1991). Hence, the joint venture mode represents the intermediate hybrid form, developed within transaction cost economics. This allows the venturing corporation to minimize the potential cost of entering a new market, while still having a future growth option (Brouthers, 2008; Kogut 1991).

This may suggest that pharmaceuticals can organize its boundaries with partnering corporations, as the results imply there is a positive performance relationship, although it raises the risk of knowledge expropriation. Indeed, if pharmaceuticals fear that their competitive advantages are endangered by organizing boundaries with partners, they should not pursue such entry mode strategy. These considerations should be integrated in the strategic choices, which the pharmaceuticals pursue.

The results generated by the beta analysis of return on assets, did not provide any reliable result with regard to the riskiness of either entry modes. Although, as discussed above, there are some implications that corporations need to adhere to when venturing new markets. The theoretical perspectives from TCE and ROT, offers conflicting insights on the riskiness of entry modes. TCE suggest that corporations should govern assets of high specificity by hierarchical governance forms i.e. wholly owned subsidiaries. ROT are more focused on the upside opportunities of the venture, as uncertainty has a positive relation to the option value. Hence, the value of a joint venture is positively associated with uncertainty. This theoretical inconsistency is not directly analyzed in the empirical analysis, although the estimation of accounting beta was expected to provide some applicable result for a discussion, though the test failed to explain the risk and flexibility of entry modes.

As the data sample employed for the empirical analysis consists of accounting data from US and EU pharmaceuticals, there might be some data issues. Corporate accounting practices, like GAAP and IFRS, could impose a bias for some measures as they allow for differences in reporting of financial data. Another implication for the empirical analysis is related to taxation. As developed in the theoretical framework, capital structure and tax are intimately related, which may influence debt ratio and how corporations govern their subsidiaries. This inevitably imposes some uncertainty to results, and perspectives developed in this thesis. The findings from the analysis, did suggest that US pharmaceuticals were negatively related, and EU pharmaceuticals positively related, to increased long term debt to equity ratio. These results may be subject to taxation influences.

The definitions of corporate entry mode strategies developed in accordance with other research (Brouthers et al., 2008), are subject to a sorting criterion on shareholdings in subsidiaries. This definition is ambiguous, as it considers a subsidiary where shareholdings are 90 pct., a joint venture. Equally, the threshold determined for sorting corporations under

the three corporate entry mode strategies, has not been tested before by other researchers. This evidently calls for some uncertainty, as it is the first time this approach is tested – to the knowledge of the thesis author. Though, the distinction was made with caution to what could be determined as an "aggregate" corporate entry mode strategy. Therefore, it is suggested that this approach is tested in future research on entry mode.

Attention should also be directed towards the data sample size. The total size of the dataset, after sorting for lacking data, was limited to 89 corporations. A larger sample would have heightened the quality of the regression results, as well as the period considered 2005-2010 only gives six observations for the time-series analysis. This will inevitably decrease the applicability of the dataset. Though, the normality tests conducted on data were quite strong, which provides some support for the application.

The overall thesis conclusion is stated below.

Conclusion

This thesis has investigated whether entry mode strategy, within the pharmaceutical industry, is associated with underlying financing capabilities. In order to test this, an empirical data sample on US and EU pharmaceutical corporations from the period 2005-2010, has been analyzed.

The main hypothesis has been accepted, which entails that entry modes for pharmaceuticals, is associated with underlying financing capabilities. Entry mode is associated by the underlying financing components, explained below.

Liquidity is found to have a mixed relationship with performance, for wholly owned and joint venture modes, whereas it has a negative impact on performance for balanced entry mode. These results are inconsistent with the theorized relationship, as liquidity was hypnotized to provide added strategic flexibility. An explanation to the lacking relationship, was related to the measure on which liquidity was estimated, current ratio. Current ratio includes current assets, which is not generally considered to entail future economic profits, as such will likely stem from intangibles or knowhow, especially within the pharmaceutical industry.

The ability to generate cash flows from operating activities, which was measured by cash flow ratio, had a positive impact on profitability, for all entry modes. The findings specifically imply that there is a clear positive relationship between cash flow ratio and joint venture modes. This is in support of the theorized relationship between joint venturing, and thus strategic flexibility, as it provides a future growth options.

Lastly, the relationship between capital structure and performance, reports very mixed results, which may imply that capital structure is specified with respect to the target corporation's business context. The results from the analysis provide no clear pattern on whether capital structure has a positive effect on entry mode strategy, or vice versa. The theoretical framework developed in the thesis, proposes that some portion of debt could be desirable, as there are tax benefits related to debt obligations. Although, it is suggested that high debt ratios will impede financing flexibility. In context of the pharmaceutical industry, high debt levels may expectedly lead to high costs of capital, and therefore diminish financing flexibility and hence performance. Therefore, there is only support for the theorized relationship.

Therefore, it can be concluded that entry modes is associated with underlying financing capabilities, and that the impact varies across the analyzed entry modes.

9 Literature

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10 Appendices

10.1 Appendix – consolidated results

Regression model: PROFITMARGIN = CASH FLOW RATIO + CURRENT RATIO

MODEL: PROFITMARGIN =CASH FLOW RATIO + CURRENT RATIO															
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: CASH-FLOW/OPERATING REVENUE		Variable: CURRENT RATIO		
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value	
US - Global															
ABBOTT LABORATORIES	1	0	0	0,1854	0,1247	0,2113	0,4986	1,5	1,921	0,1555	0,944	1,52	0,0248	0,32	
MERCK & CO., INC.	1	0	0	0,2454	0,1379	0,292	0,2786	1,465	5,9155	0,3716	107228,000	5,49	0,0566	0,62	
ILLUMINA INC	1	0	0	0,1941	0,0673	0,1398	0	2,875	-3,0396	0,0135	0,120	0,78	-0,0121	-0,28	
BIOMARIN PHARMACEUTICAL INC	1	0	0	-0,2325	-0,0178	0,0223	1,6704	6	-10,209	0,2239	-432732,000	-3,23	279376,0000	5,22	
JOHNSON & JOHNSON	0	1	0	0,263	0,1829	0,2449	0,1622	1,735	2,8795	0,6428	112018,000	3,08	0,0011	0,09	
PFIZER INC	0	1	0	0,271	0,0839	0,2812	0,1254	1,895	1,8529	0,2719	0,211	1,12	-0,1211	-1,89	
WYETH	0	1	0	0,2787	0,1439	0,2458	0,5927	3,14	-0,4993	0,3381	0,595	0,66	0,0108	2,06	
BRISTOL-MYERS SQUIBB COMPANY	0	1	0	0,2254	0,1575	0,21	0,4764	1,875	0,3147	0,0024	0,040	0,15	0,1238	1,12	
AMGEN INCORPORATED	0	1	0	0,3787	0,1268	0,3524	0,427	2,845	1,9059	0,4693	121322,000	4,39	0,0179	1,52	
GILEAD SCIENCES INC	0	1	0	0,5076	0,3493	0,3993	0,3164	3,34	1,0939	0,0014	0,975	144,38	0,0059	4,30	
ALLERGAN INC	0	1	0	0,1976	0,1066	0,1829	0,3551	3,105	4,714	0,1938	111951,000	8,75	-0,0201	-1,48	
MYLAN INC.	0	1	0	0,1514	0,0259	0,1119	1,4221	2,015	4,9421	0,1721	100744,000	10,39	0,0170	0,82	
HOSPIRA, INC.	0	1	0	0,1329	0,0751	0,1545	0,5946	2,565	2,3711	0,3053	0,970	11,38	-0,0058	-0,88	
CELGENE CORP	0	1	0	0,2402	0,0868	0,1643	0,1082	7,145	-18,931	0,5793	101607,000	11,82	0,0200	1,27	
MILLIPORE CORP	0	1	0	0,1418	0,0691	0,1665	0,7631	2,475	0,2277	0,0087	0,117	0,18	0,0348	2,45	
PERRIGO CO	0	1	0	0,103	0,0635	0	0,9539	1,84	-8,7745	0,324	105815,000	6,27	0,0344	0,44	
AMERICAN MEDICAL SYSTEMS HOLDINGS INC	0	1	0	0,2103	0,0885	0,1747	0,8842	2,81	1,7368	0,0233	0,922	6,37	0,0186	0,45	
CHATTEM INC	0	1	0	0,2637	0,1237	0,1613	1,4559	3,355	0,8101	0,0897	0,025	0,09	-0,0185	-2,57	
QUEST DIAGNOSTICS INCORPORATED	0	0	1	0,1801	0,1411	0,1283	0,6955	1,145	1,045	0,0653	0,312	3,57	0,0044	0,47	
GENZYME CORPORATION	0	0	1	0,1439	0,0639	0,2136	0,0801	2,79	1,9544	0,1023	205278,000	1,90	-0,0817	-1,06	

MODEL: PROFITMARGIN =CASH FLOW RATIO + CURRENT RATIO														
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: CASH-FLOW/OPERATING REVENUE		Variable: CURRENT RATIO	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
US - International														
ALKERMES, INC.	1	0	0	0,064	0,0133	0,0888	0,3203	5,355	7,1995	0,1069	105381	8,57	-0,0067	-0,37
SUCAMPO PHARMACEUTICALS, INC.	1	0	0	0,1944	0,1534	0,0659	0	4,015	2,2057	0,0134	0,46123	1,10	0,0263	0,94
NBTY INC	0	1	0	0,1077	0,1182	0,0965	0,3176	2,97	-2,97	0,2835	0,62939	0,66	0,0331	0,82
UNITED THERAPEUTICS CORP	0	1	0	0,1267	0,0487	0,0374	0,0614	3,47	-0,2412	0,0004	182426	3,91	0,0296	2,98
HEALTHTRONICS, INC.	0	1	0	0,1787	0,0361	0,1293	0,3525	2,635	-21,09	0,5679	-0,25926	-0,12	-0,0069	-0,05
ABIOMED INC	0	1	0	-0,4831	-0,2141	-0,4311	0	4,805	-6,8233	0,1885	0,89103	8,56	-0,0253	-1,49
DYAX CORP	0	1	0	-1,4426	-0,6221	-1,734	0,5432	3,565	6,6765	0,0311	0,9051	18,79	-0,0115	-0,16
GENENTECH INC	0	0	1	0,3209	0,2315	0,261	0,2172	2,435	-1,8037	0,1121	130310	9,50	-0,0074	-0,54
SYNTHES, INC.	0	0	1	0,3332	0,1761	0,3087	0,0025	3,15	0,8849	0,2925	0,61553	2,34	0,0017	0,75
KING PHARMACEUTICALS INC	0	0	1	0,1271	0,0601	0,2093	0,1593	1,965	-3,8707	0,2207	0,75061	3,21	-0,0017	-0,06
ENDO HEALTH SOLUTIONS, INC	0	0	1	0,2872	0,1863	0,2402	0,1007	2,695	4,1486	0,3891	-0,00839	-0,01	-0,0598	-0,97
CUBIST PHARMACEUTICALS INC	0	0	1	0,1751	0,0565	0,1591	2,1025	6,335	-9,74	0,4855	0,87199	3,19	0,0154	0,67
VERTEX PHARMACEUTICALS INC	0	0	1	-2,3427	-0,4039	-2,1379	0,432	3,455	0,5857	0,0008	0,95455	18,27	0,0054	0,04
INTERMUNE INC	0	0	1	-1,1545	-0,4317	-0,6354	-1,2958	4,125	11,09	0,029	0,8426	5,29	-0,0839	-0,79
ZILA INC	0	0	1	-0,5449	-0,3854	-0,1345	0,1111	1,29	12,948	0,8561	0,56601	0,89	-328168,0000	-1,63
COLUMBIA LABORATORIES INC	0	0	1	-0,3008	-0,4177	-0,4357	-0,3152	2,515	-2,9636	0,0086	0,65483	1,40	-0,0917	-1,51

MODEL: PROFITMARGIN =CASH FLOW RATIO + CURRENT RATIO													
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: CASH-FLOW/OPERATING REVENUE		Variable: CURRENT RATIO	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
EU - Global														
RHODIA SA	1			0,0576	0,0203	0,0725	-3,6976	1,34	-3,3678	0,1624	0,95626	4,88	-0,0208	-0,36
NOVARTIS AG	1			0,2177	0,1126	0,2508	0,0416	1,36	1,4262	0,5752	-0,33263	-6,03	-0,0063	-0,50
ROCHE HOLDING AG	1			0,2777	0,1764	0,2419	0,2184	3,075	-0,1477	0,0016	186.321	4,26	0,0196	3,16
LABORATORIOS MENARINI SA	1			0,0878	0,1752	0,0778	0,1578	2,24	-6,2857	0,3308	164.762	2,54	-0,0185	-0,68
LABORATORIOS INDAS SA	1			0,1799	0,1419	0,1873	0,2177	1,155	-1,7189	0,0386	149.424	3,87	0,0089	0,91
ISDIN SA	1			0,086	0,1431	0,0864	0,0451	2,545	0,2765	0,0006	131.912	3,89	0,0247	0,37
LABORATOIRES FOURNIER SA	1			0,137	0,2327	0,097	0,0016	1,38	1,3756	0,0056	-161.644	-1,70	0,2660	2,09
SHIRE PLC	1			0,0682	0,0451	0,2535	0,3139	1,28	-4,8224	0,2332	-0,80813	-0,57	0,4138	1,52
CHEMI - S.P.A.		1		0,0512	0,0453	0,1332	0	2,5	5,8497	0,2094	185.483	2,51	-0,0533	-0,69
SANOFI AVENTIS SA		1		0,0984	0,152	0,0953	0,0127	3,265	-0,6128	0,0105	137.603	2,80	0,0132	0,72
SANOFI WINTHROP INDUSTRIE		1		0,0909	0,1978	0,0687	0,1785	1,465	-0,3606	0,0069	151.031	3,84	-0,1061	-2,57
SANOFI PASTEUR		1		0,0969	0,0648	0,1041	0,7246	1,98	-0,5697	0,0155	0,42346	1,55	-0,0799	-1,33
MERIAL		1		0,3157	0,3603	0,2687	0,7431	1,575	5,4867	0,3077	0,92294	2,16	-0,1279	-1,15
TEVA PHARMACEUTICAL INDUSTRIES LIMITED		1		0,2064	0,081	0,23	0,2687	1,72	-0,377	0,0045	111.007	9,53	0,0389	2,17
HEMOFARM		1		0,1996	0,0961	0,1838	0,2969	1,545	0,3446	0,004	0,59908	1,77	-0,0173	-0,08
ASTRAZENECA AB		1		0,3575	0,1423	0,5053	4E-05	2,305	-0,1373	0,0007	0,09103	0,26	-0,0199	-0,36

MODEL: PROFITMARGIN = CASH FLOW RATIO + CURRENT RATIO														
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: CASH-FLOW/OPERATING REVENUE		Variable: CURRENT RATIO	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
EU - International														
UNION QUIMICO FARMACEUTICA SA	1			0,1113	0,1361	0,1749	0,0042	1,745	2,4609	0,0889	0,9240	5,89	-0,0199	-1,14
EUROMED SA	1			0,1407	0,1193	0,1759	0	3,94	-2,2126	0,216	129396,0000	4,72	0,0122	1,82
SMITHKLINE BEECHAM LIMITED	1			-0,0048	0,0181	0,2096	0,0203	0,2	-60,21	0,0317	0,0282	0,21	-0,7519	-0,10
OLON S.P.A.	1			-0,0263	-0,0423	0,0616	0,0167	1,125	1,2291	0,0688	0,5939	2,20	0,0100	0,27
SWEDISH ORPHAN BIOVITRUM INTERNATIONAL AB	1			0,1781	0,3215	0,1334	0,0736	1,25	-2,1159	0,06	0,9942	5,15	-0,0837	-2,31
INGASO FARM SL	1			0,2401	0,3992	0,2076	0	2,24	-15,421	0,2682	-0,0130	-0,76	136080,0000	7,23
SCHWARZ PHARMA AG	1			0	-0,0119	0,0361	0,0172	0,655	-2,5283	0,3324	-0,0114	-0,84	0,0098	0,55
PHARMA MAR SA	1			0,1297	-0,0168	0,295	4,1169	0,525	-0,859	0,0219	238412,0000	2,19	-125447,0000	-1,89
BOUCHARA RECORDATI	1			0,6328	0,4448	1,2031	0	0,325	-15,362	0,5132	-0,3290	-0,56	-285479,0000	-1,83
SA GENFIT	1			-0,5531	-0,1181	-0,2274	0,2438	2,41	9,1773	0,3461	0,9299	4,43	-0,1926	-1,06
SANOFI-AVENTIS S.P.A.	1			0,1515	0,1855	0,1542	0,0042	1,81	1,986	0,3199	-0,3247	-1,27	0,0059	0,61
AEROCRINE AB	1			-1,4542	-0,8705	-1,4164	0	3,05	5,97	0,0084	109792,0000	19,62	-0,0126	-1,01
PIPELIFE BELGIUM	1			0,0287	0,0012	0,0222	1,6644	1,925	-1,2464	0,2973	0,0612	1,57	-0,0001	0,00
DERETIL SOCIEDAD ANONIMA		1		-0,0273	-0,0419	0,0425	0,0932	1,53	-1,5962	0,0279	0,8967	3,02	0,0757	1,99
GRIFOLS INTERNATIONAL SA		1		0,1044	0,2415	0,0626	0,0041	1,54	1,8698	0,003	147670,0000	11,64	-0,0488	-2,46
GIRINDUS AG		1		-0,3323	-0,3705	-0,3931	-0,0039	0,45	-22,262	0,1429	-0,0956	-0,34	0,8300	2,78
BIOGARAN		1		0,0803	0,1463	0,0593	0,236	1,595	0,0614	6E-05	162166,0000	4,82	-0,0140	-0,53
FISONS LIMITED		1		0,1252	0,024	0,388	0	3,995	2,692	0,4913	-2571518,0000	-4,56	124458,0000	2,24
WARNER CHILCOTT PUBLIC LIMITED COMPANY		1		0,15	0,0114	0,293	1,0194	1,14	-9,68	0,4817	0,8734	4,38	0,0815	0,36
RHODIA UK LIMITED			1	-0,0685	-0,0782	-0,139	-0,7524	1,14	-2,6132	0,0494	0,0987	0,56	-0,0286	-0,11
LIFE TECHNOLOGIES			1	0,3448	0,2452	0,3244	0	3,98	16,891	0,4292	-0,0366	-0,41	0,0145	1,84

AS												
PFIZER ITALIA S.R.L.	1	0,016	0,006	0,072	0	3,51	-1,608	0,2498	0,7100	1,70	-0,0109	-0,28
INSTITUTO GRIFOLS SA	1	0,1957	0,18	0,1491	0,3605	1,04	-2,6214	0,0275	111082,0000	6,64	-0,0325	-0,88
ITALFARMACO SA	1	0,1505	0,206	0,1366	0,1185	1,76	0,128	0,001	0,0486	0,23	0,0250	2,40
GE HEALTHCARE LIMITED	1	-0,4467	0,05	0,4659	0	1,735	1,3186	0,0294	0,0700	0,30	0,2654	3,31
A NELSON & CO LIMITED	1	0,1859	0,498	0,2253	0,8144	2,845	-6,5742	0,2219	211889,0000	1,57	-0,0400	-2,11
STIEFEL LABORATORIES (IRELAND) LIMITED	1	0,1962	0,1957	0,1645	0,1486	1,195	19,9	0,3692	0,6418	7,56	0,3208	6,15
AB BIOMERIEUX	1	0,7209	0,5283	0,51	0	7,11	-8,8794	0,0714	102047,0000	3,68	-0,0038	-0,98
GLAXOSMITHKLINE BIOLOGICALS	1	0,2349	0,0725	0,402	0,0008	8,555	-1,2654	0,3124	0,1954	0,82	-0,0048	-0,44
JANSSEN PHARMACEUTICA	1	0,0253	0,009	0,3192	0,0187	1,11	1,9596	0,2938	0,0299	0,09	-0,1079	-1,79
HAUPT PHARMA AG	1	0,0508	0,0423	0,0613	0,8543	1,3	-3,9063	0,5548	102140,0000	7,49	-0,0387	-2,11
GENEART AG	1	0,0312	0,0436	0,0707	0,0069	3,305	-2,329	0,158	0,4318	1,72	0,0072	3,17
B BRAUN MEDICAL SA	1	0,0983	0,1104	0,171	0,0175	2,64	1,9473	0,2206	0,0784	0,27	0,0146	0,80
GP PHARM SA	1	-0,5736	-0,0633	-0,1082	1,1053	1,065	1,6248	0,0371	206522,0000	16,47	-0,2256	-1,97
MERCK SANTE	1	0,1399	0,2312	0,1719	0,0979	3,205	-6,0969	0,1379	0,7667	0,35	-0,0307	-0,74
MERIAL LIMITED	1	0,2571	0,2572	0,2371	0,0044	1,97	-19,772	0,0381	0,0810	2,08	0,0828	1,82
ELAN CORPORATION	1	-0,3809	-0,1545	-0,1237	4,3848	3,34	12,618	0,2021	0,0898	0,24	-0,1956	-1,16

PROFITMARGIN = CASH FLOW RATIO + LONG TERM DEBT TO EQUITY RATIO

MODEL: PROFITMARGIN = CASH FLOW RATIO + LONG TERM DEBT TO EQUITY RATIO														
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Cash flow/Operating revenue		Variable: LT debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
US - Global														
ABBOTT LABORATORIES	1	0	0	0,1854	0,1247	0,2113	0,4986	1,5	1,921	0,1555	111.818	7,01	-0,08443	-1,24
MERCK & CO., INC.	1	0	0	0,2454	0,1379	0,292	0,2786	1,465	5,9155	0,3716	109.328	6,45	-0,60332	-1,10
ILLUMINA INC	1	0	0	0,1941	0,0673	0,1398	0	2,875	-3,0396	0,0135	0,66066	7,76	0,57949	7,05
BIOMARIN PHARMACEUTICAL INC	1	0	0	-0,2325	-0,0178	0,0223	1,6704	6	-10,209	0,2239	-426.627	-1,12	323.032	1,55
JOHNSON & JOHNSON	0	1	0	0,263	0,1829	0,2449	0,1622	1,735	2,8795	0,6428	112.875	3,53	0,06783	0,87
PFIZER INC	0	1	0	0,271	0,0839	0,2812	0,1254	1,895	1,8529	0,2719	0,10635	0,39	0,05073	0,36
WYETH	0	1	0	0,2787	0,1439	0,2458	0,5927	3,14	-0,4993	0,3381	182.648	1,09	-0,01584	-0,20
BRISTOL-MYERS SQUIBB COMPANY	0	1	0	0,2254	0,1575	0,21	0,4764	1,875	0,3147	0,0024	0,17499	0,78	-0,1557	-0,72
AMGEN INCORPORATED	0	1	0	0,3787	0,1268	0,3524	0,427	2,845	1,9059	0,4693	161.303	22,60	0,13859	4,51
GILEAD SCIENCES INC	0	1	0	0,5076	0,3493	0,3993	0,3164	3,34	1,0939	0,0014	0,95648	46,40	-0,03997	-1,51
ALLERGAN INC	0	1	0	0,1976	0,1066	0,1829	0,3551	3,105	4,714	0,1938	0,98019	7,01	-0,12803	-1,98
MYLAN INC.	0	1	0	0,1514	0,0259	0,1119	1,4221	2,015	4,9421	0,1721	103.227	16,93	-0,0773	-1,88
HOSPIRA, INC.	0	1	0	0,1329	0,0751	0,1545	0,5946	2,565	2,3711	0,3053	104.441	19,50	0,01194	3,16
CELGENE CORP	0	1	0	0,2402	0,0868	0,1643	0,1082	7,145	-18,931	0,5793	104.318	9,80	-0,02661	-0,17
MILLIPORE CORP	0	1	0	0,1418	0,0691	0,1665	0,7631	2,475	0,2277	0,0087	-0,199	-0,13	0,02283	0,15
PERRIGO CO	0	1	0	0,103	0,0635	0	0,9539	1,84	-8,7745	0,324	0,98051	3,08	-0,17957	-0,33
AMERICAN MEDICAL SYSTEMS HOLDINGS INC	0	1	0	0,2103	0,0885	0,1747	0,8842	2,81	1,7368	0,0233	109.808	3,24	0,01809	0,45
CHATTEM INC	0	1	0	0,2637	0,1237	0,1613	1,4559	3,355	0,8101	0,0897	-0,0737	-0,14	0,01906	0,49
QUEST DIAGNOSTICS INCORPORATED	0	0	1	0,1801	0,1411	0,1283	0,6955	1,145	1,045	0,0653	0,18853	1,66	-0,01684	-1,38
GENZYME CORPORATION	0	0	1	0,1439	0,0639	0,2136	0,0801	2,79	1,9544	0,1023	266.421	4,12	-0,93796	-3,12

MODEL: PROFITMARGIN = CASH FLOW RATIO + LONG TERM DEBT TO EQUITY RATIO														
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Cash flow/Operating revenue		Variable: LT debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
US - International														
ALKERMES, INC.	1	0	0	0,064	0,0133	0,0888	0,3203	5,355	7,1995	0,1069	102.776	13,64	0,00833	1,01
SUCAMPO PHARMACEUTICALS, INC.	1	0	0	0,1944	0,1534	0,0659	0	4,015	2,2057	0,0134	0,51299	1,08	-0,07075	-0,36
NBTY INC	0	1	0	0,1077	0,1182	0,0965	0,3176	2,97	-2,97	0,2835	0,62939	0,66	0,03309	0,82
UNITED THERAPEUTICS CORP	0	1	0	0,1267	0,0487	0,0374	0,0614	3,47	-0,2412	0,0004	132.969	1,49	0,06872	0,30
HEALTHTRONICS, INC.	0	1	0	0,1787	0,0361	0,1293	0,3525	2,635	-21,09	0,5679	-0,2971	-0,15	0,11135	0,13
ABIOMED INC	0	1	0	-0,4831	-0,2141	-0,4311	0	4,805	-6,8233	0,1885	0,93422	8,18	0	,
DYAX CORP	0	1	0	-1,4426	-0,6221	-1,734	0,5432	3,565	6,6765	0,0311	0,91234	16,21	-0,00204	-0,29
GENENTECH INC	0	0	1	0,3209	0,2315	0,261	0,2172	2,435	-1,8037	0,1121	124.647	20,71	-0,02257	-0,31
SYNTHES, INC.	0	0	1	0,3332	0,1761	0,3087	0,0025	3,15	0,8849	0,2925	0,00654	7,49	-0,04704	-1,38
KING PHARMACEUTICALS INC	0	0	1	0,1271	0,0601	0,2093	0,1593	1,965	-3,8707	0,2207	0,72406	3,35	-0,04169	-0,18
ENDO HEALTH SOLUTIONS, INC	0	0	1	0,2872	0,1863	0,2402	0,1007	2,695	4,1486	0,3891	0,36403	0,31	-0,05002	-0,33
CUBIST PHARMACEUTICALS INC	0	0	1	0,1751	0,0565	0,1591	2,1025	6,335	-9,74	0,4855	-0,2408	-0,41	-0,05094	-1,96
VERTEX PHARMACEUTICALS INC	0	0	1	-2,3427	-0,4039	-2,1379	0,432	3,455	0,5857	0,0008	0,95519	20,15	0,14946	0,74
INTERMUNE INC	0	0	1	-1,1545	-0,4317	-0,6354	-1,2958	4,125	11,09	0,029	0,76639	4,65	0,02583	0,52
ZILA INC	0	0	1	-0,5449	-0,3854	-0,1345	0,1111	1,29	12,948	0,8561	0,1605	0,19	1.123.077	0,34
COLUMBIA LABORATORIES INC	0	0	1	-0,3008	-0,4177	-0,4357	-0,3152	2,515	-2,9636	0,0086	0,96976	1,77	-0,00249	-0,19

MODEL: PROFITMARGIN = CASH FLOW RATIO + LONG TERM DEBT TO EQUITY RATIO														
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Cash flow/Operating revenue		Variable: LT debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
EU - Global														
RHODIA SA	1			0,0576	0,0203	0,0725	-3,6976	1,34	-3,3678	0,1624	0,79086	3,85	-0,00586	-0,80
NOVARTIS AG	1			0,2177	0,1126	0,2508	0,0416	1,36	1,4262	0,5752	-0,3492	-6,11	-0,01004	-0,28
ROCHE HOLDING AG	1			0,2777	0,1764	0,2419	0,2184	3,075	-0,1477	0,0016	134.124	5,76	-0,00775	-5,94
LABORATORIOS MENARINI SA	1			0,0878	0,1752	0,0778	0,1578	2,24	-6,2857	0,3308	124.551	6,17	-0,08408	-0,76
LABORATORIOS INDAS SA	1			0,1799	0,1419	0,1873	0,2177	1,155	-1,7189	0,0386	112.030	10,16	0,06453	7,15
ISDIN SA	1			0,086	0,1431	0,0864	0,0451	2,545	0,2765	0,0006	133.544	7,00	-0,14637	-0,61
LABORATOIRES FOURNIER SA	1			0,137	0,2327	0,097	0,0016	1,38	1,3756	0,0056	0,27503	0,65	962.206	0,48
SHIRE PLC	1			0,0682	0,0451	0,2535	0,3139	1,28	-4,8224	0,2332	219.255	1,13	0,45912	2,17
CHEMI - S.P.A.			1	0,0512	0,0453	0,1332	0	2,5	5,8497	0,2094	-0,4588	-0,87	4.766.635	4,13
SANOFI AVENTIS SA			1	0,0984	0,152	0,0953	0,0127	3,265	-0,6128	0,0105	139.514	2,90	-168.771	-0,72
SANOFI WINTHROP INDUSTRIE			1	0,0909	0,1978	0,0687	0,1785	1,465	-0,3606	0,0069	0,78201	1,48	-0,02454	-0,84
SANOFI PASTEUR			1	0,0969	0,0648	0,1041	0,7246	1,98	-0,5697	0,0155	-0,0284	-0,20	-0,09641	-5,26
MERIAL			1	0,3157	0,3603	0,2687	0,7431	1,575	5,4867	0,3077	0,58589	2,00	0,14789	1,82
TEVA PHARMACEUTICAL INDUSTRIES LIMITED			1	0,2064	0,081	0,23	0,2687	1,72	-0,377	0,0045	157.637	8,53	0,41455	2,74
HEMOFARM			1	0,1996	0,0961	0,1838	0,2969	1,545	0,3446	0,004	0,58066	1,78	-0,03502	-0,07
ASTRAZENECA AB			1	0,3575	0,1423	0,5053	4E-05	2,305	-0,1373	0,0007	-0,1362	-0,53	116.034.028	1,96

MODEL: PROFITMARGIN = CASH FLOW RATIO + LONG TERM DEBT TO EQUITY RATIO														
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Cash flow/Operating revenue		Variable: LT debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
EU - International														
UNION QUIMICO FARMACEUTICA SA	1			0,1113	0,1361	0,1749	0,0042	1,745	2,4609	0,0889	0,83461	5,78	-0,15952	-1,89
EUROMED SA	1			0,1407	0,1193	0,1759	0	3,94	-2,2126	0,216	168446	4,43	0,28405	0,99
SMITHKLINE BEECHAM LIMITED	1			-0,0048	0,0181	0,2096	0,0203	0,2	-60,21	0,0317	0,01081	0,67	873390	1,27
OLON S.P.A.	1			-0,0263	-0,0423	0,0616	0,0167	1,125	1,2291	0,0688	0,63353	2,64	-0,00106	-0,03
SWEDISH ORPHAN BIOVITRUM INTERNATIONAL AB	1			0,1781	0,3215	0,1334	0,0736	1,25	-2,1159	0,06	134962	8,31	0,03314	1,15
INGASO FARM SL	1			0,2401	0,3992	0,2076	0	2,24	-15,421	0,2682	123704	21,26	-131845	-0,49
SCHWARZ PHARMA AG	1			0	-0,0119	0,0361	0,0172	0,655	-2,5283	0,3324	-0,0135	-1,00	0,00263	0,20
PHARMA MAR SA	1			0,1297	-0,0168	0,295	4,1169	0,525	-0,859	0,0219	293630	1,75	-0,41622	-1,24
BOUCHARA RECORDATI	1			0,6328	0,4448	1,2031	0	0,325	-15,362	0,5132	0,52825	1,17	0	,
SA GENFIT	1			-0,5531	-0,1181	-0,2274	0,2438	2,41	9,1773	0,3461	105121	7,64	104940	2,78
SANOFI-AVENTIS S.P.A.	1			0,1515	0,1855	0,1542	0,0042	1,81	1,986	0,3199	-0,2967	-1,17	-231282	-0,48
AEROCRINE AB	1			-1,4542	-0,8705	-1,4164	0	3,05	5,97	0,0084	111043	19,22	-0,15916	-1,15
PIPELIFE BELGIUM	1			0,0287	0,0012	0,0222	1,6644	1,925	-1,2464	0,2973	0,04991	1,11	-0,01752	-0,45
DERETIL SOCIEDAD ANONIMA		1		-0,0273	-0,0419	0,0425	0,0932	1,53	-1,5962	0,0279	0,98577	16,16	0,24278	11,38
GRIFOLS INTERNATIONAL SA		1		0,1044	0,2415	0,0626	0,0041	1,54	1,8698	0,003	172515	8,46	-285802	-1,84
GIRINDUS AG		1		-0,3323	-0,3705	-0,3931	-0,0039	0,45	-22,262	0,1429	0,56558	2,03	0,27957	1,07
BIOGARAN		1		0,0803	0,1463	0,0593	0,236	1,595	0,0614	6E-05	155743	9,46	0,00848	1,93
FISONS LIMITED		1		0,1252	0,024	0,388	0	3,995	2,692	0,4913	-2E+06	-2,26	0,29222	0,06
WARNER CHILCOTT PUBLIC LIMITED COMPANY		1		0,15	0,0114	0,293	1,0194	1,14	-9,68	0,4817	0,8782	5,31	-0,00207	-0,90
RHODIA UK LIMITED			1	-0,0685	-0,0782	-0,139	-0,7524	1,14	-2,6132	0,0494	0,07702	0,55	-0,04279	-0,36
LIFE TECHNOLOGIES AS			1	0,3448	0,2452	0,3244	0	3,98	16,891	0,4292	0,00736	0,07	0	,
PFIZER ITALIA S.R.L.			1	0,016	0,006	0,072	0	3,51	-1,608	0,2498	0,68751	1,91	0	,
INSTITUTO GRIFOLS SA			1	0,1957	0,18	0,1491	0,3605	1,04	-2,6214	0,0275	121192	4,78	0,07553	0,97
ITALFARMACO SA			1	0,1505	0,206	0,1366	0,1185	1,76	0,128	0,001	0,60932	1,86	0,0874	0,60
GE HEALTHCARE LIMITED			1	-0,4467	0,05	0,4659	0	1,735	1,3186	0,0294	0,23709	0,57	0	,
A NELSON & CO LIMITED			1	0,1859	0,498	0,2253	0,8144	2,845	-6,5742	0,2219	238855	1,22	0,02602	0,72
STIEFEL LABORATORIES (IRELAND) LIMITED			1	0,1962	0,1957	0,1645	0,1486	1,195	19,9	0,3692	0,71278	4,33	0,42665	2,89
AB BIOMERIEUX			1	0,7209	0,5283	0,51	0	7,11	-8,8794	0,0714	105184	3,83	0	,
GLAXOSMITHKLINE BIOLOGICALS			1	0,2349	0,0725	0,402	0,0008	8,555	-1,2654	0,3124	0,09271	2,09	4125414	3,26
JANSSEN PHARMACEUTICA			1	0,0253	0,009	0,3192	0,0187	1,11	1,9596	0,2938	0,11542	0,58	0,16642	4,01
HAUPT PHARMA AG			1	0,0508	0,0423	0,0613	0,8543	1,3	-3,9063	0,5548	101532	7,61	0,02525	2,20
GENEART AG			1	0,0312	0,0436	0,0707	0,0069	3,305	-2,329	0,158	0,0923	0,14	-0,84755	-0,20
B BRAUN MEDICAL SA			1	0,0983	0,1104	0,171	0,0175	2,64	1,9473	0,2206	-0,1253	-0,25	-0,16687	-0,41

GP PHARM SA	1	-0,5736	-0,0633	-0,1082	1,1053	1,065	1,6248	0,0371	219515	20,02	0,10392	1,16
MERCK SANTE	1	0,1399	0,2312	0,1719	0,0979	3,205	-6,0969	0,1379	-0,7364	-0,41	0,77642	1,53
MERIAL LIMITED	1	0,2571	0,2572	0,2371	0,0044	1,97	-19,772	0,0381	0,04796	1,54	0,40403	1,89
ELAN CORPORATION PUBLIC LIMITED COMPANY	1	-0,3809	-0,1545	-0,1237	4,3848	3,34	12,618	0,2021	-0,2613	-0,91	0,01144	0,30

PROFITMARGIN = CURRENT RATIO + LONG-TERM DEBT TO EQUITY RATIO

MODEL: PROFITMARGIN = CURRENT RATIO + LONG-TERM DEBT TO EQUITY RATIO

	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Current ratio		Variable: LT Debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
US - Global														
ABBOTT LABORATORIES	1	0	0	0,1854	0,1247	0,2113	0,4986	1,5000	1,9210	0,1555	0,13585	4,15	-0,01754	-0,16
MERCK & CO., INC.	1	0	0	0,2454	0,1379	0,2920	0,2786	1,4650	5,9155	0,3716	0,23881	0,83	-128.033	-0,64
ILLUMINA INC	1	0	0	0,1941	0,0673	0,1398	0,0000	2,8750	-3,0396	0,0135	-0,01259	-0,26	0,00824	0,05
BIOMARIN PHARMACEUTICAL INC	1	0	0	-0,2325	-0,0178	0,0223	1,6704	6,0000	-10,2095	0,2239	400.805	3,13	-359.343	-2,05
JOHNSON & JOHNSON	0	1	0	0,2630	0,1829	0,2449	0,1622	1,7350	2,8795	0,6428	0,00915	0,38	0,07315	0,42
PFIZER INC	0	1	0	0,2710	0,0839	0,2812	0,1254	1,8950	1,8529	0,2719	-0,09098	-1,30	0,01639	0,15
WYETH	0	1	0	0,2787	0,1439	0,2458	0,5927	3,1400	-0,4993	0,3381	0,01841	2,72	0,04276	0,78
BRISTOL-MYERS SQUIBB COMPANY	0	1	0	0,2254	0,1575	0,2100	0,4764	1,8750	0,3147	0,0024	0,12287	1,78	-0,17519	-1,13
AMGEN INCORPORATED	0	1	0	0,3787	0,1268	0,3524	0,4270	2,8450	1,9059	0,4693	0,06469	4,01	-0,1286	-0,78
GILEAD SCIENCES INC	0	1	0	0,5076	0,3493	0,3993	0,3164	3,3400	1,0939	0,0014	-0,07947	-1,01	-127.635	-2,56
ALLERGAN INC	0	1	0	0,1976	0,1066	0,1829	0,3551	3,1050	4,7140	0,1938	0,05168	0,84	-0,57191	-2,13
MYLAN INC.	0	1	0	0,1514	0,0259	0,1119	1,4221	2,0150	4,9421	0,1721	0,2795	1,74	0,53183	1,05
HOSPIRA, INC.	0	1	0	0,1329	0,0751	0,1545	0,5946	2,5650	2,3711	0,3053	-0,01167	-0,22	-0,03849	-0,79
CELGENE CORP	0	1	0	0,2402	0,0868	0,1643	0,1082	7,1450	-18,9310	0,5793	0,05625	0,54	0,26785	0,32
MILLIPORE CORP	0	1	0	0,1418	0,0691	0,1665	0,7631	2,4750	0,2277	0,0087	0,03422	2,72	0,04085	0,71
PERRIGO CO	0	1	0	0,1030	0,0635	0,0000	0,9539	1,8400	-8,7745	0,3240	0,16232	1,23	-168.271	-3,44
AMERICAN MEDICAL SYSTEMS HOLDINGS	0	1	0	0,2103	0,0885	0,1747	0,8842	2,8100	1,7368	0,0233	0,085	1,38	-0,09163	-3,59

INC														
CHATTEM INC	0	1	0	0,2637	0,1237	0,1613	1,4559	3,3550	0,8101	0,0897	-0,01759	-2,93	0,01591	0,95
QUEST DIAGNOSTICS INCORPORATED	0	0	1	0,1801	0,1411	0,1283	0,6955	1,1450	1,0450	0,0653	0,01476	2,11	-0,0368	-5,31
GENZYME CORPORATION	0	0	1	0,1439	0,0639	0,2136	0,0801	2,7900	1,9544	0,1023	-0,04222	-0,27	-0,36937	-0,37

MODEL: PROFITMARGIN = CURRENT RATIO + LONG-TERM DEBT TO EQUITY RATIO														
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Current ratio		Variable: LT Debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
US - International														
ALKERMES, INC.	1	0	0	0,064	0,013	0,089	0,32	5,355	7,19951	0,10695	0,13836	2,27	0,05073	1,11
SUCAMPO PHARMACEUTICALS, INC.	1	0	0	0,194	0,153	0,066	0	4,015	2,20567	0,01343	0,03405	1,15	-0,13351	-0,72
NBTY INC	0	1	0	0,108	0,118	0,096	0,318	2,97	-2,97	0,28354	0,04622	1,63	-0,03536	-0,51
UNITED THERAPEUTICS CORP	0	1	0	0,127	0,049	0,037	0,061	3,47	-0,2412	0,00036	0,03145	1,18	-0,31756	-0,99
HEALTHTRONICS, INC.	0	1	0	0,179	0,036	0,129	0,353	2,635	-21,09	0,56792	-0,02027	-0,15	0,14471	0,17
ABIOMED INC	0	1	0	-0,483	-0,214	-0,431	0	4,805	-6,8233	0,18847	-0,06573	-0,92	0	,
DYAX CORP	0	1	0	-1,443	-0,622	-1,734	0,543	3,565	6,67647	0,03105	-0,2273	-0,27	0,07757	1,09
GENENTECH INC	0	0	1	0,321	0,231	0,261	0,217	2,435	-1,8037	0,11208	0,10781	3,58	0,16409	0,45
SYNTHES, INC.	0	0	1	0,333	0,176	0,309	0,002	3,15	0,88485	0,29251	0,00654	7,49	-0,04704	-1,38
KING PHARMACEUTICALS INC	0	0	1	0,127	0,06	0,209	0,159	1,965	-3,8707	0,22071	0,07261	2,49	-0,6561	-2,39
ENDO HEALTH SOLUTIONS, INC	0	0	1	0,287	0,186	0,24	0,101	2,695	4,14864	0,38914	-0,08723	-1,57	-0,1369	-1,09
CUBIST PHARMACEUTICALS INC	0	0	1	0,175	0,056	0,159	2,103	6,335	-9,74	0,48547	0,02431	2,59	-0,04311	-8,77
VERTEX PHARMACEUTICALS INC	0	0	1	-2,343	-0,404	-2,138	0,432	3,455	0,58567	0,00084	-0,37942	-0,30	0,13142	0,06
INTERMUNE INC	0	0	1	-1,154	-0,432	-0,635	-1,296	4,125	11,0899	0,02899	0,39207	1,38	0,20659	1,60
ZILA INC	0	0	1	-0,545	-0,385	-0,134	0,111	1,29	12,9484	0,85609	-445.863	-2,80	4.195.194	2,10
COLUMBIA LABORATORIES INC	0	0	1	-0,301	-0,418	-0,436	-0,315	2,515	-2,9636	0,00859	-0,13026	-1,90	-0,00344	-0,28

MODEL: PROFITMARGIN = CURRENT RATIO + LONG-TERM DEBT TO EQUITY RATIO													
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Current ratio		Variable: LT Debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
EU - Global														
RHODIA SA	1			0,058	0,02	0,073	-3,698	1,34	-3,3678	0,16238	0,11473	1,44	-0,02326	-2,42
NOVARTIS AG	1			0,218	0,113	0,251	0,042	1,36	1,42616	0,57518	-0,02937	-0,69	0,05406	0,45
ROCHE HOLDING AG	1			0,278	0,176	0,242	0,218	3,075	-0,1477	0,00156	-0,04501	-8,10	-0,02362	-10,71
LABORATORIOS MENARINI SA	1			0,088	0,175	0,078	0,158	2,24	-6,2857	0,33078	0,05561	5,43	-0,2918	-2,18
LABORATORIOS INDAS SA	1			0,18	0,142	0,187	0,218	1,155	-1,7189	0,03864	-0,01617	-1,11	0,12574	2,66
ISDIN SA	1			0,086	0,143	0,086	0,045	2,545	0,27654	0,0006	0,19566	3,74	-0,61314	-1,84
LABORATOIRES FOURNIER SA	1			0,137	0,233	0,097	0,002	1,38	1,3756	0,0056	0,05948	1,20	1.037.948	0,59
SHIRE PLC	1			0,068	0,045	0,253	0,314	1,28	-4,8224	0,23318	0,30394	1,33	0,19975	1,56
CHEMI - S.P.A.			1	0,051	0,045	0,133	0	2,5	5,84972	0,20943	-0,00058	-0,02	3.870.859	6,32
SANOFI AVENTIS SA			1	0,098	0,152	0,095	0,013	3,265	-0,6128	0,01053	0,02543	0,41	-102.090	-0,13
SANOFI WINTHROP INDUSTRIE			1	0,091	0,198	0,069	0,179	1,465	-0,3606	0,0069	0,03113	0,40	-0,04475	-1,08
SANOFI PASTEUR			1	0,097	0,065	0,104	0,725	1,98	-0,5697	0,01552	0,03269	1,26	-0,10694	-7,02
MERIAL			1	0,316	0,36	0,269	0,743	1,575	5,48665	0,30767	-0,023	-0,20	0,17069	1,37
TEVA PHARMACEUTICAL INDUSTRIES LIMITED			1	0,206	0,081	0,23	0,269	1,72	-0,377	0,00453	0,1182	2,74	-0,87983	-3,85
HEMOFARM			1	0,2	0,096	0,184	0,297	1,545	0,34456	0,004	0,10274	0,29	-0,20081	-0,26
ASTRAZENECA AB			1	0,358	0,142	0,505	4E-05	2,305	-0,1373	0,00071	-0,01477	-0,42	94.746.576	1,87

MODEL: PROFITMARGIN = CURRENT RATIO + LONG-TERM DEBT TO EQUITY RATIO														
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Current ratio		Variable: LT Debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
EU - International														
UNION QUIMICO FARMACEUTICA SA	1			0,111	0,136	0,175	0,004	1,745	2,46088	0,08892	-0,02357	-0,46	-0,38591	-1,44
EUROMED SA	1			0,141	0,119	0,176	0	3,94	-2,2126	0,216	0,02218	1,20	-0,19867	-0,35
SMITHKLINE BEECHAM LIMITED	1			-0,005	0,018	0,21	0,02	0,2	-60,21	0,03169	0,60005	0,64	878886	1,28
OLON S.P.A.	1			-0,026	-0,042	0,062	0,017	1,125	1,22908	0,06883	-0,14379	-1,62	0,17101	2,09
SWEDISH ORPHAN BIOVITRUM INTERNATIONAL AB	1			0,178	0,322	0,133	0,074	1,25	-2,1159	0,06003	-0,02117	-0,32	-0,23765	-3,41
INGASO FARM SL	1			0,24	0,399	0,208	0	2,24	-15,421	0,26824	-0,51892	-0,05	0,10739	4,92
SCHWARZ PHARMA AG	1			0	-0,012	0,036	0,017	0,655	-2,5283	0,33239	0,01422	0,73	0,00162	0,11
PHARMA MAR SA	1			0,13	-0,017	0,295	4,117	0,525	-0,859	0,02192	-150899	-1,13	0,39116	0,89
BOUCHARA RECORDATI	1			0,633	0,445	1,203	0	0,325	-15,362	0,51319	-216229	-2,51	0	,
SA GENFIT	1			-0,553	-0,118	-0,227	0,244	2,41	9,17732	0,3461	0,23347	0,46	-0,45709	-0,28
SANOFI-AVENTIS S.P.A.	1			0,152	0,185	0,154	0,004	1,81	1,98605	0,31993	123605	0,18	-0,00101	-0,07
AEROCRINE AB	1			-1,454	-0,871	-1,416	0	3,05	5,97003	0,00844	-0,05096	-0,23	155746	0,64
PIPELIFE BELGIUM	1			0,029	0,001	0,022	1,664	1,925	-1,2464	0,29733	0,03314	1,26	-0,08188	-1,84
DERETIL SOCIEDAD ANONIMA		1		-0,027	-0,042	0,042	0,093	1,53	-1,5962	0,02791	0,09037	0,95	0,16428	0,63
GRIFOLS INTERNATIONAL SA		1		0,104	0,242	0,063	0,004	1,54	1,8698	0,00295	699237	1,28	-0,08247	-0,74
GIRINDUS AG		1		-0,332	-0,371	-0,393	-0,004	0,45	-22,262	0,14292	-0,08102	-0,21	0,68978	1,76
BIOGARAN		1		0,08	0,146	0,059	0,236	1,595	0,06144	5,6E-05	0,00912	0,50	0,0864	1,61
FISONS LIMITED		1		0,125	0,024	0,388	0	3,995	2,69202	0,49133	520041	0,56	0,08608	0,06
WARNER CHILCOTT PUBLIC LIMITED COMPANY		1		0,15	0,011	0,293	1,019	1,14	-9,68	0,48173	0,6063	1,21	-0,00564	-0,93
RHODIA UK LIMITED			1	-0,069	-0,078	-0,139	-0,752	1,14	-2,6132	0,04943	-0,01368	-0,05	-0,06116	-0,35
LIFE TECHNOLOGIES AS			1	0,345	0,245	0,324	0	3,98	16,8912	0,42923	0,01363	2,01	0	,
PFIZER ITALIA S.R.L.			1	0,016	0,006	0,072	0	3,51	-1,608	0,24981	0,00224	0,05	0	,
INSTITUTO GRIFOLS SA			1	0,196	0,18	0,149	0,36	1,04	-2,6214	0,02752	0,04543	0,49	-0,22905	-1,77
ITALFARMACO SA			1	0,151	0,206	0,137	0,119	1,76	0,12797	0,00103	0,02845	3,76	0,02375	0,35
GE HEALTHCARE LIMITED			1	-0,447	0,05	0,466	0	1,735	1,31859	0,02944	0,27079	3,93	0	,
A NELSON & CO LIMITED			1	0,186	0,498	0,225	0,814	2,845	-6,5742	0,2219	-0,05994	-1,24	-0,08134	-2,22
STIEFEL LABORATORIES (IRELAND) LIMITED			1	0,196	0,196	0,164	0,149	1,195	19,9001	0,36924	0,35597	0,99	-0,09925	-0,19
AB BIOMERIEUX			1	0,721	0,528	0,51	0	7,11	-8,8794	0,07135	-0,00551	-0,70	0	,
GLAXOSMITHKLINE BIOLOGICALS			1	0,235	0,072	0,402	8E-04	8,555	-1,2654	0,31244	0,00351	1,47	4270694	2,83
JANSSEN PHARMACEUTICA			1	0,025	0,009	0,319	0,019	1,11	1,95962	0,29378	0,04466	0,69	0,2021	2,58
HAUPT PHARMA AG			1	0,051	0,042	0,061	0,854	1,3	-3,9063	0,55477	-0,02757	-0,09	0,05511	0,30
GENEART AG			1	0,031	0,044	0,071	0,007	3,305	-2,329	0,15798	0,00535	1,97	0,77262	0,41

B BRAUN MEDICAL SA	1	0,098	0,11	0,171	0,018	2,64	1,94733	0,22058	0,01404	0,80	-0,09477	-0,41
GP PHARM SA	1	-0,574	-0,063	-0,108	1,105	1,065	1,62477	0,03707	-152087	-2,36	0,4726	0,82
MERCK SANTE	1	0,14	0,231	0,172	0,098	3,205	-6,0969	0,13792	-0,02138	-0,71	0,67476	1,48
MERIAL LIMITED	1	0,257	0,257	0,237	0,004	1,97	-19,772	0,03815	-0,07941	-1,05	0,74559	1,67
ELAN CORPORATION PUBLIC LIMITED COMPANY	1	-0,381	-0,155	-0,124	4,385	3,34	12,6178	0,20207	-0,166	-1,54	0,00706	0,22

PROFITMARGIN = CASH FLOW RATIO + LONG-TERM DEBT TO EQUITY RATIO + CURRENT RATIO

	MODEL: PROFITMARGIN = CASH FLOW RATIO + LONG-TERM DEBT TO EQUITY RATIO + CURRENT RATIO															
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Cash flow/Operating revenue		Variable: LT Debt to equity		Variable: Current ratio	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value	Parameter Estimate	t Value
US - Global																
ABBOTT LABORATORIES	1	0	0	0,1854	0,1247	0,2113	0,4986	1,5000	1,9210	0,1555	125.186	1,80	-0,09359	-0,99	-0,01778	-0,20
MERCK & CO., INC.	1	0	0	0,2454	0,1379	0,2920	0,2786	1,4650	5,9155	0,3716	103.779	6,22	-0,8067	-1,48	0,09502	1,17
ILLUMINA INC	1	0	0	0,1941	0,0673	0,1398	0,0000	2,8750	-3,0396	0,0135	0,6707	175,48	0,59106	160,10	-0,01821	-38,65
BIOMARIN PHARMACEUTICAL INC	1	0	0	-0,2325	-0,0178	0,0223	1,6704	6,0000	-10,2095	0,2239	-324.035	-2,17	-181.356	-1,27	370.466	4,27
JOHNSON & JOHNSON	0	1	0	0,2630	0,1829	0,2449	0,1622	1,7350	2,8795	0,6428	111.657	2,83	0,06978	0,73	0,00228	0,17
PFIZER INC	0	1	0	0,2710	0,0839	0,2812	0,1254	1,8950	1,8529	0,2719	0,27431	1,19	0,07182	0,65	-0,12622	-1,76
WYETH	0	1	0	0,2787	0,1439	0,2458	0,5927	3,1400	-0,4993	0,3381	147.848	1,85	0,09591	1,92	0,01721	3,40
BRISTOL-MYERS SQUIBB COMPANY	0	1	0	0,2254	0,1575	0,2100	0,4764	1,8750	0,3147	0,0024	-0,05954	-0,21	-0,19105	-0,94	0,13906	1,22
AMGEN INCORPORATED	0	1	0	0,3787	0,1268	0,3524	0,4270	2,8450	1,9059	0,4693	161.822	7,20	0,13955	2,60	-0,00025	-0,03
GILEAD SCIENCES INC	0	1	0	0,5076	0,3493	0,3993	0,3164	3,3400	1,0939	0,0014	0,97586	66,13	0,00202	0,09	0,00605	2,48
ALLERGAN INC	0	1	0	0,1976	0,1066	0,1829	0,3551	3,1050	4,7140	0,1938	100.083	5,18	-0,10651	-0,85	-0,00501	-0,22
MYLAN INC.	0	1	0	0,1514	0,0259	0,1119	1,4221	2,0150	4,9421	0,1721	113.319	16,40	-0,19629	-2,84	-0,05012	-1,91
HOSPIRA, INC.	0	1	0	0,1329	0,0751	0,1545	0,5946	2,5650	2,3711	0,3053	105.042	17,26	0,01436	2,49	0,00338	0,62
CELGENE CORP	0	1	0	0,2402	0,0868	0,1643	0,1082	7,1450	-18,9310	0,5793	102.088	9,60	-0,03315	-0,22	0,02017	1,06
MILLIPORE CORP	0	1	0	0,1418	0,0691	0,1665	0,7631	2,4750	0,2277	0,0087	107.719	1,24	0,11836	1,45	0,04167	3,20
PERRIGO CO	0	1	0	0,1030	0,0635	0,0000	0,9539	1,8400	-8,7745	0,3240	0,86722	2,12	-0,37202	-0,53	0,05976	0,59
AMERICAN MEDICAL SYSTEMS HOLDINGS INC	0	1	0	0,2103	0,0885	0,1747	0,8842	2,8100	1,7368	0,0233	102.660	1,90	0,01176	0,20	0,01205	0,20
CHATTEM INC	0	1	0	0,2637	0,1237	0,1613	1,4559	3,3550	0,8101	0,0897	0,19901	0,64	0,02339	1,06	-0,01907	-2,69
QUEST DIAGNOSTICS INCORPORATED	0	0	1	0,1801	0,1411	0,1283	0,6955	1,1450	1,0450	0,0653	0,12916	1,37	-0,02506	-2,38	0,01149	1,74
GENZYME CORPORATION	0	0	1	0,1439	0,0639	0,2136	0,0801	2,7900	1,9544	0,1023	278.114	3,55	-111.847	-2,22	0,03649	0,50

MODEL: PROFITMARGIN = CASH FLOW RATIO + LONG-TERM DEBT TO EQUITY RATIO + CURRENT RATIO																
	Entry Mode Strategy			**Mean ratios**					**Accounting beta**		Variable: Cash flow/Operating revenue		Variable: LT Debt to equity		Variable: Current ratio	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value	Parameter Estimate	t Value
US - International																
ALKERMES, INC.	1	0	0	0,0640	0,0133	0,0888	0,3203	5,3550	7,1995	0,1069	0,99932	6,76	0,01036	0,80	0,00606	0,24
SUCAMPO PHARMACEUTICALS, INC.	1	0	0	0,1944	0,1534	0,0659	0,0000	4,0150	2,2057	0,0134	0,39597	0,76	-0,0825	-0,39	0,02719	0,82
NBTY INC	0	1	0	0,1077	0,1182	0,0965	0,3176	2,9700	-2,9700	0,2835	0,59058	0,52	-0,03175	-0,40	0,02586	0,51
UNITED THERAPEUTICS CORP	0	1	0	0,1267	0,0487	0,0374	0,0614	3,4700	-0,2412	0,0004	173.715	17,91	-0,25703	-8,27	0,04369	16,39
HEALTHTRONICS, INC.	0	1	0	0,1787	0,0361	0,1293	0,3525	2,6350	-21,0902	0,5679	-0,20785	-0,08	0,1325	0,13	-0,01359	-0,07
ABIOMED INC	0	1	0	-0,4831	-0,2141	-0,4311	0,0000	4,8050	-6,8233	0,1885	0,89103	8,56	0	,	-0,0253	-1,49
DYAX CORP	0	1	0	-1,4426	-0,6221	-1,7340	0,5432	3,5650	6,6765	0,0311	0,91255	13,08	-0,00218	-0,20	0,00211	0,02
GENENTECH INC	0	0	1	0,3209	0,2315	0,2610	0,2172	2,4350	-1,8037	0,1121	131.410	7,60	-0,01944	-0,23	-0,00709	-0,43
SYNTHES, INC.	0	0	1	0,3332	0,1761	0,3087	0,0025	3,1500	0,8849	0,2925	165.120	2,44	0,10762	1,61	-0,00607	-1,17
KING PHARMACEUTICALS INC	0	0	1	0,1271	0,0601	0,2093	0,1593	1,9650	-3,8707	0,2207	0,64062	1,06	-0,11829	-0,21	0,01005	0,15
ENDO HEALTH SOLUTIONS, INC	0	0	1	0,2872	0,1863	0,2402	0,1007	2,6950	4,1486	0,3891	-0,09413	-0,08	-0,13795	-0,89	-0,0891	-1,24
CUBIST PHARMACEUTICALS INC	0	0	1	0,1751	0,0565	0,1591	2,1025	6,3350	-9,7400	0,4855	-0,53071	-2,46	-0,06542	-6,85	0,02847	4,76
VERTEX PHARMACEUTICALS INC	0	0	1	-2,3427	-0,4039	-2,1379	0,4320	3,4550	0,5857	0,0008	0,95473	16,22	0,15115	0,60	-0,00648	-0,05
INTERMUNE INC	0	0	1	-1,1545	-0,4317	-0,6354	-1,2958	4,1250	11,0899	0,0290	0,87074	3,04	-0,01316	-0,13	-0,10777	-0,49
ZILA INC	0	0	1	-0,5449	-0,3854	-0,1345	0,1111	1,2900	12,9484	0,8561	0,50871	1,19	4.057.904	2,17	-492.611	-3,19
COLUMBIA LABORATORIES INC	0	0	1	-0,3008	-0,4177	-0,4357	-0,3152	2,5150	-2,9636	0,0086	0,64659	1,14	-0,0025	-0,21	-0,09172	-1,24

MODEL: PROFITMARGIN = CASH FLOW RATIO + LONG-TERM DEBT TO EQUITY RATIO + CURRENT RATIO																
	Entry Mode Strategy			**Mean ratios**					**Accounting beta**		Variable: Cash flow/Operating revenue		Variable: LT Debt to equity		Variable: Current ratio	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value	Parameter Estimate	t Value
EU - Global																
RHODIA SA	1			0,0576	0,0203	0,0725	-3,6976	1,3400	-3,3678	0,1624	0,79719	2,24	-0,00575	-0,57	-0,00185	-0,03
NOVARTIS AG	1			0,2177	0,1126	0,2508	0,0416	1,3600	1,4262	0,5752	-0,33948	-4,86	-0,01313	-0,31	-0,007	-0,46
ROCHE HOLDING AG	1			0,2777	0,1764	0,2419	0,2184	3,0750	-0,1477	0,0016	0,59571	4,10	-0,01753	-10,14	-0,02768	-5,80
LABORATORIOS MENARINI SA	1			0,0878	0,1752	0,0778	0,1578	2,2400	-6,2857	0,3308	125.346	0,73	-0,08272	-0,26	-0,00036	0,00
LABORATORIOS INDAS SA	1			0,1799	0,1419	0,1873	0,2177	1,1550	-1,7189	0,0386	105.886	9,12	0,07207	6,78	-0,00361	-1,18
ISDIN SA	1			0,0860	0,1431	0,0864	0,0451	2,5450	0,2765	0,0006	110.296	2,22	-0,19264	-0,67	0,04061	0,52
LABORATOIRES FOURNIER SA	1			0,1370	0,2327	0,0970	0,0016	1,3800	1,3756	0,0056	-177.012	-1,90	1.413.177	1,08	0,28653	2,29
SHIRE PLC	1			0,0682	0,0451	0,2535	0,3139	1,2800	-4,8224	0,2332	171.510	0,87	0,36085	1,58	0,25456	1,04
CHEMI - S.P.A.			1	0,0512	0,0453	0,1332	0,0000	2,5000	5,8497	0,2094	-102.352	-1,25	5.553.293	3,80	0,03757	0,92
SANOFI AVENTIS SA			1	0,0984	0,1520	0,0953	0,0127	3,2650	-0,6128	0,0105	137.538	2,31	-0,94862	-0,18	0,00693	0,17
SANOFI WINTHROP INDUSTRIE			1	0,0909	0,1978	0,0687	0,1785	1,4650	-0,3606	0,0069	251.951	23,78	0,06187	11,47	-0,2282	-18,53
SANOFI PASTEUR			1	0,0969	0,0648	0,1041	0,7246	1,9800	-0,5697	0,0155	-0,17743	-1,43	-0,13143	-6,08	0,05632	2,02
MERIAL			1	0,3157	0,3603	0,2687	0,7431	1,5750	5,4867	0,3077	0,92092	11,02	0,1701	8,73	-0,15834	-7,19
TEVA PHARMACEUTICAL INDUSTRIES LIMITED			1	0,2064	0,0810	0,2300	0,2687	1,7200	-0,3770	0,0045	147.073	3,62	0,32261	0,93	0,01094	0,31
HEMOFARM			1	0,1996	0,0961	0,1838	0,2969	1,5450	0,3446	0,0040	0,59325	1,42	-0,06669	-0,10	-0,03201	-0,10
ASTRAZENECA AB			1	0,3575	0,1423	0,5053	0,0000	2,3050	-0,1373	0,0007	-0,22058	-0,70	120.027.813	1,81	-0,027	-0,64

MODEL: PROFITMARGIN = CASH FLOW RATIO + LONG-TERM DEBT TO EQUITY RATIO + CURRENT RATIO																
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Cash flow/Operating revenue		Variable: LT Debt to equity		Variable: Current ratio	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value	Parameter Estimate	t Value
EU - International																
UNION QUIMICO FARMACEUTICA SA	1			0,1113	0,1361	0,1749	0,0042	1,7450	2,4609	0,0889	0,81921	5,08	-0,13358	-1,32	-0,01135	-0,67
EUROMED SA	1			0,1407	0,1193	0,1759	0,0000	3,9400	-2,2126	0,2160	151.752	7,55	0,33738	2,30	0,0134	3,09
SMITHKLINE BEECHAM LIMITED	1			-0,0048	0,0181	0,2096	0,0203	0,2000	-60,2100	0,0317	0,02173	0,17	872.346	1,04	-0,6351	-0,08
OLON S.P.A.	1			-0,0263	-0,0423	0,0616	0,0167	1,1250	1,2291	0,0688	0,44322	1,18	-0,06973	-0,67	0,07815	0,71
SWEDISH ORPHAN BIOVITRUM INTERNATIONAL AB	1			0,1781	0,3215	0,1334	0,0736	1,2500	-2,1159	0,0600	104.331	4,60	0,01665	0,66	-0,07216	-1,65
INGASO FARM SL	1			0,2401	0,3992	0,2076	0,0000	2,2400	-15,4209	0,2682	136.333	6,10	-110.816	-0,36	-0,01212	-0,59
SCHWARZ PHARMA AG	1			0,0000	-0,0119	0,0361	0,0172	0,6550	-2,5283	0,3324	-0,01135	-0,68	0,000969	0,06	0,00942	0,42
PHARMA MAR SA	1			0,1297	-0,0168	0,2950	4,1169	0,5250	-0,8590	0,0219	255.798	1,47	-0,07519	-0,15	-112.564	-0,97
BOUCHARA RECORDATI	1			0,6328	0,4448	1,2031	0,0000	0,3250	-15,3617	0,5132	-0,32898	-0,56	0	,	-285.479	-1,83
SA GENFIT	1			-0,5531	-0,1181	-0,2274	0,2438	2,4100	9,1773	0,3461	108.182	6,47	0,94416	1,99	-0,07691	-0,54
SANOFI-AVENTIS S.P.A.	1			0,1515	0,1855	0,1542	0,0042	1,8100	1,9860	0,3199	-0,33721	-1,03	-0,93055	-0,13	0,00472	0,32
AEROCRINE AB	1			-1,4542	-0,8705	-1,4164	0,0000	3,0500	5,9700	0,0084	110.905	15,66	-0,12113	-0,42	-0,0041	-0,16
PIPELIFE BELGIUM	1			0,0287	0,0012	0,0222	1,6644	1,9250	-1,2464	0,2973	0,02629	0,41	-0,05738	-0,72	0,02337	0,60
DERETIL SOCIEDAD ANONIMA		1		-0,0273	-0,0419	0,0425	0,0932	1,5300	-1,5962	0,0279	0,9768	11,71	0,2361	6,08	0,00365	0,23
GRIFOLS INTERNATIONAL SA		1		0,1044	0,2415	0,0626	0,0041	1,5400	1,8698	0,0030	165.383	14,23	-201.670	-2,20	-0,03869	-2,78
GIRINDUS AG		1		-0,3323	-0,3705	-0,3931	-0,0039	0,4500	-22,2624	0,1429	0,64591	2,16	0,39658	1,34	-0,2523	-0,92
BIOGARAN		1		0,0803	0,1463	0,0593	0,2360	1,5950	0,0614	0,0001	160.838	5,67	0,00815	1,49	-0,00572	-0,25
FISONS LIMITED		1		0,1252	0,0240	0,3880	0,0000	3,9950	2,6920	0,4913	######	-5,43	445.863	1,54	161.468	3,11
WARNER CHILCOTT PUBLIC LIMITED COMPANY		1		0,1500	0,0114	0,2930	1,0194	1,1400	-9,6800	0,4817	0,81364	3,84	-0,00258	-0,96	0,1526	0,63
RHODIA UK LIMITED			1	-0,0685	-0,0782	-0,1390	-0,7524	1,1400	-2,6132	0,0494	0,15654	0,71	-0,12706	-0,60	-0,22839	-0,52
LIFE TECHNOLOGIES AS			1	0,3448	0,2452	0,3244	0,0000	3,9800	16,8912	0,4292	-0,0366	-0,41	0	,	0,01451	1,84
PFIZER ITALIA S.R.L.			1	0,0160	0,0060	0,0720	0,0000	3,5100	-1,6080	0,2498	0,71002	1,70	0	,	-0,01085	-0,28
INSTITUTO GRIFOLS SA			1	0,1957	0,1800	0,1491	0,3605	1,0400	-2,6214	0,0275	130.968	4,26	0,06811	0,79	-0,02873	-0,72
ITALFARMACO SA			1	0,1505	0,2060	0,1366	0,1185	1,7600	0,1280	0,0010	0,17062	0,54	0,06042	0,59	0,02405	2,03
GE HEALTHCARE LIMITED			1	-0,4467	0,0500	0,4659	0,0000	1,7350	1,3186	0,0294	0,07	0,30	0	,	0,26542	3,31
A NELSON & CO LIMITED			1	0,1859	0,4980	0,2253	0,8144	2,8450	-6,5742	0,2219	197.900	1,70	-0,05457	-1,44	-0,07459	-2,57
STIEFEL LABORATORIES (IRELAND) LIMITED			1	0,1962	0,1957	0,1645	0,1486	1,1950	19,9001	0,3692	0,66725	8,20	0,13928	1,22	0,24857	3,26
AB BIOMERIEUX			1	0,7209	0,5283	0,5100	0,0000	7,1100	-8,8794	0,0714	102.047	3,68	0	,	-0,00384	-0,98
GLAXOSMITHKLINE BIOLOGICALS			1	0,2349	0,0725	0,4020	0,0008	8,5550	-1,2654	0,3124	0,1415	1,03	4.042.006	2,68	-0,00238	-0,38
JANSSEN PHARMACEUTICA			1	0,0253	0,0090	0,3192	0,0187	1,1100	1,9596	0,2938	0,09397	0,40	0,20677	2,22	0,03897	0,51
HAUPT PHARMA AG			1	0,0508	0,0423	0,0613	0,8543	1,3000	-3,9063	0,5548	101.456	6,23	0,01848	0,36	-0,01096	-0,14
GENEART AG			1	0,0312	0,0436	0,0707	0,0069	3,3050	-2,3290	0,1580	0,77849	2,22	-251.325	-1,30	0,00782	3,72

B BRAUN MEDICAL SA	1	0,0983	0,1104	0,1710	0,0175	2,6400	1,9473	0,2206	-0,03772	-0,07	-0,11876	-0,26	0,01368	0,61
GP PHARM SA	1	-0,5736	-0,0633	-0,1082	1,1053	1,0650	1,6248	0,0371	199.995	20,52	0,09937	1,91	-0,22029	-2,64
MERCK SANTE	1	0,1399	0,2312	0,1719	0,0979	3,2050	-6,0969	0,1379	-0,28634	-0,13	0,70553	1,16	-0,01927	-0,48
MERIAL LIMITED	1	0,2571	0,2572	0,2371	0,0044	1,9700	-19,7719	0,0381	0,06103	0,82	0,25935	0,34	0,03205	0,20
ELAN CORPORATION PUBLIC LIMITED COMPANY	1	-0,3809	-0,1545	-0,1237	4,3848	3,3400	12,6178	0,2021	0,07251	0,15	0,00535	0,13	-0,19103	-0,92

RETURN ON ASSETS = CASH FLOW RATIO + CURRENT RATIO

MODEL: RETURN ON ASSETS = CASH FLOW RATIO + CURRENT RATIO														
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Current ratio		Variable: LT Debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
US - Global														
ABBOTT LABORATORIES	1	0	0	0,1854	0,1247	0,2113	0,4986	1,5000	1,9210	0,1555	-0,0322	-0,03	0,1039	0,83
MERCK & CO., INC.	1	0	0	0,2454	0,1379	0,2920	0,2786	1,4650	5,9155	0,3716	0,3607	1,89	-0,1270	-1,42
ILLUMINA INC	1	0	0	0,1941	0,0673	0,1398	0,0000	2,8750	-3,0396	0,0135	0,4688	6,24	0,0012	0,05
BIOMARIN PHARMACEUTICAL INC	1	0	0	-0,2325	-0,0178	0,0223	1,6704	6,0000	-10,2095	0,2239	0,1230	4,67	0,0052	0,50
JOHNSON & JOHNSON	0	1	0	0,2630	0,1829	0,2449	0,1622	1,7350	2,8795	0,6428	0,0371	0,04	0,0114	0,35
PFIZER INC	0	1	0	0,2710	0,0839	0,2812	0,1254	1,8950	1,8529	0,2719	0,2101	1,83	-0,0215	-0,55
WYETH	0	1	0	0,2787	0,1439	0,2458	0,5927	3,1400	-0,4993	0,3381	229589,0000	5,90	-0,0058	-2,57
BRISTOL-MYERS SQUIBB COMPANY	0	1	0	0,2254	0,1575	0,2100	0,4764	1,8750	0,3147	0,0024	-0,0123	-0,10	0,0990	1,81
AMGEN INCORPORATED	0	1	0	0,3787	0,1268	0,3524	0,4270	2,8450	1,9059	0,4693	0,5288	1,70	-0,0164	-1,24
GILEAD SCIENCES INC	0	1	0	0,5076	0,3493	0,3993	0,3164	3,3400	1,0939	0,0014	0,6620	13,76	-0,0122	-1,25
ALLERGAN INC	0	1	0	0,1976	0,1066	0,1829	0,3551	3,1050	4,7140	0,1938	0,7882	2,82	-0,0331	-1,12
MYLAN INC.	0	1	0	0,1514	0,0259	0,1119	1,4221	2,0150	4,9421	0,1721	0,1616	4,05	0,0475	5,53
HOSPIRA, INC.	0	1	0	0,1329	0,0751	0,1545	0,5946	2,5650	2,3711	0,3053	0,5845	0,77	-0,0004	-0,01
CELGENE CORP	0	1	0	0,2402	0,0868	0,1643	0,1082	7,1450	-18,9310	0,5793	0,4749	11,58	0,0140	1,86
MILLIPORE CORP	0	1	0	0,1418	0,0691	0,1665	0,7631	2,4750	0,2277	0,0087	0,3222	1,18	0,0039	0,66
PERRIGO CO	0	1	0	0,1030	0,0635	0,0000	0,9539	1,8400	-8,7745	0,3240	0,0203	0,46	0,6639	7,08
AMERICAN MEDICAL SYSTEMS HOLDINGS INC	0	1	0	0,2103	0,0885	0,1747	0,8842	2,8100	1,7368	0,0233	0,7560	5,30	-0,0798	-1,97
CHATTEM INC	0	1	0	0,2637	0,1237	0,1613	1,4559	3,3550	0,8101	0,0897	-0,3268	-2,00	0,0104	2,38
QUEST DIAGNOSTICS INCORPORATED	0	0	1	0,1801	0,1411	0,1283	0,6955	1,1450	1,0450	0,0653	0,8842	2,32	-0,0421	-1,02
GENZYME CORPORATION	0	0	1	0,1439	0,0639	0,2136	0,0801	2,7900	1,9544	0,1023	0,6216	1,13	-0,0428	-1,09

MODEL: RETURN ON ASSETS = CASH FLOW RATIO + CURRENT RATIO

	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Current ratio		Variable: LT Debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
US - International														
ALKERMES, INC.	1	0	0	0,0640	0,0133	0,0888	0,3203	5,3550	7,1995	0,1069	0,4525	5,07	-0,0076	-0,58
SUCAMPO PHARMACEUTICALS, INC.	1	0	0	0,1944	0,1534	0,0659	0,0000	4,0150	2,2057	0,0134	0,5806	1,67	0,0123	0,53
NBTY INC	0	1	0	0,1077	0,1182	0,0965	0,3176	2,9700	-2,9700	0,2835	120324,0000	1,69	0,0445	1,48
UNITED THERAPEUTICS CORP	0	1	0	0,1267	0,0487	0,0374	0,0614	3,4700	-0,2412	0,0004	0,6531	3,25	0,0126	2,93
HEALTHTRONICS, INC.	0	1	0	0,1787	0,0361	0,1293	0,3525	2,6350	-21,0902	0,5679	-0,9289	-0,79	0,0150	0,19
ABIOMED INC	0	1	0	-0,4831	-0,2141	-0,4311	0,0000	4,8050	-6,8233	0,1885	0,5013	7,28	0,0188	1,67
DYAX CORP	0	1	0	-1,4426	-0,6221	-1,7340	0,5432	3,5650	6,6765	0,0311	0,0590	0,78	0,2621	2,36
GENENTECH INC	0	0	1	0,3209	0,2315	0,2610	0,2172	2,4350	-1,8037	0,1121	0,9720	3,05	-0,0173	-0,55
SYNTHES, INC.	0	0	1	0,3332	0,1761	0,3087	0,0025	3,1500	0,8849	0,2925	-0,8552	-0,73	0,0028	0,27
KING PHARMACEUTICALS INC	0	0	1	0,1271	0,0601	0,2093	0,1593	1,9650	-3,8707	0,2207	0,3470	2,80	0,0011	0,07
ENDO HEALTH SOLUTIONS, INC	0	0	1	0,2872	0,1863	0,2402	0,1007	2,6950	4,1486	0,3891	0,3277	0,35	0,0208	0,40
CUBIST PHARMACEUTICALS INC	0	0	1	0,1751	0,0565	0,1591	2,1025	6,3350	-9,7400	0,4855	0,4262	2,31	0,0051	0,33
VERTEX PHARMACEUTICALS INC	0	0	1	-2,3427	-0,4039	-2,1379	0,4320	3,4550	0,5857	0,0008	0,0037	0,10	0,0640	0,77
INTERMUNE INC	0	0	1	-1,1545	-0,4317	-0,6354	-1,2958	4,1250	11,0899	0,0290	0,3488	2,67	-0,0164	-0,19
ZILA INC	0	0	1	-0,5449	-0,3854	-0,1345	0,1111	1,2900	12,9484	0,8561	0,0373	3,39	-0,1288	-3,71
COLUMBIA LABORATORIES INC	0	0	1	-0,3008	-0,4177	-0,4357	-0,3152	2,5150	-2,9636	0,0086	0,5392	1,66	0,1912	4,53

MODEL: RETURN ON ASSETS = CASH FLOW RATIO + CURRENT RATIO

	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Current ratio		Variable: LT Debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
EU - Global														
RHODIA SA	1			0,0576	0,0203	0,0725	-3,6976	1,3400	-3,3678	0,1624	123065,0000	7,43	0,0755	1,54
NOVARTIS AG	1			0,2177	0,1126	0,2508	0,0416	1,3600	1,4262	0,5752	-0,1029	-0,76	0,0006	0,02
ROCHE HOLDING AG	1			0,2777	0,1764	0,2419	0,2184	3,0750	-0,1477	0,0016	227591,0000	3,46	0,0119	1,28
LABORATORIOS MENARINI SA	1			0,0878	0,1752	0,0778	0,1578	2,2400	-6,2857	0,3308	301436,0000	2,83	-0,0447	-1,00
LABORATORIOS INDAS SA	1			0,1799	0,1419	0,1873	0,2177	1,1550	-1,7189	0,0386	406278,0000	4,14	0,0055	0,22
ISDIN SA	1			0,0860	0,1431	0,0864	0,0451	2,5450	0,2765	0,0006	217455,0000	2,48	0,0080	0,05
LABORATOIRES FOURNIER SA	1			0,1370	0,2327	0,0970	0,0016	1,3800	1,3756	0,0056	-189005,0000	-1,79	0,3259	2,31
SHIRE PLC	1			0,0682	0,0451	0,2535	0,3139	1,2800	-4,8224	0,2332	-0,2695	-0,38	0,2569	1,89
CHEMI - S.P.A.			1	0,0512	0,0453	0,1332	0,0000	2,5000	5,8497	0,2094	185106,0000	3,40	-0,0567	-0,99
SANOFI AVENTIS SA			1	0,0984	0,1520	0,0953	0,0127	3,2650	-0,6128	0,0105	162021,0000	2,91	-0,0268	-1,29
SANOFI WINTHROP INDUSTRIE			1	0,0909	0,1978	0,0687	0,1785	1,4650	-0,3606	0,0069	175319,0000	1,78	-0,1452	-1,41
SANOFI PASTEUR			1	0,0969	0,0648	0,1041	0,7246	1,9800	-0,5697	0,0155	0,6971	3,01	-0,0782	-1,53
MERIAL			1	0,3157	0,3603	0,2687	0,7431	1,5750	5,4867	0,3077	123788,0000	1,89	-0,2740	-1,61
TEVA PHARMACEUTICAL INDUSTRIES LIMITED			1	0,2064	0,0810	0,2300	0,2687	1,7200	-0,3770	0,0045	0,5165	11,16	0,0341	4,78
HEMOFARM			1	0,1996	0,0961	0,1838	0,2969	1,5450	0,3446	0,0040	0,2789	1,59	0,0490	0,41
ASTRAZENECA AB			1	0,3575	0,1423	0,5053	0,0000	2,3050	-0,1373	0,0007	0,2564	3,78	-0,0018	-0,17

MODEL: RETURN ON ASSETS = CASH FLOW RATIO + CURRENT RATIO

	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Current ratio		Variable: LT Debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
EU - International														
UNION QUIMICO FARMACEUTICA SA	1			0,1113	0,1361	0,1749	0,0042	1,7450	2,4609	0,0889	144355,0000	4,62	-0,0294	-0,85
EUROMED SA	1			0,1407	0,1193	0,1759	0,0000	3,9400	-2,2126	0,2160	110903,0000	9,09	0,0113	3,78
SMITHKLINE BEECHAM LIMITED	1			-0,0048	0,0181	0,2096	0,0203	0,2000	-60,2100	0,0317	0,4621	16,20	-104249,0000	-0,64
OLON S.P.A.	1			-0,0263	-0,0423	0,0616	0,0167	1,1250	1,2291	0,0688	0,6162	4,38	0,0055	0,28
SWEDISH ORPHAN BIOVITRUM INTERNATIONAL AB	1			0,1781	0,3215	0,1334	0,0736	1,2500	-2,1159	0,0600	-0,6752	-0,86	-0,2141	-1,46
INGASO FARM SL	1			0,2401	0,3992	0,2076	0,0000	2,2400	-15,4209	0,2682	269881,0000	3,84	-0,0424	-0,66
SCHWARZ PHARMA AG	1			0,0000	-0,0119	0,0361	0,0172	0,6550	-2,5283	0,3324	-0,0020	-0,14	0,0023	0,12
PHARMA MAR SA	1			0,1297	-0,0168	0,2950	4,1169	0,5250	-0,8590	0,0219	0,1750	4,64	-0,0322	-1,40
BOUCHARA RECORDATI	1			0,6328	0,4448	1,2031	0,0000	0,3250	-15,3617	0,5132	-0,0177	-0,06	-101190,0000	-1,26
SA GENFIT	1			-0,5531	-0,1181	-0,2274	0,2438	2,4100	9,1773	0,3461	0,2643	7,43	-0,0641	-2,07
SANOFI-AVENTIS S.P.A.	1			0,1515	0,1855	0,1542	0,0042	1,8100	1,9860	0,3199	0,7395	2,69	-0,0143	-1,39
AEROCRINE AB	1			-1,4542	-0,8705	-1,4164	0,0000	3,0500	5,9700	0,0084	-0,1743	-1,16	0,2056	6,09
PIPELIFE BELGIUM	1			0,0287	0,0012	0,0222	1,6644	1,9250	-1,2464	0,2973	0,0460	0,88	-0,0138	-0,52
DERETIL SOCIEDAD ANONIMA		1		-0,0273	-0,0419	0,0425	0,0932	1,5300	-1,5962	0,0279	123622,0000	5,33	0,0754	2,54
GRIFOLS INTERNATIONAL SA		1		0,1044	0,2415	0,0626	0,0041	1,5400	1,8698	0,0030	287854,0000	3,61	-0,3421	-2,74
GIRINDUS AG		1		-0,3323	-0,3705	-0,3931	-0,0039	0,4500	-22,2624	0,1429	101961,0000	2,05	0,0886	0,19
BIOGARAN		1		0,0803	0,1463	0,0593	0,2360	1,5950	0,0614	0,0001	241517,0000	4,43	0,0486	1,14
FISONS LIMITED		1		0,1252	0,0240	0,3880	0,0000	3,9950	2,6920	0,4913	0,0560	1,74	0,0002	0,05
WARNER CHILCOTT PUBLIC LIMITED COMPANY		1		0,1500	0,0114	0,2930	1,0194	1,1400	-9,6800	0,4817	0,2686	8,87	-0,0691	-2,00
RHODIA UK LIMITED			1	-0,0685	-0,0782	-0,1390	-0,7524	1,1400	-2,6132	0,0494	0,3191	1,99	0,2078	0,91
LIFE TECHNOLOGIES AS			1	0,3448	0,2452	0,3244	0,0000	3,9800	16,8912	0,4292	0,7132	20,05	-0,0056	-1,76
PFIZER ITALIA S.R.L.			1	0,0160	0,0060	0,0720	0,0000	3,5100	-1,6080	0,2498	0,3478	1,41	-0,0108	-0,47
INSTITUTO GRIFOLS SA			1	0,1957	0,1800	0,1491	0,3605	1,0400	-2,6214	0,0275	165919,0000	5,77	-0,0393	-0,62
ITALFARMACO SA			1	0,1505	0,2060	0,1366	0,1185	1,7600	0,1280	0,0010	103495,0000	1,17	-0,0700	-1,60
GE HEALTHCARE LIMITED			1	-0,4467	0,0500	0,4659	0,0000	1,7350	1,3186	0,0294	0,1309	8,78	0,0322	6,18
A NELSON & CO LIMITED			1	0,1859	0,4980	0,2253	0,8144	2,8450	-6,5742	0,2219	174032,0000	0,88	-0,1411	-5,06
STIEFEL LABORATORIES (IRELAND) LIMITED			1	0,1962	0,1957	0,1645	0,1486	1,1950	19,9001	0,3692	0,8815	5,41	0,1334	1,33
AB BIOMERIEUX			1	0,7209	0,5283	0,5100	0,0000	7,1100	-8,8794	0,0714	219306,0000	1,40	0,0087	0,39
GLAXOSMITHKLINE BIOLOGICALS			1	0,2349	0,0725	0,4020	0,0008	8,5550	-1,2654	0,3124	-0,0758	-0,65	-0,0007	-0,14
JANSSEN PHARMACEUTICA			1	0,0253	0,0090	0,3192	0,0187	1,1100	1,9596	0,2938	-0,0593	-0,38	-0,0401	-1,51
HAUPT PHARMA AG			1	0,0508	0,0423	0,0613	0,8543	1,3000	-3,9063	0,5548	158963,0000	4,68	0,0269	0,59
GENEART AG			1	0,0312	0,0436	0,0707	0,0069	3,3050	-2,3290	0,1580	0,4727	2,47	0,0048	2,79

B BRAUN MEDICAL SA		1	0,0983	0,1104	0,1710	0,0175	2,6400	1,9473	0,2206	102429,0000	5,17	0,0042	0,34
GP PHARM SA		1	-0,5736	-0,0633	-0,1082	1,1053	1,0650	1,6248	0,0371	0,1258	2,74	0,0106	0,25
MERCK SANTE		1	0,1399	0,2312	0,1719	0,0979	3,2050	-6,0969	0,1379	274535,0000	0,67	-0,0266	-0,34
MERIAL LIMITED		1	0,2571	0,2572	0,2371	0,0044	1,9700	-19,7719	0,0381	176734,0000	19,15	-0,0524	-0,49
ELAN CORPORATION PUBLIC LIMITED COMPANY		1	-0,3809	-0,1545	-0,1237	4,3848	3,3400	12,6178	0,2021	0,2575	2,78	-0,0353	-0,83

RETURN ON ASSETS = CASH FLOW RATIO + LONG-TERM DEBT TO EQUITY RATIO

MODEL: RETURN ON ASSETS = CASH FLOW RATIO + LONG-TERM DEBT TO EQUITY RATIO

	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Cash flow/Operating revenue		Variable: LT Debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
US - Global														
ABBOTT LABORATORIES	1	0	0	0,1854	0,1247	0,2113	0,4986	1,5000	1,9210	0,1555	-0,0322	5,27	-0,23599	-4,06
MERCK & CO., INC.	1	0	0	0,2454	0,1379	0,2920	0,2786	1,4650	5,9155	0,3716	0,3607	1,22	-0,24245	-0,32
ILLUMINA INC	1	0	0	0,1941	0,0673	0,1398	0,0000	2,8750	-3,0396	0,0135	0,4688	83,37	0,2868	33,67
BIOMARIN PHARMACEUTICAL INC	1	0	0	-0,2325	-0,0178	0,0223	1,6704	6,0000	-10,2095	0,2239	0,1230	4,08	0,02025	1,48
JOHNSON & JOHNSON	0	1	0	0,2630	0,1829	0,2449	0,1622	1,7350	2,8795	0,6428	0,0371	0,13	-0,29889	-1,82
PFIZER INC	0	1	0	0,2710	0,0839	0,2812	0,1254	1,8950	1,8529	0,2719	0,2101	4,00	-0,10675	-8,31
WYETH	0	1	0	0,2787	0,1439	0,2458	0,5927	3,1400	-0,4993	0,3381	229589,0000	11,24	0,06649	5,82
BRISTOL-MYERS SQUIBB COMPANY	0	1	0	0,2254	0,1575	0,2100	0,4764	1,8750	0,3147	0,0024	-0,0123	0,81	-0,08659	-0,66
AMGEN INCORPORATED	0	1	0	0,3787	0,1268	0,3524	0,4270	2,8450	1,9059	0,4693	0,5288	2,51	-0,14729	-5,52
GILEAD SCIENCES INC	0	1	0	0,5076	0,3493	0,3993	0,3164	3,3400	1,0939	0,0014	0,6620	9,30	0,10465	1,07
ALLERGAN INC	0	1	0	0,1976	0,1066	0,1829	0,3551	3,1050	4,7140	0,1938	0,7882	1,72	-0,22032	-1,50
MYLAN INC.	0	1	0	0,1514	0,0259	0,1119	1,4221	2,0150	4,9421	0,1721	0,1616	10,85	-0,12828	-8,14
HOSPIRA, INC.	0	1	0	0,1329	0,0751	0,1545	0,5946	2,5650	2,3711	0,3053	0,5845	0,07	-0,06475	-1,29
CELGENE CORP	0	1	0	0,2402	0,0868	0,1643	0,1082	7,1450	-18,9310	0,5793	0,4749	8,75	-0,04984	-0,60
MILLIPORE CORP	0	1	0	0,1418	0,0691	0,1665	0,7631	2,4750	0,2277	0,0087	0,3222	-3,07	-0,06734	-9,37
PERRIGO CO	0	1	0	0,1030	0,0635	0,0000	0,9539	1,8400	-8,7745	0,3240	0,0203	3,53	-0,08209	-0,27
AMERICAN MEDICAL SYSTEMS HOLDINGS INC	0	1	0	0,2103	0,0885	0,1747	0,8842	2,8100	1,7368	0,0233	0,7560	-0,52	-0,09263	-3,50
CHATTEM INC	0	1	0	0,2637	0,1237	0,1613	1,4559	3,3550	0,8101	0,0897	-0,3268	-1,20	-0,01876	-0,91
QUEST DIAGNOSTICS INCORPORATED	0	0	1	0,1801	0,1411	0,1283	0,6955	1,1450	1,0450	0,0653	0,8842	-0,14	-0,12528	-5,31
GENZYME CORPORATION	0	0	1	0,1439	0,0639	0,2136	0,0801	2,7900	1,9544	0,1023	0,6216	2,03	-0,42087	-2,05

MODEL: RETURN ON ASSETS = CASH FLOW RATIO + LONG-TERM DEBT TO EQUITY RATIO														
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Cash flow/Operating revenue		Variable: LT Debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
US - International														
ALKERMES, INC.	1	0	0	0,0640	0,0133	0,0888	0,3203	5,3550	7,1995	0,1069	0,4525	6,36	-0,00117	-0,16
SUCAMPO PHARMACEUTICALS, INC.	1	0	0	0,1944	0,1534	0,0659	0,0000	4,0150	2,2057	0,0134	0,5806	1,63	-0,06826	-0,46
NBTY INC	0	1	0	0,1077	0,1182	0,0965	0,3176	2,9700	-2,9700	0,2835	120324,0000	3,72	-0,07036	-1,50
UNITED THERAPEUTICS CORP	0	1	0	0,1267	0,0487	0,0374	0,0614	3,4700	-0,2412	0,0004	0,6531	1,16	0,02783	0,29
HEALTHTRONICS, INC.	0	1	0	0,1787	0,0361	0,1293	0,3525	2,6350	-21,0902	0,5679	-0,9289	-0,79	-0,08099	-0,18
ABIOMED INC	0	1	0	-0,4831	-0,2141	-0,4311	0,0000	4,8050	-6,8233	0,1885	0,5013	5,89	0	,
DYAX CORP	0	1	0	-1,4426	-0,6221	-1,7340	0,5432	3,5650	6,6765	0,0311	0,0590	0,10	0,02132	1,48
GENENTECH INC	0	0	1	0,3209	0,2315	0,2610	0,2172	2,4350	-1,8037	0,1121	0,9720	9,25	-0,20615	-1,65
SYNTHES, INC.	0	0	1	0,3332	0,1761	0,3087	0,0025	3,1500	0,8849	0,2925	-0,8552	-1,05	0,10325	0,85
KING PHARMACEUTICALS INC	0	0	1	0,1271	0,0601	0,2093	0,1593	1,9650	-3,8707	0,2207	0,3470	3,16	0,02302	0,19
ENDO HEALTH SOLUTIONS, INC	0	0	1	0,2872	0,1863	0,2402	0,1007	2,6950	4,1486	0,3891	0,3277	0,57	-0,1633	-2,42
CUBIST PHARMACEUTICALS INC	0	0	1	0,1751	0,0565	0,1591	2,1025	6,3350	-9,7400	0,4855	0,4262	-0,68	-0,03183	-1,86
VERTEX PHARMACEUTICALS INC	0	0	1	-2,3427	-0,4039	-2,1379	0,4320	3,4550	0,5857	0,0008	0,0037	-0,03	-0,02902	-0,18
INTERMUNE INC	0	0	1	-1,1545	-0,4317	-0,6354	-1,2958	4,1250	11,0899	0,0290	0,3488	2,59	0,00489	0,13
ZILA INC	0	0	1	-0,5449	-0,3854	-0,1345	0,1111	1,2900	12,9484	0,8561	0,0373	1,76	-124.106	-1,80
COLUMBIA LABORATORIES INC	0	0	1	-0,3008	-0,4177	-0,4357	-0,3152	2,5150	-2,9636	0,0086	0,5392	-0,14	0,00899	0,49

MODEL: RETURN ON ASSETS = CASH FLOW RATIO + LONG-TERM DEBT TO EQUITY RATIO													
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Cash flow/Operating revenue		Variable: LT Debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
EU - Global														
RHODIA SA	1			0,0576	0,0203	0,0725	-3,6976	1,3400	-3,3678	0,1624	123065,0000	5,42	-0,00296	-0,34
NOVARTIS AG	1			0,2177	0,1126	0,2508	0,0416	1,3600	1,4262	0,5752	-0,1029	-6,26	-0,14706	-7,51
ROCHE HOLDING AG	1			0,2777	0,1764	0,2419	0,2184	3,0750	-0,1477	0,0016	227591,0000	3,96	-0,0054	-1,95
LABORATORIOS MENARINI SA	1			0,0878	0,1752	0,0778	0,1578	2,2400	-6,2857	0,3308	301436,0000	5,57	-0,13162	-0,66
LABORATORIOS INDAS SA	1			0,1799	0,1419	0,1873	0,2177	1,1550	-1,7189	0,0386	406278,0000	3,92	0,07037	0,91
ISDIN SA	1			0,0860	0,1431	0,0864	0,0451	2,5450	0,2765	0,0006	217455,0000	4,34	-0,72245	-1,47
LABORATOIRES FOURNIER SA	1			0,1370	0,2327	0,0970	0,0016	1,3800	1,3756	0,0056	-189005,0000	0,91	1.838.191	0,83
SHIRE PLC	1			0,0682	0,0451	0,2535	0,3139	1,2800	-4,8224	0,2332	-0,2695	1,31	0,25776	2,24
CHEMI - S.P.A.			1	0,0512	0,0453	0,1332	0,0000	2,5000	5,8497	0,2094	185106,0000	-0,46	3.923.689	6,15
SANOFI AVENTIS SA			1	0,0984	0,1520	0,0953	0,0127	3,2650	-0,6128	0,0105	162021,0000	2,41	226.178	0,74
SANOFI WINTHROP INDUSTRIE			1	0,0909	0,1978	0,0687	0,1785	1,4650	-0,3606	0,0069	175319,0000	0,79	-0,02104	-0,37
SANOFI PASTEUR			1	0,0969	0,0648	0,1041	0,7246	1,9800	-0,5697	0,0155	0,6971	-1,59	0,42275	1,40
MERIAL			1	0,3157	0,3603	0,2687	0,7431	1,5750	5,4867	0,3077	123788,0000	1,08	-0,1677	-0,92
TEVA PHARMACEUTICAL INDUSTRIES LIMITED			1	0,2064	0,0810	0,2300	0,2687	1,7200	-0,3770	0,0045	0,5165	7,16	0,31265	3,13
HEMOFARM			1	0,1996	0,0961	0,1838	0,2969	1,5450	0,3446	0,0040	0,2789	1,70	-0,08891	-0,35
ASTRAZENECA AB			1	0,3575	0,1423	0,5053	0,0000	2,3050	-0,1373	0,0007	0,2564	3,58	15.812.904	1,10

MODEL: RETURN ON ASSETS = CASH FLOW RATIO + LONG-TERM DEBT TO EQUITY RATIO														
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Cash flow/Operating revenue		Variable: LT Debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
EU - International														
UNION QUIMICO FARMACEUTICA SA	1			0,1113	0,1361	0,1749	0,0042	1,7450	2,4609	0,0889	144355,0000	3,90	-0,18859	-0,92
EUROMED SA	1			0,1407	0,1193	0,1759	0,0000	3,9400	-2,2126	0,2160	110903,0000	4,27	0,09001	0,38
SMITHKLINE BEECHAM LIMITED	1			-0,0048	0,0181	0,2096	0,0203	0,2000	-60,2100	0,0317	0,4621	99,61	0,78706	0,42
OLON S.P.A.	1			-0,0263	-0,0423	0,0616	0,0167	1,1250	1,2291	0,0688	0,6162	5,12	-0,00143	-0,08
SWEDISH ORPHAN BIOVITRUM INTERNATIONAL AB	1			0,1781	0,3215	0,1334	0,0736	1,2500	-2,1159	0,0600	-0,6752	0,39	-0,03854	-0,36
INGASO FARM SL	1			0,2401	0,3992	0,2076	0,0000	2,2400	-15,4209	0,2682	269881,0000	10,67	-430.972	-0,43
SCHWARZ PHARMA AG	1			0,0000	-0,0119	0,0361	0,0172	0,6550	-2,5283	0,3324	-0,0020	-0,35	-0,01098	-0,92
PHARMA MAR SA	1			0,1297	-0,0168	0,2950	4,1169	0,5250	-0,8590	0,0219	0,1750	10,56	-0,02024	-4,78
BOUCHARA RECORDATI	1			0,6328	0,4448	1,2031	0,0000	0,3250	-15,3617	0,5132	-0,0177	1,45	0	,
SA GENFIT	1			-0,5531	-0,1181	-0,2274	0,2438	2,4100	9,1773	0,3461	0,2643	6,87	0,20782	1,93
SANOFI-AVENTIS S.P.A.	1			0,1515	0,1855	0,1542	0,0042	1,8100	1,9860	0,3199	0,7395	2,07	479.077	0,82
AEROCRINE AB	1			-1,4542	-0,8705	-1,4164	0,0000	3,0500	5,9700	0,0084	-0,1743	-0,56	180.226	1,88
PIPELIFE BELGIUM	1			0,0287	0,0012	0,0222	1,6644	1,9250	-1,2464	0,2973	0,0460	0,14	-0,06294	-1,46
DERETIL SOCIEDAD ANONIMA		1		-0,0273	-0,0419	0,0425	0,0932	1,5300	-1,5962	0,0279	123622,0000	13,16	0,21455	5,97
GRIFOLS INTERNATIONAL SA		1		0,1044	0,2415	0,0626	0,0041	1,5400	1,8698	0,0030	287854,0000	2,68	-1.620.031	-1,33
GIRINDUS AG		1		-0,3323	-0,3705	-0,3931	-0,0039	0,4500	-22,2624	0,1429	101961,0000	2,60	-0,31687	-0,68
BIOGARAN		1		0,0803	0,1463	0,0593	0,2360	1,5950	0,0614	0,0001	241517,0000	8,01	0,01241	1,26
FISONS LIMITED		1		0,1252	0,0240	0,3880	0,0000	3,9950	2,6920	0,4913	0,0560	3,46	0,02046	1,56
WARNER CHILCOTT PUBLIC LIMITED COMPANY		1		0,1500	0,0114	0,2930	1,0194	1,1400	-9,6800	0,4817	0,2686	8,40	-0,00076694	-2,00
RHODIA UK LIMITED			1	-0,0685	-0,0782	-0,1390	-0,7524	1,1400	-2,6132	0,0494	0,3191	2,83	-0,06127	-0,51
LIFE TECHNOLOGIES AS			1	0,3448	0,2452	0,3244	0,0000	3,9800	16,8912	0,4292	0,7132	16,45	0	,
PFIZER ITALIA S.R.L.			1	0,0160	0,0060	0,0720	0,0000	3,5100	-1,6080	0,2498	0,3478	1,50	0	,
INSTITUTO GRIFOLS SA			1	0,1957	0,1800	0,1491	0,3605	1,0400	-2,6214	0,0275	165919,0000	3,32	0,02127	0,15
ITALFARMACO SA			1	0,1505	0,2060	0,1366	0,1185	1,7600	0,1280	0,0010	103495,0000	-0,94	-0,46873	-1,06
GE HEALTHCARE LIMITED			1	-0,4467	0,0500	0,4659	0,0000	1,7350	1,3186	0,0294	0,1309	3,24	0	,
A NELSON & CO LIMITED			1	0,1859	0,4980	0,2253	0,8144	2,8450	-6,5742	0,2219	174032,0000	0,74	0,16281	2,64
STIEFEL LABORATORIES (IRELAND) LIMITED			1	0,1962	0,1957	0,1645	0,1486	1,1950	19,9001	0,3692	0,8815	10,16	0,2931	3,54
AB BIOMERIEUX			1	0,7209	0,5283	0,5100	0,0000	7,1100	-8,8794	0,0714	219306,0000	1,54	0	,
GLAXOSMITHKLINE BIOLOGICALS			1	0,2349	0,0725	0,4020	0,0008	8,5550	-1,2654	0,3124	-0,0758	-3,34	1.750.273	2,21
JANSSEN PHARMACEUTICA			1	0,0253	0,0090	0,3192	0,0187	1,1100	1,9596	0,2938	-0,0593	-0,22	0,06393	3,04
HAUPT PHARMA AG			1	0,0508	0,0423	0,0613	0,8543	1,3000	-3,9063	0,5548	158963,0000	4,96	-0,02264	-0,81
GENEART AG			1	0,0312	0,0436	0,0707	0,0069	3,3050	-2,3290	0,1580	0,4727	0,24	0,50554	0,17

B BRAUN MEDICAL SA	1	0,0983	0,1104	0,1710	0,0175	2,6400	1,9473	0,2206	102429,0000	2,90	-0,14813	-0,60
GP PHARM SA	1	-0,5736	-0,0633	-0,1082	1,1053	1,0650	1,6248	0,0371	0,1258	3,69	-0,00327	-0,12
MERCK SANTE	1	0,1399	0,2312	0,1719	0,0979	3,2050	-6,0969	0,1379	274535,0000	0,13	160.609	2,16
MERIAL LIMITED	1	0,2571	0,2572	0,2371	0,0044	1,9700	-19,7719	0,0381	176734,0000	28,02	-0,53805	-1,23
ELAN CORPORATION PUBLIC LIMITED COMPANY	1	-0,3809	-0,1545	-0,1237	4,3848	3,3400	12,6178	0,2021	0,2575	3,57	0,01044	1,55

RETURN ON ASSETS = CURRENT RATIO + LONG-TERM DEBT TO EQUITY RATIO

MODEL: RETURN ON ASSETS = CURRENT RATIO + LONG-TERM DEBT TO EQUITY RATIO													
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Cash flow/Operating revenue		Variable: LT Debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
US - Global														
ABBOTT LABORATORIES	1	0	0	0,1854	0,1247	0,2113	0,4986	1,5000	1,9210	0,1555	0,0877	3,78	-0,19267	-2,43
MERCK & CO., INC.	1	0	0	0,2454	0,1379	0,2920	0,2786	1,4650	5,9155	0,3716	-0,07841	-0,59	-0,13249	-0,14
ILLUMINA INC	1	0	0	0,1941	0,0673	0,1398	0,0000	2,8750	-3,0396	0,0135	0,00436	0,08	-0,35249	-1,96
BIOMARIN PHARMACEUTICAL INC	1	0	0	-0,2325	-0,0178	0,0223	1,6704	6,0000	-10,2095	0,2239	-0,02483	-0,72	0,09542	2,03
JOHNSON & JOHNSON	0	1	0	0,2630	0,1829	0,2449	0,1622	1,7350	2,8795	0,6428	0,01142	0,35	0,0371	0,04
PFIZER INC	0	1	0	0,2710	0,0839	0,2812	0,1254	1,8950	1,8529	0,2719	0,00096707	0,05	-0,12812	-4,35
WYETH	0	1	0	0,2787	0,1439	0,2458	0,5927	3,1400	-0,4993	0,3381	-0,00022016	-0,02	-0,04876	-0,60
BRISTOL-MYERS SQUIBB COMPANY	0	1	0	0,2254	0,1575	0,2100	0,4764	1,8750	0,3147	0,0024	0,08864	2,72	-0,095	-1,30
AMGEN INCORPORATED	0	1	0	0,3787	0,1268	0,3524	0,4270	2,8450	1,9059	0,4693	0,00708	2,92	-0,17531	-7,12
GILEAD SCIENCES INC	0	1	0	0,5076	0,3493	0,3993	0,3164	3,3400	1,0939	0,0014	-0,069	-1,22	-0,85421	-2,39
ALLERGAN INC	0	1	0	0,1976	0,1066	0,1829	0,3551	3,1050	4,7140	0,1938	0,02728	0,55	-0,46287	-2,12
MYLAN INC.	0	1	0	0,1514	0,0259	0,1119	1,4221	2,0150	4,9421	0,1721	0,0817	2,66	0,05538	0,57
HOSPIRA, INC.	0	1	0	0,1329	0,0751	0,1545	0,5946	2,5650	2,3711	0,3053	-0,07641	-1,64	-0,1159	-2,75
CELGENE CORP	0	1	0	0,2402	0,0868	0,1643	0,1082	7,1450	-18,9310	0,5793	0,03129	0,64	0,0879	0,22
MILLIPORE CORP	0	1	0	0,1418	0,0691	0,1665	0,7631	2,4750	0,2277	0,0087	0,00149	0,73	-0,05127	-5,49
PERRIGO CO	0	1	0	0,1030	0,0635	0,0000	0,9539	1,8400	-8,7745	0,3240	0,10018	1,21	-104.568	-3,41
AMERICAN MEDICAL SYSTEMS HOLDINGS INC	0	1	0	0,2103	0,0885	0,1747	0,8842	2,8100	1,7368	0,0233	-0,03153	-1,74	-0,08368	-11,12
CHATTEM INC	0	1	0	0,2637	0,1237	0,1613	1,4559	3,3550	0,8101	0,0897	0,00729	1,16	-0,00301	-0,17
QUEST DIAGNOSTICS INCORPORATED	0	0	1	0,1801	0,1411	0,1283	0,6955	1,1450	1,0450	0,0653	-0,00816	-0,55	-0,12044	-8,23
GENZYME CORPORATION	0	0	1	0,1439	0,0639	0,2136	0,0801	2,7900	1,9544	0,1023	-0,02222	-0,36	-0,19368	-0,48

MODEL: RETURN ON ASSETS = CURRENT RATIO + LONG-TERM DEBT TO EQUITY RATIO														
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Cash flow/Operating revenue		Variable: LT Debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
US - International														
ALKERMES, INC.	1	0	0	0,0640	0,0133	0,0888	0,3203	5,3550	7,1995	0,1069	0,04901	1,61	0,01335	0,58
SUCAMPO PHARMACEUTICALS, INC.	1	0	0	0,1944	0,1534	0,0659	0,0000	4,0150	2,2057	0,0134	0,02214	0,79	-0,14119	-0,80
NBTY INC	0	1	0	0,1077	0,1182	0,0965	0,3176	2,9700	-2,9700	0,2835	0,07194	2,85	-0,05898	-0,96
UNITED THERAPEUTICS CORP	0	1	0	0,1267	0,0487	0,0374	0,0614	3,4700	-0,2412	0,0004	0,0143	1,51	-0,13255	-1,17
HEALTHTRONICS, INC.	0	1	0	0,1787	0,0361	0,1293	0,3525	2,6350	-21,0902	0,5679	-0,0106	-0,13	-0,05604	-0,11
ABIOMED INC	0	1	0	-0,4831	-0,2141	-0,4311	0,0000	4,8050	-6,8233	0,1885	-0,00398	-0,10	0	,
DYAX CORP	0	1	0	-1,4426	-0,6221	-1,7340	0,5432	3,5650	6,6765	0,0311	0,20535	1,49	0,0106	0,90
GENENTECH INC	0	0	1	0,3209	0,2315	0,2610	0,2172	2,4350	-1,8037	0,1121	0,08082	3,09	-0,04839	-0,15
SYNTHES, INC.	0	0	1	0,3332	0,1761	0,3087	0,0025	3,1500	0,8849	0,2925	-0,00322	-1,25	0,13253	1,32
KING PHARMACEUTICALS INC	0	0	1	0,1271	0,0601	0,2093	0,1593	1,9650	-3,8707	0,2207	0,03442	2,08	-0,27782	-1,78
ENDO HEALTH SOLUTIONS, INC	0	0	1	0,2872	0,1863	0,2402	0,1007	2,6950	4,1486	0,3891	-0,02187	-0,67	-0,18306	-2,46
CUBIST PHARMACEUTICALS INC	0	0	1	0,1751	0,0565	0,1591	2,1025	6,3350	-9,7400	0,4855	0,00967	0,95	-0,0217	-4,06
VERTEX PHARMACEUTICALS INC	0	0	1	-2,3427	-0,4039	-2,1379	0,4320	3,4550	0,5857	0,0008	0,06624	0,81	-0,04669	-0,31
INTERMUNE INC	0	0	1	-1,1545	-0,4317	-0,6354	-1,2958	4,1250	11,0899	0,0290	0,18202	1,26	0,08662	1,32
ZILA INC	0	0	1	-0,5449	-0,3854	-0,1345	0,1111	1,2900	12,9484	0,8561	-0,06836	-0,84	-0,52176	-0,51
COLUMBIA LABORATORIES INC	0	0	1	-0,3008	-0,4177	-0,4357	-0,3152	2,5150	-2,9636	0,0086	0,15734	3,50	0,0082	1,01

MODEL: RETURN ON ASSETS = CURRENT RATIO + LONG-TERM DEBT TO EQUITY RATIO													
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Cash flow/Operating revenue		Variable: LT Debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
EU - Global														
RHODIA SA	1			0,0576	0,0203	0,0725	-3,6976	1,3400	-3,3678	0,1624	0,24828	2,88	-0,03074	-2,96
NOVARTIS AG	1			0,2177	0,1126	0,2508	0,0416	1,3600	1,4262	0,5752	-0,01973	-0,88	-0,1146	-1,83
ROCHE HOLDING AG	1			0,2777	0,1764	0,2419	0,2184	3,0750	-0,1477	0,0016	-0,06933	-9,68	-0,02987	-10,51
LABORATORIOS MENARINI SA	1			0,0878	0,1752	0,0778	0,1578	2,2400	-6,2857	0,3308	0,08875	4,24	-0,46094	-1,68
LABORATORIOS INDAS SA	1			0,1799	0,1419	0,1873	0,2177	1,1550	-1,7189	0,0386	-0,05205	-0,97	0,26993	1,56
ISDIN SA	1			0,0860	0,1431	0,0864	0,0451	2,5450	0,2765	0,0006	0,25279	3,28	-129096	-2,63
LABORATOIRES FOURNIER SA	1			0,1370	0,2327	0,0970	0,0016	1,3800	1,3756	0,0056	0,08483	1,67	1949979	1,09
SHIRE PLC	1			0,0682	0,0451	0,2535	0,3139	1,2800	-4,8224	0,2332	0,20323	1,75	0,09092	1,39
CHEMI - S.P.A.			1	0,0512	0,0453	0,1332	0,0000	2,5000	5,8497	0,2094	0,00003447	0,00	3659069	11,69
SANOFI AVENTIS SA			1	0,0984	0,1520	0,0953	0,0127	3,2650	-0,6128	0,0105	-0,01825	-0,25	-209354	-0,22
SANOFI WINTHROP INDUSTRIE			1	0,0909	0,1978	0,0687	0,1785	1,4650	-0,3606	0,0069	-0,00429	-0,03	-0,0326	-0,47
SANOFI PASTEUR			1	0,0969	0,0648	0,1041	0,7246	1,9800	-0,5697	0,0155	0,03032	0,36	-0,1098	-2,20
MERIAL			1	0,3157	0,3603	0,2687	0,7431	1,5750	5,4867	0,3077	-0,06814	-0,34	-0,13181	-0,62
TEVA PHARMACEUTICAL INDUSTRIES LIMITED			1	0,2064	0,0810	0,2300	0,2687	1,7200	-0,3770	0,0045	0,07129	3,89	-0,41403	-4,26
HEMOFARM			1	0,1996	0,0961	0,1838	0,2969	1,5450	0,3446	0,0040	0,09983	0,58	-0,1138	-0,30
ASTRAZENECA AB			1	0,3575	0,1423	0,5053	0,0000	2,3050	-0,1373	0,0007	-0,01465	-0,86	40781142	1,64

MODEL: RETURN ON ASSETS = CURRENT RATIO + LONG-TERM DEBT TO EQUITY RATIO														
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Cash flow/Operating revenue		Variable: LT Debt to equity	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value
EU - International														
UNION QUIMICO FARMACEUTICA SA	1			0,1113	0,1361	0,1749	0,0042	1,7450	2,4609	0,0889	-0,04021	-0,46	-0,55239	-1,21
EUROMED SA	1			0,1407	0,1193	0,1759	0,0000	3,9400	-2,2126	0,2160	0,01871	1,29	-0,28693	-0,64
SMITHKLINE BEECHAM LIMITED	1			-0,0048	0,0181	0,2096	0,0203	0,2000	-60,2100	0,0317	2.520.096	10,86	215.898	0,13
OLON S.P.A.	1			-0,0263	-0,0423	0,0616	0,0167	1,1250	1,2291	0,0688	0,15785	2,29	-0,13128	-1,76
SWEDISH ORPHAN BIOVITRUM INTERNATIONAL AB	1			0,1781	0,3215	0,1334	0,0736	1,2500	-2,1159	0,0600	-0,13065	-1,40	-0,06842	-0,77
INGASO FARM SL	1			0,2401	0,3992	0,2076	0,0000	2,2400	-15,4209	0,2682	0,19765	4,29	-245.186	-0,10
SCHWARZ PHARMA AG	1			0,0000	-0,0119	0,0361	0,0172	0,6550	-2,5283	0,3324	0,0076	0,47	-0,01197	-0,99
PHARMA MAR SA	1			0,1297	-0,0168	0,2950	4,1169	0,5250	-0,8590	0,0219	-0,02861	-0,33	0,0193	0,69
BOUCHARA RECORDATI	1			0,6328	0,4448	1,2031	0,0000	0,3250	-15,3617	0,5132	-0,97473	-2,31		
SA GENFIT	1			-0,5531	-0,1181	-0,2274	0,2438	2,4100	9,1773	0,3461	0,03613	0,27	-0,22812	-0,54
SANOFI-AVENTIS S.P.A.	1			0,1515	0,1855	0,1542	0,0042	1,8100	1,9860	0,3199	-0,00042132	-0,02	-390.808	-0,36
AEROCRINE AB	1			-1,4542	-0,8705	-1,4164	0,0000	3,0500	5,9700	0,0084	0,23316	3,73	-0,52479	-0,78
PIPELIFE BELGIUM	1			0,0287	0,0012	0,0222	1,6644	1,9250	-1,2464	0,2973	0,02708	1,03	-0,09932	-2,23
DERETIL SOCIEDAD ANONIMA		1		-0,0273	-0,0419	0,0425	0,0932	1,5300	-1,5962	0,0279	0,13739	1,08	0,07832	0,23
GRIFOLS INTERNATIONAL SA		1		0,1044	0,2415	0,0626	0,0041	1,5400	1,8698	0,0030	-0,39159	-1,45	1.054.885	0,80
GIRINDUS AG		1		-0,3323	-0,3705	-0,3931	-0,0039	0,4500	-22,2624	0,1429	0,58608	0,78	0,11695	0,15
BIOGARAN		1		0,0803	0,1463	0,0593	0,2360	1,5950	0,0614	0,0001	0,20187	2,57	0,01766	0,66
FISONS LIMITED		1		0,1252	0,0240	0,3880	0,0000	3,9950	2,6920	0,4913	0,00585	1,60	0,02485	1,02
WARNER CHILCOTT PUBLIC LIMITED COMPANY		1		0,1500	0,0114	0,2930	1,0194	1,1400	-9,6800	0,4817	0,08926	0,60	-0,00154	-0,86
RHODIA UK LIMITED			1	-0,0685	-0,0782	-0,1390	-0,7524	1,1400	-2,6132	0,0494	0,68025	1,91	0,164	0,76
LIFE TECHNOLOGIES AS			1	0,3448	0,2452	0,3244	0,0000	3,9800	16,8912	0,4292	0,01155	0,38	0	,
PFIZER ITALIA S.R.L.			1	0,0160	0,0060	0,0720	0,0000	3,5100	-1,6080	0,2498	-0,00439	-0,17	0	,
INSTITUTO GRIFOLS SA			1	0,1957	0,1800	0,1491	0,3605	1,0400	-2,6214	0,0275	0,0571	0,45	-0,37266	-2,10
ITALFARMACO SA			1	0,1505	0,2060	0,1366	0,1185	1,7600	0,1280	0,0010	-0,05811	-2,23	-0,44705	-1,91
GE HEALTHCARE LIMITED			1	-0,4467	0,0500	0,4659	0,0000	1,7350	1,3186	0,0294	1	0,02	0	,
A NELSON & CO LIMITED			1	0,1859	0,4980	0,2253	0,8144	2,8450	-6,5742	0,2219	-0,12637	-2,35	0,02806	0,40
STIEFEL LABORATORIES (IRELAND) LIMITED			1	0,1962	0,1957	0,1645	0,1486	1,1950	19,9001	0,3692	0,10575	0,21	0,00892	0,01
AB BIOMERIEUX			1	0,7209	0,5283	0,5100	0,0000	7,1100	-8,8794	0,0714	0	,	0,00513	0,21
GLAXOSMITHKLINE BIOLOGICALS			1	0,2349	0,0725	0,4020	0,0008	8,5550	-1,2654	0,3124	-0,00383	-2,40	1.600.315	1,59
JANSSEN PHARMACEUTICA			1	0,0253	0,0090	0,3192	0,0187	1,1100	1,9596	0,2938	0,01823	0,57	0,08651	2,23
HAUPT PHARMA AG			1	0,0508	0,0423	0,0613	0,8543	1,3000	-3,9063	0,5548	-0,11908	-0,25	-0,0213	-0,07
GENEART AG			1	0,0312	0,0436	0,0707	0,0069	3,3050	-2,3290	0,1580	0,00324	1,47	176.329	1,15

B BRAUN MEDICAL SA	1	0,0983	0,1104	0,1710	0,0175	2,6400	1,9473	0,2206	-0,00546	-0,24	-0,7034	-2,37
GP PHARM SA	1	-0,5736	-0,0633	-0,1082	1,1053	1,0650	1,6248	0,0371	-0,0727	-1,47	0,0208	0,47
MERCK SANTE	1	0,1399	0,2312	0,1719	0,0979	3,2050	-6,0969	0,1379	0,00187	0,04	164.127	2,33
MERIAL LIMITED	1	0,2571	0,2572	0,2371	0,0044	1,9700	-19,7719	0,0381	-313.788	-2,58	1.308.257	1,82
ELAN CORPORATION PUBLIC LIMITED COMPANY	1	-0,3809	-0,1545	-0,1237	4,3848	3,3400	12,6178	0,2021	0,05118	1,23	0,01495	1,22

RETURN ON ASSETS = CASH FLOW RATIO + LONG-TERM DEBT TO EQUITY RATIO + CURRENT RATIO

MODEL: RETURN ON ASSETS = CASH FLOW RATIO + LONG-TERM DEBT TO EQUITY RATIO + CURRENT RATIO

	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Cash flow/Operating revenue		Variable: LT Debt to equity		Variable: CURRENT RATIO	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value	Parameter Estimate	t Value
US - Global																
ABBOTT LABORATORIES	1	0	0	0,1854	0,1247	0,2113	0,4986	1,5000	1,9210	0,1555	0,75093	1,26	-0,23828	-2,93	-0,00446	-0,06
MERCK & CO., INC.	1	0	0	0,2454	0,1379	0,2920	0,2786	1,4650	5,9155	0,3716	0,36205	1,53	0,03275	0,04	-0,12858	-1,12
ILLUMINA INC	1	0	0	0,1941	0,0673	0,1398	0,0000	2,8750	-3,0396	0,0135	0,73702	251,72	0,28796	101,82	-0,00182	-5,04
BIOMARIN PHARMACEUTICAL INC	1	0	0	-0,2325	-0,0178	0,0223	1,6704	6,0000	-10,2095	0,2239	0,09804	3,97	0,04157	1,76	-0,01566	-1,09
JOHNSON & JOHNSON	0	1	0	0,2630	0,1829	0,2449	0,1622	1,7350	2,8795	0,6428	0,05228	0,06	-0,29336	-1,47	0,00646	0,23
PFIZER INC	0	1	0	0,2710	0,0839	0,2812	0,1254	1,8950	1,8529	0,2719	0,1174	14,16	-0,10439	-26,4	-0,01412	-5,48
WYETH	0	1	0	0,2787	0,1439	0,2458	0,5927	3,1400	-0,4993	0,3381	276.068	24,12	0,05048	7,06	-0,00246	-3,4
BRISTOL-MYERS SQUIBB COMPANY	0	1	0	0,2254	0,1575	0,2100	0,4764	1,8750	0,3147	0,0024	-0,07157	-0,57	-0,11407	-1,27	0,1081	2,15
AMGEN INCORPORATED	0	1	0	0,3787	0,1268	0,3524	0,4270	2,8450	1,9059	0,4693	0,03852	0,22	-0,16893	-4,09	0,00553	0,73
GILEAD SCIENCES INC	0	1	0	0,5076	0,3493	0,3993	0,3164	3,3400	1,0939	0,0014	0,6839	6,6	0,0417	0,25	-0,00907	-0,53
ALLERGAN INC	0	1	0	0,1976	0,1066	0,1829	0,3551	3,1050	4,7140	0,1938	0,56538	1,28	-0,19995	-0,7	-0,00474	-0,09
MYLAN INC.	0	1	0	0,1514	0,0259	0,1119	1,4221	2,0150	4,9421	0,1721	113.319	16,4	-0,19629	-2,84	-0,05012	-1,91
HOSPIRA, INC.	0	1	0	0,1329	0,0751	0,1545	0,5946	2,5650	2,3711	0,3053	-0,08913	-0,14	-0,12039	-1,98	-0,07768	-1,35
CELGENE CORP	0	1	0	0,2402	0,0868	0,1643	0,1082	7,1450	-18,9310	0,5793	0,4828	11,06	-0,05444	-0,88	0,01422	1,82
MILLIPORE CORP	0	1	0	0,1418	0,0691	0,1665	0,7631	2,4750	0,2277	0,0087	-0,2255	-2,25	-0,0675	-7,14	-6,663E-05	-0,04
PERRIGO CO	0	1	0	0,1030	0,0635	0,0000	0,9539	1,8400	-8,7745	0,3240	0,56696	2,47	-0,1888	-0,48	0,03314	0,58
AMERICAN MEDICAL SYSTEMS HOLDINGS INC	0	1	0	0,2103	0,0885	0,1747	0,8842	2,8100	1,7368	0,0233	0,12028	0,48	-0,07156	-2,66	-0,04008	-1,45
CHATTEM INC	0	1	0	0,2637	0,1237	0,1613	1,4559	3,3550	0,8101	0,0897	-0,4843	-4,61	-0,02123	-2,84	0,0109	4,55
QUEST DIAGNOSTICS INCORPORATED	0	0	1	0,1801	0,1411	0,1283	0,6955	1,1450	1,0450	0,0653	0,01374	0,05	-0,11919	-3,86	-0,00851	-0,44
GENZYME CORPORATION	0	0	1	0,1439	0,0639	0,2136	0,0801	2,7900	1,9544	0,1023	278.114	3,55	-111.847	-2,22	0,03649	0,5

MODEL: RETURN ON ASSETS = CASH FLOW RATIO + LONG-TERM DEBT TO EQUITY RATIO + CURRENT RATIO																
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Cash flow/Operating revenue		Variable: LT Debt to equity		Variable: CURRENT RATIO	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value	Parameter Estimate	t Value
US - International																
ALKERMES, INC.	1	0	0	0,0640	0,0133	0,0888	0,3203	5,3550	7,1995	0,1069	0,48548	4,32	-0,00627	-0,64	-0,01526	-0,81
SUCAMPO PHARMACEUTICALS, INC.	1	0	0	0,1944	0,1534	0,0659	0,0000	4,0150	2,2057	0,0134	0,52213	1,22	-0,07392	-0,43	0,0131	0,48
NBTY INC	0	1	0	0,1077	0,1182	0,0965	0,3176	2,9700	-2,9700	0,2835	113.966	1,62	-0,05202	-1,05	0,03264	1,03
UNITED THERAPEUTICS CORP	0	1	0	0,1267	0,0487	0,0374	0,0614	3,4700	-0,2412	0,0004	0,61541	16,24	-0,1111	-9,15	0,01863	17,89
HEALTHTRONICS, INC.	0	1	0	0,1787	0,0361	0,1293	0,3525	2,6350	-21,0902	0,5679	-0,97279	-0,67	-0,11318	-0,2	0,02068	0,2
ABIOMED INC	0	1	0	-0,4831	-0,2141	-0,4311	0,0000	4,8050	-6,8233	0,1885	0,50128	7,28	0	,	0,01877	1,67
DYAX CORP	0	1	0	-1,4426	-0,6221	-1,7340	0,5432	3,5650	6,6765	0,0311	0,03255	0,31	0,00775	0,46	0,21354	1,28
GENENTECH INC	0	0	1	0,3209	0,2315	0,2610	0,2172	2,4350	-1,8037	0,1121	108.512	3,73	-0,19993	-1,38	-0,01405	-0,5
SYNTHES, INC.	0	0	1	0,3332	0,1761	0,3087	0,0025	3,1500	0,8849	0,2925	426.023	1,66	0,53158	2,1	-0,03577	-1,81
KING PHARMACEUTICALS INC	0	0	1	0,1271	0,0601	0,2093	0,1593	1,9650	-3,8707	0,2207	0,40423	1,26	0,06154	0,2	-0,00505	-0,15
ENDO HEALTH SOLUTIONS, INC	0	0	1	0,2872	0,1863	0,2402	0,1007	2,6950	4,1486	0,3891	0,21541	0,32	-0,18065	-2,03	-0,01757	-0,42
CUBIST PHARMACEUTICALS INC	0	0	1	0,1751	0,0565	0,1591	2,1025	6,3350	-9,7400	0,4855	-0,39569	-1,04	-0,03833	-2,29	0,01277	1,22
VERTEX PHARMACEUTICALS INC	0	0	1	-2,3427	-0,4039	-2,1379	0,4320	3,4550	0,5857	0,0008	0,00368	0,08	-0,04661	-0,25	0,06768	0,66
INTERMUNE INC	0	0	1	-1,1545	-0,4317	-0,6354	-1,2958	4,1250	11,0899	0,0290	0,35542	1,5	-0,00308	-0,04	-0,02201	-0,12
ZILA INC	0	0	1	-0,5449	-0,3854	-0,1345	0,1111	1,2900	12,9484	0,8561	0,03818	4,25	-0,62479	-1,59	-0,10344	-3,2
COLUMBIA LABORATORIES INC	0	0	1	-0,3008	-0,4177	-0,4357	-0,3152	2,5150	-2,9636	0,0086	0,56885	2,22	0,00902	1,68	0,19125	5,75

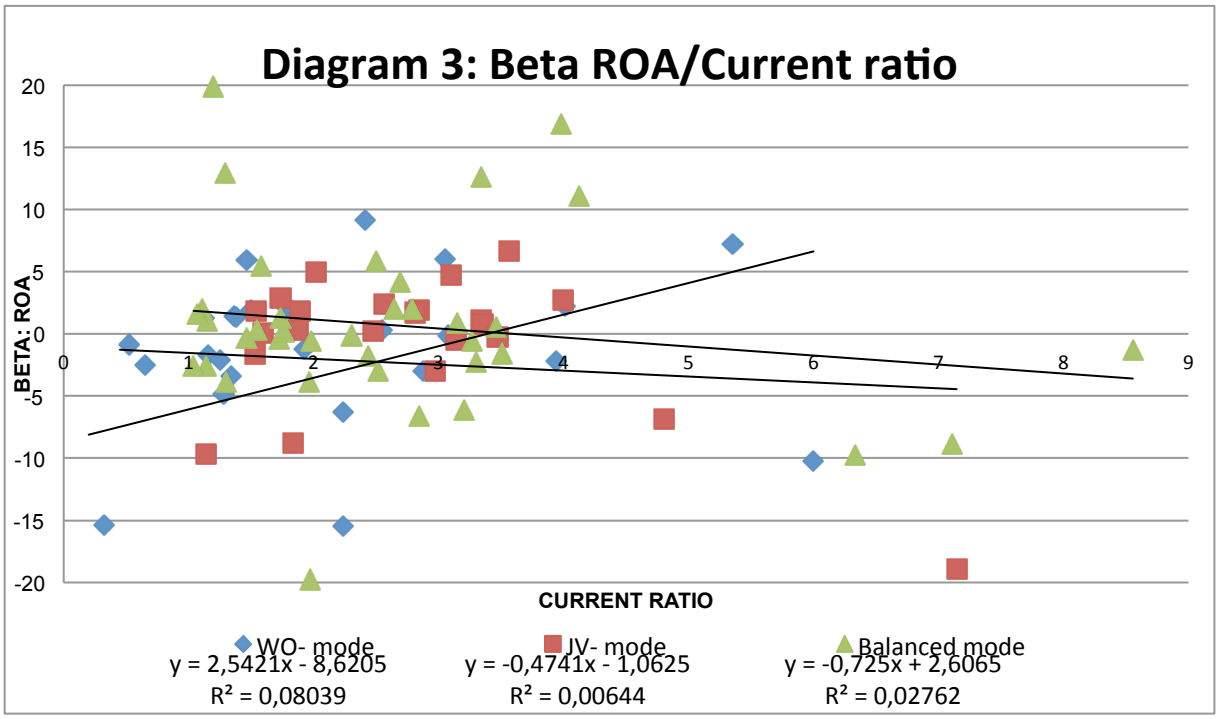
MODEL: RETURN ON ASSETS = CASH FLOW RATIO + LONG-TERM DEBT TO EQUITY RATIO + CURRENT RATIO

	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Cash flow/Operating revenue		Variable: LT Debt to equity		Variable: CURRENT RATIO	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value	Parameter Estimate	t Value
EU - Global																
RHODIA SA	1			0,0576	0,0203	0,0725	-3,6976	1,3400	-3,3678	0,1624	0,96906	4,4	-0,00945	-1,52	0,10656	2,34
NOVARTIS AG	1			0,2177	0,1126	0,2508	0,0416	1,3600	1,4262	0,5752	-0,18136	-5,99	-0,15049	-8,07	-0,00779	-1,18
ROCHE HOLDING AG	1			0,2777	0,1764	0,2419	0,2184	3,0750	-0,1477	0,0016	0,44491	0,93	-0,02532	-4,43	-0,05639	-3,57
LABORATORIOS MENARINI SA	1			0,0878	0,1752	0,0778	0,1578	2,2400	-6,2857	0,3308	398.710	1,44	0,20414	0,39	-0,0893	-0,71
LABORATORIOS INDAS SA	1			0,1799	0,1419	0,1873	0,2177	1,1550	-1,7189	0,0386	350.555	2,79	0,09224	0,8	-0,01048	-0,32
ISDIN SA	1			0,0860	0,1431	0,0864	0,0451	2,5450	0,2765	0,0006	126.872	1,23	-0,80727	-1,35	0,07444	0,46
LABORATOIRES FOURNIER SA	1			0,1370	0,2327	0,0970	0,0016	1,3800	1,3756	0,0056	-215.171	-4,57	2.406.097	3,66	0,36083	5,72
SHIRE PLC	1			0,0682	0,0451	0,2535	0,3139	1,2800	-4,8224	0,2332	106.722	1,18	0,19116	1,82	0,17251	1,54
CHEMI - S.P.A.			1	0,0512	0,0453	0,1332	0,0000	2,5000	5,8497	0,2094	-0,30731	-0,6	4.164.221	4,53	0,01149	0,45
SANOFI AVENTIS SA			1	0,0984	0,1520	0,0953	0,0127	3,2650	-0,6128	0,0105	161.883	2,45	-200.847	-0,35	-0,04003	-0,88
SANOFI WINTHROP INDUSTRIE			1	0,0909	0,1978	0,0687	0,1785	1,4650	-0,3606	0,0069	394.374	3,6	0,1343	2,4	-0,41022	-3,22
SANOFI PASTEUR			1	0,0969	0,0648	0,1041	0,7246	1,9800	-0,5697	0,0155	0,52886	1,2	-0,0368	-0,48	-0,0401	-0,4
MERIAL			1	0,3157	0,3603	0,2687	0,7431	1,5750	5,4867	0,3077	123.945	1,79	-0,13261	-0,82	-0,25028	-1,37
TEVA PHARMACEUTICAL INDUSTRIES LIMITED			1	0,2064	0,0810	0,2300	0,2687	1,7200	-0,3770	0,0045	0,62319	3,53	0,09548	0,63	0,02584	1,69
HEMOFARM			1	0,1996	0,0961	0,1838	0,2969	1,5450	0,3446	0,0040	0,27435	1,27	-0,05178	-0,15	0,03751	0,23
ASTRAZENECA AB			1	0,3575	0,1423	0,5053	0,0000	2,3050	-0,1373	0,0007	0,21428	2,59	16.222.782	0,93	-0,00277	-0,25

MODEL: RETURN ON ASSETS = CASH FLOW RATIO + LONG-TERM DEBT TO EQUITY RATIO + CURRENT RATIO																
	Entry Mode Strategy			Mean ratios					Accounting beta		Variable: Cash flow/Operating revenue		Variable: LT Debt to equity		Variable: CURRENT RATIO	
COMPANY	WO-mode	JV-mode	Balanced mode	Profit-margin	ROA	Cash Flow	LT debt-equity	Current	ROA	R^2	Parameter Estimate	t Value	Parameter Estimate	t Value	Parameter Estimate	t Value
EU - International																
UNION QUIMICO FARMACEUTICA SA	1			0,1113	0,1361	0,1749	0,0042	1,7450	2,4609	0,0889	133206,000	3,25	-0,142	-0,55	-0,020	-0,47
EUROMED SA	1			0,1407	0,1193	0,1759	0,0000	3,9400	-2,2126	0,2160	119972,000	11,14	0,137	1,74	0,012	5,07
SMITHKLINE BEECHAM LIMITED	1			-0,0048	0,0181	0,2096	0,0203	0,2000	-60,2100	0,0317	0,462	13,61	0,770	0,36	-103218,000	-0,53
OLON S.P.A.	1			-0,0263	-0,0423	0,0616	0,0167	1,1250	1,2291	0,0688	0,520	2,83	-0,044	-0,87	0,049	0,91
SWEDISH ORPHAN BIOVITRUM INTERNATIONAL AB	1			0,1781	0,3215	0,1334	0,0736	1,2500	-2,1159	0,0600	-0,982	-1,28	-0,104	-1,22	-0,286	-1,93
INGASO FARM SL	1			0,2401	0,3992	0,2076	0,0000	2,2400	-15,4209	0,2682	270708,000	3,22	-362188,000	-0,31	-0,040	-0,51
SCHWARZ PHARMA AG	1			0,0000	-0,0119	0,0361	0,0172	0,6550	-2,5283	0,3324	-0,003	-0,18	-0,012	-0,83	0,006	0,31
PHARMA MAR SA	1			0,1297	-0,0168	0,2950	4,1169	0,5250	-0,8590	0,0219	0,225	8,65	-0,022	-2,98	0,005	0,3
BOUCHARA RECORDATI	1			0,6328	0,4448	1,2031	0,0000	0,3250	-15,3617	0,5132	-0,018	-0,06	0,000	,	-101190,000	-1,26
SA GENFIT	1			-0,5531	-0,1181	-0,2274	0,2438	2,4100	9,1773	0,3461	0,288	8,65	0,144	1,53	-0,046	-1,64
SANOFI-AVENTIS S.P.A.	1			0,1515	0,1855	0,1542	0,0042	1,8100	1,9860	0,3199	0,752	2,14	0,923	0,12	-0,013	-0,84
AEROCRINE AB	1			-1,4542	-0,8705	-1,4164	0,0000	3,0500	5,9700	0,0084	-0,146	-0,76	-0,303	-0,39	0,227	3,35
PIPELIFE BELGIUM	1			0,0287	0,0012	0,0222	1,6644	1,9250	-1,2464	0,2973	-0,033	-0,53	-0,130	-1,67	0,039	1,03
DERETIL SOCIEDAD ANONIMA		1		-0,0273	-0,0419	0,0425	0,0932	1,5300	-1,5962	0,0279	129514,000	11,25	0,174	3,24	0,022	1,02
GRIFOLS INTERNATIONAL SA		1		0,1044	0,2415	0,0626	0,0041	1,5400	1,8698	0,0030	374277,000	3,65	-983955,000	-1,22	-0,293	-2,38
GIRINDUS AG		1		-0,3323	-0,3705	-0,3931	-0,0039	0,4500	-22,2624	0,1429	122310,000	2	-0,438	-0,73	0,262	0,47
BIOGARAN		1		0,0803	0,1463	0,0593	0,2360	1,5950	0,0614	0,0001	238873,000	7,91	0,016	2,79	0,065	2,69
FISONS LIMITED		1		0,1252	0,0240	0,3880	0,0000	3,9950	2,6920	0,4913	0,058	2,3	0,027	1,7	0,002	0,84
WARNER CHILCOTT PUBLIC LIMITED COMPANY		1		0,1500	0,0114	0,2930	1,0194	1,1400	-9,6800	0,4817	0,255	12,14	-0,001	-2,2	-0,053	-2,2
RHODIA UK LIMITED			1	-0,0685	-0,0782	-0,1390	-0,7524	1,1400	-2,6132	0,0494	0,302	1,39	0,037	0,18	0,266	0,62
LIFE TECHNOLOGIES AS			1	0,3448	0,2452	0,3244	0,0000	3,9800	16,8912	0,4292	0,713	20,05	0,000	,	-0,006	-1,76
PFIZER ITALIA S.R.L.			1	0,0160	0,0060	0,0720	0,0000	3,5100	-1,6080	0,2498	0,348	1,41	0,000	,	-0,011	-0,47
INSTITUTO GRIFOLS SA			1	0,1957	0,1800	0,1491	0,3605	1,0400	-2,6214	0,0275	169214,000	2,8	0,011	0,07	-0,039	-0,5
ITALFARMACO SA			1	0,1505	0,2060	0,1366	0,1185	1,7600	0,1280	0,0010	0,234	0,2	-0,397	-1,05	-0,064	-1,48
GE HEALTHCARE LIMITED			1	-0,4467	0,0500	0,4659	0,0000	1,7350	1,3186	0,0294	0,131	8,78	0,000	,	0,032	6,18
A NELSON & CO LIMITED			1	0,1859	0,4980	0,2253	0,8144	2,8450	-6,5742	0,2219	182494,000	0,78	0,033	0,44	-0,120	-2,07
STIEFEL LABORATORIES (IRELAND) LIMITED			1	0,1962	0,1957	0,1645	0,1486	1,1950	19,9001	0,3692	0,945	8,66	0,347	2,27	-0,046	-0,45
AB BIOMERIEUX			1	0,7209	0,5283	0,5100	0,0000	7,1100	-8,8794	0,0714	219306,000	1,4	0,000	,	0,009	0,39
GLAXOSMITHKLINE BIOLOGICALS			1	0,2349	0,0725	0,4020	0,0008	8,5550	-1,2654	0,3124	-0,099	-1,12	1760790,000	1,8	0,000	0,07
JANSSEN PHARMACEUTICA			1	0,0253	0,0090	0,3192	0,0187	1,1100	1,9596	0,2938	-0,033	-0,28	0,085	1,8	0,020	0,52
HAUPT PHARMA AG			1	0,0508	0,0423	0,0613	0,8543	1,3000	-3,9063	0,5548	161916,000	4,28	-0,080	-0,68	-0,093	-0,5
GENEART AG			1	0,0312	0,0436	0,0707	0,0069	3,3050	-2,3290	0,1580	0,549	1,54	-0,556	-0,28	0,005	2,33

B BRAUN MEDICAL SA	1	0,0983	0,1104	0,1710	0,0175	2,6400	1,9473	0,2206	0,890	2,37	-0,137	-0,45	0,003	0,21
GP PHARM SA	1	-0,5736	-0,0633	-0,1082	1,1053	1,0650	1,6248	0,0371	0,128	2,13	-0,003	-0,1	0,010	0,2
MERCK SANTE	1	0,1399	0,2312	0,1719	0,0979	3,2050	-6,0969	0,1379	0,352	0,1	160343,000	1,71	-0,001	-0,01
MERIAL LIMITED	1	0,2571	0,2572	0,2371	0,0044	1,9700	-19,7719	0,0381	196701,000	74,85	-258970,000	-9,69	0,454	8,17
ELAN CORPORATION PUBLIC LIMITED COMPANY	1	-0,3809	-0,1545	-0,1237	4,3848	3,3400	12,6178	0,2021	0,227	2,58	0,010	1,28	-0,027	-0,69

10.2 Appendix – Diagram: Beta ROA/Current ratio.



10.3 Appendix – Dupont System