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# The financial impact of standard stringency: An event study of successive generations of the ISO 9000 standard

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**Abstract**

While ISO 9000 has been shown to improve internal metrics of firm performance, external measurements may be unaffected. This paper examines the economic value of successive generations of the ISO 9000 standard by assessing the equity returns of 204 firms certified between 1999 and 2002. This study also examines the economic effects of ISO 9001:2000 versus the superseded 1994 standards. The complete sample experienced no significant changes in stock price. The market reaction to ISO 9001:2000 certification is significantly more positive than the reaction to ISO 9000:1994 registration.


*Keywords:* ISO 9000; Quality; Event study; Standard stringency

## 1. Introduction

Existing literature is sharply divided over whether ISO 9000 is ultimately good or bad for companies (Anderson et al., 1999; Beirão and Sarsfield Cabral, 2002; Corbett et al., 2005; Docking and Dowen, 1999; Hoyle, 1994; Huarng and Lee, 1995; Huarng et al., 1999; Juran, 1995; Kanji, 1998; Lima et al., 2000; Martinez-Costa and Martinez-Lorente, 2003; Nicolau and Sellers, 2002; Subba Rao et al., 1997; Uzumeri, 1997). For firms that voluntarily pursue certification, a common method to justify initial costs is the potential to create significant economic value through quality improvement (Anderson et al., 1999). However, even articles in the popular press have cast doubt on this claim and have offered evidence that ISO 9000 is not a guarantee of product quality or market value for the firm (Milbank, 1994). Therefore, a question arises as to whether there is sufficient justification for a firm to pursue a program that carries with it no guarantee of external value. Our paper will shed light on this critical issue by determining if an ISO 9000 certification announcement has an impact on the market value of a firm.

Despite the confusion over the value of ISO 9000, the standard has evolved over the past 15 years from "a means to harmonize disparate European regulatory bodies" into a global meta-standard in

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almost 150 countries (International Organization of Standardization, 2003; Zuckerman, 1994). As ISO 9000 has spread worldwide, it has also become part of the global supply chain and is increasingly becoming a requirement for doing business particularly in Europe, where certification is a means of obtaining the CE Mark, a regulatory seal for products critical to public safety (Anderson et al., 1995). In the United States, the Departments of Defense and Energy, Food and Drug Administration, and the Federal Aviation Administration all have adopted varying degrees of ISO 9000 as a supplier requirement (Anderson et al., 1995). Many firms have followed suit and demand that their suppliers become certified (Anderson et al., 1999; Subba Rao et al., 1997).

In addition, the standard has undergone additional modifications, including the adoption of the ISO 9000:2001 standard, which has attempted to align the goals of ISO 9000 certification with the principles of Total Quality Management (TQM). Furthermore, the standard has eliminated the ISO 9002 and 9003 series, thereby requiring any firm wishing to achieve ISO certification to meet all 20 requirements of the standard.

## 2. Literature review

### 2.1. Criticism and praise for ISO 9000

Past literature has heaped both exuberant praise and harsh criticism upon the ISO 9000 standards. Perhaps the most common criticism of the standard is the extensive documentation often associated with its implementation and the potential for certification to become ‘‘consultant-driven paperwork’’ (Huarng et al., 1999, p. 1024) at the risk of systemizing poor processes (Australian Manufacturing Council, 1992). Implementation has been criticized as being time consuming and costly; collecting the documentation and completing the application often takes more than a year, and the required third-party audit may take several days to complete (Curkovic and Pagell, 1999). Companies incur costs for auditors, training, and the associated lost time due to the training requirements and interviews by both internal and third-party auditors (Arnold, 1994; Cianfrani et al., 2001). Furthermore, when a firm is pressured by regulations into attaining ISO 9000 registration, there is a possibility of short-term quality improvement for the certification process. That performance is likely unsustainable, leading to a ‘‘hollow achievement in the long run’’ (Terziovski et al., 1997, p. 4). The potential for only short-term improvement prompted Hoyle (1994) to state that ISO 9000 is only a beginning step to an effective quality program.

Praise for ISO 9000 is rooted in the same parameters that also lead to its criticism. Systemization as a means to reduce process variation in a firm is a potential benefit of ISO 9000 certification (Huarng and Lee, 1995). Extensive documentation can be beneficial (Anderson et al., 1995; Beattie and Sohal, 1999) as such information can provide managers with detailed information about the processes of the firm, leading to fact-based decision making rather than assumptions that can introduce stochastic system behavior and associated risk (Arnold, 1994). While ISO 9000 is not a complete model of TQM, the standard is compatible with TQM and can serve as a baseline for further quality initiatives (Arnold, 1994; Juran, 1995; Kanji, 1998).

There is little research concerning the market impact of the revisions to the ISO 9000 standards which have attempted to make the standard more compatible with TQM. Little is known if the market perceives additional firm-level benefits of the new standard’s approach of reducing paperwork and becoming more closely aligned with customer satisfaction. Our research specifically investigates this issue.

### 2.2. Financial impact of ISO 9000

Empirical observations on the financial impact of ISO 9000 certification have yielded inconsistent results. Past researchers have observed the impact of ISO 9000 registration on both stock price and accounting variables. With regard to accounting metrics, Corbett et al. (2005) report that 3 years after certification, ISO 9000 registered firms exhibit a significant increase in return on assets, return on sales, intangible assets, sales growth, and the sales to assets ratio relative to noncertified firms. Simmons and White (1999) observed a sample of 63 certified electronics companies and report higher profitability versus a noncertified control group. They also found no significant difference in the sales to equity ratio; however, Lima et al. (2000) observed a higher sales to assets ratio for a sample of 129 certified Brazilian firms. A caution with these results is research that tests the impact of ISO 9000 certification on only accounting variables may be affected by managerial tinkering since accounting procedures are subject to manipulation by financial