

**SQUARE PEG IN A ROUND HOLE:
COMPARABILITY AND TRADE SECRETS**

By

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Abstract

An Abstract of the dissertation of

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in the Accounting Area

Title: “SQUARE PEG IN A ROUND HOLE-COMPARABILITY AND TRADE SECRETS”

In this paper, I document the impact of knowledge assets on *between firms* accounting quality. Specifically, I study if financial statement comparability (comparability) is affected by the protection provided to trade secrets—a key knowledge asset. To do this, I utilize the enactment of the uniform trade secrets act (UTSA) in the U.S. states in a staggered manner, as a quasi-natural experiment to the enhanced protection levels provided to trade secrets. I find that as protection to trade secrets increase, comparability reduces. The results are weaker for firms that have more intangibles intensity and that have a higher proportion of sophisticated users of financial statements. Overall, this paper establishes trade secrets as a determinant of comparability.

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Table of Contents

1. INTRODUCTION	1
2. LITERATURE AND HYPOTHESES DEVELOPMENT	6
3. RESEARCH DESIGN METHOD, SAMPLE DETAILS AND SUMMARY STATISTICS, AND VARIABLES DESCRIPTION	13
3.1 RESEARCH DESIGN METHOD	13
3.1.1 BASE MODEL	13
3.1.2 PARALLEL TRENDS	14
3.1.3 CROSS-SECTION	14
3.2 SAMPLE DETAILS AND SUMMARY STATISTICS	15
4. VARIABLES DESCRIPTION	16
4.1 DEPENDENT VARIABLE	16
4.2 INDEPENDENT VARIABLE	17
4.3 CONTROL VARIABLES-FIRM	17
4.4 CONTROL VARIABLES-STATE	18
5. RESULTS DESCRIPTION	19
5.1 HYPOTHESIS 1-BASE MODEL	19
5.2 CROSS-SECTIONAL RESULTS	20
5.2.1 HYPOTHESIS 2-INTANGIBLES INTENSITY	20
5.2.2 HYPOTHESIS 3-SOPHISTICATED USERS OF FINANCIAL STATEMENTS	21
5.3 ADDITIONAL ANALYSIS	21
6. CONCLUSION	22
REFERENCES	23

List of Tables

	Page
Appendix A	29
Table 1 Panel A	30
Table 1 Panel B	31
Table 2	32
Table 3	33
Table 4	34
Table 5	35
Table 6	36
Table 7	37
Table 8	38
Appendix B	39
Appendix C	41

1. Introduction

Comparability is a critical *between firms*¹ accounting quality impacted by accounting choices made by firms' vis-a-vis their peers. However, research on its determinants is sparse. Anecdotal evidence in discussions of FASB (2019), FRC (2019), CFA Institute (Puca and Zyla, 2019), auditors (2015), practitioners (2019), and academicians (2016) suggests that knowledge assets pose a challenge to comparability and consequently peer valuation. Motivated by this evidence, I explore the impact of knowledge assets, specifically trade secrets, on comparability. To do this, I utilize the enactment of the uniform trade secrets act (UTSA) in various states of the U.S. in a staggered manner as a setting since (1) trade secrets are an important knowledge asset economically (2) trade secrets are undisclosed innovation in contrast to patents, which has been the focus of most accounting studies and (3) the passage of the UTSA is plausibly exogenous.

Comparability is a critical quality of the firm's accounting ecosystem as per the Financial Accounting Standards Board's (FASB) Statement of Financial Accounting Concepts (FASB, 2010). It is *"the qualitative characteristics that help a user identify and understand similarities in, and differences among, financial statement items. Unlike the other qualitative characteristics, comparability does not relate to a single item. A comparison requires at least two items (FASB, 2010 QC21)."* Also, *"for information to be comparable, like things must look alike and different things must look different. Comparability of financial information is not enhanced by making unlike things look alike any more than it is enhanced by making like things look different (FASB, 2010 QC23)."* Consequently, a long strand of

¹ Comparability is a between firms accounting quality and distinct from other firm-level accounting qualities such as earnings management, disclosure quality, etc., (Simmons, 1967; De Franco et al., 2011; Imhof et al., 2017; Chircop et al., 2019).

accounting literature documents the advantages of comparability for financial statement users, but we know little about its determinants.

Existing literature on accounting quality and knowledge assets uses patents to proxy for knowledge assets (Chemmanur et al., 2014; Bernstein, 2015; Cornaggia et al., 2015; Agarwal et al., 2018; Zhong, 2018). However, these studies have limitations, given that firms do not patent a majority of knowledge assets (Arundel and Kabla, 1998; Cohen et al., 2000; Arundel, 2001). A few recent studies have used the increased protection provided to trade secrets to establish its causal link with firms' real choices. These include the impact on the firms' debt-equity ratio (Klasa et al., 2018), employee innovation effort and outcome (Contigiani et al., 2018), corporate social responsibility (CSR) engagement and expenditure (Flammer and Kacperczyk, 2019), adoption of antitakeover provisions (Dey and White, 2021). Literature has also explored the impact of increased protection provided to trade secrets on accounting choices such as the disclosure of forward-looking financial information such as earnings forecast frequency and horizon (Li and Li, 2019), corporate transparency and voluntary disclosure (Glaeser, 2018), financial reporting opacity (Callen et al., 2020), use of relative party evaluation in contracts (Na, 2020), and upwards earnings management (Gao et al., 2018). As a result of these real and accounting choices, increased protection to trade secrets impact the firms market values in mergers and acquisition (M&A) deals (Castellaneta et al., 2017), cumulative abnormal returns of the firms post trade secret law's passage (Qiu and Wang, 2018), stock price synchronicity (Kim et al., 2019), and the technological peer pressure (Cao et al., 2018).

In this paper, I extend the research by examining the effect of increased protection to trade secrets² on comparability. For this, I used the staggered passage of the UTSA in various

² I use increased protection of trade secrets and trade secrecy interchangeably.

states of the U.S. as an identification strategy. UTSA was set up as a model act ³ by the uniform law commission (ULC), and its adoption helped firms settle disputes related to trade secrets. Legal experts and practitioners (Sandeep, 2010; Mordaunt et al., 2020; Kasdan et al., 2021) believe that the adoption of UTSA aided in the quicker disputes resolution related to the misuse or theft of trade secrets. As a result, researchers have found that firms pursue higher trade secrets and lesser patents after enacting the law, given the uniformity induced in the legal solutions provided by the UTSA (Png, 2017a, 2017b). Additionally, the increase in trade secrecy is exogenous and unrelated to firm-level factors and lobbying activities (Castellaneta et al., 2017; Klasa et al., 2018). I use this exogenous variation in trade secrecy in my research design to establish the causal impact of UTSA on firms' relative accounting choices, which I capture using comparability. Also, literature gives us differing views on the relationship between trade secrets and comparability.

On the one hand, theoretical models of proprietary disclosure suggest that the disclosing proprietary information⁴, such as trade secrets, involves a cost because making this information public will reveal it to competitors. Therefore, firms have to balance between the dual objectives of protecting information that is proprietary in nature and producing value-enhancing disclosures, and consequently, partial or non-disclosure can be an optimal policy (Verrecchia, 1983; Dye, 1986). In line with this, extant research finds that after the passage of the trade secrets acts, there is a reduction in proprietary disclosures such as customers' identity (Li et al., 2018), information about material contracts (Glaeser, 2018), and firms' press releases about R&D and product development stages (Cao et al., 2018). Moreover, due to the enhanced protection provided to trade secrets, gathering information about

³ "An act is designated as a "Model" Act if uniformity may be a desirable objective" ("What is a Model Act?," 2021)

⁴ "Proprietary information is defined as information whose disclosure reduces the present value of cash flows of the firm endowed with the information" (Dye, 1986, p. 331).

competitors' innovative activities is more challenging because of severer punishment for misappropriation and reduced employee mobility (Castellaneta et al., 2017; Png, 2017a; Gao et al., 2018).⁵ Therefore, due to the lower levels of proprietary disclosure and higher threat of punishment, competitors pay more attention to public disclosures, increasing the marginal cost of proprietary disclosure (Li et al., 2018; Kim et al., 2019). Overall, due to the increased marginal cost of proprietary disclosure, the reduced levels of the disclosure will result in a weaker information environment for the firm and its peers and lower accounting transparency.⁶ The lower levels of transparency reduce the dissemination of accounting practices⁷ and make it difficult to assess the peer firm's business economics and its link to the accounting practices, leading to reduced comparability (Choi et al., 2019).

On the other hand, after passage of the trade secrets act, managers face the dual objectives of protecting information that is proprietary in nature and producing value-enhancing disclosures. Therefore, they try to balance the disclosures made to the product market, i.e., proprietary disclosures, and capital markets, i.e., non-proprietary disclosures (Glaeser, 2018; Kim et al., 2019). In line with this, the extant literature on trade secrecy finds that managers issue more forward-looking earnings related information, such as increasing the number of management forecasts and its horizon (Glaeser, 2018; Li and Li, 2019). Similarly, Gao et al., (2018) find that managers have lower outside employment opportunities due to trade secrecy, which reduces their incentives for upwards earnings management

⁵ Legal remedies against misappropriation also include injunctive relief under which an employer can prohibit an employee from joining a competitor (Godfrey, 2004).

⁶ Existing literature defines transparency as the accessibility of information related to the publicly traded firm for those outside the firm, and the framework includes the corporate reporting regime, intensity of private information acquired by outsiders such as analysts, and dissemination of information (Bushman et al., 2004b). Transparency reveals the underlying economic activities of the firms to outsiders (Bushman et al., 2004b) and has implications for insider gains (Aboody and Lev, 2000) and financing policy (Vicente-Lorente, 2001; Hall, 2002).

⁷ Based on the institutional theory, the literature on determinants of comparability suggests that the dissemination of accounting practices positively impacts it (De Franco et al., 2019; J. R. Francis et al., 2013, 2018).

practices. These papers align with the literature on the benefits of transparency for innovative firms, which finds that the increased level of transparency results in lower managerial entrenchment, efficient R&D capital allocation, and lower capital market punishment due to project failure (Bushman et al., 2004a; Zhong, 2018). Additionally, firms increase their reliance on outside capital (Klasa et al., 2018) and benchmark managers' to the peer firms' performance (Na, 2020) after the trade secret acts. Therefore, managers will truly reflect the underlying business economics in the accounting choices and inform the capital market about it leading to higher transparency. These practices will also lead to the dissemination of accounting practices between peer firms, leading to increased comparability.

To empirically study the relationship between trade secrets on comparability, I use the staggered passage of the UTSA in various states of the U.S. starting from 1979. The research design choice helps in making sharper empirical predictions and addresses the endogeneity concerns. Following Bertrand and Mullainathan (2003), I use a generalized differences-in-differences design in which the dependent variable is comparability, as proposed by De Franco et al.,(2011). They propose the distance between accounting systems between firms in an industry as a index of comparability. I find a statistically and economically significant decrease in comparability following the passage of the UTSA. Next, I look at the moderators of the negative relationship between trade secrecy and comparability. Literature finds that transparency and the resulting higher comparability can benefit firms with higher intangibles intensity due to their inherent opaque nature of business (Zhong, 2018) and that sophisticated users of financial statements such as sell-side analysts and institutional investors have a positive association with comparability (DeFond et al., 2011; De Franco et al., 2011; Fang et al., 2015). Therefore, I choose to study these two variables as moderators. In this analysis, I find that the negative relationship is weakened in the presence of sophisticated users of financial statements and for firms with higher intangibles intensity.

With these findings, I contribute to various streams of literature. Firstly, I contribute to research documenting the determinants of comparability. There is little empirical research on what determines a firm's decision to provide comparable financial statements.⁸ This paper is the first to show that enhanced protection of trade secrets, a vital source of a firms' sustainable competitive advantage, reduce comparability.

Next, I contribute to the literature on how knowledge-based assets impact accounting practices. By showing that a critical source of knowledge capital, trade secrets affect comparability, I establish that firms make important accounting decisions in the face of a changing business environment. I also add to the literature on non-patentable knowledge assets. Most accounting and finance studies in the broad area of innovation focus on patents and their economic implications. However, non-patentable innovations are extensive and steadily increasing as a percentage of firms' knowledge assets (Png, 2017a, 2017b). By showing that trade secrets have important accounting implications, I add to this stream of literature.

The findings in this paper have implications for policymakers as it highlights an unintended effect of trade secrets protection law, regulators interested in understanding the factors that drive comparability of financial statements, and practitioners involved in peer valuation of firms with intangibles.

2. Literature and Hypotheses Development

Comparability is a key qualitative accounting characteristic important for financial statement users (FASB, 2010; De Franco et al., 2011), and it is the closeness of accounting systems between peer firms. A few important points about comparability is that (1) it is a

⁸ The most common theme has been audit-related factors, i.e., common auditors (Francis et al., 2013), the global network of local audit firms (Ege et al., 2019). I enumerate the other determinants in Section 2.

relative accounting measure, (2) it has its roots in how the underlying economics of the business transaction reflects between peer firms accounting, and (3) it reflects similarities as similarities and dissimilarities as dissimilarities (Simmons, 1967; FASB, 2010; De Franco et al., 2011; Barth et al., 2012). A long strand of research in accounting has documented various benefits of comparability. It has multiple capital market benefits like reduced stock price crash risk (Kim et al., 2016), lower information asymmetry amongst market participants (Brochet et al., 2013; Neel, 2015), better analyst following, and analyst performance (De Franco et al., 2011), and lower IPO under-pricing (Shane et al., 2014). Additionally, it has a negative association with credit risk (Kim et al., 2013), leads to lower cost of debt (Fang et al., 2012), and increased acquisition efficiency (Chen et al., 2015). However, the determinants' of comparability is an under researched area.

Literature enumerates the following determinants of accounting comparability: common auditors (Francis et al., 2013), the global network of local audit firms (Ege et al., 2019), common reporting standards (Yip and Young, 2012), and presence of institutional investors (Fang et al., 2015), co-location with peer firms (De Franco et al., 2019). A key determinant of comparability that is of interest is knowledge assets, given the concerns raised by policymakers and practitioners in various discussions (Mazzi et al., 2019; *FASB-Invitation to comment*, 2019). Additionally, the impact of knowledge assets on comparability is important given the trend of increasing investments into such assets in the last few years.

A key knowledge asset is trade secrets, a source of continuous competitive advantage for a firm (Png, 2017a, 2017b). It is any manufacturing or commercial and industrial secret, ranging from formulae, drawings, suppliers' lists, customers' lists amongst others ("Trade secret - Wikipedia," n.d., "What is a Trade Secret?," n.d.). It is estimated by the U.S. Chamber of Commerce that in the U.S. publicly listed firms have around \$5 trillion in trade secrets, and this is nearly 20% of the market capitalization of these firms (*U.S. Chamber of*

Commerce, 2016; Glaeser, 2018). Also, evidence across various surveys worldwide shows that trade secrets is considered more predominant than patents for innovations and consequently firms' might not file patents for a lot of innovations (Arundel and Kabla, 1998; Cohen et al., 2000; Arundel, 2001). The presence of trade secrets poses a challenge for valuations and peer analysis (Aboody and Lev, 2000), and comparability can be desirable quality for such firms. It decreases the time and effort needed for analysing financial statements compared to peer firms (De Franco et al., 2011). However, there has been no study that looks at how trade secrets impact comparability.

Both anecdotal and academic evidence suggests that trade secrets play a substantial role in differentiating a firm from its peers. They constitute approximately sixty five percent of the firms' intangible assets (Castellaneta et al., 2017). Extant literature documents that trade secrets can impact firm value in mergers and acquisitions (Castellaneta et al., 2017), shareholder value (Qiu and Wang, 2018), and employee mobility and innovation (Png, 2017a). Evidence also suggests that trade secrets impact firms' business choices, e.g., location choices (Fosfuri and Ronde, 2004), how much to investment in knowledge capital (Qiu and Wang, 2018), and the firms' debt to equity mix (Klasa et al., 2018). Moreover, they also impact managers' accounting choices, such as voluntary disclosure practices (Glaeser, 2018), earnings management (Gao et al., 2018), and asymmetric release of good news vs. bad news (Ali et al., 2018).

In this paper, I extend the research examining the impact of trade secrets on accounting choices and study how does it impact comparability. However, assessing the impact of trade secrets on comparability is empirically challenging because of endogeneity issues. For instance, some underlying unobservable common causes arising from the firm's environment can impact trade secrets and the accounting choices. To overcome this empirical challenge, I take advantage of a quasi-natural event, i.e., the passage of the UTSA in various

states of the USA in a staggered manner, which enhanced the protection to trade secrets and resulted in firms pursuing higher trade secrecy compared to patents (Png, 2017b). In 1979, the Uniform Law Commission (ULC) enacted UTSA and later amended the law 1985 after which various states adopted it in a staggered manner (“Trade Secrets Act - Uniform Law Commission-Summary,” n.d.).⁹ The states that passed the UTSA saw enhanced protection towards trade secrets, which led to more investments in attaining and maintaining them (Png, 2017a; Contigiani et al., 2018). Moreover, the enactment was exogenous to the states’ economic and political situation, which further allays fears that some unobservable state-level economic or political characteristic contaminates the shock (Castellaneta et al., 2017; Png, 2017a, 2017b). Besides, research suggests that the passage of UTSA in different states was not an outcome of the firms’ lobbying efforts (Png, 2017a).

Existing literature on increased protection to trade secrets and accounting qualities gives us two views on how comparability will be affected by the passage of UTSA. Extant literature suggests that firms maintain a balance between disclosures made to the product market vs. the capital market (Glaeser, 2018; Kim et al., 2019; Li and Li, 2019). This disclosure choice is due to dual objectives of safeguarding proprietary information and disclosing value-increasing financial information, and therefore partial, or non-disclosure can be an optimal policy (Verrecchia, 1983; Dye, 1986). On the one hand, extant research finds that as the protection to trade secrets increases, it leads to lower levels of proprietary disclosures. The theoretical models of proprietary disclosures in Dye (1986) and Verrecchia (1983) supported this view of partial disclosure. Consequently, the empirical literature on trade secrets finds that after the passage of trade secrets protection acts firms reduce voluntary disclosure of proprietary information such as the identity of major customers’ (Li et

⁹ As of date, all states in the U.S. have enacted the UTSA except New York, where the introduction was in 2020 (“Trade Secrets Act - Uniform Law Commission-Summary,” n.d.).

al., 2018), redact information about material contracts in the 10K (Glaeser, 2018), and bring down the number of press releases about R&D and product development stages (Cao et al., 2018). Although protection provided to trade secrets acts motivates firms to pursue innovation, it becomes increasingly difficult for competitors to gain information about firms innovative activities due to easier resolution and harsher punishment for misappropriation and difficulty in employing competitors employees (Castellaneta et al., 2017; Png, 2017b, 2017b; Gao et al., 2018). Therefore, firms' competitors pay more attention to public disclosures resulting in the higher marginal cost of proprietary disclosure (Li et al., 2018; Kim et al., 2019). As a result of the reduced disclosure, firms' information environment and peer environment suffer, making it difficult to understand the peer firms' business economics and its link to the accounting practices. Overall, this results in lower transparency in firms accounting policies and hinders the dissemination of accounting practices resulting in reduced comparability.

On the other hand, the extant literature on trade secrecy finds evidence of enhanced voluntary disclosure to capital market participants, resulting in higher transparency of accounting policies. For example, after the passage of trade secrets acts, the literature finds that managers increase the volume of information relevant to capital market participants, such as increased management forecast frequency and horizon (Glaeser, 2018; Li and Li, 2019) and longer 10-K's (Kim et al., 2019). In a similar vein, Gao et al.,(2018) find that managers reduce upwards earnings management practices due to lower outside employment opportunities. These papers find support from the literature that explores the advantages of transparency for innovative firms. The evidence such advantages are lower managerial entrenchment, increased efficiency of allocation of R&D expenses, and the reduced threat of punishment by the capital market when there are project failures (Bushman et al., 2004b, 2004a; Zhong, 2018). Firms might also be motivated to increase transparency in accounting

practices after the trade secrets acts due to an increase in benchmarking of managers to peer firms' performance (Na, 2020) and an increase in firms' dependence on outside capital (increase leverage) (Klasa et al., 2018). Therefore, managers will be motivated to have transparency in accounting practices and inform the capital market about mapping economic transactions to accounting choices. This improved information environment will positively affect the peer information environment, leading to the dissemination of accounting practices between peer firms and an increase in comparability. Given these views, the impact of trade secrets on comparability is an empirical question. Thus, in null form, the first hypothesis is :

H1: Adoption of UTSA has no impact on comparability of firms in the adopting state.

While ex-ante, it is difficult to anticipate the impact of *UTSA* on *Comparability*; it is possible to anticipate predictions in certain sub-samples. In these sub-samples, I can anticipate which firms are more likely to have higher comparability post the passage of *UTSA*. I follow the guidance in the existing literature to anticipate that comparability will be higher for firms with higher intangibles intensity and for firms with sophisticated users of financial statements. Extant literature finds that firms with higher intangibles intensity benefit from transparency due to their inherent opaque nature of innovative business (Zhong, 2018). Also, comparability is positively associated with sophisticated users of financial statements such as analysts (De Franco et al., 2011) and institutional investors (DeFond et al., 2011; Fang et al., 2015).

Therefore, first, I explore intangibles intensity as a moderator. Trade secrecy is a motivation for firms to pursue innovation, which provides a multiplicative effect on firms' growth just as total factor productivity does to production (Mairesse and Mohnen, 2002). It also distinguishes the firms from peers and helps procure sustainable competitive advantages by accumulating non-tradable and difficult-to-copy assets (Barney, 1991; Vicente-Lorente, 2001). While innovation increases a firm's competitive advantage (Barney, 1991; Vicente-

Lorente, 2001), various factors contribute to making these firms less transparent than peers (Hall, 2002; Srivastava, 2014) as the assets in these firms are associated with high opacity and specificity (Vicente-Lorente, 2001). Unlike other investment projects, the investment in innovation is a long-term, intangible in nature, and has enhanced level of secrecy and uncertainty (Hall, 2002; Zhong, 2018). Consequently, investments in innovation contribute to the volatility of expenses, revenues, and earnings (Srivastava, 2014). Such volatility, related to innovation investments, motivates managers to increase transparency because of its implicit contracting benefits. These benefits can accrue as lower punishment for managers in project failures and efficient allocation of R&D capital (Zhong, 2018). Thus, ex-ante, I expect that firms with higher intangibles intensity will have higher comparability to take advantage of the implicit contracting benefits of transparency after the passage of UTSA. I use two commonly used proxies of intangibles intensity, scaled R&D expenses and market-to-book ratio (MTB), to test this hypothesis.¹⁰ While R&D captures the reported expenditures in innovation, MTB is a proxy of the intangibles. These proxies reflect the intensity of innovation at the firm level by capturing the intangibility intensity (Francis and Schipper, 1999; Aboody and Lev, 2000; Srivastava, 2014). Thus, my second hypothesis in alternate form is that:

H2: Comparability of firms with higher intangible's intensity is more likely to increase after the enactment of UTSA.

Lastly, I examine the moderating effect of sophisticated users of financial statements actively involved in peer valuation. Literature finds that comparability has a positive association with sophisticated users of financial statements such as sell-side analysts and institutional investors such as foreign and domestic mutual funds (DeFond et al., 2011; De

¹⁰ Another way of testing this hypothesis is to examine capital constraints as a moderator directly, which I am currently doing through intangibles intensity.

Franco et al., 2011; Fang et al., 2015). The literature highlights that comparability reduces the information acquisition costs of foreign mutual funds (DeFond et al., 2011), increase forecast accuracy and reduces forecast dispersion of sell-side analysts (De Franco et al., 2011), and improves the valuation judgments of credit analysts (Kim et al., 2013). Therefore, increased comparability after the passage of UTSA is the desired quality for firms in the presence of sophisticated users of financial statements. This increase is an advantage because of the efficiency of the users involved in peer evaluation. Additionally, these users also aid in disseminating accounting practices amongst firms (Healy and Palepu, 2001; D’Souza et al., 2010). Thus, ex-ante, I expect comparability to be higher for firms with sophisticated users of financial statements. I use two commonly used proxies for sophisticated users of financial statements, the number of analysts following the firm and the percentage of dedicated institutional investors holding in a firm. Both sell-side analysts (Neel, 2015; De Franco et al., 2019) and dedicated institutional investors (Bushee, 1998, 2001) proxy for sophisticated users of financial statements actively involved in peer evaluation and have a positive association with comparability. Thus, my second hypothesis in alternate form is that:

H3: Comparability of firms with higher proportion of sophisticated users of financial statements are more likely to have increase after the enactment of the UTSA.

3. Research Design Method, Sample Details and Summary Statistics, and Variables Description

3.1 Research Design Method

3.1.1 Base Model

I use the staggered passage of the UTSA in the states as an exogenous variation in trade secrets at the firm level and use the model below:

$$Y_{i,j,t+1} = \alpha_i + \delta_t + \beta_1 UTSA_{j,t} + \gamma X_{i,j,t} + \varepsilon_{i,j,t} \quad 1$$

In the above model i represents firms, j represents the incorporation state of the firm, and t represents time and it is similar to the model in Castellaneta et al., (2017). Y represents the dependent variable, i.e., comparability, α represents the firm fixed effect, δ represents the time fixed effect, $UTSA$ is a dummy variable which is equal to one if UTSA is enacted in state j during time t and zero otherwise, and X represents the set of control variables in the model. The estimate of the effect of the passage of UTSA is the coefficient β_1 . The model in Eq.(1) is a generalised difference-in-differences estimation proposed and used by Bertrand & Mullainathan (2003) and is a popularly used research design choice to estimate causal impact. Following Bertrand & Mullainathan (2003), I also add firm and year fixed effects in the specifications and the errors are clustered at the state level which is the level of the shock.

3.1.2 Parallel trends

To address reverse causality and the concern that pre-existing differential trends explain the difference-in-difference results, I estimate the following model proposed in Bertrand & Mullainathan (2003):

$$y_{i,t,t+1} = \alpha_i + \delta_t + \beta_1 UTSA_{j,t=-1} + \beta_2 UTSA_{j,t=0} + \beta_3 UTSA_{j,t=1} + \beta_4 UTSA_{j,t=2+} + \beta_5 z_{i,j,t} + \varepsilon_{i,j,t}$$

In the above model, I replace the indicator for UTSA in Eq. (1) by the time event indicator $UTSA_{j,t=-1}$, which is one if the firm is in a state that passed UTSA one ago, $UTSA_{j,t=0}$ which is one if the firm is in a state in the year of the enactment of the UTSA, $UTSA_{j,t=1}$ which equals one if the firm is in a state one year after the enactment of the UTSA and $UTSA_{j,t=2}$ which is one if the firm is in a state two or more years after the enactment of the UTSA. If there were no pre-existing trends around the passage of UTSA, then in the above model, I should not find a significant β_1 coefficient.

3.1.3 Cross-section

I use the model in Eq.(3) for cross-sectional analysis :

$$y_{i,t,t+1} = \alpha_i + \delta_t + \beta_1 UTSA_{j,t} + \beta_2 z_{i,j,t} + \beta_3 UTSA_{j,t} * z_{i,j,t} + \varepsilon_{i,j,t} \quad 3$$

where $z_{i,j,t}$ the moderator of the relationship and β_3 , the coefficient of the interaction term of $UTSA_{j,t}$, and $z_{i,j,t}$ is the coefficient of interest. I use this model to test Hypothesis 2 and Hypothesis 3.

3.2 Sample Details and Summary Statistics

I use data from multiple sources: COMPUSTAT for firm fundamentals, CRSP for firm returns, I/B/E/S for analysts-related information, Thomson Reuters for identifying the presence of institutional investors. My data sample begins with the firm pairs for which I construct comparability using the algorithm provided by De Franco et al., (2011) between 1980-2016. Post merging this data with the key control variables, I have 69,886 firm-year observations. I present the summary statistics of the key variables Table 1 Panel A, and the yearly distributions of the observations in Table 1 Panel B.

In Table 1 Panel A, the mean (median) of the dependent variable, i.e., comparability, is $-0.571(-0.240)$, which implies that the average (median) error in quarterly earnings between firm i and the top 4 firm j 's functions is 0.57% (0.24%) of market value and it is a left-skewed distribution similar to the definition in De Franco et al,(2011). In the paper, I define dependent variable is an indicator for the enactment of the UTSA in the state in which the firm is incorporated. I present the information on the state-wise passage of the act in Appendix B (Castellaneta et al., 2017; “Trade Secrets Act - Uniform Law Commission-Legislation,” 2021). Table 2 reports the Pearson correlations between the key covariates in the base model. In line with expectations, I find that the correlation between comparability and the UTSA indicator is negative and significant at 1%.

4. Variables Description

4.1 Dependent Variable

I construct the output-based comparability index (*Comparability*) for which I use algorithm in De Franco et al., (2011). I choose this measure, even though it is a parsimonious one, because it moves away from choosing which input to use and the relative weights to give to those inputs (De Franco et al., 2011). “*This measure maps the economic events faced by a firm to its financial statements* (De Franco et al., 2011, p. 899).”

$$Financial\ Statement_i = f_i(Economic\ Events_i) \quad 4$$

where $f_i(.)$ represents the accounting system of the firm. “*Consequently, two firms are comparable if the respective firms’ accounting systems produce similar financial statements conditional on similar economic events* (De Franco et al., 2011, p. 899)”. Thus, it is a measure of the distance between two firms’ reported earnings given that they face the same returns during the same time-period. Empirically the measure is operationalized by estimating the following equation using 16 quarters of lagged data for each firm in the sample separately:

$$Earnings_{i,t} = \alpha_i + \beta_i Return_{i,t} + \varepsilon_{i,t} \quad 5$$

In the above equation $Earnings_{i,t}$ is the quarterly net income before extraordinary items divided by the beginning of the period market value of equity, and $Return_{i,t}$ is the quarterly return of the firm. From equation (5) the parameters $\hat{\alpha}_i$ and $\hat{\beta}_i$ are estimated. These parameters are the representative of the accounting system of the firm. Next, I calculate the closeness of the $Earnings_{i,t}$ measure by estimating the following two equations for a firm pair $i-k$.

$$E(Earnings)_{i,i,t} = \hat{\alpha}_i + \hat{\beta}_i Return_{i,t} \quad 6$$

$$E(Earnings)_{i,k,t} = \hat{\alpha}_j + \hat{\beta}_j Return_{i,t} \quad 7$$

In the above equations $E(Earnings)_{i,i,t}$ is the expected earnings for firm i for period t , calculated by using the parameters estimated by Eq.(5) and similarly, the $E(Earnings)_{i,k,t}$ is the expected earnings for firm k in period t . I calculate the expected earnings using parameters estimated in Eq.(5) and return of firm i to empirically measure the expected earnings when the firms face similar economic events. Using the same return to predict the earnings for the pair of firms holds the economic income constant for the pair of firms.

I measure the closeness of the earnings estimate as per Eq. (8) below, where higher values indicate higher comparability. This closeness measure is the comparability for firm pair $i-k$.

$$AcctComp_{i,k,t} = -1/16 \times \sum_{t=15}^t |E(Earnings_{i,i,t}) - E(Earnings_{i,k,t})| \quad 8$$

I operationalize the measure of firm-year level *Comparability* by using all the available firm $i-k$ pair level comparability for any firm i at time-period t . For firm i , all the firm $i-k$ pair, the measure is ranked, and then the average of the top four $i-k$ pair taken as the firm-year level comparability for firm i .

4.2 Independent Variable

The independent variable is a dummy variable that equals one if the time-period is after the passage of the UTSA and zero otherwise.

4.3 Control Variables-Firm

I use several control variables that might impact comparability in line with extant literature (Francis et al., 2013, 2018). Firstly I control for the auditor type (*Big4 Ind*) following Francis et al.,(2014), which shows that common auditors drive common accounting practices. Following the literature on accounting choices, I use additional firm-level controls.

I control for firm-level uncertainty (Stein and Wang, 2016) by using return volatility (*Return Vol*), which is the standard deviation of a firm's returns in the last 12 months. Additionally, I control for agency costs related to debt and managers incentive to use discretion in accounting estimates to avoid violation of debt covenants (DeFond and Jiambalvo, 1994) using leverage (*Leverage*) (Myers, 1977) which is long-term debt divided by total assets.

I follow Dey (2008) and include control variables that limit the extent of managerial discretion in accounting using age (*Age*) and size (*Size*). I control for *Age* as information asymmetry is lower due to the availability of a long history for such firms (Baxamusa et al., 2015). I also use a control for the firms size (*Size*), which is the logarithm of total assets, as larger firms have diffused ownership structure that separates ownership and control of the firms' business decisions, and higher scale of operations providing managers with greater incentive to shirk, thus contributing to higher discretion (Demsetz and Lehn, 1985). Firms that are bigger in size also face greater political scrutiny granting managers broader choices to reduce political costs (Watts and Zimmerman, 1990). The literature on real earnings management argues that the manipulating real activities like increased sales might be a sign of earnings management (Roychowdhury, 2006). Therefore, I control for sales growth (*Sales_Growth*) as the percentage difference in sales from the previous financial year. To control for governance and disciplining, I use concentration of the industry (*HHI*) to represent competition that a firm faces (Giroud and Mueller, 2011), measured as the Herfindahl-Hirschman index measured at the two-digit SIC level.

4.4 Control Variables-State

To eliminate the likelihood that the state-level variables might be driving the results, I use state-fixed effects to control for the state-level time-invariant factors and state-level controls for the time-variant factors. In line with extant literature to proxy for the state

wellbeing, I use the GDP growth in the state¹¹ (Glaeser, 2018) and for the political bent in the state use a dummy variable to represent the political party that the Governor of the state belongs to.¹²

5. Results Description

5.1 Hypothesis 1-Base Model

In Table 3, I report the result of the Hypothesis 1 from estimating Eq.(1). I use industry fixed effects in Column (1) and firm fixed effects in Column (2), respectively. Additionally, in both the columns, I use time-fixed effects and cluster errors at the level of the shock, i.e., the state level (Bertrand and Mullainathan, 2003; Armstrong et al., 2012). The coefficient of interest is β_1 , and its negative sign shows that comparability is lower in states where UTSA has been passed as compared to the control firms. In both the columns β_1 is statistically and economically significant. In terms of economic magnitude, in Column (2), after the passage of the UTSA, the comparability of firms decreases by 0.049 units relative to that of their industry peers in the control states. This represents an 8.41% decrease as compared to the sample mean for comparability (0.571). These results align with the view that after the passage of trade secrets acts, even though managers increase disclosures to the capital markets to make up for the reduced disclosure to the product market, the overall result is a weaker information environment which is reflected in higher bid-ask spread, liquidity, and synchronicity (Glaeser, 2018; Kim et al., 2019).

These results are robust to using alternate specifications with different combinations of fixed effects, levels of clustering, and additional state-level control variables. Additionally, I use state fixed effects to control for the time-invariant state-level variables and additional

¹¹This data is available at <https://apps.bea.gov/regional/downloadzip.cfm>.

¹² I use the data for the Governor's party till 2011 from <https://dataverse.harvard.edu/dataset.xhtml?persistentId=hdl:1902.1/20408> and 2012 onwards hand collected from <https://www.nga.org/former-governors/>.

time-variant controls for the state such as the rate of growth of GDP growth and political bent of the state to rule out the concerns that state-level variables might be driving the results (Castellaneta et al., 2017; Glaeser, 2018). Table 4 reports these alternate specifications, and the results, i.e., coefficient of *UTSA*, i.e., β_1 , are qualitatively similar to the base model.¹³ Additionally, I also rule out the presence of pre-existing trends by testing for the parallel trends similar to Bertrand and Mullainathan (2003) by estimating Eq.(2) and report the results in Table 5. The result from this estimation, the insignificant β_1 , indicates that the hypothesis that there were some pre-existing trends cannot be accepted.

5.2 Cross-sectional Results

5.2.1 Hypothesis 2-Intangibles Intensity

To test Hypothesis 2, i.e., the moderating effect of the presence of intangibles, I use two commonly used proxies of intangibles intensity, R&D expenses, and market-to-book ratio (MTB). These proxies reflect the intensity of innovation at the firm level by capturing the intangibility intensity (Francis and Schipper, 1999; Aboody and Lev, 2000; Srivastava, 2014). Higher the R&D and MTB higher is the intangible intensity. I use Eq.(3) to test the cross-sectional variations, which uses an interaction term of the proxy of innovation intensity and the key explanatory variable, i.e., *UTSA*, an indicator variable, to test the hypothesis. Table 6 Column (1) reports the result using R&D and Column (2) using *MTB*. The interaction term coefficient, i.e., β_3 , the coefficient of interest, is positive and significant for both the proxies. As expected, I find firms with higher intangible's intensity are more likely to have higher comparability after the passage of *UTSA*. This result aligns with the implicit contracting benefits of transparency, which accrue in the form of lower punishment for

¹³ In un-tabulated results, I also use two-way clustering in line with Ali et al., (2018) using state and year, and the results are qualitatively similar.

managers in case of project failures and efficient allocation of R&D capital for innovative firms (Zhong, 2018).

5.2.2 Hypothesis 3-Sophisticated users of financial statements

For Hypothesis 3, i.e., moderating effect of sophisticated users of financial statements, I use two proxies, the log of the number of analysts following of a firm and the percentage of dedicated institutional investors in a firm. These users actively undertake peer firms analysis and are positively correlated with comparability (DeFond et al., 2011; De Franco et al., 2011; Fang et al., 2015). I follow the classification based on Bushee (1998, 2001) for the proxy of dedicated institutional investors. Table 7 Column (1) reports the result using the number of analysts, and Column (2) reposts the results using dedicated institutional investors. In both the columns, I find that the interaction term coefficient, i.e., β_3 is positive and significant. Therefore, as expected, I find that firms with a higher number of analysts following and dedicated institutional investors are more likely to have higher comparability after the passage of the UTSA. This result aligns with the idea that increased comparability after the enactment of UTSA is beneficial for firms with sophisticated users of financial statements due to efficiency and ease in peer evaluation.

5.3 Additional Analysis

Following Neel (2017), I use the comparability measure, which draws its observations only from the post-adoption period of the UTSA to control for any further confounding effects and report the results in Table 8. I find the results to be qualitatively similar to the base model in Table 3. These results confirm a persistent negative effect on comparability after the passage of the UTSA act.

6. Conclusion

Comparability is important *between firms* accounting quality as it impacts the effort and time required for financial statement users. However, research on the determinants of this accounting quality is sparse. I bridge this gap by documenting that key knowledge asset, trade secrets, reduces comparability. I examine the question using the adoption of the UTSA in various states of the U.S. in a staggered fashion as an exogenous shock to trade secrecy. My findings in the paper suggests that lower levels of disclosure associated with proprietary information of trade secrets might be a driving factor for lower comparability. In cross-sectional analysis, I find comparability is higher for firms when intangible intensity is high and in the presence of sophisticated users of financial statements.

The findings in the paper inform regulators such as FASB by documenting a determinant of comparability. It also has implications for policymakers as it documents a negative externality of trade secrets protection law and for practitioners who work on peer evaluations for firms with intangibles.

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Appendix-A-Variable Definition

Name of Variable	Description
<i>Dependent Variable</i>	
<i>Comparability</i>	Comparability measured using algorithm of De Franco et al., (2011)
<i>Independent Variable</i>	
<i>UTSA</i>	An indicator variable that equals one if UTSA is passed in a state, else 0
<i>Firm Level Control Variables</i>	
<i>Age</i>	Number of years a firm appears in Compustat
<i>Size</i>	Log (1+Total Assets)
<i>ROA</i>	Return on assets=Net Income/Average total assets for the year
<i>Return Vol</i>	Standard deviation of previous 12 months stock return
<i>Sales Growth</i>	Percentage growth in annual sales
<i>HHI</i>	Industry concentration measured at the two digits SIC level
<i>Leverage</i>	Long term debt/Total Assets
<i>State Level Control Variables</i>	
<i>GDP Growth</i>	GDP growth in the state
<i>Governor Party</i>	An indicator variable which equals 1 if the Governor belongs to the republican party, 0 if the governor belongs to Democratic party and 0.5 in case the governor belongs to a non-major party following Klarner, Carl, 2013
<i>Cross-Sectional Variables</i>	
<i>R&D</i>	R&D expenses/Average Assets
<i>MTB</i>	Market to book ratio following Srivastava (2014)
<i>Analyst</i>	Log of number of analysts following a firm
<i>Dedicated IO</i>	The percentage of dedicated institutional ownership based on classification data in Bushee (1998, 2001)
<i>Other Variables</i>	
<i>Earnings</i>	Fraction of the beginning of the period quarterly net income before extraordinary items to the market value of equity
<i>Return</i>	Quarterly return

Results

Table 1 Panel A
Summary Statistics

The sample includes yearly firm observations between 1980-2016, and the data is from 2 main sources- COMPUSTAT, CRSP. The table presents the number of observations, mean, standard deviations (SD), median, 25th, and 75th percentile of the covariates. Variables, if not self-explanatory, are described in Appendix A. I winsorize all continuous variables at the 1st and the 99th percentile.

VARIABLES	(1) N	(2) mean	(3) sd	(5) p25	(6) p50	(7) p75
<i>Comparability</i>	69,886	-0.571	0.91	-0.590	-0.240	-0.110
<i>Age</i>	69,886	21.470	13.89	10.000	17.000	30.000
<i>Big4 Ind</i>	69,886	0.782	0.413	1.000	1.000	1.000
<i>HHI</i>	69,886	0.063	0.062	0.033	0.044	0.072
<i>Leverage</i>	69,886	0.169	0.173	0.013	0.124	0.276
<i>Size</i>	69,886	5.922	2.208	4.240	5.855	7.475
<i>Sales Growth</i>	69,886	0.125	0.357	-0.022	0.073	0.194
<i>Return Vol</i>	69,886	0.174	0.040	0.142	0.169	0.201
<i>ROA</i>	69,886	-0.001	0.160	0.001	0.031	0.069

Table 1 Panel B
Year-Wise Distribution of the Sample

This table provides the year wise distribution of the number of observations. The table includes number of firms for each year and the corresponding mean of *Comparability* for that year.

<i>Year</i>	<i>Firm Year Observations</i>	<i>Comparability</i>
1980	841	-0.417
1981	848	-0.452
1982	882	-0.477
1983	899	-0.435
1984	1183	-0.464
1985	1498	-0.487
1986	1614	-0.488
1987	1744	-0.512
1988	1731	-0.580
1989	1777	-0.628
1990	1934	-0.657
1991	2013	-0.667
1992	2031	-0.614
1993	2065	-0.580
1994	2065	-0.481
1995	2209	-0.453
1996	2303	-0.426
1997	2482	-0.467
1998	2378	-0.502
1999	2396	-0.558
2000	2380	-0.657
2001	2453	-0.736
2002	2427	-0.741
2003	2510	-0.671
2004	2437	-0.554
2005	2297	-0.452
2006	2119	-0.381
2007	1985	-0.574
2008	1979	-0.677
2009	1981	-0.747
2010	1969	-0.802
2011	1934	-0.734
2012	1821	-0.530
2013	1779	-0.529
2014	1717	-0.554
2015	1666	-0.525
2016	1539	-0.525

Table 2
Pairwise Correlations

This table presents Pearson correlations for variables used in the base model below the diagonal. In Appendix A, I include the detailed definition of the variables. Statistical significance (two-tailed) at 1%, 5%, and 10% is reflected as ***, ** and *.

<i>Variables</i>	<i>Comparability</i>	<i>UTSA</i>	<i>Age</i>	<i>Size</i>	<i>ROA</i>	<i>Leverage</i>	<i>Big4 Ind</i>	<i>Return Vol</i>	<i>Sales Growth</i>	<i>HHI</i>
<i>Comparability</i>	1									
<i>UTSA</i>	-0.057***	1								
<i>Age</i>	0.096***	-0.032***	1							
<i>Size</i>	0.181***	0.035***	0.470***	1						
<i>ROA</i>	0.274***	-0.072***	0.191***	0.280***	1					
<i>Leverage</i>	-0.125***	0.005	0.126***	0.220***	-0.006*	1				
<i>Big4 Ind</i>	0.036***	-0.008**	0.127***	0.163***	0.072***	0.172***	1			
<i>Return Vol</i>	-0.051***	-0.027***	-0.103***	-0.117***	-0.043***	0.029***	0.070***	1		
<i>Sales Growth</i>	0.044***	0.014***	-0.129***	-0.045***	0.026***	0.017***	0.013***	-0.026***	1	
<i>HHI</i>	-0.133***	-0.018***	-0.069***	-0.143***	0.055***	0.008**	0.043***	0.023***	0.005	1
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$										

Table 3
Effect of Trade Secret on Comparability-Test of Hypothesis 1

The model used in this table is:

$Comparability_{i,j,t+1} = \alpha_i + \delta_t + \beta_1 UTSA_{j,t} + \gamma X_{i,j,t} + \varepsilon_{i,j,t}$. I use Industry and Year fixed effects (Column 1) and Firm and Year fixed effect (Column 2). The estimates of the coefficients and p -values are based on robust standard errors clustered at the state level. I use firm-level controls discussed in section 4.3.3. In Appendix A, I include the detailed definition of the variables. Statistical significance (two-tailed) at 1%, 5%, and 10% is reflected as ***, ** and *.

VARIABLES	(1)	(2)
	<i>Comparability</i>	
<i>UTSA</i>	-0.061** [-2.570]	-0.049** [-2.221]
<i>Age</i>	-0.000 [-0.164]	-0.011 [-0.792]
<i>Size</i>	0.059*** [14.431]	0.106*** [10.299]
<i>ROA</i>	1.481*** [19.955]	1.281*** [15.871]
<i>Leverage</i>	-0.635*** [-10.836]	-0.428*** [-16.199]
<i>Big4 Ind</i>	0.091*** [4.354]	-0.034* [-1.980]
<i>Return Vol</i>	0.283 [0.841]	0.143 [0.552]
<i>Sales Growth</i>	0.080*** [10.336]	0.036*** [4.585]
<i>HHI</i>	-0.185 [-0.769]	0.025 [0.247]
<i>Intercept</i>	-0.874*** [-16.633]	-0.840** [-2.292]
Observations	69,886	69,052
Adjusted R-squared	0.205	0.487
Industry FE	Yes	
Year FE	Yes	Yes
Cluster	State	State
Firm FE		Yes

Table 4
Test of Hypothesis 1 with State Fixed Effects and Additional State Level Controls

The model used in this table is: $Comparability_{i,j,t+1} = \alpha_i + \delta_t + \beta_1 UTSA_{j,t} + \gamma X_{i,j,t} + \varepsilon_{i,j,t}$. I use multiple specification for robustness of base model with a combination of Industry, Firm, Year, State Fixed effects and additional state level controls. The estimates of the coefficients and p -values are based on robust standard errors clustered at the state level. I use firm-level controls discussed in section 4.3.3. In Appendix A, I include the detailed definition of the variables. Statistical significance (two-tailed) at 1%, 5%, and 10% is reflected as ***, ** and *.

VARIABLES	(1)	(2)	(3)	(4)
	<i>Comparability</i>			
UTSA	-0.053*** [-2.689]	-0.052** [-2.617]	-0.049** [-2.221]	-0.049** [-2.179]
Age	-0.000 [-0.449]	-0.000 [-0.453]	-0.011 [-0.792]	-0.013 [-0.921]
Size	0.060*** [16.788]	0.060*** [16.501]	0.106*** [10.299]	0.108*** [9.526]
ROA	1.462*** [21.971]	1.467*** [20.992]	1.281*** [15.871]	1.286*** [15.376]
Leverage	-0.629*** [-11.507]	-0.632*** [-11.115]	-0.428*** [-16.199]	-0.424*** [-16.503]
Big4 Ind	0.086*** [3.680]	0.086*** [3.635]	-0.034* [-1.980]	-0.034* [-1.952]
Return Vol	0.279 [0.838]	0.280 [0.835]	0.143 [0.552]	0.141 [0.531]
Sales Growth	0.083*** [10.415]	0.084*** [10.413]	0.036*** [4.585]	0.036*** [4.583]
HHI	-0.178 [-0.742]	-0.180 [-0.750]	0.025 [0.247]	0.022 [0.224]
Governor Party		0.007 [0.561]		0.003 [0.193]
GDP Growth		0.002 [1.316]		0.002* [1.918]
Intercept	-0.882*** [-17.400]	-0.896*** [-16.438]	-0.840** [-2.292]	-0.829** [-2.292]
Observations	69,886	69,724	69,052	68,891
Adjusted R-squared	0.208	0.209	0.487	0.488
Firm FE			Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Cluster	State	State	State	State
Additional State Controls		Yes		Yes
Industry FE	Yes	Yes		

Table 5
The Parallel Trends Assumption

The model is proposed in Bertrand & Mullainathan (2003):

$$Comparability_{i,j,t+1} = \alpha_i + \delta_t + \beta_1 UTSA_{j,t=-1} + \beta_2 UTSA_{j,t=0} + \beta_3 UTSA_{j,t=1} + \beta_4 UTSA_{j,t=2+} + \beta_5 Z_{i,j,t} + \varepsilon_{i,j,t}$$

I use Industry and Year fixed effects (Column 1) and Firm and Year fixed effect (Column 2). The estimates of the coefficients and *p*-values are based on robust standard errors clustered at the state level. I use firm-level controls discussed in section 4.3.3. In Appendix A, I include the detailed definition of the variables. Statistical significance (two-tailed) at 1%, 5%, and 10% is reflected as ***, ** and *.

VARIABLES	(1)	(2)
	<i>Comparability</i>	
<i>UTSA (t-1)</i>	-0.001 [-0.030]	0.016 [0.643]
<i>UTSA (t)</i>	-0.029 [-1.082]	0.002 [0.105]
<i>UTSA (t+1)</i>	-0.054* [-1.727]	-0.029 [-1.097]
<i>UTSA(t>=2)</i>	-0.053** [-2.017]	-0.064** [-2.490]
<i>Age</i>	-0.011 [-0.795]	-0.000 [-0.182]
<i>Size</i>	0.106*** [10.291]	0.059*** [14.449]
<i>ROA</i>	1.281*** [15.876]	1.480*** [19.954]
<i>Leverage</i>	-0.427*** [-16.155]	-0.635*** [-10.845]
<i>BigN Ind</i>	-0.034* [-1.969]	0.091*** [4.341]
<i>Return Vol</i>	0.147 [0.566]	0.289 [0.847]
<i>Sales Growth</i>	0.036*** [4.584]	0.080*** [10.326]
<i>HHI</i>	0.023 [0.235]	-0.188 [-0.784]
<i>Intercept</i>	-0.836** [-2.275]	-0.874*** [-16.203]
Observations	69,052	69,886
Adjusted R-squared	0.487	0.205
Firm FE	Yes	
Year FE	Yes	Yes
Cluster	State	State
Industry FE		Yes

Table 6
Test of Hypothesis 2-Cross-section with Intangible Intensity

The model used in this table is: $Comparability_{i,j,t+1} = \alpha_i + \delta_t + \beta_1 UTSA_{j,t} + \beta_2 z_{i,j,t} + \beta_3 UTSA_{j,t} * z_{i,j,t} + \varepsilon_{i,j,t}$. The proxy for intangible intensity (Francis and Schipper, 1999; Srivastava, 2014) is scaled R&D expenses (Column 1) and market-to-book ratio (Column 2). Both columns use Firm and Year fixed effects. The estimates of the coefficients and p -values are based on robust standard errors clustered at the state level. I use firm-level controls discussed in section 4.3.3. In Appendix A, I include the detailed definition of the variables. Statistical significance (two-tailed) at 1%, 5%, and 10% is reflected as ***, ** and *.

VARIABLES	(1) <i>Comparability</i>	(2)
UTSA	-0.062*** [-2.745]	-0.094*** [-3.444]
Age	-0.013 [-0.889]	-0.013 [-0.852]
Size	0.120*** [13.737]	0.120*** [13.134]
ROA	1.403*** [20.668]	1.236*** [17.372]
Leverage	-0.407*** [-15.095]	-0.409*** [-13.182]
BigN Ind	-0.035* [-2.004]	-0.037 [-1.569]
Return Vol	0.193 [0.777]	0.234 [0.802]
Sales Growth	0.026*** [3.327]	0.008 [1.103]
HHI	-0.002 [-0.017]	-0.006 [-0.051]
R&D	0.005 [1.405]	
UTSA*R&D	0.008** [2.409]	
MTB		0.028** [2.486]
UTSA*MTB		0.035*** [3.061]
Intercept	-0.938** [-2.589]	-0.963** [-2.491]
Observations	69,052	61,553
Adjusted R-squared	0.489	0.487
Firm FE	Yes	Yes
Year FE	Yes	Yes
Cluster	State	State

Table 7
Test of Hypothesis 3-Crossection with Sophisticated Users of Financial Statements

The model used in this table is: $Comparability_{i,t,t+1} = \alpha_i + \delta_t + \beta_1 UTSA_{j,t} + \beta_2 z_{i,j,t} + \beta_3 UTSA_{j,t} * z_{i,j,t} + \varepsilon_{i,j,t}$. The proxy for sophisticated users is number of analysts following a firm (Column 1) and the percentage of dedicated institutional ownership in a firm (Column 2). Both columns use Firm and Year fixed effects. The estimates of the coefficients and p -values are based on robust standard errors clustered at the state level. I use firm-level controls discussed in section 4.3.3. In Appendix A, I include the detailed definition of the variables. Statistical significance (two-tailed) at 1%, 5%, and 10% is reflected as ***, ** and *.

VARIABLES	(1) <i>Comparability</i>	(2)
<i>UTSA</i>	-0.148*** [-2.918]	-0.109*** [-3.872]
<i>Age</i>	-0.004 [-0.305]	-0.010 [-0.743]
<i>Size</i>	0.010 [0.645]	0.109*** [8.711]
<i>ROA</i>	1.229*** [18.994]	1.152*** [18.447]
<i>Leverage</i>	-0.359*** [-10.738]	-0.466*** [-11.814]
<i>BigN Ind</i>	-0.007 [-0.473]	-0.016 [-0.711]
<i>Return Vol</i>	0.402 [1.529]	0.013 [0.058]
<i>Sales Growth</i>	0.038*** [6.557]	0.029*** [3.798]
<i>HHI</i>	-0.091 [-0.510]	0.023 [0.126]
<i>Analyst</i>	0.099*** [4.662]	
<i>UTSA*Analyst</i>	0.057** [2.660]	
<i>Dedicated IO</i>		-0.001 [-0.545]
<i>UTSA*Dedicated IO</i>		0.003** [2.129]
<i>Intercept</i>	-0.572 [-1.491]	-0.834** [-2.307]
Observations	53,800	53,485
Adjusted R-squared	0.479	0.500
Firm FE	Yes	Yes
Year FE	Yes	Yes
Cluster	State	State

Table 8
Test of Hypothesis 1 with Full Observations from Post Period

I test Hypothesis 1, i.e., the base model in Table 3 with *Comparability* measure using observations from post period only. The model used in this table $Comparability = \alpha_i + \delta_t + \beta_1 UTSA_{j,t} + \gamma X_{i,j,t} + \varepsilon_{i,j,t}$. I use Industry and Year fixed effects (Column 1) and Firm and Year fixed effect (Column 2). The estimates of the coefficients and *p*-values are based on robust standard errors clustered at the state level. I use firm-level controls discussed in section 4.3.3. In Appendix A, I include the detailed definition of the variables. Statistical significance (two-tailed) at 1%, 5%, and 10% is reflected as ***, ** and *.

VARIABLES	(1)	(2)
	<i>Comparability</i>	
<i>UTSA</i>	-0.045** [-2.388]	-0.034* [-1.733]
<i>Age</i>	-0.000 [-0.051]	0.053* [1.966]
<i>Size</i>	0.036*** [5.726]	-0.053*** [-4.706]
<i>ROA</i>	1.443*** [28.248]	1.293*** [19.252]
<i>Leverage</i>	-0.598*** [-6.368]	-0.236*** [-7.466]
<i>BigN Ind</i>	0.084*** [3.474]	-0.021 [-0.941]
<i>Return Vol</i>	-0.509 [-1.219]	-0.436 [-0.998]
<i>Sales Growth</i>	0.034*** [3.848]	0.007 [0.974]
<i>HHI</i>	0.060 [0.182]	0.058 [0.471]
<i>Intercept</i>	-0.597*** [-7.700]	-1.230** [-2.088]
Observations	48,550	47,968
Adjusted R-squared	0.138	0.466
Industry FE	Yes	
Year FE	Yes	Yes
Cluster	State	State
Firm FE		Yes

Appendix B

UTSA Passage (Castellaneta et al., 2017; “Trade Secrets Act - Uniform Law Commission-Legislation,” 2021)

State	Year
“Alabama	1987
Alaska	1988
Arizona	1990
Arkansas	1981
California	1985
Colorado	1986
Connecticut	1983
Delaware	1982
Florida	1988
Georgia	1990
Hawaii	1989
Idaho	1981
Illinois	1988
Indiana	1982
Iowa	1990
Kansas	1981
Kentucky	1990
Louisiana	1981
Maine	1987
Maryland	1989
Massachusetts	N/A
Michigan	1998
Minnesota	1980
Mississippi	1990
Missouri	1995
Wyoming	2006
Montana	1985
Nebraska	1988
Nevada	1987
New Hampshire	1990
New Jersey	2012
New Mexico	1989
New York	N/A
North Carolina	1981
North Dakota	1983
Ohio	1994
Oklahoma	1986
Oregon	1988
Pennsylvania	2004
Rhode Island	1986
South Carolina	1992
South Dakota	1988
Tennessee	2000
Texas	2013
Utah	1989
Vermont	1996
Virginia	1986

Washington	1982
Washington D.C.	1989
West Virginia	1986
Wisconsin	1986

Appendix C-Institutional Background of Uniform Trade Secrets Act

The Uniform Law Commission completed the Uniform Trade Secrets Act (UTSA) and amended it in 1985 (“Trade Secrets Act - Uniform Law Commission-Summary,” n.d.). The prefatory note mentions that *“Notwithstanding the commercial importance of state trade secret law to interstate business, this law has not developed satisfactorily. In the first place, its development is uneven. Although there typically are a substantial number of reported decisions in states that are commercial centres, this is not the case in less populous and more agricultural jurisdictions. Secondly, even in states in which there has been significant litigation, there is undue uncertainty concerning the parameters of trade secret protection, and the appropriate remedies for misappropriation of a trade secret”* (“Uniform Trade Secrets Act With 1985 Amendments,” n.d., p. 1). And the comments mentioned - *“Under technological and economic pressures, industry continues to rely on trade secret protection despite the doubtful and confused status of both common law and statutory remedies. Clear, uniform trade secret protection is urgently needed. . . .”* (“Uniform Trade Secrets Act With 1985 Amendments,” n.d., p. 1). Before enacting the UTSA, the states depended on common law to resolve disputes regarding trade secrets’ misappropriation. This induced uncertainty in the way different jurisdictions would make decisions regarding the disputes of trade secrets. Apart from dispute resolution, UTSA also brought uniformity in the definitions of “improper means,” “misappropriation,” and “trade secrets” amongst others (“Trade Secrets Act - Uniform Law Commission-Summary,” n.d.).