RIGID OR FLEXIBLE ACCOUNTING RULES?
EVIDENCE FROM PURCHASE PRICE ADJUSTMENTS

by

Derek Christopher Johnson

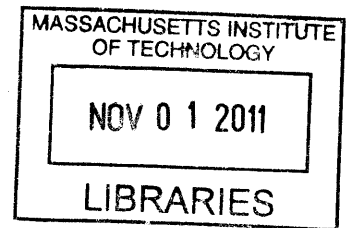BA, University of Minnesota (2005)
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ABSTRACT

I examine the negotiation of accounting rules in the purchase price adjustment clause of corporate acquisition agreements. Purchase price adjustments make the deal value contingent on the target's closing working capital or net worth. Some purchase price adjustments use "rigid" accounting and specify which measurement rules will be used to prepare the closing-date balance sheet. Many more use "flexible" accounting and require only GAAP compliance. I provide evidence that hidden action and adverse selection problems determine whether the buyer and seller use rigid or flexible accounting. I also provide evidence that this choice is associated with other features of the contract related to purchase price adjustment flexibility and to the prospect of hold-up. Estimates of the effect of rigid accounting on finalized purchase price adjustments are consistent with implications of the adverse selection and hold-up problems.

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1 Introduction

This paper studies the choice of accounting rules in corporate acquisition agreements. When one firm acquires another, accounting measures such as net worth or working capital are important determinants of the price. The buyer and seller agree on the values of such measures as the purchase is negotiated. But because the target's assets and liabilities can change in value between the date the purchase agreement is signed and the date of the merger's completion, the buyer and seller commonly include a "purchase price adjustment" clause in the acquisition agreement. Purchase price adjustments reprice the deal after the merger is completed based on changes in working capital and net worth. The seller has an incentive to argue that working capital and net worth increased to adjust the purchase price upwards, while the buyer has an incentive to argue the converse.

The buyer and seller consider these incentives when they decide whether the contract will include a rigid or a flexible purchase price adjustment. Rigid purchase price adjustments are less negotiable after closing than flexible purchase price adjustments are. In large part, the choice between rigid and flexible purchase price adjustments is the choice between following "rigid" accounting rules or "flexible" ones. When rigid rules are chosen, the contract includes an appended schedule that specifies how the purchase price adjustment is to be calculated. When flexible rules are chosen, the calculation is made according to generally accepted accounting principles (GAAP).[1] Whether the buyer and seller prefer rigid or flexible accounting rules depends on when negotiations over accounting rules most cost-effectively reprice the acquisition given the buyer's and seller's differing incentives over the adjustment: before signing or after closing.

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[1] Other choices related to negotiability after closing include the amount of time allotted to finalize the closing financial statements, limitations on the magnitude of potential purchase price adjustments, etc. These other choices are described in more detail in Section 3.2 below.

The buyer and seller bear contracting costs during negotiations that occur before the contract is signed and after the deal is closed. An efficient contract maximizes the gains from trade net of all contracting costs. Rigid purchase price adjustments involve more extensive negotiations (and therefore higher contracting costs) before signing, while flexible purchase price adjustments involve more extensive negotiations (and therefore higher contracting costs) after closing. Whether negotiations are more cost-effective before signing or after closing depends on the hidden action problem and the adverse selection problem. At signing, the hidden action problem emerges, because the buyer is uncertain about the decisions the seller will make leading up to the closing. At closing, the adverse selection problem emerges, because the buyer is uncertain about the effect of those decisions on the target's value.

Although the hidden action and adverse selection problems exist in any deal in which there is a gap between signing and closing, their relative severity varies. As a result, whether rigid or flexible accounting rules are optimal in a deal depends on expectations of the deal's particulars. When the hidden action problem is more severe—if, for instance, there is an extensive time lag between signing and closing—the seller's knowledge that the buyer can use extensive negotiations after closing encourages the seller to make optimal decisions leading up to closing (Choi and Triantis 2008). In such a case as this, the buyer and seller are better off with a flexible purchase price adjustment, as it allows for more negotiation after closing. When the adverse selection problem is more severe—if, for instance, the buyer and seller are in different industries—the seller has private information about the effect of its decisions at closing. Because buyers are unable to distinguish good decisions from bad decisions, the buyer cannot use more extensive negotiations after closing to encourage the seller to make good decisions. In this case, the buyer and seller are better off with a rigid purchase price adjustment. The tradeoff is

illustrated in Figure 1 and leads to the following research question: What effect does the choice between rigid and flexible accounting rules in purchase price adjustments have on the price that buyers pay and sellers receive? If the choice between rigid and flexible accounting rules depends on the contracting context, the effect of including rigid accounting rules in the acquisition agreement on finalized purchase price adjustments will depend on the contracting context as well.

I hypothesize that the buyer and seller prefer to use flexible accounting rules when the hidden action problem is more severe, but prefer to use rigid accounting rules when the adverse selection problem is more severe. Because the premise is that the anticipation of negotiations after closing disciplines the seller's decisions, I hypothesize that the choice between rigid and flexible accounting rules is associated with choices in other contract features related to the flexibility of the adjustment. However, the anticipation of negotiations after closing can induce suboptimal decisions because of hold-up. This leads to the hypothesis that the choice between rigid and flexible accounting rules is associated with choices that limit the gains from expropriation in negotiations after closing. Lastly, I hypothesize that the effect of the choice between rigid and flexible accounting rules on finalized purchase price adjustments are consistent with the buyer and seller responding to adverse selection and hold-up problems in negotiations after closing.

To test these hypotheses, I examine the purchase price adjustment clauses from 201 corporate acquisition agreements between public acquirers and private targets for deals completed between 2001 and 2009. I model the choice between rigid and flexible accounting rules with a logistic regression of an indicator for whether the contract includes specific guidance on the adjustment calculation on proxies for the hidden action and adverse selection problems. I

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also investigate whether this choice is associated with other contract features that influence how the purchase price adjustment is negotiated after closing. I collect finalized purchase price adjustments for 69 deals from subsequent disclosures and match observations with rigid accounting rules to observations with flexible accounting rules based on the propensity scores estimated from the logistic regression. Propensity score matching quantifies the effect of including rigid accounting rules on the finalized purchase price adjustments for the subsamples of rigid and flexible purchase price adjustments.

The results of my investigations support my hypotheses. Flexible accounting rules are used when the hidden action problem is expected to be more severe, as measured by the length of time between signing and closing. Rigid accounting rules are used when the adverse selection problem is expected to be more severe, such as when the buyer and seller are in different industries, the buyer is inexperienced in acquisitions, and a greater percentage of the target's operating cycle elapses between signing and closing. The choice between rigid and flexible accounting rules is also associated with other contract features related to the flexibility of and the potential for hold-up in negotiations after closing, including flexibility in the preparation of the closing financial statements, the length of negotiations after closing, and the magnitude of the purchase price adjustment.

The first and third hypotheses generate testable implications about the effect of accounting rules on purchase price adjustments. The first hypothesis states that rigid accounting rules are preferred when the adverse selection problem is more severe, because the seller will withhold negative private information during negotiations after closing. An implication is that the purchase price adjustment would be higher if flexible rules were used. The results are consistent with this implication: When rigid accounting rules are used, buyers save between

$2.58 and $3.68 million compared with the adjustment they would have paid had flexible accounting rules been used. The third hypothesis states that the buyer and seller make optimal decisions only when a purchase price adjustment with flexible accounting rules constrains the hold-up problem. If hold-up is effectively constrained by other contract choices, an implication is that the use of rigid accounting rules instead of flexible accounting rules would have no effect on the purchase price adjustment. The results are consistent with this implication: When flexible accounting rules are used, buyers would not have paid more or less had rigid accounting rules been used.

This paper contributes to evidence on the economic consequences of accounting choice (e.g., Holthausen and Leftwich 1983). Purchase price adjustments provide a powerful setting to study accounting choice, because (1) a corporate acquisition is among the most important transactions a company can make; (2) the adjustment is a single-stage game with limited reputation penalties, so the risk of opportunism is high; and (3) the prospect of a dispute is very near-term, so the buyer and seller are very conscious of pre-signing and post-closing contracting costs. By providing evidence on the determinants of the choice between rigid and flexible accounting rules, I contribute to prior evidence on the negotiation of accounting measurement rules (Leftwich 1983; El-Gazzar and Pastena 1990; Beatty, Ramesh, and Weber 2002; Li 2010).

The remainder of this paper proceeds as follows. Section 2 describes the institutional background, and Section 3 develops hypotheses. Section 4 describes the research design and variable measurement. Section 5 discusses sample selection and descriptive statistics. Section 6 presents the empirical results. Section 7 concludes.

2 Institutional background

This paper examines purchase price adjustments in corporate acquisition agreements between public buyers and private sellers. Appendix 1 provides more detail on this segment of the mergers and acquisitions (M&A) market. A corporate acquisition agreement is a contract the buyer and seller jointly draft that names the parties to the contract and the surviving corporation; describes the payment; and lists representations and warranties, covenants, and closing conditions (Carney 2009). Upon signing the acquisition agreement, the buyer and seller work to fulfill their respective obligations. After the obligations are met (or waived), the buyer and seller close the deal. Between signing and closing, however, the seller loses its incentive to make optimal operational decisions because any resulting gains that occur after closing accrue to the buyer. Because the seller's decisions leading up to closing can change the value of the target to the buyer, corporate acquisition agreements frequently include purchase price adjustment clauses. When the buyer and seller agree to include a purchase price adjustment in the acquisition agreement, part of the payment is placed in escrow at closing. This "holdback" is subsequently released to the buyer or seller according to the difference between the working capital or net worth at closing and a prespecified value.

For most deals with purchase price adjustments, the buyer prepares preliminary financial statements for the target as of the closing date. The seller then reviews these statements. If the seller has no objections, the adjustment is finalized: the preliminary statements become the final closing financial statements, the "holdback" funds are released from escrow, and they are disbursed to the appropriate party. If the seller has objections, however, it issues a notice of dispute to the buyer, and the two parties attempt to negotiate their differences. If private negotiations settle the dispute, the adjustment is finalized. But if the buyer and seller fail to reach agreement during private negotiations, an independent accounting firm makes a final and binding

determination, finalizing the adjustment. Hence, there are three points at which the purchase price adjustment might be finalized: (1) after the seller reviews the preliminary statements and expresses no objections, (2) after the buyer and seller privately negotiate their differences, or (3) after an independent accounting firm makes its determination.

Disputes over the purchase price adjustment arise when the buyer and seller disagree on the value of balance sheet accounts. Such disagreements are more likely when flexible accounting rules are used. When closing statements are prepared "in accordance with GAAP," more values for working capital or net worth can be calculated. In a review of corporate acquisitions with public buyers and private targets completed in 2008, the M&A Market Trends Subcommittee of the American Bar Association's Business Law Section found that 69% of purchase price adjustments specified the use of flexible accounting rules.

Using rigid accounting rules can limit disagreements. The buyer and seller agree in advance how balance sheet accounts will be determined, and a schedule listing the specific measurement rules to be followed is appended to the contract. In the American Bar Association review cited above, 24% of deals with purchase price adjustments included such rules in the contract.[2] Exhibit A provides an example of rigid accounting rules from the stock purchase agreement dated January 9, 2007, between Associated American Industries Inc. and Standex International Corporation. This agreement included guidance on the allowance for doubtful accounts, the return reserve, and the inventory obsolescence reserve that would limit negotiability after closing. Each of these accruals depended on estimates. By including specific guidance on making these estimates, Associated American Industries Inc. and Standex International Corporation limited disagreement over them.

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[2] In the American Bar Association's sample, the percentage of purchase price adjustments using rigid accounting rules and the percentage using flexible rules sums to 93%, because 7% of all purchase price adjustments reviewed are silent about the preparation of the closing financial statements.

3 Hypothesis development

Once the buyer and seller decide whether to make the purchase price contingent on the target's working capital or on its net worth at closing, they must choose whether to use rigid or flexible accounting rules in preparing the closing balance sheet. This section develops hypotheses about (1) the choice between rigid and flexible accounting rules, (2) how that choice relates to other contract decisions, and (3) the effect of that choice on purchase price adjustments.

In the first subsection that follows, I predict that the optimal choice between rigid and flexible accounting rules is determined by the relative severity of two agency problems that arise from the asymmetry of information between buyer and seller: the hidden action problem and the adverse selection problem. The hidden action problem results from an information gap between buyer and seller that opens on the signing date: The seller manages the operations of the target until the closing date, making decisions that the buyer does not observe. The adverse selection problem results from an information gap between buyer and seller that opens on the closing date: With less information about the effect of the seller's decisions, the buyer may not observe diminution in the value of the target.[3] The second subsection predicts how the choice between rigid and flexible accounting rules is associated with other features of the purchase price adjustment related to negotiations after closing. The final subsection predicts the effect of rigid accounting rules on the finalized purchase price adjustment.

3.1 Determinants of rigid or flexible purchase price adjustments

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[3] If there is both a severe hidden action problem and a severe adverse selection problem, both negotiations before signing and negotiations after closing are obstructed by information problems. Negotiations before signing are expected to be more cost-effective than negotiations after closing: the buyer and seller negotiate both to increase and to divide the value of the transaction before signing, but only to divide the value after closing.

Flexible purchase price adjustments allow for more negotiation after closing than rigid purchase price adjustments do. Hidden action and adverse selection problems determine whether negotiations before signing or negotiations after closing will be more effective and deliver the most value to both parties.

The hidden action problem results from the information gap that opens on the signing date. In the unusual environment that exists between signing and closing, it is difficult for either party to assess the probability that any one scenario will arise—and impossible to anticipate every possible contingency. This ambiguity affects the buyer more acutely, because the buyer has yet to complete its transactional due diligence (Wangerin 2011). Thus, the buyer and seller cannot contract for every possible condition that might arise, limiting how effectively the buyer can use negotiations before signing to encourage the seller to make optimal decisions. Instead, the buyer is better served when negotiations take place after closing, as the seller's knowledge that the buyer can use those negotiations serves to discipline the seller's use of its discretion.

An adjustment that is more negotiable after closing has potentially higher costs after closing for the seller.[4] As a result, the seller is motivated to make optimal decisions leading up to closing to reduce these costs or avoid them altogether. Thus, if the hidden action problem is severe, a flexible purchase price adjustment encourages the seller to make optimal decisions more effectively than a rigid purchase price adjustment does.

The adverse selection problem results from the information gap that opens on the closing date. The seller has private information about the effect of its decisions on the value of the target. Private information prevents the buyer and the independent accounting firm from accurately measuring the effect of the seller's decisions. Specifically, the seller rationally withholds

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[4] Potential costs after closing include time-costs in deliberations, fees for the independent accounting firm, and expenditures to produce evidence in support of claims.

negative private information, so the buyer rationally biases its estimate of closing working capital or net worth downward. Though the independent accounting firm's determination is unbiased, its estimate is imprecise because the independent accounting firm has less information than the seller.[5] The buyer cannot determine whether the seller is withholding negative private information, so the seller cannot be assured that contracting costs after closing will be reduced by making optimal decisions. Because the seller's private information hinders negotiations after closing, a flexible purchase price adjustment is less effective than a rigid purchase price adjustment in encouraging the seller to make optimal decisions when the adverse selection problem is more severe. This leads to the first hypothesis:

H_1: *Flexible accounting rules are positively associated with the hidden action problem, and rigid accounting rules are positively associated with the adverse selection problem.*

3.2 Relationship between accounting rules and other contract features

The discussion above focused on the determinants of rigid and flexible purchase price adjustments, where rigid purchase price adjustments have less negotiability after closing than flexible purchase price adjustments do. Negotiations after closing are useful when the hidden action problem is more severe, but not when the adverse selection problem is more severe. Negotiations after closing can effectively discipline a seller for suboptimal decisions only if the amount of asymmetric information is expected to decline between signing and closing. Accounting rules are just one of several contract features that may be either rigid or flexible. In general, the same conditions that determine whether the accounting rules are rigid or flexible

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[5] The buyer and independent accounting firm have limited time and resources to finalize the purchase price adjustment (see Section 2), which restricts the extent to which the seller's private information can be uncovered.

also determine the degree to which other contract features are rigid or flexible (illustrated in Figure 1). This leads to the second hypothesis:

> H_2: *There is a positive association between accounting flexibility and the flexibility of other contract features.*

As mentioned in Section 1, purchase price adjustments have a high risk of opportunism. Between signing and closing, the buyer and seller bear sunk costs from the decisions they make as they go about fulfilling their respective obligations under the acquisition agreement. Because these decisions are relationship-specific, the buyer can expropriate the seller during negotiations after closing (and vice versa). This threat of hold-up is a potential pitfall of utilizing negotiations after closing, as hold-up undermines the buyer's and the seller's incentives to make optimal decisions before the closing. The buyer and seller can overcome the hold-up problem by limiting the expected gain from expropriation in negotiations after closing. This leads to the third hypothesis:

> H_3: *There is a positive association between accounting flexibility and other contract features that limit the hold-up problem.*

It is important to note that accounting rules and other contract features are choice variables for which I predict associations, but no causal relations.

3.3 Effects on finalized purchase price adjustments

The final hypothesis predicts the effect that rigid accounting rules have in observed choices between rigid and flexible accounting rules.

When adverse selection is severe, H_1 predicts that the buyer and seller prefer rigid accounting rules. If they had counterfactually used flexible accounting rules, there would be more negotiations after closing. In the course of these negotiations, the seller would have

withheld negative private information about the effect that the seller's decisions had on the value of the target at closing. Hence, an implication of H_1 is that the buyer would have paid more had the contract included rigid accounting rules instead.

When the hidden action problem is more severe, H_1 predicts that the buyer and seller prefer flexible accounting rules. If they were to use rigid accounting rules instead, the transaction would yield less value, as both buyer and seller would forfeit potential gains from using negotiations after closing to discipline the seller's decisions. A lower expected value of the transaction does not generate a testable implication of the adjustment itself, but the prediction of H_3—that the buyer and seller will make other contract choices to constrain the hold-up problem—does generate one. If hold-up is prevented due to the use of other contract features to reduce the expected gain from expropriation, an implication is that rigid accounting rules would not affect the finalized purchase price adjustment. The leads to the fourth hypothesis:

> H_4: *Rigid accounting rules decrease the finalized purchase price adjustment in deals that use rigid purchase price adjustments, and would have no effect on the finalized purchase price adjustment in deals that use flexible purchase price adjustments.*

4 Research design

4.1 Overview of research design

To test the hypothesis developed in Section 3.1, I model the decision to use rigid accounting rules for the calculation of the purchase price adjustment as a function of agency problems and controls:

$$\text{Prob}(RIGID = 1) = f \text{ (Hidden action, Adverse selection, Controls)} \tag{1}$$

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The dependent variable *RIGID* is a dummy that equals 1 if the contract uses rigid accounting rules (described in Section 2), and 0 if the contract uses the alternatives "in accordance with GAAP" or "in accordance with GAAP, consistently applied." The independent variables include proxies for the hidden action problem, the adverse selection problem, and controls. Proxies for the hidden action problem are chosen to capture uncertainty at signing about the optimal decisions during the pre-closing period, and proxies for the adverse selection problem are chosen to capture private information at closing about the effect of those decisions. Controls include measures of the size of the target and the size of the buyer. I discuss these proxies in more detail in Sections 4.2.1, 4.2.2, and 4.2.5.

I test the hypothesis developed in Section 3.2 by augmenting model (1) with other contract features:

$$\text{Prob}(RIGID = 1) = f \text{ (Hidden action, Adverse selection, Controls, Contract}$$
$$\text{flexibility, Hold-up)} \tag{2}$$

Expressing the probability that the buyer and seller negotiate rigid accounting rules as a function of other contract variables parsimoniously detects associations between several choices embedded in the acquisition agreement. No causality is inferred from model (2).

Estimation of models (1) and (2) provides conditional probabilities that a purchase price adjustment includes rigid accounting rules. I use these conditional probabilities, or "propensity scores," to match acquisition agreements with rigid accounting rules to acquisition agreements with flexible accounting rules. Using propensity scores in this way addresses the selection bias in a univariate comparison of finalized purchase price adjustments that arises because of a missing data problem; see Appendix 2 for details. Appendix 3 expands model (1) to address the choice to include a purchase price adjustment.

Next, I discuss the independent variables in models (1) and (2).

4.2 Variable measurement

4.2.1 Hidden action variables

The first set of variables relates to the hidden action problem. I predict that the hidden action problem is more severe when the buyer and seller expect that the period between the signing and closing dates will be long. While the buyer and seller are able to reduce the period between the signing and closing dates through advanced preparation or waivers of closing conditions, there are unavoidable requirements before closing that are beyond their control.[6] I assume that the observed pre-closing period is as brief as possible given those exogenous requirements, so that the pre-closing period is predetermined. I use the date that the acquisition is completed as a proxy for the buyer and seller's expected closing date. Two variables represent polar extremes for the length of the pre-closing period.

The first variable is a dummy for observations with unusually long pre-closing periods. The pre-closing period typically lasts between two and four months (Choi and Triantis 2010), so pre-closing periods longer than four months are unusual. *LONG_PRECLOSING* equals 1 if the number of days between the signing date and the closing date is equal to or more than four months, 0 otherwise. I expect the severity of the hidden action problem to be higher when the pre-closing period is unusually long, so H_1 predicts that *RIGID* is negatively correlated with *LONG_PRECLOSING*.

The second variable is a dummy for deals that are simultaneously signed and closed. Negotiated corporate acquisitions usually have a lag between the signing date and the closing date, and the buyer and seller include purchase price adjustments to provide the seller with an

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[6] Examples include regulatory approvals, tax rulings, and consents to assignment from lenders and lessors (Freund 1975).

incentive to make optimal decisions during this lag, but purchase price adjustments are also used in deals when there is no lag to reprice the deal based on up-to-date financial statements.[7] *SIMULTANEOUS* equals 1 if the signing date coincides with the closing date, 0 otherwise. The hidden action problem is predicted to be less severe when there is a simultaneous closing, and therefore H_1 predicts that *RIGID* is positively correlated with *SIMULTANEOUS*.

I expect that the hidden action problem will be more severe when internal controls are weak. Review of the target's financial statements is an important part of due diligence performed during the pre-closing period (Wangerin 2011), and the buyer will have more uncertainty about the outcome of this due diligence if the target's internal controls are weak. Direct measures of the quality of internal controls in my sample are unavailable because (1) part of the sample period predates the Sarbanes-Oxley Act of 2002, and (2) private targets are not covered by the internal control requirements under Sections 302 and 404 of the Sarbanes-Oxley Act of 2002. Following Ge and McVay's (2005) finding that companies in the computer and services industries account for 50% of internal control deficiencies in period-end reporting and accounting policies, I use a target company's membership in these industries as a proxy for weak internal controls. *COMP_SVCS* equals 1 if the target is in the computer or services industries, 0 otherwise. *RIGID* is predicted to be negatively associated with *COMP_SVCS*.

The hidden action problem is expected to vary with the target's financial reporting environment, particularly with the bias and variance in accounting estimates in the target's balance sheet. The buyer takes the opportunity to review the target's financial statements between signing and closing with greater care. When there is uncertainty about the balance sheet estimates that will be resolved by the closing date, negotiations before signing are less cost-effective. Additionally, in the presence of high bias and variance, negotiations after closing are

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[7] The financial statements used in negotiations before signing relate to prior reporting periods.

expected to be more cost-effective with flexible accounting rules because an independent accounting firm's determination is prone to more error with rules than with standards (Hadfield 1994). The magnitude of the bias in accounting estimates is positively related to the likelihood that the target's assets require discretionary write-offs. Following Francis, Hanna, and Vincent (1996), I measure *WRITEOFFS*, the percentage of the past five years that an average firm within the target's Fama-French 48 industry classification reports negative special items. The variance in accounting estimates is positively related to industry-specific dispersion in net operating assets. Using the Hirshleifer et al. (2004) definition of net operating assets, I define *NOA_STDDEV* as the standard deviation of net operating assets within each Fama-French 48 industry classification each year. I expect that *WRITEOFFS* and *NOA_STDDEV* are negatively associated with *RIGID*.

4.2.2 Adverse selection variables

The second set of variables relates to the adverse selection problem, which is more severe when the seller has private information about the effect of its pre-closing decisions on the condition of the target's balance sheet at the closing date. I expect that the seller will have more private information when a greater percentage of the seller's operating cycle is completed between the signing and closing dates because the seller makes more decisions regarding the turnover of inventory and accounts receivable. *%OPERATINGCYCLE* scales the length of the pre-closing period by the length of the target's operating cycle. Because data on target companies' operating cycles are unavailable, I use the median operating cycle length within the target's Fama-French 48 industry from the fiscal year before the deal is completed. Because I expect *%OPERATINGCYCLE* to be positively associated with the seller's private information at closing, H_1 predicts that *RIGID* is positively associated with *%OPERATINGCYCLE*.

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I expect the adverse selection problem to be more severe when the buyer and the seller operate in different industries. Private information is greater when the buyer is unfamiliar with the target's operations, and this unfamiliarity is expected to be greater when the buyer belongs to a different industry. *DIVERSIFY* equals 1 if the buyer and seller have different Fama-French 48 industry classifications, 0 otherwise. H_1 predicts that *RIGID* is positively associated with *DIVERSIFY*.

I expect the adverse selection problem to be more severe when the seller can manage real activities. Roychowdhury (2006) finds evidence of greater real earnings management in the manufacturing industry, so I include the variable *MANUFACTURING*, which equals 1 if the target is in a manufacturing industry, 0 otherwise. H_1 predicts that *RIGID* is positively associated with *MANUFACTURING*.

I expect that the adverse selection problem will be lower when the closing date is near the end of the buyer's fiscal year. If the buyer prepares its own fourth-quarter financial statements while it negotiates the calculation of the purchase price adjustment with the seller, it can use its more thorough year-end accounting procedures and stronger audit oversight to uncover the seller's private information. Hence, when there is a year-end closing, I expect there is less private information at closing and the adverse selection problem is less severe. I define *YEAR_END*, a dummy variable that equals 1 if the closing date is in the buyer's fourth quarter, 0 otherwise. H_1 predicts a negative association between *RIGID* and *YEAR_END*.

Buyers that have made more acquisitions are more likely to have experience detecting the seller's negative private information at closing. The buyer can use this experience to direct its audit efforts when preparing the preliminary closing financial statements. Because an experienced buyer's audit is more likely to spot red flags for negative private information that

the seller withholds at the closing date, the adverse selection problem should be less severe. Goodwill is the excess of the purchase price over the net separable value of the assets acquired, so more goodwill is expected to correspond to more experience in measuring the net separable value of assets acquired, as performed to prepare closing financial statements to finalize the purchase price adjustment. The proxy used is *BUYER_EXPERIENCE*, defined as is the ratio of goodwill to total assets at the end of the fiscal year before the merger is completed. H_1 predicts that *RIGID* is negatively associated with *BUYER_EXPERIENCE*.

4.2.3 Contract variables related to flexibility

Two variables measure flexibility in the definition of the adjustment. The first variable is *EXCLUSIONS*, equal to the sum of the number of accounts excluded from the adjustment. In many purchase price adjustments, particular accounts are excluded from the calculation to reduce mutually known or systemic risks (Choi and Triantis 2010). The second variable is *MULTIPLE_ADJ*, which equals 1 if the purchase price adjustment clause has additional non–working capital and non–net worth adjustments, 0 otherwise. Multiple adjustments are expected to be less negotiable because any concession the buyer or seller makes during a dispute over one adjustment frequently affects the calculation of the other adjustment. I expect higher values of *EXCLUSIONS* and *MULTIPLE_ADJ* are associated with rigid purchase price adjustments, and predict positive associations between *RIGID* and *EXCLUSIONS* and *MULTIPLE_ADJ*.

Including the phrase "fairly presents" in the purchase price adjustment increases flexibility to prepare the closing financial statements because the legal interpretation of this phrase allows departures from GAAP (e.g., *United States v. Simon*, 425 F.2d 796 (1969)). *FAIRLY_PRESENTS* equals 1 if the phrase "fairly presents" is used in the instructions for the

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closing financial statements, 0 otherwise. H_2 predicts *RIGID* is negatively associated with *FAIRLY_PRESENTS*.

There can also be flexibility in the time the buyer has to prepare the preliminary closing financial statements (described in Section 2). I create an interval *PRELIMINARY*, which equals 0 if the statements must be prepared on or before the 30th day after closing, 1 if the statements must be prepared on or before the 60th day after closing, 2 if the statements must be prepared on or before the 90th day after closing, and 3 otherwise. Similarly, there can be flexibility in the amount of time the seller has to review the closing financial statements, which I measure using an indicator variable, *RESPONSE*, which equals 0 if the review period is less than or equal to 30 days, and 1 otherwise. Allotting more time to prepare and review the preliminary statements extends the buyer and seller more time to plan for potential disputes (Hay 1995). H_2 predicts *RIGID* is negatively associated with *PRELIMINARY* and *RESPONSE*.

The variables *NEGOTIATION* and *RESOLUTION* measure flexibility in the length of negotiations and dispute resolution, respectively (described in Section 2.2). *NEGOTIATION* equals 0 if the maximum number of days allotted for the buyer and seller to privately negotiate any objections to the preliminary closing financial statements is less than or equal to 15 days, 1 otherwise. If the dispute is not resolved through private negotiations, an independent accounting firm is appointed to make a determination. *RESOLUTION* equals 0 if the independent accounting firm is instructed to make its determination within 30 days of its appointment, 1 if within 60 days of its appointment, and 2 otherwise. I expect that the purchase price adjustment is more negotiable when there is more time to settle disputes. As a result, H_2 predicts *RIGID* is negatively associated with *NEGOTIATION* and *RESOLUTION*.

The buyer and seller can stipulate that the purchase price adjustment has a threshold to restrict negotiations after closing. This threshold can be either a minimum difference between the closing working capital or net worth from the pre-specified amount (see Section 2), or a minimum difference between the buyer's and seller's calculations. If the threshold is not met, the adjustment is finalized. *MINIMUM* equals 1 if the clause has a threshold level for either an adjustment or a dispute over an adjustment, 0 otherwise. Because thresholds prevent negotiations after closing over adjustments within a certain range, H_2 predicts a positive association between *RIGID* and *MINIMUM*.

4.2.4 Contract variables related to hold-up

The hold-up problem threatens the buyer's and seller's incentives to make optimal decisions between signing and closing. This problem is greater when the expected gain from expropriation during negotiations after closing is high. This expected gain, in turn, is high when the magnitude of the adjustment is unrestricted, when the independent accounting firm makes determinations with error with sufficient probability, and when the buyer and seller strategically take extreme positions in the adjustment calculation (Hadfield 1994, Choi and Triantis 2008).

Hold-up is of greater concern when the adjustable amount of the purchase price is large. Two variables measure limitations on the magnitude of the adjustment. The first variable is *MAXIMUM*, which equals 1 if the purchase price adjustment has a ceiling on the amount of the adjustment, 0 otherwise. If there is a maximum adjustment amount, the buyer's expected gain from holding up the seller in negotiations after closing is constrained. As a result, H_2 predicts a negative association between *RIGID* and *MAXIMUM*.

The second variable is *ASYMMETRY*, which equals 1 if the adjustment differs depending on whether closing working capital or net worth is above or below the pre-specified amount, 0

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otherwise. For example, the price can be adjusted upward \$1 for each dollar that closing working capital or net worth is above the pre-specified amount and adjusted downward \$0.50 for each dollar the closing working capital or net worth is below the pre-specified amount. This asymmetry lessens the hold-up incentive in negotiations after closing. H_2 predicts that *RIGID* is negatively associated with *ASYMMETRY*.

AUDITOR_FLEXIBILITY equals 1 if there are no limitations on the appointment of an independent accounting firm, 0 otherwise. Limitations include restricting the number of days to appoint the independent accounting firm, requiring the independent accounting firm to be one of the "Big 4" (or "Big 5" or "Big 6"), or naming a specific accounting firm in the purchase price adjustment clause. If the choice of the independent accounting firm is restricted, the buyer and seller lose the flexibility, in the event of a dispute, to appoint the firm with the most relevant expertise. The error from the independent accounting firm's determination can be reduced if the buyer and seller do not restrict the firm's identity. Because the hold-up problem is more severe when the independent accounting firm's determination has higher error, H_2 predicts a negative association between *RIGID* and *AUDITOR_FLEXIBILITY*.

FEE_SHIFTING equals 1 if the independent accounting firm's fees are paid by the non-prevailing party in the event of a dispute or if the independent accounting firm can use its discretion to allocate its fees, 0 otherwise. Fee-shifting rules reduce the hold-up problem by discouraging the buyer and seller from taking an extreme position in negotiations after closing (Spier 2007). This reduces hold-up because the higher expected cost from an independent accountant's unfavorable determination reduces the net gain to expropriation. As a result, I expect a negative association between *RIGID* and *FEE_SHIFTING*.

4.2.5 Control variables

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Making optimal decisions during the pre-closing period is costly. The cost is relevant to the decision to use rigid accounting rules because negotiations after closing are less effective in providing discipline when the cost of making optimal decisions is high (Choi and Triantis 2010). I assume that this cost increases with the size of the deal because larger firms have more complex operations. I measure the seller's size with *DEAL_VALUE*, the natural logarithm of the value of the transaction (in millions). To allow for a potential non-linear relationship between the disciplining effect and the cost of making optimal decisions (Choi and Triantis 2010), I include *BIG_DEAL*, a variable that equals 1 for transactions in the upper quartile of the sample (i.e., equal to or exceeding $195.0 million), 0 otherwise. I measure the size of the buyer with *BUYER_SIZE*, the natural logarithm of its total assets at the end of the fiscal year before the merger is completed (in millions). I expect that *RIGID* is positively associated with *DEAL_VALUE*, *BIG_DEAL*, and *BUYER_SIZE*.

5 Data

5.1 Sample selection

Table 1 describes the sample selection. I identify corporate acquisitions using SDC Platinum. The sample includes all mergers and acquisitions completed between January 1, 2001 and December 31, 2009 with reported deal values equal to or exceeding $25 million. I exclude acquisitions of assets, repurchases, self-tenders, recapitalizations, bankruptcy acquisitions, and reverse takeovers. I require the buyer to be a public U.S. company to ensure that the corporate acquisition agreements are publicly filed. Because of my focus on acquisitions of firms, I require that the targets be private companies, which have the possibility of a post-closing purchase price adjustment. I exclude cross-border deals to ensure the target follows the same GAAP as the buyer. SDC Platinum reports 1,133 deals that meet these criteria.

I collect contractual agreements using Morningstar Document Research. I search for the agreements in SEC filings by entering the names of the buyer and the target in exhibits 2 ("plan of acquisition") and 10 ("material contracts"). 624 contractual agreements are successfully collected.[8] Because my analysis requires data on firms' operating cycles and net operating assets, I exclude acquisitions of targets in banking, insurance, real estate, and trading. This leaves 492 contractual agreements. I exclude a further 35 agreements that are missing details required for the variable measurement, leaving a sample of 457 agreements.

I then read these agreements and identify all post-closing purchase price adjustments. These adjustments exist if a clause calls for the preparation of a financial statement and/or a certificate as of the closing date that adjusts the purchase price upward and/or downward based on changes from a specified figure. There are 241 clauses with 452 adjustments.

I delete 25 adjustments that are based on seller expenses related to the transaction and 57 adjustments that do not describe how they are finalized, leaving 229 clauses with 370 adjustments. Of these adjustments, 160 (43%) relate to working capital; 57 (15%) relate to debt; 47 (13%) relate to net worth, net assets, or shareholders' equity; 37 (10%) relate to cash; 12 (3%) relate to revenues and/or expenses; 10 (3%) relate to taxes; and 47 (13%) relate to other accounts. To increase the probability that the price adjustment is disclosed in a subsequent filing, I retain only acquisition agreements with a working capital or net worth adjustment, reducing the number of purchase price adjustment clauses to a final sample of 201.

To determine what measurement practices are applied, I read the purchase price adjustment clause to see how the buyer and seller agree to prepare the closing financial statements. Of the 201 purchase price adjustments in the final sample, 70 (35%) specify

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[8] More than 624 acquisitions of private targets took place during the sample period, but the SEC requires disclosure only of "significant" deals—that is, acquisitions whose value relative to the acquirer is equal to or more than a certain amount—as Rodrigues and Stegemoller (2007) discuss.

accounting measurement rules for working capital or net worth in an attached schedule or exhibit; 114 (57%) require application of GAAP, consistent with past practice; and 17 (8%) require application of GAAP without mention of past practice.

I collect realized purchase price adjustments from footnote disclosures in the buyers' subsequent 10-K and 10-Q filings. Because the preliminary purchase price can change for multiple reasons,[9] I use only those disclosures that explicitly reference the purchase price adjustment identified in the acquisition agreement. This disclosure is made for 69 of the 201 observations (34%).

5.2 Descriptive statistics

Descriptive statistics are presented in Table 2. Columns 1–3 present mean and median values and standard deviations for the full sample of 201 observations. Columns 4–6 present these statistics for the subsample of 70 observations with rigid accounting rules ($RIGID = 1$), and columns 7–9 present these statistics for the subsample of 131 observations with flexible accounting rules ($RIGID = 0$). The last column provides z-statistics for differences across these two subsamples (according to two-sample tests of proportionality for binary variables and Wilcoxon rank-sum tests for all other variables).

As discussed in Section 4.2.1, the variables LONG_PRECLOSING, SIMULTANEOUS, COMP_SVCS, WRITEOFFS, and NOA_STDDEV measure variation in the hidden action problem. Approximately one-quarter of the sample has either a long pre-closing period (18 observations with LONG_PRECLOSING = 1) or a simultaneous closing (31 observations with SIMULTANEOUS = 1). Almost half of the sample relates to deals with a target in the computer or services industries (94 observations with COMP_SVCS = 1). The mean value of WRITEOFFS

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[9] Other reasons include breaches of representations and warranties, contingent payouts, share price guarantees, contractual change of control payments under employment agreements, payment of transaction costs, etc.

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is 58%, and the mean and median values of *NOA_STDDEV* are 0.90. The interpretation of these values is that firms in the average target's industry experienced negative special items in three of the past five years and had a standard deviation of net operating assets of 90% of total assets. Deals with rigid accounting rules are significantly less likely to be in the computer and services industries and have significantly lower *NOA_STDDEV*. When comparing deals with rigid and flexible accounting rules, there is no significant difference in *LONG_PRECLOSING*, *SIMULTANEOUS*, and *WRITEOFFS*.

As discussed in Section 4.2.2, the adverse selection problem is expected to be positively related to *%OPERATINGCYCLE*, *DIVERSIFY*, and *MANUFACTURING* and negatively related to *YEAR_END* and *BUYER_EXPERIENCE*. The mean (median) value of *%OPERATINGCYCLE* is 0.64 (0.26). Excluding simultaneous closings, the mean (median) value is 0.75 (0.34) (untabulated). The interpretation of these values is that the average (median) seller makes decisions for three-quarters (one-third) of the operating cycle during the pre-closing period when the deal has a deferred closing. There are 76 observations for diversifying deals (*DIVERSIFY* = 1) and 67 observations with targets in industries with a higher risk of real earnings management (*MANUFACTURING* = 1). There are 55 observations with a closing date in the buyer's fourth fiscal quarter. *BUYER_EXPERIENCE* has a mean (median) value of 19% (16%). The subsample with rigid accounting rules has a significantly higher proportion of diversifying deals, a significantly lower proportion of year-end closings, and buyers with significantly less experience in making acquisitions. Each of these differences has the predicted sign. There are no significant differences between subsamples in *%OPERATINGCYCLE* and *MANUFACTURING*.

There are significant differences among the contract variables as well. Deals with rigid accounting rules are more likely to use additional non-working capital and non-net worth

adjustments, less likely to use "fairly presents" language, and more likely to have a minimum threshold for a dispute. This is consistent with the predictions in Section 4.2.3.

Turning to the control variables, *DEAL_VALUE* and *BUYER_SIZE* are significantly higher for deals with rigid accounting rules. There is also a significantly higher proportion of observations with *BIG_DEAL* = 1 when the deal includes rigid accounting rules (39%) than when the deal includes flexible accounting rules (18%). Hence, the decision to include accounting rules in the contract is strongly associated with the cost of decisions in the pre-closing period.

Pearson and Spearman correlation coefficients are presented in Table 3. Because many of the variables are significantly correlated with one another, I investigate whether collinearity is a problem. The largest condition index reported by intercept-adjusted collinearity diagnostics is 5.32, well below the values suggested by Belsley, Kuh, and Welsch (1980). As a result, collinearity is not expected to affect the estimates.

6 Results

6.1 Logistic regression results

Coefficient estimates and average marginal effects from the logistic regressions are presented in Table 4. In the discussion that follows, I discuss the results for model (1) and then model (2).

The proxies for the hidden action problem are *LONG_PRECLOSING, SIMULTANEOUS, COMP_SVCS, WRITEOFFS*, and *NOA_STDDEV. LONG_PRECLOSING* has a strong statistical association with *RIGID*. Deals with unusually long pre-closing periods are significantly less likely to include rigid accounting rules, with an average marginal effect of −0.627. This is

expected because the hidden action problem is more severe when the pre-closing period is longer. The other proxies for the hidden action problem are not significant.[10]

The proxies for the adverse selection problem are *%OPERATINGCYCLE, DIVERSIFY, MANUFACTURING, YEAR_END*, and *BUYER_EXPERIENCE*. There is a strong positive association between *RIGID* and *%OPERATINGCYCLE*, as predicted by H_1, with an average marginal effect of 0.161. *DIVERSIFY* has the predicted sign and is nearly significant. *BUYER_EXPERIENCE* has a significant average marginal effect of −0.466. The variables *MANUFACTURING* and *YEAR_END* are not significant. These results provide evidence that the adverse selection problem is a key determinant in the choice between rigid and flexible accounting rules.

H_2 predicts associations between accounting flexibility and other measures of flexibility in the purchase price adjustment and is tested with model (2). *EXCLUSIONS* and *MULTIPLE_ADJ* are proxies for flexibility in the definition of the adjustment. *MULTIPLE_ADJ* is significant and positive, but *EXCLUSIONS* is not significant. *FAIRLY_PRESENTS, PRELIMINARY*, and *RESPONSE* measure the flexibility in preparation of the closing financial statements, but only the phrase "fairly presents" is statistically significant. *NEGOTIATION, RESOLUTION*, and *MINIMUM* measure the flexibility of negotiations. The average marginal effect of *NEGOTIATION* is significantly negative. *RESOLUTION* has the predicted sign and is nearly significant. *MINIMUM* is significantly positive, as predicted. These associations are consistent with H_2.

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[10] The insignificance of *SIMULTANEOUS* may owe to the fact that *SIMULTANEOUS* is negatively related to the possibility of hold-up. If there is a simultaneous closing, the buyer and seller bear lower sunk costs before closing because there are fewer decisions to make. Accordingly, there is less of a threat of expropriation in negotiations after closing. This would mitigate the relationship predicted by H_1.

H3 predicts associations between accounting flexibility and other contract features related to the hold-up problem. The hold-up problem is more severe when there is a large expected gain from expropriation during negotiations after closing. The expected gain is larger when the adjustment is potentially large in magnitude, when the independent accounting firm's determination is prone to error, and when the buyer and seller take extreme positions during negotiations. The average marginal effect of *MAXIMUM* is significantly negative, as predicted. Though *ASYMMETRY*, *AUDITOR_FLEXIBILITY*, and *FEE_SHIFTING* have the predicted signs, the average marginal effects are not statistically significant.[11]

The controls related to the target's size are also important determinants. *DEAL_VALUE* and *BIG_DEAL* are statistically significant, but surprisingly, with opposite signs. *BIG_DEAL* increases the probability that the buyer and seller use a rigid purchase price adjustment, while *DEAL_VALUE* decreases the probability that the buyer and seller use a rigid purchase price adjustment. This suggests that the probability that the contract includes rigid accounting rules decreases with the size of the target, but the baseline probability that the contract includes rigid accounting rules is higher for large deals. *BUYER_SIZE* is not significant.

Overall, the logistic regressions have strong goodness-of-fit. Models (1) and (2) explain 14.9% and 25.4%, respectively, of the variation in the decision to have a rigid purchase price adjustment according to the pseudo R-square statistic. I now discuss how I use the conditional probabilities estimated from models (1) and (2) to perform propensity score matching.

6.2 Results for the effect of rigid accounting rules on finalized purchase price adjustments

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[11] In untabulated tests, I use an alternative definition of *AUDITOR_FLEXIBILITY* that equals 1 if the contract does not name the independent accounting firm, 0 otherwise. The coefficient using this alternative definition is −0.176 and remains insignificant.

Figure 2 provides histograms for the 69 observations where the finalized purchase price adjustment is subsequently disclosed in the buyer's annual filing.[12] The mean adjustment for the subsample of 22 observations with rigid accounting rules decreases the purchase price by $0.1 million, while the mean adjustment for the subsample of 47 observations with flexible accounting rules increases the purchase price by $1.0 million. A pooled t-test cannot reject the null hypothesis that the difference in means is zero (t-statistic = -1.05, p-value = 0.30), but there are significant differences between the subsamples in the covariates of models (1) and (2). Untabulated t-tests identify significant differences in COMP_SVCS (p-value = 0.09), NOA_STDDEV (p-value = 0.03), YEAR_END (p-value = 0.04), DIVERSIFYING (p-value = 0.05), BUYER_EXPERIENCE (p-value = 0.07), and BIG_DEAL (p-value < 0.01). Additionally, there are significant differences in MINIMUM (p-value = 0.02), FAIRLY_PRESENTS (p-value = 0.03), and MULTIPLE_ADJ (p-value = 0.10). To isolate the effect of rigid accounting rules, I match observations with RIGID = 1 to observations with RIGID = 0 based on the fitted probabilities that the adjustment uses rigid accounting rules from models (1) and (2). Matching on propensity scores removes the selection effect, yielding an estimated difference in finalized purchase price adjustments that can be attributed to the effect of rigid accounting rules.

I use propensity scores estimated from the logistic regressions presented in Table 4 to match the outcome for each observation with RIGID = 1 to a weighted average of outcomes for observations with RIGID = 0. For each observation with RIGID = 1, kernel-based matching assigns weights to each observation with RIGID = 0 according to its difference in propensity score. As the difference in propensity scores decreases, the weight increases to reflect the greater similarity (Heckman, Ichimura, and Todd 1997). The reduction in the selection effect that results is depicted graphically in Figure 3, which plots the density curves of the propensity scores for the

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[12] I assume that there is no selection bias in the disclosure of finalized purchase price adjustments.

subsamples with *RIGID* = 0 and *RIGID* = 1 before (left) and after (right) kernel-based matching. The density curves are much closer after kernel matching, which gives confidence that the matching estimator controls for the abovementioned significant differences in covariates.[13]

The results for the effect of *RIGID* on finalized purchase price adjustments based on propensity score matching are provided in Table 5. The hypothesis of H_4 is that rigid accounting rules reduce the purchase price paid by the buyer in deals that use rigid purchase price adjustments, and have no effect on the purchase price in deals that use flexible purchase price adjustments. The results are consistent with this prediction. The estimates suggest that rigid accounting rules save the buyer between \$2.58 million (using propensity scores from model (1)) and \$3.68 million (using propensity scores from model (2)) when the contract includes rigid accounting rules. The estimates are insignificant when the contract includes flexible accounting rules. This is consistent with implications of how the buyer and seller design the adjustment clause under the threat of adverse selection and hold-up problems: rigid accounting rules protect the buyer from overpayment when the seller is expected to have negative private information at closing, but would not alter outcomes of negotiations after closing when flexible accounting rules are optimal and hold-up is contained.

7 Conclusion

The objective of a contract is to organize economic activity by regulating parties' relationship in the future (Posner 2005). Accounting rules support contracting by measuring how well each party fulfills its obligations. This paper addresses the question of how rigid and flexible accounting rules, both frequently used in negotiated acquisition agreements with purchase price adjustments, help to regulate the buyer and seller's relationship. That is, under

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[13] All differences in covariates are insignificant after matching with the exception of *DIVERSIFY* (p-value = 0.08 using model (1), 0.03 using model (2)).

what conditions do rigid or flexible accounting rules best measure how well the seller meets its pre-closing obligations?

I hypothesize that the choice between rigid and flexible accounting rules is driven by the relative severity the hidden action problem and the adverse selection problem. The buyer and seller prefer flexible accounting rules when the hidden action problem is more severe, and prefer rigid accounting rules when the adverse selection problem is more severe. When the buyer and seller use flexible accounting rules, other contract features are chosen to increase the flexibility of negotiations after closing and reduce the threat of the hold-up problem. The effect of rigid accounting rules on finalized purchase price adjustments is predicted to depend on how the buyer and seller use negotiations after closing. The evidence is consistent with the hypotheses.

Prior literature on the contracting uses of accounting finds that measurement rules are heavily negotiated (e.g., Leftwich 1983), that certain accounting properties are demanded (e.g., Nikolaev 2010), and that flexibility in accounting choice is priced (e.g., Beatty, Ramesh, and Weber 2002). This paper contributes to this line of research by considering how two near-term agency problems affect the decision to include rigid or flexible accounting rules, how this decision is associated with negotiations, and how this decision is priced.

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Appendix 1 Mergers and acquisitions with public buyers and private sellers

A deal begins when potential buyers and sellers seek each other out, frequently with the aid of a "finder," a business broker, or an investment bank. Confidentiality and stand-still agreements enable the necessary due diligence for the buyer and seller to investigate whether there are gains to an acquisition and negotiate a mutually acceptable price. If the due diligence is encouraging, a "letter of intent" (also referred to as a "memorandum of understanding" or a "term sheet") is signed as a preliminary to the definitive corporate acquisition agreement. The definitive corporate acquisition agreement names the parties and the surviving corporation; describes the payment; and lists "representations and warranties" (which provide legal assurance), "covenants" (which delineate how the businesses will proceed until closing), and various closing conditions (Carney 2009).

Though the buyer and seller enter into a binding contract at signing, tasks remain before closing. The buyer completes its financing arrangements, verifies the seller's representations and warranties, and reviews the seller's legal status (pending litigation, leases and contracts, and charter documents). The seller operates the business in accordance with the agreement and obtains consents from mortgagees, lessors, and counterparties in other contracts. Together, the buyer and seller work to meet closing conditions, such as obtaining necessary tax rulings or regulatory approvals under the Hart-Scott-Rodino Antitrust Improvements Act of 1976. These tasks give rise to the lag between the signing and closing dates. Only after these tasks are completed or waived can the parties "close" the deal and the acquisition is completed. The buyer and seller then prepare closing financial statements.

Appendix 2 Propensity score matching

If rigid accounting rules are used ($RIGID = 1$), adjustment $a_{1,i}$ is observed. If flexible accounting rules are used ($RIGID = 0$), adjustment $a_{0,i}$ is observed. For each observation i, only $a_{1,i}$ or $a_{0,i}$ is observed. The counterfactual finalized purchase price adjustment is needed, because a univariate comparison of finalized purchase price adjustments across subsamples of $RIGID$ does not equal the effect of rigid accounting rules within a subsample of $RIGID$:

$$E[a_{1,i} \mid RIGID = 1] - E[a_{0,i} \mid RIGID = 0] \neq E[a_{1,i} - a_{0,i} \mid RIGID = 1]$$

$$E[a_{1,i} \mid RIGID = 1] - E[a_{0,i} \mid RIGID = 0] \neq E[a_{1,i} - a_{0,i} \mid RIGID = 0]$$

Propensity score matching enables estimation of $E[a_{1,i} - a_{0,i} \mid RIGID = 1]$ and $E[a_{1,i} - a_{0,i} \mid RIGID = 0]$. It makes the assumption that the expectations of $a_{1,i}$ and $a_{0,i}$ are independent of whether rigid or flexible accounting rules are used conditional on X, the set of covariates in models (1) and (2) that determines whether rigid or flexible accounting rules are optimal:

$$E[a_{1,i} \mid X, RIGID = 1] = E[a_{1,i} \mid X, RIGID = 0]$$

$$E[a_{0,i} \mid X, RIGID = 1] = E[a_{0,i} \mid X, RIGID = 0]$$

As discussed in Section 4.2, the dimension of X is high because many covariates influence the choice between rigid and flexible accounting rules. Rather than match observations according to each covariate in X, Rosenbaum and Rubin (1983) show that it is sufficient to match according to the probability that rigid accounting rules are used conditional on X. This leads to the following:

$$E[a_{1,i} \mid Prob(RIGID = 1 \mid X), RIGID = 1] = E[a_{1,i} \mid Prob(RIGID = 1 \mid X), RIGID = 0]$$

$$E[a_{0,i} \mid Prob(RIGID = 1 \mid X), RIGID = 1] = E[a_{0,i} \mid Prob(RIGID = 1 \mid X), RIGID = 0]$$

After matching on propensity scores, the expectation of the difference in finalized purchase price adjustments conditional on values of $RIGID$ provides an estimate of the effect of

rigid accounting rules on the finalized purchase price adjustment. For deals with rigid accounting rules, this difference is:

$$E\{E[a_{1,i} \mid \text{Prob}(RIGID=1 \mid X), RIGID=1] - E[a_{0,i} \mid \text{Prob}(RIGID=1 \mid X), RIGID=0] \mid RIGID=1\}$$

And for deals with flexible accounting rules, this difference is:

$$E\{E[a_{1,i} \mid \text{Prob}(RIGID=1 \mid X), RIGID=1)] - E[a_{0,i} \mid \text{Prob}(RIGID=1 \mid X), RIGID=0] \mid RIGID=0\}$$

An advantage of using propensity score matching instead of regression to estimate the effect of using rigid accounting rules relates to the weights applied to observations to estimate the above conditional expectations. Propensity score matching puts more weight on observations with values of X that have a high probability of using rigid accounting rules, while regression puts more weight on observations with values of X where the conditional variance of $RIGID$ is high (Angrist and Pischke 2009). In short, propensity score matching places high weight when $\text{Prob}(RIGID = 1 \mid X)$ is high, while regression places high weight when $\text{Var}(RIGID \mid X)$ is high. Because my inquiry focuses on the effect of rigid accounting rules, it is sensible to use an estimator that puts more weight on observations with high $\text{Prob}(RIGID = 1 \mid X)$.

Appendix 3 Why purchase price adjustments are used

Using a choice-based sample, consisting as it does of observations contingent on a particular choice being made, can lead to "oversampling" of the outcome of interest. Oversampling increases the precision of parameter estimates (Palepu 1986) but requires weighting for consistent estimation. The sample discussed in this paper is composed of contracts that include a clause allowing for a purchase price adjustment based on working capital or net worth. The risk of selecting such a sample is that contracts using rigid accounting rules may be oversampled. In this appendix, I discuss the buyer and seller's choice to include a purchase price adjustment based on working capital or net worth, and examine the effect that buyers and sellers' observed choices have on my results.

A3.1 Determinants of the choice to include purchase price adjustments

A corporate acquisition agreement is the product of bilateral bargaining. The buyer and seller have a shared interest in increasing the payoff from the merger but divergent interests regarding the distribution of that payoff. Bargaining establishes how they will cooperate to maximize the payoff and how it will be divvied up.

The purchase price adjustment addresses a particular problem in the bargaining situation: the "cooperative investment problem." In a corporate acquisition, the buyer and seller contract for future trade. The contract calls for the seller to make an investment that provides relationship-specific benefits. If the investment directly benefits the buyer, it is said to be "cooperative." (In contrast, if it lowers the seller's own costs, then it is said to be "selfish.") In M&A, the seller makes decisions between the signing and closing dates that provide benefits to the acquirer not available to alternative acquirers. Unless the seller has all the bargaining power, during

renegotiation it will receive only a fraction of the surplus from its investment. Consequently, the seller underinvests (Che and Hausch 1999).

Purchase price adjustments counteract the seller's tendency to underinvest. How they do so is suggested by Stremitzer's (2010) findings that a contract can induce the optimal level of cooperative investment if an independent third party can determine whether the traded good meets a quality threshold. In crafting a purchase price adjustment clause, the buyer and seller identify a target figure for working capital or net worth and agree to adjust the purchase price accordingly, thereby establishing a quality threshold. Because the buyer prepares closing financial statements in accordance with GAAP (FASB 2007), this quality threshold is verifiable by a third party, and at lower cost than alternative quality thresholds. By making the purchase price contingent on the working capital or net worth at closing, the buyer is protected against—and the seller is penalized for—overvalued assets and undervalued liabilities.

I expect that buyers and sellers will include purchase price adjustments when the cooperative investment problem is serious. Prior literature identifies three contracting contexts that give rise to significant cooperative investment problems: (1) when the seller receives a fractional share of the benefit of its relationship-specific investment; (2) when the seller has minimal bargaining power, as it expects a lower share of the surplus after renegotiation; and (3) when a significant percentage of the seller's business decisions are relationship-specific, because the buyer is better able to hold up the seller during renegotiations.

A3.2 Relationship between purchase price adjustments and other contract features

Section 3.2 hypothesizes that flexible accounting rules are used when the buyer and seller prefer to bear more negotiation-related contracting costs after closing than before signing. However, buyers and sellers that choose not to include a purchase price adjustment may be

signing a particularly rigid contract that allows less renegotiation than either contracts with *RIGID* = 1 or contracts with *RIGID* = 0. Additionally, buyers and sellers make the choice to include a purchase price adjustment at the same time that they make choices involving other contract features. However, as in Section 3.2, it is important to note that while the cooperative investment and agency problems determine the shape of the contract, purchase price adjustments and other contract features are choice variables for which I expect associations but no causal relations.

A3.3 Selection models

Using the following probit model, I test whether the choice to include a purchase price adjustment *(ADJUST* = 1 or 0*)* has an effect on the choice between rigid (*RIGID* = 1) and flexible (*RIGID* = 0) accounting rules:

$$\text{Prob}(RIGID = 1) \quad = \quad f \text{ (Hidden action, Adverse selection, Controls)} \tag{3a}$$

$$\text{Prob}(ADJUST = 1) \quad = \quad f \text{ (Hidden action, Adverse selection, Controls,} \tag{3b}$$

$$\text{Cooperative investment)}$$

The outcome equation (3a) is a probit model that is similar to model (1), which is described in Section 4.1. The selection equation (3b) is the endogenous choice to include the purchase price adjustment. I include the hidden action and adverse selection proxies and control variables described in Sections 4.2.1, 4.2.2., and 4.2.5. The selection model includes proxies that capture variation in the cooperative investment problem that are excluded from the outcome equation. These proxies are described in Section A3.4.1 below.

Much as I did with model (2), I augment model (3) with other contract features that permit me to investigate whether and how the choice to include a purchase price adjustment is associated with other contract choices that have been the subject of prior literature:

$$\text{Prob}(RIGID = 1) \quad = \quad f \text{ (Hidden action, Adverse selection, Controls)} \qquad \text{(4a)}$$

$$\text{Prob}(ADJUST = 1) \quad = \quad f \text{ (Hidden action, Adverse selection, Controls,} \qquad \text{(4b)}$$

Cooperative investment, Other contract features)

The proxies for other contract features are described in Section A3.4.2 below.

Estimation of models (3) and (4) provide two conditional probabilities to use for propensity score matching. The first is the conditional probability that $RIGID = 1$, which is described in Section 4.1. Additionally, the estimation provides the conditional probability that $RIGID = 1$ given $ADJUST = 1$. I provide propensity score matching estimates of the effect of $RIGID$ for each of these conditional probabilities.

A3.4 Selection model variable measurement

As described in Section A3.1, the cooperative investment problem is serious when the seller receives a smaller share of the benefits resulting from its relationship-specific investment, when the seller has limited bargaining power, or when many or most of the seller's business decisions are relationship-specific. Here, I discuss proxies that capture such variation in the severity of the cooperative investment.

A3.4.1 Method of payment and industry M&A activity

The first two proxies for variation in the cooperative investment problem relate to the seller's share of the benefit resulting from its relationship-specific investment. It is expected that cash-financed deals have a greater cooperative investment problem than stock-financed deals, because in cash-financed deals the seller receives no share in the benefit of its cooperative investment that accrues to the buyer's shareholders after closing. In contrast, an equity stake in the surviving corporation gives the seller a way to participate in the buyer's payoff. Chang (1998) draws an analogy between stock-financed acquisitions of private companies and private

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placements of equity because of the relatively small number of owners of private companies, and argues that these new shareholders of the buyer enhance the merger's prospect through monitoring.[14] Following Gaspar, Massa, and Matos (2005), I define *ALL_CASH* and *ALL_EQUITY* as binary variables that equal 1 if the consideration offered is cash-only/equity-only, 0 otherwise.

The third proxy for variation in the severity of the cooperative investment problem relates to the seller's bargaining power. Ben-Shahar (2009, p. 408) argues that bargaining power "reflects, in short, the relative facility of each party to refuse the deal." This is consistent with debt market research in the accounting literature. For example, Chen et al. (2010) provide evidence that a borrower's bargaining power decreases in proportion to the number of loans from its current lead lender, and increases in proportion to the option to issue public debt and in its liquidation value. Zhang (2010) argues that borrowers with higher accounting quality have greater access to financing from new lenders, because new lenders do not have to invest in costly information production. She finds that this increases bargaining power in renegotiations with existing lenders.

To measure the availability of alternative acquirers, I define *LTNUM* as the natural logarithm of the number of acquisitions within the target's Fama-French 48 industry classification that meet the first sample selection criterion in Table 1. I expect that targets in industries with higher *LTNUM* would hold greater bargaining power because they are more able to refuse the deal and be acquired by an alternative acquirer.

While I use *LTNUM* as a proxy for the availability of alternative transactions and therefore the seller's bargaining power, industry-level acquisition activity has previously been

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[14] In addition to a monitoring effect, the positive returns to stock-financed acquisitions of private companies that Chang (1998) presents are consistent with a reduction in the cooperative investment problem.

used as a proxy for valuation uncertainty in studies of contingent consideration in M&A. While Rhodes-Kropf et al. (2005) propose that misvaluation contributes to acquisition activity at the industry level, Datar, Frankel, and Wolfson (2001) find evidence that valuation uncertainty is lower (and contingent consideration is less common) when more acquisitions are completed within the target's industry because buyers can use prices paid in similar transactions as reference points. Similarly, Delong and Deyoung (2007) find that prospective acquirers benefit from an information spillover when they observe other acquisitions in the recent past. Accordingly, I cannot rule out this alternative explanation, which has the same directional prediction as I do for the effect of *LTNUM* on the selection equation model.

A3.4.2 Other contract features

The proxies described in Section A3.4.1 capture variation in the cooperative investment problem related to the seller's share of the benefit of its relationship-specific investment and to the seller's bargaining power. The third source of variation in the cooperative investment problem is the degree of to which the seller's decisions in the pre-closing period are relationship-specific. Costello (2011) provides evidence that buyer-supplier contracts with relationship-specific investments are longer in duration. I define contract duration as the amount of time that passes between contract and the expiration of the contract. Specifically, contract duration is the amount of time between the date the buyer and seller sign the merger agreement and the date after which either party has an option to terminate the agreement. *LOG_DURATION* is the natural logarithm of the number of days between the signing date and the termination date. While Costello (2011) examines the contract duration *over which* trade occurs, *LOG_DURATION* measures the contract duration *by which* trade occurs. This distinction is important, because Che and Sákovics (2004) describe how the timing of investment and bargaining is endogenously

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chosen by buyers and sellers. *LOG_DURATION* is a proxy for the buyer and seller's choice about the timing of investment and bargaining.

As described in Section 2, the merger agreement also contains representations and warranties, pre-closing and post-closing covenants, and conditions to closing. These contract features allocate risk between buyer and seller by providing for indemnification in the event that representations are found to be untrue, covenants are breached, or conditions are not fulfilled.[15] The indemnification may (or may not) survive the closing, allowing (or disallowing) the buyer from claiming a reduction in the purchase price (Carney 2009). To proxy for this alternative contract feature related to renegotiation, I measure *INDEMNITY*, which equals the natural logarithm of 1 plus the number of days the buyer is able to file a claim against the seller for indemnification.

Whether the target's management will be employed by the surviving corporation also affects the degree to which the seller shares the benefit of its relationship-specific investment. Merger agreements frequently include employment agreements, consulting agreements, and earnouts as conditions to close. I create the binary variables *EMPLOYMENT* and *CONSULTING*, which equal 1 if the contract stipulates that an employment or consulting agreement is required to be delivered at closing, 0 otherwise. Earnouts are a form of deferred payment contingent on post-closing revenues or earnings, while purchase price adjustments are contingent on pre-closing changes to working capital or net worth. *EARNOUT* equals 1 if the merger has an earnout agreement, 0 otherwise.

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[15] For instance, the stock purchase agreement dated April 27, 2006, between Courier Corp. and Federal Marketing Corp. includes an indemnity provision that states the following: "The representations, warranties, covenants and agreements made herein, as modified by the Disclosure Schedules, together with the indemnification provisions herein, are intended among other things to allocate the economic cost and the risks inherent in the transactions contemplated hereby between the Parties."

Che and Chung (1999) and Schweizer (2006) show that breach remedies like expectation damages and reliance damages can produce efficient contracts when there is a cooperative investment problem. In merger agreements, the common breach remedy is liquidated damages, commonly referred to as a termination fee. Termination and reverse-termination fees are included because the buyer or seller may want to walk away from the merger, to entice trading partners to make and consider offers, and to avoid the uncertainty of a third party's assessment of damages (Carney 2009). Officer (2003) and Bates and Lemmon (2003) find that termination fees are used when negotiation and bidding costs are high and to encourage the exchange of private information. The binary variable *BUYER_TERMINATION* (*SELLER_TERMINATION*) equals 1 if the buyer (seller) must pay a stipulated amount in the event that it exercises an option to terminate the agreement and/or enters into an alternative transaction, 0 otherwise.

Since the merger agreement is a very important contract and drafting errors can have serious consequences, I include in my selection model proxies for the reputation of the buyer's and seller's legal advisor in negotiations. Retaining top legal advisors represents a higher expenditure in contracting costs before signing, which would be expected if the buyer and seller prefer to limit negotiations after closing. I include the binary variables *BUYER_TOPLEGAL* and *SELLER_TOPLEGAL* if the buyer's/seller's legal advisor is listed among the top fifty advisors in *Mergerstat Review*, measured in total deal value, in the year prior to closing.

As mentioned in Section A3.2, the variables in this section are choice variables. It is unclear whether these other contract features serve as complements to or substitutes for purchase price adjustments.

A3.5 Descriptive statistics

Descriptive statistics for the selection model variables are presented in Table 6. Columns 1–3 present mean and median values and standard deviations for the full sample of 457 contracts (see the sample selection in Section 5.1). Columns 4–6 present these statistics for the subsample of 200 contracts with purchase price adjustments (*ADJUST* = 1), and columns 7–9 present these statistics for the subsample of 257 contracts without purchase price adjustments (*ADJUST* = 0). The last column provides z-statistics for differences across these two subsamples (according to two-sample tests of proportionality for binary variables and Wilcoxon rank-sum tests for all other variables).

As discussed in Section 4.2.1, the variables *LONG_PRECLOSING*, *SIMULTANEOUS*, *COMP_SVCS*, *WRITEOFFS*, and *NOA_STDDEV* measure variation in the hidden action problem. The subsample of contracts with *ADJUST* = 1 are found to have a significantly lower proportion of observations with a long pre-closing period (*LONG_PRECLOSING* = 1).[16] The mean value of *WRITEOFFS* is significantly higher for the subsample of contracts with *ADJUST* = 1. As discussed in Section 4.2.2, the variables *%OPERATINGCYCLE*, *DIVERSIFY*, *MANUFACTURING*, *YEAR_END*, and *BUYER_EXPERIENCE* measure variation in the adverse selection problem. *%OPERATINGCYCLE* is significantly lower and *BUYER_EXPERIENCE* is significantly higher in the subsample with *ADJUST* = 1. In terms of the control variables, Wilcoxon rank-sum tests do not find significant differences in *DEAL_VALUE*, *BIG_DEAL*, or *BUYER_SIZE*, suggesting that the size of the merging parties does not affect the choice to include a purchase price adjustment.

There are significant differences between subsamples according to *ADJUST* in method of payment: deals with *ADJUST* = 1 are significantly more likely to be cash-financed (*ALL_CASH*

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[16] Contract duration, as proxied by *LOG_DURATION*, is significantly lower for contracts with purchase price adjustments. The Pearson and Spearman correlation coefficients between *LOG_DURATION* and *LONG_PRECLOSING*, reported in Table 7, are large and significant at the 0.01 level.

= 1) than stock-financed (*ALL_STOCK* = 1). This is not surprising, given that stock financing leads the seller to internalize the benefits of its relationship-specific investment, thereby reducing the cooperative investment problem. The proxy for the seller's bargaining power, *LTNUM*, is significantly lower for deals with purchase price adjustments. This is expected, because the cooperative investment problem is more severe when the seller's bargaining power is low. Again, I cannot rule out the alternative explanation that *LTNUM* proxies for valuation uncertainty, as it would also be lower for deals with purchase price adjustments.

There are significant differences between the subsamples according to *ADJUST* in other contract features. *INDEMNITY* is significantly higher for deals with adjustments, which is consistent with the use of renegotiations related to representations and warranties, covenants, and closing conditions and purchase price adjustments complementarily. Interestingly, while there is no significant difference in *EMPLOYMENT*, the subsample with purchase price adjustments has a significantly higher proportion of contracts with *CONSULTING* = 1.

There is no significant difference in *EARNOUT* between the subsamples according to *ADJUST*. This suggests that purchase price adjustments are not used to resolve valuation uncertainty either as a complement or substitute for earnouts.[17] Overall, univariate differences suggest that, while earnouts are used more frequently in my sample, purchase price adjustments serve a different function.[18]

Lastly, the proportion of contracts with *SELLER_TOPLEGAL* is significantly lower for deals with *ADJUST* = 1. This is expected, as the seller's using a top legal advisor increases its

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[17] Moreover, *COMP_SVCS* and *DIVERSIFY* are not significantly different between the subsamples with *ADJUST* = 1 and *ADJUST* = 0, which Datar, Frankel, and Wolfson (1999) and Kohers and Ang (2000) expect to be related to valuation uncertainty.

[18] Datar, Frankel, and Wolfson observe that 7% of the 15,132 acquisitions of private targets have earnout agreements. In comparison, my sample has 16% of the 457 observations with *EARNOUT* = 1, which is a significantly greater proportion (z-statistic = 7.30, p-value < 0.01).

bargaining power, thereby mitigating the cooperative investment problem because there is a lower threat of hold-up in renegotiations.

A3.6 Results

Results from the probit model with sample selection are provided in Table 8.[19] Predicted signs and coefficient estimates are provided for the outcome equation and selection equation of models (3) and (4).

The results for outcome equations (3a) and (4a) are broadly consistent with the results for model (1). The coefficient estimates of *LONG_PRECLOSING*, *%OPERATINGCYCLE*, and *BUYER_EXPERIENCE* are significant with the predicted signs, as before. Now, however, *DIVERSIFY* is significant at the 0.10 level and *DEAL_VALUE* is no longer significant. In general, the selection model does not overturn the inferences made in Section 6.1.

Turning to selection equation (3b), the coefficient estimates for *WRITEOFFS* and *BUYER_EXPERIENCE* are significantly different from zero. Combined with similar univariate differences discussed in Section A3.5 above, these estimates provide some evidence that the hidden action and adverse selection problems have countervailing effects on the choice to include a purchase price adjustment: a more severe hidden action (adverse selection) problem increases (decreases) the probability of including a purchase price adjustment.[20] Additionally, and consistent with the expectations in Section A3.4.1, *ALL_CASH*, *ALL_EQUITY*, and *LTNUM* are strongly significant with the predicted signs. This suggests that when the seller's cooperative investment problem is more severe, as in cash-financed acquisitions and when the seller's

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[19] While Section 6 presents results of a logistic regression, estimation of the Heckman selection model requires that I use a probit model.

[20] The fact that *BUYER_EXPERIENCE* is significantly positive is also consistent with the argument in Reuer, Shenkar, and Ragozzino (2004) that greater experience in M&A enables buyers to reduce risk in these transactions with contingent payments.

bargaining power is low, the buyer and seller are more likely to include a purchase price adjustment.

Selection equation (4b) augments this equation with other contract features. The coefficients on *ALL_CASH*, *ALL_EQUITY*, and *LTNUM* remain significant with the predicted signs. The coefficient estimates for *INDEMNITY*, *CONSULTING*, and *SELLER_TOPLEGAL* are also significant, though there are no predicted signs for these other contract features because it is a priori unclear whether they serve as complements to or substitutes for the purchase price adjustment in addressing the cooperative investment problem.

The Wald test is used to determine whether the outcome and selection equations in models (3) and (4) are independent. The correlation coefficient estimate (standard error) between the two equations for model (3) is -0.350 (0.364), which is not significantly different from zero ($\chi^2 = 0.77$, p-value $= 0.38$). However, the correlation coefficient estimate (standard error) between the two equations for model (4) is -0.643 (0.239), which is significantly different from zero ($\chi^2 = 3.51$, p-value $= 0.06$). The Wald test cannot reject that equations (3a) and (3b) are independent, but it does reject the independence of equations (4a) and (4b). I use propensity scores for both models to determine whether the results described in Section 6.2 are altered by modeling the buyer and seller's choice to include a purchase price adjustment.

Table 9 presents propensity score matching estimates of the effect of *RIGID* on finalized purchase price adjustments using the first conditional probability, Prob(*RIGID* $= 1 \mid X$), where X includes the proxies for the hidden action and adverse selection problems and the controls. While the estimates of the effect are similar in magnitude to those reported in Table 5, they are insignificant.

However, Table 10 presents propensity score matching estimates using the second conditional probability, represented by Prob($RIGID = 1 \mid X, ADJUST = 1$). This is the conditional probability that the contract includes accounting measurement rules, given that the buyer and seller include a purchase price adjustment. Though the estimated effect of $RIGID$ from matching on propensity scores from model (3) is still insignificant, the estimated effect of $RIGID$ from matching on propensity scores from model (4) are significant for observations with $RIGID = 1$, but not for observations with $RIGID = 0$. Hence, while the statistical significance of the effect of $RIGID$ weakens when I model the choice to include the purchase price adjustment, the results are consistent with H_4 and Section 6.2 when I match according to the conditional probability that $RIGID = 1$, given the buyer and seller make the choice to include the purchase price adjustment.

EXHIBIT A:
Example of a contract that includes measurement rules

Schedule 2

Policies and Procedures to Compute Final Net Asset Value

Final Net Asset Value shall be calculated from the Balance Sheet as of Effective Time included in the Final Closing Financial Statements, and as necessary, the books and records of the Group taking into account the Excluded Items noted below.

	As of August 31, 2006		Excluded Items	Target Net Assets Value	
Cash, cash equivalents and short-term investments	$ 0.1		(0.1)	$ –	(1)
Accounts and other receivables, net	6.6			6.6	
Inventories	7.3			7.3	
Deferred income taxes		1.0		1.0	
Other current assets	0.7		(0.1)	0.6	(2)
Total current assets	15.7		(0.2)	15.5	
Property, plant & equipment, net	3.9		–	3.9	
Other Assets	2.7		–	2.7	
TOTAL ASSETS	$ 22.3		(0.2)	$ 22.1	
Current maturities of long-term debt	$ 1.0		(1.0)	$ –	(3)
Accounts payable	2.4			2.4	
Accrued expenses	5.2			5.2	(3)
Total current liabilities	8.6		(1.0)	7.6	
Revolver note, Long-term debt & pension plan withdrawal obligation	6.4		(6.4)	–	(3)
TOTAL LIABILITIES	15.0		(7.4)	7.6	
NET ASSETS	$ 7.3		7.2	$ 14.5	

(1.) Cash, cash equivalents and short-term investments are excluded in the determination of Net Assets.

(2.) The value of the executive life insurance policies, the Dallas Cowboys season tickets and the related bonds, if any, shall be excluded from the determination of Net Assets. Included in the above shall be $117, 677, such amount representing the net debt issuance costs prior to any write off, if any, associated with the repayment of debt in connection with the Stock Purchase Agreement.

(3.) Outstanding Debt, the Effective Time Chino Lease Liability and the Effective Time Withdrawal Liability are excluded from the determination of Net Assets.

For purposes of calculating Final Net Asset Value, the following historical policies and procedures will be followed, all of which will be calculated in a manner consistent with prior years:

I. Allowance for Doubtful Accounts. The Allowance for Doubtful Accounts includes the aggregate of three separate reserves:

a. Specific Reserve. Each Group Member shall review the aged accounts receivable listing as of the Effective Time and determine whether any entire customer account balance or any selected invoice amount or other unpaid amount, should be deemed uncollectible in whole or in part in the judgment of the management of the Group Member or the Company The total of these identified uncollectible amounts shall constitute the Specific Reserve.

b. General Reserve. Each Group Member shall calculate the average annual write-offs of bad accounts, net of any subsequent recoveries, for the three-year period ended December 31, 2006 (the "Three-Year Average"), adjusted for non-recurring items or items specifically reserved for. The percentage derived by dividing the Three-Year Average (as adjusted) by the aggregate Accounts Receivable over that same period shall be multiplied by the Accounts Receivable balance as of the Effective Time to determine the General Reserve.

c. Return Reserve. The return reserve shall be equal to the "Adjusted Gross Profit Percentage" multiplied by the Effective Time accounts receivable balance net of the Specific and General Reserves determined in (a) and (b.) above multiplied by the "Average Net Return Percentage." Each Group Member's "Average Net Return Percentage" shall be equal to (x) the sum of its net returns (actual returns less restocking fees) for the calendar years 2005 and 2006, divided by (y) the sum of its gross sales for the calendar years 2005 and 2006. Each Group Member shall determine its "Adjusted Gross Profit Percentage," which shall be equal to (1) its "Net Gross Profit Percentage" plus (2) an amount equal to one minus management's estimated net realizable value percentage of returned inventory multiplied by its "Cost of Goods Sold Percentage." Each Group Member's "Net Gross Profit Percentage" shall be equal to one minus such Group Member's "Cost of Goods Sold Percentage". Each Group Member's "Cost of Goods Sold Percentage" shall be equal to (x) its standard cost of goods sold for the calendar year 2006, divided by (y) its gross sales less actual returns for the calendar year 2006.

II. Excess and Obsolete Inventory Reserve. Each Group Member shall review its aged inventory as of the Effective Time. The aged inventory shall be based on the inventory quantity on hand as of the Effective Time and historical usage in either the manufacture of finished goods or sale to third parties. All items with over one year supply on hand shall be reviewed for possible inclusion in the excess and obsolete inventory reserve. The Group Member's or Company's management shall make a determination whether to reserve for each item based on its determination of future use, either in manufacturing or service parts sales. Consideration shall be given to parts or finished goods related to new products introduced in the most recent fiscal year or currently in development. The Group Member shall reserve for any item not determined to have potential future use or if the quantity on hand exceeds the estimated future use. Management shall determine if the items have scrap value or may be returned to the supplier, in either of which cases the Group Member shall reserve for only the value in excess of the estimated value to be recovered. The total value of these identified items to be reserved for is the Specific Reserve. Once a Specific Reserve is determined, a General Reserve shall be determined. Unless an active obsolete inventory clean-up process was performed by the Group Member during the calendar year 2006, the sum of the Specific and General Reserves as a percentage of total inventory shall be consistent with prior years.

In determining the Final Net Asset Value, there shall be (a) excluded from the calculation any asset or liability that is booked as such only as a result of the transactions contemplated by the Stock Purchase Agreement, and (b) included in the calculation any asset or liability that is not booked as such only as a result of the transactions contemplated by the Stock Purchase Agreement, to the extent such amounts are in accordance with GAAP.

EXHIBIT B:
Definitions and computations of variables

HIDDEN ACTION VARIABLE	DEFINITION AND DATA SOURCE
LONG_PRECLOSING	A dummy variable that equals 1 if the number of days that elapse between the signing date (from the contract) and the date effective (from SDC Platinum) equals or exceeds 120 days, 0 otherwise. *Sources: Morningstar Document Research, SDC Platinum*
SIMULTANEOUS	A dummy variable that equals 1 if the signing date (from the contract) is the date effective (from SDC Platinum), and 0 if there is a deferred closing. *Sources: Morningstar Document Research, SDC Platinum*
COMP_SVCS	A dummy variable that equals 1 if the target's industry membership is in computers (SIC codes 3570–3579, 3670–3679, and 7370–7379), or services (SIC codes 6000–6999), 0 otherwise. *Source: SDC Platinum*
WRITEOFFS	The percentage of the past five years that report negative special items (Compustat data item *spi*) averaged across all firms in each Fama-French 48 industry. *Source: Compustat Industrial Annual*
NOA_STDDEV	The standard deviation of net operating assets within each Fama-French 48 industry each year, where operating assets are defined as total assets (Compustat data item *at*) minus cash and short-term investment (Compustat data item *che*) and operating liabilities are defined as total assets minus short-term debt (Compustat data item *dlc*) minus long-term debt (Compustat data item *dltt*) minus minority interest (Compustat data item *mib*) minus preferred stock (Compustat data item *pstkk*) minus common equity (Compustat data item *ceq*). *Source: Compustat Industrial Annual*

ADVERSE SELECTION VARIABLE	DEFINITION AND DATA SOURCE
%OPERATINGCYCLE	Length of the pre-closing cycle divided by the median operating cycle within the Fama-French 48 industry classification for the year prior to the merger, where the operating cycle is the sum of 365 divided by inventory turnover ratio (the ratio of cost of goods sold (Compustat data item *cogs*) divided by average total inventory (Compustat data item *invt*)) and 365 divided by accounts receivable turnover ratio (total revenues (Compustat data item *revt*) divided by average total receivables (Compustat data item *rect*). *Sources: Morningstar Document Research, SDC Platinum, Compustat Industrial Annual*
DIVERSIFY	A binary variable that equals 1 when the buyer and target belong to different industries (using the Fama-French 48 industry classification scheme), 0 otherwise. *Source: SDC Platinum*
MANUFACTURING	A dummy variable that equals 1 if the target's industry membership is in manufacturing (SIC codes 2000–3999). *Source: SDC Platinum*
YEAR_END	A dummy variable that equals 1 if the closing date falls in the buyer's fourth quarter, 0 otherwise. *Source: SEC EDGAR*
BUYER_EXPERIENCE	The acquirer's ratio of goodwill (Compustat data item *gdwl*) to total assets (Compustat data item *at*) as of the end of the fiscal year prior to the effective date for the merger. *Source: Compustat Industrial Annual*

CONTRACT FLEXIBILITY VARIABLE	DEFINITION AND DATA SOURCE
EXCLUSIONS	The sum of the exclusions in each separate adjustment, without giving weight to exclusions that arise because the excluded account falls under the definition of another metric. *Source: Morningstar Document Research*
MULTIPLE_ADJ	A dummy variable that equals 1 in the presence of non-working capital, non-net worth adjustments in the contract, 0 otherwise. *Source: Morningstar Document Research*
FAIRLY_PRESENTS	A dummy variable that equals 1 if the preparation of the closing financial statements includes the term "fairly presents." *Source: Morningstar Document Research*
PRELIMINARY	Discrete variable for the length of the period allotted for the preparation of the preliminary closing statements. Takes a value of 0 if the period is less than or equal to 30 days; a value of 1 if the period is greater than 30 days but less than or equal to 60 days; a value of 2 if the period is greater than 60 days but less than or equal to 90 days; and a value of 3 if the period is greater than 90 days or not specified. *Source: Morningstar Document Research*
RESPONSE	Discrete variable for the maximum number of days allotted for the non-preparing party to issue a notice of dispute. Takes a value of 0 if the period is less than or equal to 30 days, and a value of 1 if the period is greater than 30 days or not specified. *Source: Morningstar Document Research*
NEGOTIATION	Discrete variable for the maximum number of days allotted for the buyer and seller to attempt to resolve the dispute without a third party. Takes a value of 0 if the period is less than or equal to 15 days, and a value of 1 if the period is greater than 15 days or not specified. *Source: Morningstar Document Research*
RESOLUTION	Discrete variable for the maximum number of days allotted to an independent accounting firm to act as a third party to resolve a dispute. Takes a value of 0 if the period is less than or equal to 30 days; a value of 1 if the period is greater than 30 days but less than or equal to 60 days; and a value of 2 if the period is greater than 60 days or not specified. *Source: Morningstar Document Research*
MINIMUM	A binary variable that equals 1 if one or more adjustments has a minimum amount by which the final figure must exceed the target, 0 otherwise. *Source: Morningstar Document Research*

HOLD-UP VARIABLE	DEFINITION AND DATA SOURCE
MAXIMUM	A binary variable that equals 1 if one or more adjustments has a ceiling over which further adjustment will not be made, 0 otherwise. *Source: Morningstar Document Research*
ASYMMETRY	A binary variable that equals 1 if one or more adjustments is asymmetric around the target figure (e.g., $1 for each dollar the final figure falls below the target, $0.50 for each dollar the final figure exceeds the target). *Source: Morningstar Document Research*
AUDITOR_FLEXIBILITY	A binary variable that equals 1 if the contract does not stipulate any of the following: (1) a maximum number of days to retain an accounting firm as an arbiter, (2) the identity of the arbiter is stipulated to be a Big-4 (or Big-5 or Big-6) accounting firm, and (3) a specific arbiter is identified, and 0 otherwise. *Source: Morningstar Document Research*
FEE_SHIFTING	A binary variable that equals 1 if the arbiter can allocate its fees, if the arbiter can assign a penalty in the event a disputant's submission is unreasonable, or if the disputant whose submission is furthest from the arbiter's determination pays all of the fees. *Source: Morningstar Document Research*

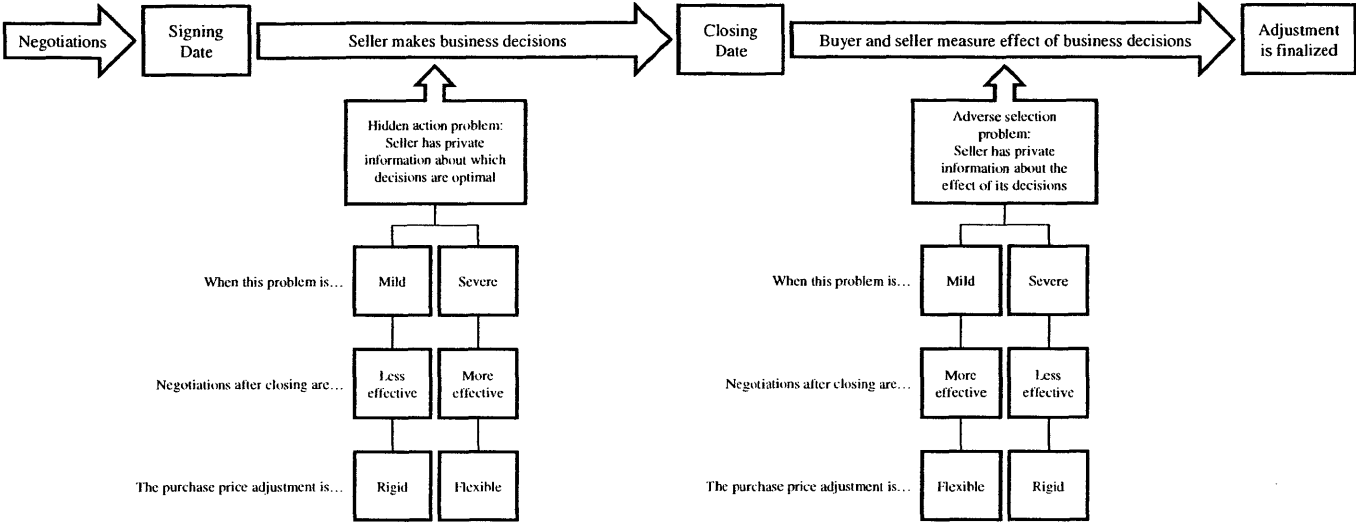| CONTROL VARIABLES	DEFINITION AND DATA SOURCE
DEAL_VALUE	The natural logarithm of the value of the transaction, in $ millions. *Source: SDC Platinum*
BIG_DEAL	A dummy variable that equals 1 if the deal value is above the third quartile ($195.0 million). *Source: SDC Platinum*
BUYER_SIZE	The natural logarithm of total assets (Compustat data item *at*) of the acquirer as of the end of the fiscal year prior to the effective date for the merger. *Source: Compustat Industrial Annual*

SELECTION MODEL VARIABLE	DEFINITION AND DATA SOURCE
ALL_CASH	A dummy variable that equals 1 if *consideration_offered* has only "cash" as keyword, 0 otherwise. *Sources: SDC Platinum*
ALL_EQUITY	A dummy variable that equals 1 if *consideration_offered* does not have "cash" as keyword, 0 otherwise. *Sources: SDC Platinum*
LTNUM	The natural logarithm of the number of mergers and acquisitions completed between 1 January 2001 and 31 December 2009 within the target's Fama-French 48 industry classification. *Source: SDC Platinum*
LOG_DURATION	The natural logarithm of 1 plus the number of days between the "optional termination date" and the signing date. The optional termination date is also referred to as any of the following: automatic termination date, closing deadline, drop dead date, end date, final date, outside date, termination date, termination election date, and walk-away date. Extensions of the optional termination date owing to the following regulatory concerns are ignored: Hart-Scott-Rodino Antitrust Improvements Act of 1976 clearance, buyer's registration statement with the SEC, injunctions, shareholder meetings, and permit applications for fairness hearings under state securities laws. If one party can unilaterally extend the termination date, I use the extended date. *Source: Morningstar Document Research*
INDEMNITY	The natural logarithm of 1 plus the number of days the buyer can seek a claim against the seller for a breach of representations and warranties or non-fulfillment of any covenant or agreement. This "survival period" is referred to with any of the following: indemnity period, cut-off date, claims termination date, and warranty expiration date. If the survival period depends on preparation of filing of the buyer's audit report, I take the buyer's filing date with the SEC. *Source: Morningstar Document Research, SEC EDGAR*
EMPLOYMENT	A dummy variable that equals 1 if any of the following is included as an ancillary agreement delivered at closing, 0 otherwise: executed employment agreements (including an "amended and restated" agreement), offer letters, continuation agreements, retention agreements. *Source: Morningstar Document Research*
CONSULTING	A dummy variable that equals 1 if a consulting or transition services agreement is included as an ancillary agreement delivered at closing, 0 otherwise. *Source: Morningstar Document Research*

EARNOUT	A dummy variable that equals 1 if there is an earnout agreement (as determined by a value for *earnout_value*), 0 otherwise. *Source: SDC Platinum*
BUYER_TERMINATION	A dummy variable that equals 1 if the buyer may be required to pay liquidated damages to the target if the agreement is terminated and/or an alternative transaction is consummated, 0 otherwise. *Source: Morningstar Document Research*
SELLER_TERMINATION	A dummy variable that equals 1 if the target may be required to pay liquidated damages to the target if the agreement is terminated and/or an alternative transaction is consummated, 0 otherwise. *Source: Morningstar Document Research*
BUYER_TOPLEGAL	A dummy variable that equals 1 if the buyer's legal counsel is ranked among the "Top 50 Legal Advisors" in the *Mergerstat Review* in the year preceding the closing, 0 otherwise. *Source: Morningstar Document Research, FactSet Mergerstat*
SELLER_TOPLEGAL	A dummy variable that equals 1 if the target's and/or seller's legal counsel is ranked among the "Top 50 Legal Advisors" in the *Mergerstat Review* in the year preceding the closing, 0 otherwise. *Source: Morningstar Document Research, FactSet Mergerstat*

FIGURE 1:
Timeline of purchase price adjustments

Negotiations	Signing Date	Seller makes business decisions	Closing Date	Buyer and seller measure effect of business decisions	Adjustment is finalized

Hidden action problem: Seller has private information about which decisions are optimal

Adverse selection problem: Seller has private information about the effect of its decisions

When this problem is...	Mild	Severe		When this problem is...	Mild	Severe
Negotiations after closing are...	Less effective	More effective		Negotiations after closing are...	More effective	Less effective
The purchase price adjustment is...	Rigid	Flexible		The purchase price adjustment is...	Flexible	Rigid

This figure shows the progression of events, agency problems, and the efficient purchase price adjustment.

FIGURE 2:
Histograms of purchase price adjustment outcomes
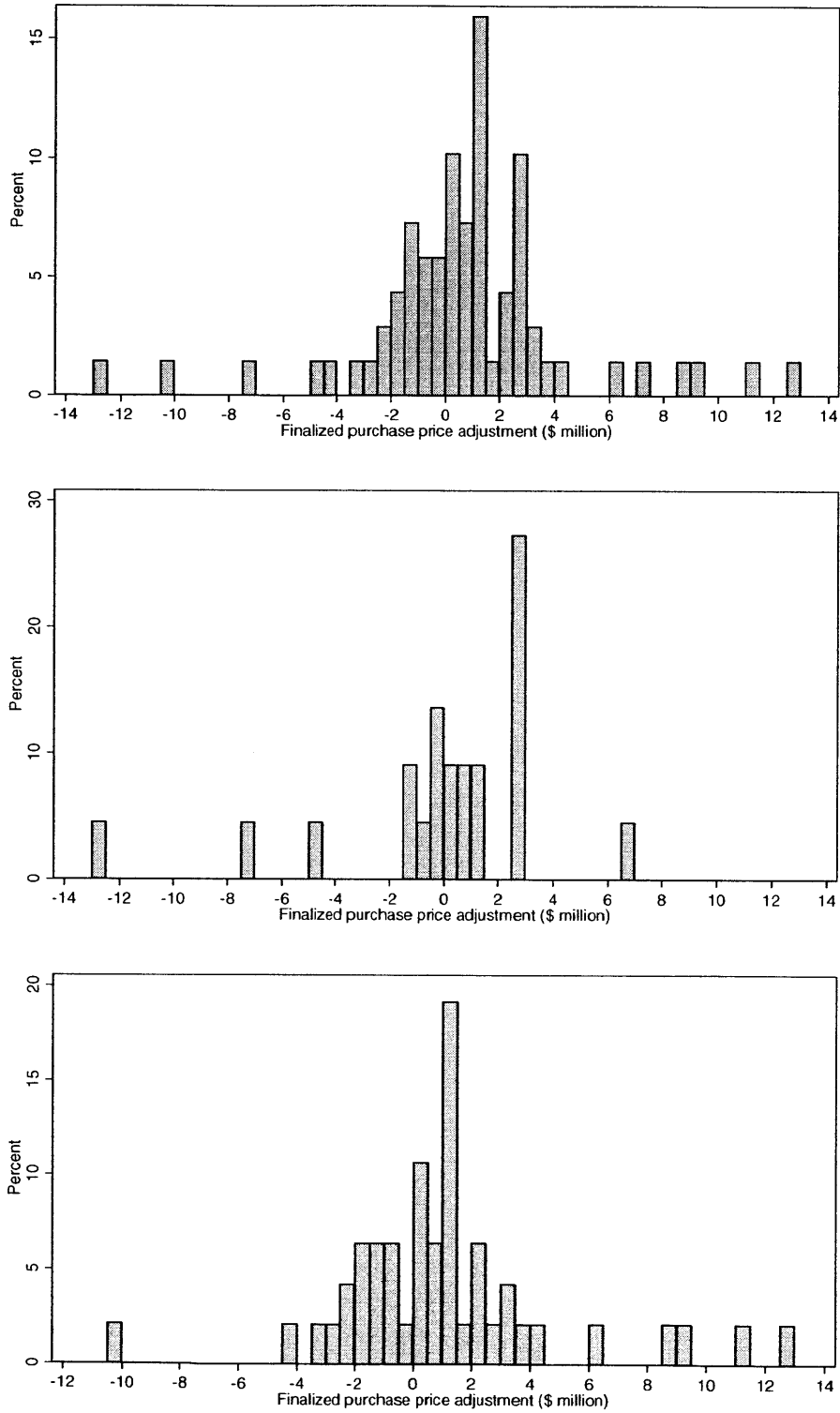
The top histogram shows the distribution of purchase price adjustments for the 69 observations that subsequently disclose the finalized adjustment. The middle (bottom) histogram shows the distribution for the subsample with *RIGID* = 1 (*RIGID* = 0).

FIGURE 3:
Distributions of propensity scores before and after kernel matching
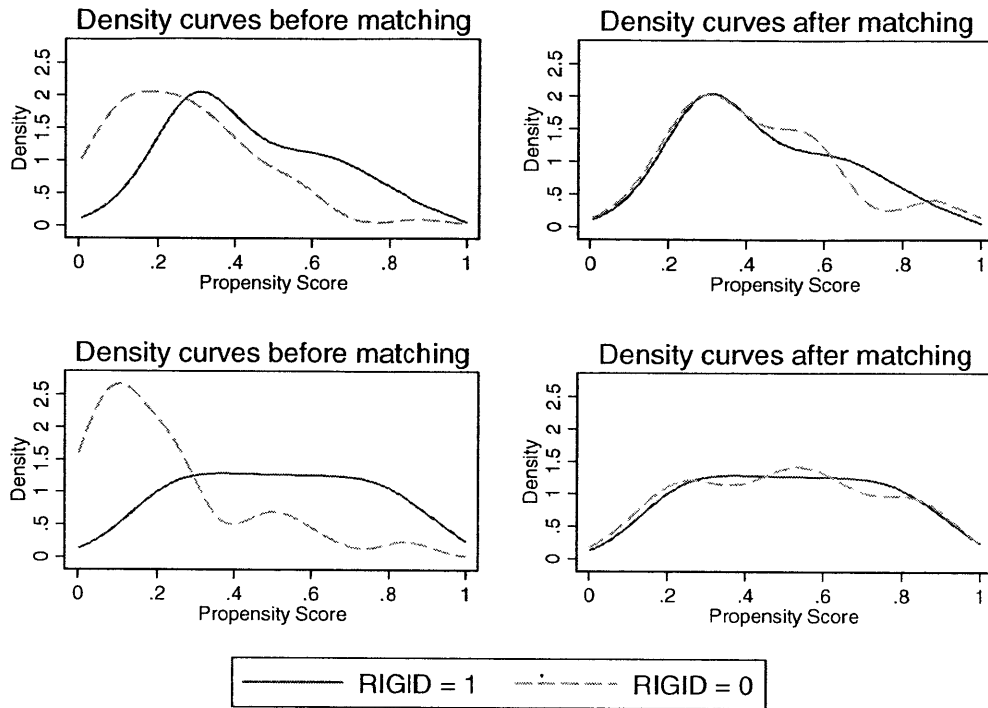
This figure shows smooth histograms of the propensity scores that acquisition agreements include accounting rules for the subsample of deals with subsequent disclosure of the finalized adjustment. The top two graphs present smooth histograms of propensity scores using model (1), and the bottom two graphs present smooth histograms of propensity scores using model (2). The solid line is the density for observations with *RIGID* = 1, and the dashed line is the density for observations with *RIGID* = 0. The dashed line in the two graphs on the right weights observations with *RIGID* = 0 with the kernel matching estimator weights.

TABLE 1:
Sample Selection

SDC Platinum: Mergers and acquisitions between public buyers and private targets completed between 1 January 2001 and 31 December 2009 with deal values ≥ $25mn, excluding acquisitions of assets (AA) or certain assets (AC), repurchases and self-tenders (B), recapitalizations (R), bankruptcy acquisitions (6), and reverse takeovers (22).		1,133
Less: Morningstar Document Research: No contractual agreements recovered from keyword searches in exhibits 2 ("plan of acquisition") and 10 ("material contracts") of SEC filings.	(509)	
		624
Less: Deals involving targets in banking, insurance, real estate, and trading.	(132)	
		492
Less: Contractual agreements missing data required for selection model variables.	(35)	
		457
Less: Contractual agreements without purchase price adjustments.	(216)	
		241
Less: Purchase price adjustments based only on seller expenses, or missing instructions on how to finalize the adjustment.	(12)	
		229
Less: Purchase price adjustments that do not use working capital or net worth.	(28)	
		201

TABLE 2:
Descriptive statistics

	All deals (n = 201)			RIGID = 1 (n = 70)			RIGID = 0 (n = 131)			
	Mean	Median	Std Dev	Mean	Median	Std Dev	Mean	Median	Std Dev	z-Statistic
LONG_PRECLOSING	0.09	0.00	0.29	0.06	0.00	0.23	0.11	0.00	0.31	-1.18
SIMULTANEOUS	0.15	0.00	0.36	0.13	0.00	0.34	0.17	0.00	0.38	-0.74
COMP_SVCS	0.47	0.00	0.50	0.39	0.00	0.49	0.51	1.00	0.50	-1.70 *
WRITEOFFS	0.58	0.60	0.08	0.57	0.59	0.07	0.58	0.61	0.08	-1.47
NOA_STDDEV	0.90	0.90	0.49	0.79	0.64	0.47	0.95	0.92	0.49	-2.17 **
%OPERATINGCYCLE	0.64	0.26	1.47	0.82	0.28	2.24	0.53	0.26	0.79	0.81
DIVERSIFY	0.38	0.00	0.49	0.47	0.00	0.50	0.33	0.00	0.47	1.99 **
MANUFACTURING	0.33	0.00	0.47	0.40	0.00	0.49	0.30	0.00	0.46	1.47
YEAR_END	0.27	0.00	0.45	0.19	0.00	0.39	0.32	0.00	0.47	-2.04 **
BUYER_EXPERIENCE	0.19	0.16	0.18	0.15	0.13	0.16	0.20	0.18	0.18	-1.68 *
EXCLUSIONS	2.08	2.00	2.13	2.07	2.00	2.23	2.08	2.00	2.08	-0.25
MULTIPLE_ADJ	0.34	0.00	0.47	0.41	0.00	0.50	0.30	0.00	0.46	1.66 *
FAIRLY_PRESENTS	0.13	0.00	0.34	0.06	0.00	0.23	0.17	0.00	0.38	-2.23 **
PRELIMINARY	1.26	1.00	0.91	1.29	1.00	0.90	1.24	1.00	0.91	0.36
RESPONSE	0.20	0.00	0.40	0.19	0.00	0.39	0.21	0.00	0.41	-0.34
NEGOTIATION	0.68	1.00	0.47	0.61	1.00	0.49	0.71	1.00	0.46	-1.38
RESOLUTION	0.84	1.00	0.86	0.79	1.00	0.81	0.87	1.00	0.88	-0.57
MINIMUM	0.16	0.00	0.37	0.24	0.00	0.43	0.11	0.00	0.32	2.37 **
MAXIMUM	0.06	0.00	0.25	0.03	0.00	0.17	0.08	0.00	0.28	-1.52
ASYMMETRY	0.16	0.00	0.37	0.14	0.00	0.35	0.17	0.00	0.38	-0.46
AUDITOR_FLEXIBILITY	0.40	0.00	0.49	0.37	0.00	0.49	0.42	0.00	0.50	-0.67
FEE_SHIFTING	0.25	0.00	0.43	0.29	0.00	0.46	0.23	0.00	0.42	0.89
DEAL_VALUE	4.58	4.41	0.95	4.73	4.46	0.92	4.51	4.32	0.96	1.99 **
BIG_DEAL	0.25	0.00	0.44	0.39	0.00	0.49	0.18	0.00	0.39	3.14 ***
BUYER_SIZE	6.03	6.11	1.32	6.21	6.23	1.24	5.94	5.78	1.35	1.86 *

Variable definitions are given in Exhibit B. The first three columns provide summary statistics for the full sample, the second three columns for the subsample of observations that do include accounting measurement rules in the contract (RIGID = 1), and the last three columns for the subsample of observations that do not include accounting measurement rules in the contract (RIGID = 0). The z-statistic in the final column tests for differences between these two subsamples using two-sample tests of proportions for binary variables and Wilcoxon rank-sum tests otherwise. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

TABLE 3:
Correlations

	A	B	C	D	E	F	G	H	I	J	K	L	M
LONG_PRECLOSING (A)	--	-0.13 *	-0.08	0.04	0.03	0.60	0.04	-0.07	0.08	-0.16 **	0.01	-0.04	-0.12 *
SIMULTANEOUS (B)	-0.13 *	--	0.07	0.00	0.03	-0.19	0.09	-0.01	0.08	0.00	0.02	0.04	-0.04
COMP_SVCS (C)	-0.08	0.07	--	0.34 ***	0.23 ***	0.03	-0.05	-0.54 ***	0.05	0.26 ***	-0.04	-0.04	-0.06
WRITEOFFS (D)	0.03	-0.01	0.35 ***	--	0.45 ***	0.02	-0.08	-0.08	-0.03	0.25 ***	0.06	0.12 *	0.03
NOA_STDDEV (E)	0.00	0.04	0.26 ***	0.46 ***	--	-0.02	-0.11	-0.11	0.06	0.19 ***	0.11	0.10	-0.11
%OPERATINGCYCLE (F)	0.48 ***	-0.63 ***	0.01	-0.01	-0.10	--	-0.02	-0.17 **	-0.04	-0.12 *	-0.04	-0.05	-0.05
DIVERSIFY (G)	0.04	0.09	-0.05	-0.06	-0.12	-0.02	--	0.08	-0.09	0.01	0.00	-0.04	-0.03
MANUFACTURING (H)	-0.07	-0.01	-0.54 ***	-0.04	-0.07	-0.28	0.08	--	-0.06	-0.13 *	-0.04	-0.06	0.04
YEAR_END (I)	0.08	0.08	0.05	-0.04	0.05	-0.07	-0.09	-0.06	--	-0.12 *	0.03	-0.04	-0.04
BUYER_EXPERIENCE (J)	-0.21 ***	0.03	0.23 ***	0.27 ***	0.19 ***	-0.08	0.02	-0.11	-0.14 *	--	0.06	0.05	0.05
EXCLUSIONS (K)	0.01	0.01	-0.03	0.05	0.13 *	0.09	0.00	-0.05	0.05	0.09	--	0.27 ***	0.03
MULTIPLE_ADJ (L)	-0.04	0.04	-0.04	0.11	0.11	0.01	-0.04	-0.06	-0.04	0.05	0.26 ***	--	0.01
FAIRLY_PRESENTS (M)	-0.12 *	-0.04	-0.06	-0.02	-0.12	0.01	-0.03	0.04	-0.04	0.05	0.02	0.01	--
PRELIMINARY (N)	-0.21 ***	0.06	0.02	0.07	0.07	-0.13 *	-0.14 **	-0.01	0.10	0.20 ***	0.06	0.16 **	-0.13 *
RESPONSE (O)	0.02	-0.14 **	0.16 **	0.11	0.11	0.20 ***	-0.03	-0.11	0.00	0.05	0.08	0.06	0.10
NEGOTIATION (P)	0.03	0.09	-0.10	0.06	0.04	0.05	-0.08	0.02	-0.03	0.07	0.14 *	0.09	0.01
RESOLUTION (Q)	-0.15 **	0.10	-0.04	-0.13 *	-0.10	-0.15 **	-0.01	-0.01	0.02	0.01	-0.02	0.04	0.06
MINIMUM (R)	-0.04	-0.04	-0.03	0.03	-0.01	0.03	-0.06	0.04	0.04	-0.16 **	-0.05	-0.08	-0.09
MAXIMUM (S)	-0.01	-0.11	0.24 ***	0.05	-0.03	0.16	-0.08	-0.19 ***	0.07	0.10	-0.03	0.07	0.14 **
ASYMMETRY (T)	-0.04	-0.04	0.16 **	0.05	-0.03	0.00	0.00	-0.05	0.07	-0.02	-0.11	0.01	-0.01
AUDITOR_FLEXIBILITY (U)	0.10	-0.04	0.00	-0.03	-0.01	0.11	0.05	0.04	-0.05	-0.04	-0.13 *	-0.12	0.05
FEE_SHIFTING (V)	0.06	-0.02	0.13 *	-0.08	0.00	0.11	0.03	-0.11	0.03	-0.01	0.07	0.05	-0.02
DEAL_VALUE (W)	0.02	-0.28 ***	-0.08	-0.06	0.01	0.43	0.08	-0.05	-0.15 **	0.05	0.24 ***	0.15 **	-0.07
BIG_DEAL (X)	-0.02	-0.22 ***	-0.02	-0.08	-0.03	0.32	0.13 *	-0.07	-0.13 *	0.08	0.19 ***	0.09	-0.09
BUYER_SIZE (Y)	-0.19 ***	-0.09	-0.09	-0.08	0.03	0.05	0.08	-0.02	-0.24 ***	0.25 ***	0.03	0.09	-0.02

	N	O	P	Q	R	S	T	U	V	W	X	Y
LONG_PRECLOSING (A)	-0.21 ***	0.02	0.03	-0.15 **	-0.04	-0.01	-0.04	0.10	0.06	0.01	-0.02	-0.19 ***
SIMULTANEOUS (B)	0.06	-0.14 **	0.09	0.10	-0.04	-0.11	-0.04	-0.04	-0.02	-0.27 ***	-0.22 ***	-0.09
COMP_SVCS (C)	0.01	0.16 **	-0.10	-0.04	-0.03	0.24 ***	0.16 **	0.00	0.13 *	-0.10	-0.02	-0.07
WRITEOFFS (D)	0.09	0.13 *	0.08	-0.15 **	0.05	0.05	0.06	-0.03	-0.06	-0.03	-0.11	-0.08
NOA_STDDEV (E)	0.06	0.11	0.05	-0.11	-0.03	-0.04	-0.04	-0.01	0.00	0.04	-0.03	0.02
%OPERATINGCYCLE (F)	-0.12 *	0.14 *	-0.04	-0.09	-0.03	0.01	-0.06	0.13 *	0.02	0.07	0.06	-0.10
DIVERSIFY (G)	-0.13 *	-0.03	-0.08	-0.01	-0.06	-0.08	0.00	0.05	0.03	0.09	0.13 *	0.07
MANUFACTURING (H)	0.00	-0.11	0.02	0.00	0.04	-0.19 ***	-0.05	0.04	-0.11	-0.05	-0.07	-0.03
YEAR_END (I)	0.10	0.00	-0.03	0.02	0.04	0.07	0.07	-0.05	0.03	-0.14 **	-0.13 *	-0.24 ***
BUYER_EXPERIENCE (J)	0.20 ***	0.09	0.04	0.00	-0.14 *	0.14 *	-0.02	-0.04	0.00	-0.01	0.05	0.17 **
EXCLUSIONS (K)	0.04	0.05	0.16 **	-0.05	-0.04	-0.06	-0.12 *	-0.13 *	0.08	0.26 ***	0.19 ***	0.04
MULTIPLE_ADJ (L)	0.14 **	0.06	0.09	0.03	-0.08	0.07	0.01	-0.12	0.05	0.18 **	0.09	0.11
FAIRLY_PRESENTS (M)	-0.14 **	0.10	0.01	0.07	-0.09	0.14 **	-0.01	0.05	-0.02	-0.09	-0.09	-0.02
PRELIMINARY (N)	--	-0.02	0.23 ***	0.13 *	-0.10	-0.05	-0.05	-0.10	-0.02	-0.01	0.00	0.07
RESPONSE (O)	0.00	--	0.00	-0.08	-0.11	0.07	0.09	0.02	0.09	0.12 *	0.05	0.01
NEGOTIATION (P)	0.25 ***	0.00	--	-0.20 ***	0.07	-0.12 *	-0.14 *	-0.04	0.00	0.19 ***	0.04	0.09
RESOLUTION (Q)	0.12 *	-0.08	-0.20 ***	--	-0.01	0.14 **	-0.04	-0.12 *	-0.04	-0.09	0.01	0.00
MINIMUM (R)	-0.11	-0.11	0.07	-0.01	--	0.11	0.03	0.00	0.03	0.04	0.00	0.00
MAXIMUM (S)	-0.05	0.07	-0.12 *	0.14 **	0.11	--	0.11	-0.01	0.13 *	-0.07	-0.01	-0.11
ASYMMETRY (T)	-0.03	0.09	-0.14 *	-0.03	0.03	0.11	--	0.00	0.16 **	-0.04	-0.16 **	-0.10
AUDITOR_FLEXIBILITY (U)	-0.11	0.02	-0.04	-0.12 *	0.00	-0.01	0.00	--	0.04	-0.05	-0.11	-0.04
FEE_SHIFTING (V)	-0.02	0.09	0.00	-0.05	0.03	0.13 *	0.16 **	0.04	--	0.06	0.14 **	-0.02
DEAL_VALUE (W)	-0.02	0.10	0.15 **	-0.03	0.01	-0.07	-0.07	-0.03	0.04	--	0.80 ***	0.53 ***
BIG_DEAL (X)	0.00	0.05	0.04	0.00	0.00	-0.01	-0.16 **	-0.11	0.14 **	0.75 ***	--	0.44 ***
BUYER_SIZE (Y)	0.03	-0.03	0.10	0.00	0.04	-0.11	-0.11	-0.03	-0.04	0.51 ***	0.46 ***	--

Pairwise Pearson and Spearman correlation coefficients are reported above and below the diagonal, respectively. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively. Variable definitions are given in Exhibit B.

TABLE 4:
Estimates from logistic regressions

Variable	Sign	Model (1)		Model (2)	
		Coefficient	Marg Effect	Coefficient	Marg Effect
Hidden action problem					
LONG_PRECLOSING	−	−3.365**	−0.627***	−4.185***	−0.668***
		(−2.50)	(−2.61)	(−2.73)	(−2.90)
SIMULTANEOUS	+	0.008	0.001	−0.115	−0.018
		(0.02)	(0.02)	(−0.20)	(−0.20)
COMP_SVCS	−	−0.282	−0.052	−0.203	−0.032
		(−0.61)	(−0.61)	(−0.40)	(−0.40)
WRITEOFFS	−	1.779	0.332	1.363	0.217
		(0.70)	(0.71)	(0.47)	(0.47)
NOA_STDDEV	−	−0.389	−0.073	−0.626	−0.010
		(−1.03)	(−1.04)	(−1.31)	(−1.33)
Adverse selection problem					
%OPERATINGCYCLE	+	0.863**	0.161**	1.193**	0.190***
		(1.96)	(2.04)	(2.52)	(2.68)
DIVERSIFY	+	0.551	0.103	0.704*	0.112*
		(1.54)	(1.57)	(1.83)	(1.87)
MANUFACTURING	+	0.480	0.090	0.658	0.105
		(1.09)	(1.10)	(1.34)	(1.36)
YEAR_END	−	−0.500	−0.093	−0.787*	−0.126*
		(−1.27)	(−1.28)	(−1.94)	(−1.94)
BUYER_EXPERIENCE	−	−2.502**	−0.466**	−1.898	−0.303
		(−2.13)	(−2.19)	(−1.45)	(−1.45)
Contract flexibility					
EXCLUSIONS	+			−0.044	−0.007
				(−0.41)	(−0.41)
MULTIPLE_ADJ	+			1.174***	0.187***
				(2.77)	(2.96)
FAIRLY_PRESENTS	−			−1.373*	−0.219**
				(−1.96)	(−2.04)
PRELIMINARY	−			0.292	0.047
				(1.41)	(1.42)
RESPONSE	−			−0.142	−0.023
				(−0.27)	(−0.27)
NEGOTIATION	−			−0.759*	−0.121*
				(−1.78)	(−1.82)
RESOLUTION	−			−0.318	−0.051
				(−1.44)	(−1.45)
MINIMUM	+			1.436***	0.229***
				(2.71)	(2.95)

Hold–up problem

	Predicted sign				
MAXIMUM	−			−1.747*	−0.279*
				(−1.75)	(−1.81)
ASYMMETRY	−			−0.051	−0.008
				(−0.10)	(−0.10)
AUDITOR_FLEXIBILITY	−			−0.231	−0.037
				(−0.62)	(−0.63)
FEE_SHIFTING	−			−0.053	−0.008
				(−0.11)	(−0.11)
Controls					
DEAL_VALUE	+	−0.777**	−0.145**	−0.876**	−0.140**
		(−2.21)	(−2.28)	(−2.30)	(−2.36)
BIG_DEAL	+	2.164***	0.403***	2.272***	0.362***
		(3.13)	(3.37)	(3.00)	(3.17)
BUYER_SIZE	+	0.078	0.015	0.045	0.007
		(0.55)	(0.55)	(0.29)	(0.29)
Intercept		1.227		2.180	
		(0.65)		(1.01)	
# of observations		201		201	
McFadden's pseudo R-square		0.149		0.254	
Likelihood ratio statistic		38.83		65.96	

This table presents predicted signs, coefficients, and average marginal effects from a logistic regression with RIGID as the binary dependent variable. Variables are defined in Exhibit B. t-statistics (in parentheses) are calculated using standard errors robust to heteroskedasticity in the case of coefficients, and the delta method in the case of average marginal effects. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively. McFadden's pseudo R-squared is calculated as 1 minus the ratio of the log likelihood of the model at convergence to the log likelihood for a model with an intercept only. The likelihood ratio statistic corresponds to a test that the parameters of the model are jointly equal to zero. The statistic is significant at the 0.01 level for both models.

TABLE 5:
Propensity score matching estimates of the
effect of rigid accounting rules
on finalized purchase price adjustments

	(1)	(2)
Effect of *RIGID* on purchase price adjustments with rules	−2.576** (1.427)	−3.676*** (1.581)
Effect of *RIGID* on purchase price adjustments without rules	−0.640 (0.877)	0.040 (1.025)

This table presents the effect of including measurement rules on the dollar adjustment to the purchase price (in millions). Column (1) uses model (1), and column (2) uses model (2). Estimates are based on a Normal kernel matching estimator. Observations with *RIGID* = 1 are matched to weighted observations with *RIGID* = 0 according to estimated propensity scores. Bootstrapped standard errors (50 replications) are in parentheses. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

TABLE 6:
Descriptive statistics

	All deals (n = 457)			Have adjustments (n = 200)			No adjustment (n = 257)			
	Mean	Median	Std Dev	Mean	Median	Std Dev	Mean	Median	Std Dev	z -Statistic
LONG_PRECLOSING	0.13	0.00	0.33	0.09	0.00	0.29	0.16	0.00	0.36	-2.09 **
SIMULTANEOUS	0.13	0.00	0.34	0.16	0.00	0.36	0.11	0.00	0.31	1.46
COMP_SVCS	0.49	0.00	0.50	0.47	0.00	0.50	0.50	0.00	0.50	-0.60
WRITEOFFS	0.57	0.58	0.08	0.58	0.60	0.07	0.56	0.57	0.08	2.39 **
NOA_STDDEV	0.88	0.82	0.49	0.90	0.90	0.48	0.87	0.69	0.49	0.60
%OPERATINGCYCLE	0.69	0.32	1.52	0.63	0.26	1.47	0.73	0.35	1.56	-1.95 *
DIVERSIFY	0.38	0.00	0.49	0.38	0.00	0.49	0.38	0.00	0.49	-0.03
MANUFACTURING	0.35	0.00	0.48	0.34	0.00	0.47	0.37	0.00	0.48	-0.77
YEAR_END	0.29	0.00	0.46	0.28	0.00	0.45	0.31	0.00	0.46	-0.75
BUYER_EXPERIENCE	0.14	0.06	0.17	0.19	0.16	0.18	0.11	0.02	0.16	5.61 ***
DEAL_VALUE	4.65	4.43	1.06	4.57	4.41	0.92	4.71	4.50	1.15	-0.63
BIG_DEAL	0.26	0.00	0.44	0.25	0.00	0.43	0.27	0.00	0.44	-0.45
BUYER_SIZE	5.92	5.95	1.67	6.01	6.08	1.29	5.84	5.89	1.92	1.32
ALL_CASH	0.33	0.00	0.47	0.48	0.00	0.50	0.21	0.00	0.41	5.89 ***
ALL_EQUITY	0.15	0.00	0.36	0.04	0.00	0.18	0.25	0.00	0.43	-6.19 ***
LTNUM	3.92	3.85	1.32	3.76	3.69	1.42	4.04	3.93	1.22	-2.44 **
LOG_DURATION	3.65	4.29	1.81	3.49	4.19	1.83	3.78	4.45	1.79	-2.46 **
INDEMNITY	4.66	5.90	2.71	5.22	6.31	2.39	4.23	5.90	2.86	5.63 ***
EMPLOYMENT	0.53	1.00	0.50	0.54	1.00	0.50	0.53	1.00	0.50	0.12
CONSULTING	0.09	0.00	0.29	0.14	0.00	0.34	0.05	0.00	0.23	2.99 ***
EARNOUT	0.16	0.00	0.37	0.15	0.00	0.35	0.18	0.00	0.38	-0.87
BUYER_TERMINATION	0.13	0.00	0.33	0.13	0.00	0.33	0.13	0.00	0.34	-0.11
SELLER_TERMINATION	0.17	0.00	0.38	0.15	0.00	0.36	0.19	0.00	0.39	-1.14
BUYER_TOPLEGAL	0.35	0.00	0.48	0.33	0.00	0.47	0.37	0.00	0.48	-0.80
SELLER_TOPLEGAL	0.23	0.00	0.42	0.17	0.00	0.38	0.28	0.00	0.45	-2.77 ***

Variable definitions are given in Exhibit B. The first three columns provide summary statistics for the full sample, the second three columns for the subsample of contracts that include working capital or net worth adjustments, and the last three columns for the subsample of observations that do not include working capital or net worth adjustments. The z-statistic in the final column tests for differences between these two subsamples using two-sample tests of proportions for binary variables and Wilcoxon rank-sum tests otherwise. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

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TABLE 7:
Correlations

	A	B	C	D	E	F	G	H	I	J	K	L	M
LONG_PRECLOSING (A)	--	-0.15 ***	-0.08 *	0.05	0.03	0.54 ***	0.07	-0.01	0.06	-0.14 ***	0.06	0.01	-0.11 **
SIMULTANEOUS (B)	-0.15 ***	--	0.06	0.04	-0.01	-0.17 ***	0.05	-0.03	0.00	0.03	-0.24 ***	-0.18 ***	-0.05
COMP_SVCS (C)	-0.08 *	0.06	--	0.38 ***	0.17 ***	0.02	-0.02	-0.40 ***	0.06	0.19 ***	-0.20 ***	-0.11 **	-0.12 **
WRITEOFFS (D)	0.04	0.03	0.39 ***	--	0.48 ***	0.00	-0.04	-0.06	-0.02	0.28 ***	-0.14 ***	-0.12 **	-0.16 ***
NOA_STDDEV (E)	0.02	-0.01	0.20 ***	0.48 ***	--	-0.07	-0.08 *	0.00	0.00	0.15 ***	-0.01	0.00	-0.04
%OPERATINGCYCLE (F)	0.54 ***	-0.58 ***	-0.02	0.02	-0.04	--	-0.01	-0.16 ***	0.02	-0.08 *	0.16 ***	0.12 **	0.01
DIVERSIFY (G)	0.07	0.05	-0.02	-0.02	-0.08 *	-0.02	--	-0.03	0.00	0.04	-0.01	0.03	-0.02
MANUFACTURING (H)	-0.01	-0.03	-0.40 ***	-0.11 **	-0.02	-0.21 ***	-0.03	--	-0.07	-0.15 ***	-0.02	-0.04	-0.01
YEAR_END (I)	0.06	0.00	0.06	0.03	0.00	0.02	0.00	-0.07	--	-0.02	-0.01	-0.03	0.00
BUYER_EXPERIENCE (J)	-0.18 ***	0.06	0.17 ***	0.31 ***	0.19 ***	-0.11 **	0.03	-0.11 **	-0.04	--	-0.06	0.00	0.10 **
DEAL_VALUE (K)	0.06	-0.25 ***	-0.18 ***	-0.07	0.01	0.38 ***	-0.02	-0.01	-0.02	0.02	--	0.80 ***	0.57 ***
BIG_DEAL (L)	0.01	-0.18 ***	-0.11 **	-0.12 **	0.00	0.27 ***	0.03	-0.04	-0.03	0.04	0.76 ***	--	0.44 ***
BUYER_SIZE (M)	-0.11 **	-0.04	-0.11 **	-0.09 **	-0.02	0.06	-0.04	-0.02	-0.05	0.23 ***	0.54 ***	0.46 ***	--
ALL_CASH (N)	-0.08 *	0.09 **	0.03	0.06	0.05	-0.16 ***	0.03	-0.08 *	0.02	0.32 ***	-0.06	0.02	0.18 ***
ALL_EQUITY (O)	0.18 ***	-0.13 ***	0.05	-0.06	-0.14 ***	0.21 ***	-0.03	0.02	-0.01	-0.24 ***	-0.03	-0.03	-0.17 ***
LTNUM (P)	-0.11 **	0.04	0.69	0.27 ***	0.35 ***	-0.10 **	-0.13 ***	-0.35 ***	0.08	0.00	-0.23 ***	-0.17 ***	-0.13 ***
LOG_DURATION (Q)	0.46 ***	-0.44 ***	0.00	0.05	0.02	0.72 ***	-0.04	-0.05	0.02	-0.11 **	0.39 ***	0.31 ***	0.11 **
INDEMNITY (R)	-0.05	0.04	-0.02	0.07	0.04	-0.13 ***	0.07	0.08 *	-0.14 ***	0.17 ***	-0.16 ***	-0.09 *	-0.02
EMPLOYMENT (S)	-0.02	0.05	0.14 ***	0.05	0.01	-0.09 *	0.03	-0.05	-0.01	0.01	-0.18 ***	-0.16 ***	-0.17 ***
CONSULTING (T)	-0.03	0.04	-0.06	0.01	0.01	-0.07	-0.03	0.04	-0.03	0.03	-0.09 **	-0.08 *	-0.02
EARNOUT (U)	-0.06	-0.03	0.02	0.03	0.12 **	-0.08 *	-0.03	0.12 ***	-0.06	-0.02	0.00	-0.03	-0.03
BUYER_TERMINATION (V)	0.21 ***	-0.15 ***	-0.02	0.05	0.06	0.26 ***	0.00	-0.02	-0.04	-0.03	0.04	0.01	-0.12 **
SELLER_TERMINATION (W)	0.19 ***	-0.14 ***	-0.07	-0.04	0.02	0.22 ***	0.01	0.10 **	-0.07	-0.09 *	0.10 **	0.06	-0.02
BUYER_TOPLEGAL (X)	0.06	-0.04	0.07	0.01	-0.01	0.10 **	-0.08 *	0.01	0.02	0.05	0.13 ***	0.11 **	0.14 ***
SELLER_TOPLEGAL (Y)	-0.05	-0.10 **	0.07	-0.07	-0.05	0.08	-0.01	-0.01	-0.01	-0.03	0.27 ***	0.24 ***	0.16 ***

	N	O	P	Q	R	S	T	U	V	W	X	Y
LONG_PRECLOSING (A)	-0.08 *	0.18 ***	-0.10 **	0.32 ***	-0.04	-0.02	-0.03	-0.06	0.21 ***	0.19 ***	0.06	-0.05
SIMULTANEOUS (B)	0.09 **	-0.13 ***	0.05	-0.54 ***	0.00	0.05	0.04	-0.03	-0.15 ***	-0.14 ***	-0.04	-0.10 **
COMP_SVCS (C)	0.03	0.05	0.68 ***	0.03	0.04	0.14 ***	-0.06	0.02	-0.02	-0.07	0.07	0.07
WRITEOFFS (D)	0.08	-0.05	0.23 ***	0.01	0.15 ***	0.08 *	0.01	0.05	0.09 *	-0.01	-0.01	-0.08 *
NOA_STDDEV (E)	0.06	-0.14 ***	0.30 ***	0.04	0.12 **	0.00	0.02	0.12 **	0.05	0.02	-0.02	-0.06
%OPERATINGCYCLE (F)	-0.03	0.06	-0.15 ***	0.31 ***	-0.03	-0.08 *	0.07	-0.08 *	0.17 ***	0.13 ***	0.04	-0.05
DIVERSIFY (G)	0.03	-0.03	-0.12 ***	-0.04	0.07	0.03	-0.03	-0.03	0.00	0.01	-0.08 *	-0.01
MANUFACTURING (H)	-0.08 *	0.02	-0.40 ***	-0.06	0.10 **	-0.05	0.04	0.12 ***	-0.02	0.10 **	0.01	-0.01
YEAR_END (I)	0.02	-0.01	0.07	0.03	-0.09 **	-0.01	-0.03	-0.06	-0.04	-0.07	0.02	-0.01
BUYER_EXPERIENCE (J)	0.31 ***	-0.17 ***	0.06	-0.06	0.12 **	0.03	-0.01	-0.03	-0.03	-0.09 *	0.04	-0.04
DEAL_VALUE (K)	-0.08 *	-0.02	-0.22 ***	0.35 ***	-0.19 ***	-0.20 ***	-0.10 **	-0.01	0.03	0.08	0.15 ***	0.29 ***
BIG_DEAL (L)	0.02	-0.03	-0.16 ***	0.27 ***	-0.09 *	-0.16 ***	-0.08 *	-0.03	0.01	0.06	0.11 **	0.24 ***
BUYER_SIZE (M)	0.13 ***	-0.21 ***	-0.15 ***	0.14 ***	-0.04	-0.18 ***	-0.01	-0.03	-0.10 **	-0.01	0.17 ***	0.18 ***
ALL_CASH (N)	--	-0.30 ***	-0.04	-0.12 **	0.15 ***	-0.09 *	0.03	-0.31 ***	-0.03	-0.07	-0.14 ***	-0.05
ALL_EQUITY (O)	-0.30 ***	--	0.07	0.11 **	-0.09 *	0.05	-0.07	-0.09 *	0.08	0.08 *	0.01	0.00
LTNUM (P)	-0.05	0.08	--	-0.06	-0.11 **	0.16 ***	-0.06	0.07	-0.07	0.01	0.05	0.07
LOG_DURATION (Q)	-0.14 ***	0.14 ***	0.00	--	-0.07	-0.09 **	-0.07	0.01	0.23 ***	0.24 ***	0.08	0.15 ***
INDEMNITY (R)	0.17 ***	-0.15 ***	-0.01	-0.13 ***	--	0.13 ***	0.03	-0.01	-0.04	0.03	0.02	-0.07
EMPLOYMENT (S)	-0.09 *	0.05	0.17 ***	-0.13 ***	0.12 ***	--	0.02	0.13 ***	-0.04	-0.02	0.04	-0.09 *
CONSULTING (T)	0.03	-0.07	-0.05	-0.07	0.06	0.02	--	0.05	-0.03	-0.08 *	-0.04	-0.03
EARNOUT (U)	-0.31 ***	-0.09 *	0.07	-0.02	0.00	0.13 ***	0.05	--	-0.02	0.11 **	-0.01	0.03
BUYER_TERMINATION (V)	-0.03	0.08	-0.08	0.28 ***	-0.01	-0.04	-0.03	-0.02	--	0.38 ***	0.09 **	-0.02
SELLER_TERMINATION (W)	-0.07	0.08 *	0.00	0.27 ***	0.01	-0.02	-0.08 *	0.11 **	0.38 ***	--	0.06	0.05
BUYER_TOPLEGAL (X)	-0.14 ***	0.01	0.04	0.14 ***	0.02	0.04	-0.04	-0.01	0.09 **	0.06	--	0.00
SELLER_TOPLEGAL (Y)	-0.05	0.00	0.08	0.15 ***	-0.13 ***	-0.09 *	-0.03	0.03	-0.02	0.05	0.00	--

Pairwise Pearson and Spearman correlation coefficients are reported above and below the diagonal, respectively. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively. Variable definitions are given in Exhibit B.

TABLE 8:
Estimates from probit regressions with sample selection

| | Model (3) | | | Model (4) | | | |
	Sign	Coefficient	Sign	Coefficient	Sign	Coefficient	Sign	Coefficient
Hidden action problem								
LONG_PRECLOSING	−	−1.865**	?	−0.217	−	−1.692**	?	−0.212
		(−2.50)		(−0.88)		(−2.36)		(−0.83)
SIMULTANEOUS	+	−0.040	?	−0.008	+	−0.084	?	0.067
		(−0.14)		(−0.04)		(−0.32)		(0.31)
COMP_SVCS	−	−0.040	?	−0.132	−	0.093	?	−0.083
		(−0.14)		(−0.65)		(0.34)		(−0.41)
WRITEOFFS	−	0.128	?	2.584**	−	−0.400	?	2.263**
		(0.08)		(2.50)		(−0.26)		(2.18)
NOA_STDDEV	−	−0.197	?	−0.121	−	−0.120	?	−0.182
		(−0.89)		(−0.76)		(−0.58)		(−1.12)
Adverse selection problem								
%OPERATINGCYCLE	+	0.466*	?	0.000	+	0.428*	?	−0.032
		(1.93)		(0.01)		(1.89)		(−0.72)
DIVERSIFY	+	0.338*	?	−0.097	+	0.342*	?	−0.119
		(1.67)		(−0.72)		(1.83)		(−0.87)
MANUFACTURING	+	0.317	?	−0.231	+	0.362	?	−0.245
		(1.25)		(−1.49)		(1.55)		(−1.54)
YEAR_END	−	−0.287	?	−0.053	−	−0.247	?	−0.016
		(−1.26)		(−0.38)		(−1.18)		(−0.11)
BUYER_EXPERIENCE	−	−1.791**	?	0.858**	−	−1.958***	?	0.829*
		(−2.47)		(1.99)		(−3.13)		(1.93)
Controls								
DEAL_VALUE	+	−0.359	?	−0.175	+	−0.265	?	−0.038
		(−1.57)		(−1.47)		(−1.19)		(−0.31)
BIG_DEAL	+	1.112**	?	0.152	+	0.905**	?	0.067
		(2.52)		(0.63)		(2.04)		(0.28)
BUYER_SIZE	+	0.042	?	0.019	+	0.016	?	0.006
		(0.48)		(0.35)		(0.19)		(0.11)
Selection model variables								
ALL_CASH			+	0.407***			+	0.415***
				(2.89)				(2.79)
ALL_EQUITY			−	−0.985***			−	−0.921***
				(−4.11)				(−3.74)
LTNUM			−	−0.147**			−	−0.130*
				(−1.98)				(−1.77)
LOG_DURATION							?	0.028
								(0.64)
INDEMNITY							?	0.062**
								(2.52)
EMPLOYMENT							?	0.075

					(0.58)
CONSULTING				?	0.632***
					(2.84)
EARNOUT				?	0.034
					(0.19)
BUYER_TERMINATION				?	0.087
					(0.41)
SELLER_TERMINATION				?	0.001
					(0.01)
BUYER_TOPLEGAL				?	0.001
					(0.01)
SELLER_TOPLEGAL				?	−0.321**
					(−1.97)
Intercept	1.123	−0.202	1.337		−1.021
	(1.00)	(−0.26)	(1.29)		(−1.31)
Wald $\chi^2(13)$	35.18		30.40		
Prob $> \chi^2$	0.00		0.00		
Log pseudolikelihood	−378.83		−368.99		
Wald test of exogeneity	−0.880		−1.87*		

Columns 1–2 and 5–6 present predicted signs and coefficients from probit regressions with *RIGID* as the binary dependent variable. Columns 3–4 and 7–8 present predicted signs and coefficients from the sample selection model of the choice to include a working capital or net worth purchase price adjustment. Variables are defined in Exhibit B. t-statistics (in parentheses) are calculated using standard errors robust to heteroskedasticity. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively. The Wald χ^2 statistic corresponds to a test that the parameters of the model are jointly equal to zero. The statistic is significant at the 0.01 level for both models.

TABLE 9:
Propensity score matching estimates of the effect of rigid accounting rules on finalized purchase price adjustments using probit models with sample selection

	(1)	(2)
Effect of *RIGID* on purchase price adjustments with rules	−1.883 (1.566)	−2.113 (1.476)
Effect of *RIGID* on purchase price adjustments without rules	−0.724 (0.841)	−0.595 (0.823)

This table presents the effect of including measurement rules on the dollar adjustment to the purchase price (in millions). Column (1) uses model (3); and column (2) uses model (4). Estimates are based on a Normal kernel matching estimator. Observations with $RIGID = 1$ are matched to weighted observations with $RIGID = 0$ according to estimated propensity scores. Bootstrapped standard errors (50 replications) are in parentheses. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

TABLE 10:
Propensity score matching estimates of the effect of rigid accounting rules on finalized purchase price adjustments using probit models with sample selection

	(1)	(2)
Effect of *RIGID* on purchase price adjustments with rules	−2.499 (1.819)	−2.923** (1.304)
Effect of *RIGID* on purchase price adjustments without rules	−0.789 (−0.899)	−1.011 (0.945)

This table presents the effect of including measurement rules on the dollar adjustment to the purchase price (in millions). Column (1) uses model (3); and column (2) uses model (4). Estimates are based on a Normal kernel matching estimator. Observations with *RIGID* = 1 are matched to weighted observations with *RIGID* = 0 according to estimated propensity scores conditional on the contract having a purchase price adjustment. Bootstrapped standard errors (50 replications) are in parentheses. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.