

## **Jackson et al. on moral hazard, adverse selection, and the principal-agent problem**

Howell Jackson, Louis Kaplow, Steven Shavell et al., Analytical Methods For Lawyers (2003),  
Chs. 2-3

### Moral Hazard and Incentives

Our first topic on information concerns a phenomenon that got its name from the insurance industry. This industry became aware quite some time ago that ownership of insurance increases the risk that insured parties will incur losses: owning insurance tends to dull the incentive for insured parties to take actions to help prevent losses. For instance, people are naturally less concerned about property losses and thus less careful in preventing fires if they own fire insurance policies than if they don't. The insurance industry dubbed this phenomenon *moral hazard*.

#### **Moral Hazard and Information**

The moral hazard problem is often considered a part of the economics of information. The reason is that the moral hazard problem of undesirable incentives in a contractual relationship is rooted in one party's lack of information about the other party's behavior—such as an insured's fire precautions or an employee's work effort. If the information can be obtained, the problem can be avoided by writing the terms of the contract accordingly.

The insurance example of moral hazard typifies an overarching phenomenon: after a contract is made, a party to it may have incentives to act in a way that's detrimental to the other party to the contract. For instance, an employee who's been hired may work less hard than her employer would want. Or a CEO of a corporation may make poorer decisions than its shareholders would like. Or a lawyer who has a contract to be paid by the hour may work more hours than his client would wish. Or a recipient of government welfare benefits may not try hard to find a job or to obtain good job training even though the government would want her to.

The moral hazard problem isn't just that having a contract may change the incentives of one party to the disadvantage of the other party. It's that incentives tend to be altered in a way that hurts both parties to the contract. To illustrate, let's consider a fire insurance example. Suppose that an insured person can very easily take a precaution—such as closing the fireplace doors when a fire is burning in the fireplace and he's leaving home (closing the doors will prevent embers from escaping into the house and setting it on fire)—and that the cost of the precautionary effort is \$10 a year. Suppose, too, that if an insured person takes this precaution, the insurance company would save, on average, \$100 a year (according to its actuarial tables). Taking the precaution would be in the mutual interests of the insured individual and the insurer: if the insured would bear the \$10 precaution cost, the insurer could afford to reduce the insured's annual insurance premium by more than \$10—say, by \$50—given that the insurer would save \$100, so both the insured and the insurer

could wind up better off. But, unfortunately, the very fact that the individual is protected by insurance against fire-related losses may lead him not to take the precaution of dosing the fireplace doors when he leaves home. Thus, both the insured and the insurer are worse off than they might be.

How can the moral hazard problem be solved? One possibility is for the insurer to *obtain information* about the insured's precautionary behavior. If the insurer can somehow tell whether the insured takes the precaution of closing the fireplace doors, the insurer can induce the insured to do so. For instance, the insurer could lower the annual premium only if the insured closes the fireplace doors, or the insurer could deny coverage for losses if they were caused by failure to close the fireplace doors. More generally, moral hazard problems can be cured if one party to the contract can get information about the possibly problematic behavior or situation of the other party. If an employer can tell how hard an employee is working, the employer can prevent the problem of laxity of effort by rewarding the employee for proper effort or by penalizing the employee for improper effort. If the client who has hired a lawyer on an hourly basis can figure out how many hours the legal task really requires, the client can limit in the contract the number of hours to that number. If the government can find out how hard a welfare recipient searches for a job, it can condition the continuation of benefits on the recipient's exercising proper search effort.

Solving the moral hazard problem with information is one thing. Obtaining the information is another matter. How does an insurer get information about what measures an insured takes to prevent fires? How does an employer obtain information about how hard the employee is working? How do shareholders apprise themselves of the information about business opportunities open to the CEO? How does a client determine how many hours a case ought to take the lawyer?

It depends. Sometimes obtaining information is easy. For instance, it's probably fairly easy for a fire insurer to inspect a person's home to see where smoke detectors are installed. And it's probably not too hard for an employer to find out whether an employee shows up for work and puts in a full day. On the other hand, for an insurance company to determine whether an insured person really closes the fireplace doors when doing so would be appropriate or for an employer to find out whether an employee is taking too many breaks might not be easy. Likewise, ascertaining what business opportunities are available to a CEO or what number of hours is proper for a lawyer to work on a case could be a daunting task.

### **Insurance Policy Terms and Moral Hazard**

Can you explain the following features of insurance policies in view of the moral hazard problem? How do they avoid moral hazard?

- If a worker is disabled, the disability insurance policy will usually limit coverage to, say, 60% of the worker's wage.
- If death is due to suicide, a life insurance policy won't pay benefits.
- If belongings stored in a basement sustain water damage because the basement floods, a homeowner's flood insurance policy won't pay.

Difficulty in solving the moral hazard problem through acquisition of information leads to problems for the contracting parties. One problem is that, although they may solve their problem, they will have to spend money to obtain the information to do so. The insurer may be able to find out whether an insured has installed smoke detectors, but the process of finding out will require paying someone to visit the insured's premises. Another problem is that the acquired information may be fuzzy and imperfect—for example, an employer's information about how hard an employee works or a client's assessment of how many hours a case ought to take may not be very reliable. Therefore, the ability of the employer to motivate the worker properly or the client to set the appropriate number of hours for the lawyer to spend on the case might be poor.

There's a second major way in which moral hazard can be combated: through the use of an *output-based incentive* of some type, such as basing an employee's pay on the employee's contribution to profits. For instance, if the wage of a salesperson in a department store depends on his volume of sales, he'll have a natural incentive to work harder than he would if he were paid only by the hour. If the compensation of a CEO depends significantly on corporate profits, perhaps through stock options, she'll have a motive to choose business opportunities that will increase corporate profits. If an insurance policy doesn't cover losses fully—for example, because it includes a deductible feature or a ceiling on coverage—the insured party will bear part of the loss and will therefore have a reason to reduce the risk of fire. (This is an output-based incentive of a sort, in that the occurrence or nonoccurrence of a fire is an output of whether or not the insured party takes precautionary efforts.)

However, output-based incentives have a big drawback: they impose risk on people. If a CEO's pay is based in substantial part on stock options, her pay will be risky, because the amount will depend on chance elements. If an insured individual is only partially covered against loss, he will, by definition, bear some risk, but risk is exactly what he wants to avoid by purchasing insurance. As a consequence, although output-based incentives can reduce the moral hazard problem, they're often disliked because of risk imposition and are thus of limited utility. More specifically, if too much risk is imposed on a risk-averse contracting party, this party will demand higher compensation (as in the case of a CEO or an employee) or a lower price (as in the case of an insured person), and the cost to the other contracting party may be too high to be worthwhile.

Another difficulty with output-based incentives is that output may be hard to measure. For instance, determining just how much a salesperson contributes to sales may be quite difficult (perhaps one salesperson helps a customer but a different salesperson rings up the sale). Output-based incentives may be hard to fashion in such cases.

In the end, therefore, although moral hazard can be alleviated by two general methods, it typically can't be eliminated. Hence, moral hazard often remains.

A final point is that the existence of moral hazard isn't an argument for government intervention, as is sometimes mistakenly thought to be the case. If workers don't work as hard as would be best or if insured people aren't as careful to prevent loss as would be ideal, this is because the employer or the insurance company is unable to find a worthwhile way to overcome the moral hazard problem by obtaining information or using output-based incentives. Because the

government doesn't typically have a superior ability to obtain information or design output-based incentives there is no call for the government to do anything when moral hazard arises in the private sector.

### Adverse Selection

Now we're going to turn our sights to another important phenomenon that, like the moral hazard problem, involves asymmetry of information and contracts. It's called *adverse selection*, and it arises in situations in which individuals who differ from each other in important ways selectively choose to enter into contracts.

A famous instance of adverse selection is that of used-car sales and is known as the *lemons problem*. We'd expect to find a larger proportion of cars with problems—so-called lemons—in the used-car market than in the general population of cars. The reason is that people who own lemons would be more likely to try to sell their cars than people whose cars are running well would be. Of course, we wouldn't expect all cars on the used-car market to be lemons. There are, after all, a variety of reasons for wanting to sell perfectly good cars (e.g., the owner might want to buy a new car or might decide to move to a distant city and not drive the car there).

In any case, most prospective used-car buyers will know that used cars carry a relatively high risk of being lemons. Because of this risk the price that they'll be willing to pay for used cars will tend to be low—that is, lower than it would be if the used-car market included few, if any, lemons. The low price will often be unacceptable to potential sellers of reasonably good used cars, however, and will discourage them from putting their cars up for sale. With fewer cars in decent shape entering the used-car market than would otherwise be the case, the percentage of lemons in the market increases. Hence, the quality problem associated with used cars is exacerbated.

Ultimately, many potential mutually beneficial transactions between sellers of good used cars and buyers willing to pay an acceptable price for them—will never occur, because the disproportion of lemons lowers the price of used cars. In other words, the tendency for lemons to be selected for sale in the used-car market adversely affects the market in that it prevents the market from functioning in a desirable way.

Adverse selection can be involved in the insurance context as well. Let's consider fire insurance again. We might expect people whose fire risks are relatively high because of the character of their property (e.g., people whose homes don't have good wiring) to be more likely than property owners in general to buy fire insurance. As a consequence, a fire insurer will receive more claims and have to charge higher premiums than it otherwise would. The higher premiums, in turn, will deter some property owners at low risk for fire from buying insurance (or lead them to buy less coverage), even though they'd be willing to pay lower premiums that the insurer would be willing to accept to cover them if it could identify them as the low-risk prospects that they are. In the end, people at high risk for fire tend to buy more insurance coverage. And this adversely affects the functioning of the insurance market by causing premiums to rise and thus leads some people at low risk to buy less coverage than otherwise.

Let's consider one more example: loans, such as bank loans to owners of new restaurants to help them get their restaurants established. We might expect bank loans to be more attractive to owners of restaurants with a lower chance of success than to owners of restaurants with a higher

chance of success. The owner of a restaurant that isn't likely to be successful may view a loan as relatively cheap: if the restaurant fails and goes bankrupt, the loan won't have to be repaid. Also, if it's not particularly likely to succeed, its owners (and their friends) might be somewhat reluctant to invest a lot of their own money in the venture. What's the implication of the tendency for the owners wanting to take out loans to be those whose restaurants are more likely to go bankrupt? It means that the banks will have to charge higher interest rates so as to cover their losses when borrowers go bankrupt. But the higher interest rates discourage borrowing. This also means that owners of some promising new restaurants won't take out loans, even though banks would be willing to lend them money at lower, affordable interest rates if the banks knew these restaurant owners to be unlikely to go bankrupt and thus to be good bets. The problem in the loan market is adverse selection, in which the restaurant owners who take out loans tend to be those who are relatively less likely to repay the loans.

### **Can Warranties Cure Adverse Selection?**

In some cases, warranties can be used to avoid the adverse selection problem. For example, a used-car dealer who knows that his cars aren't lemons could guarantee buyers that they aren't—perhaps by agreeing to pay maintenance costs for a year-or to take back a car that's frequently in need of repairs. How would this sidestep the adverse selection problem?

What can be done about adverse selection? One basic response of contracting parties who lack information is to obtain the information they need about their contracting partners. If a prospective buyer of a used car can determine its quality—for instance, by taking it to a service station for inspection the adverse selection problem will be eliminated: lemons will be recognized as such and sell for low prices, and good used cars will be recognized as well and will sell for appropriately high prices. Therefore, someone contemplating selling a good used car will put the car on the market because he knows that he'll be able to get a fitting price for it, and a buyer who wants such a car, knowing that it isn't a lemon, will willingly pay the fitting price for it. Likewise, in the insurance example, we can imagine that the insurance company will obtain information about the fire risk of prospective policy buyers (e.g., by inspecting their houses to determine the condition of the wiring) and charge those at higher risk more for coverage. Hence, a low-risk buyer wouldn't have to pay a high premium, and the problem of adverse selection would be averted. Note that the adverse selection problem is analogous to the moral hazard problem in that both are due to an asymmetry of information and can be ameliorated in similar ways: by obtaining the appropriate necessary information.

Of course, acquiring information to prevent adverse selection is costly. Some effort is required to have a car inspected to determine whether it's a lemon, and money must be spent to ascertain which risk category a fire insurance purchaser falls into. Hence, information acquisition is, in general, an imperfect remedy for the adverse selection problem. Though it will at times substantially alleviate the problem, often it will not.

One more aspect of the adverse selection problem is that sometimes government action can help to ameliorate it. For example, consider the context of insurance where high-risk individuals cause premiums to go up and the high premiums discourage low-risk individuals from purchasing coverage. In this situation, a rule requiring all individuals to purchase coverage and to pay premiums equal to the average risk might be beneficial, but the details of why are beyond our scope. . . .

### Principal and Agent Contracts

A common situation is for one party, a *principal*, to contract with another, an *agent*, to do something: a person hires a lawyer to undertake a legal task; an individual hires a real estate agent to look for property; a store owner hires someone to manage the store; a taxpayer hires an accountant to handle tax matters; a lawyer hires a farmer to grow crops; and so forth. A principal need not, however, be an individual. Indeed, when a company hires an employee, the company can be considered the principal and the employee an agent. Obviously, then, the principal-agent relationship covers a lot of territory.<sup>1</sup>

There are three major types of principal-agent contracts: *performance-based* (also referred to as *output-based*), *input-based*, and *fixed-fee*. Under a performance-based contract, payment depends on productivity measured by some specified criterion. A real estate agent might be paid for making a deal, with the amount of the payment based on the sale price of the property. A store manager might be rewarded if the store makes a profit or if a survey shows an increase in customer satisfaction. A salesperson might be paid on commission, perhaps a percentage of the revenues on goods sold. A lawyer might be paid a contingent fee, a percentage of the recovery or settlement obtained, if any. These are just a few examples.

Under an input-based contract, on the other hand, payment is tied to input such as time spent. For instance, a store employee or a lawyer might be paid on the basis of number of hours worked. Or a builder might be paid on the basis of his costs, as in the cost-plus construction contract that we considered earlier.

Under a fixed-fee contract, the agent is simply paid a stipulated amount for performing a service. Thus, an accountant might be paid a given sum for doing taxes, a lawyer for writing a will, a guide for providing a tour, or a builder for a construction project as in the flat-fee contract discussed earlier.

Many contracts are mixtures of these types, as in the case of a store manager who is paid a salary on the basis of the number of hours worked (an input) and also a bonus consisting of a percentage of profits (a measure of performance). For each general type of principal-agent contract, many decisions – such as what percentage of profits the store manager is to receive have to be made to fully delineate the contract.

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<sup>1</sup> The production contract that we just considered can be regarded as a type of principal-agent contract, one in which the contractor is the agent. In our discussion, we addressed issues specific to the production context and focused on two particular types on contract, flat-fee and cost-plus. Here, we'll consider a broader range of issues, settings, and contract types.

Performance-based, input-based, and fixed-fee contracts differ along a number of dimensions. In the examples that we discuss, we'll often assume that your client is the principal and decide from this perspective what kind of contract you should write.<sup>2</sup>

### *Incentives*

Principals generally want incentives to be created that will enable them to achieve their goals. The store owner or land owner will want to end up with a profit, the client will want her lawyer to win a large judgment and so forth. It can't, however, be taken for granted that agents will do their best to advance the principals' goals. Doing so requires effort, which agents may not be inclined to exert unless they have an incentive to do so. Moreover, it's often insufficient for a contract merely to specify "best efforts," because such a term is hard to interpret and an agent's efforts may be difficult for a principal to observe and to demonstrate to a tribunal. Hence, understanding the incentives created by different types of contracts is important.

Incentives under a performance-based contract are, obviously, directed toward performance. Basing a store manager's salary on profits serves as an incentive for him to try to maximize the store's profits. Tying a lawyer's compensation to a judgment or settlement is an incentive for her to obtain as much as possible for her client.

The strength of incentives under performance-based contracts depends on the specific nature of the contract. Consider the store manager. If his compensation is but a small percentage of profits—say, 5%—he has little incentive to increase profits. In contemplating whether to work over the weekend on a new advertising plan that would bring in an extra \$2,000 in profits, for example, he may well decide not to because he realizes that he'd end up with only an extra \$100 (5% of the \$2,000), too little to justify the additional work.

For the manager's incentive to be better aligned with what the store owner wants, he would have to receive a higher percentage of the profits. A 25% share—which would translate into an additional \$500 in this instance—might be enough to induce him to work over the weekend. But even this fraction of profits isn't necessarily high enough: if he values an alternative for the weekend at \$700 (e.g., he's already made plans for a vacation, and his airline tickets aren't refundable), he'd choose not to work for the store, because he'd end up losing more than he'd gain from the additional \$2,000 in store profits. For the manager to have a sufficient incentive to maximize total value, he must be induced to spend the weekend working whenever his personal valuation of the weekend is less than \$2,000. But this means that he'd have to obtain for himself 100%—the full \$2,000—of additional profits the store would bring in as a result of his weekend's work. Likewise, for him to have the proper incentive to prevent losses, he'd also have to suffer 100% of any losses the store experienced.

However, a contract in which the manager both earns any extra profits the store makes and suffers any losses it experiences might not be desirable for the principal and would often be unworkable. If the manager were to receive all the profits relative to some benchmark level, his

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<sup>2</sup> It's just for the sake of simplicity that we'll assume that your client is the principal. If your client were the agent, you'd end up going with the same kind of contract. The reason is one that should be quite familiar to you by now: the type of contract that's better for one party is also better for the other party—it's mutually beneficial—because it increases the size of the contractual pie.

earnings might exceed what the principal is willing to pay.<sup>3</sup> In addition, because the manager's assets might not be sufficient to cover the losses, it's possible that he couldn't bear them. Both of these problems might be unavoidable even if the manager's share of the profits or losses were less than—perhaps much less than—100%. For example, if a manager of a large corporation were to receive 5% of profits, his salary could be hundreds of millions of dollars—an amount greatly exceeding what shareholders are willing to pay.

The upshot is that the strength of the incentive to perform under an output-based contract depends on, among other things, the percentage of profits or losses that the agent will receive or bear. Yet contracts under which agents receive high percentages of profits and suffer high percentages of losses may be undesirable for principals or unworkable.

An alternative way to create an incentive for the agent is to opt for an input-based contract rather than a performance-based one. A store owner might want the manager to work more hours than is customary because more hours means larger profits for the owner, so he would specify in the contract that the manager is to be paid by the hour. If the manager is specifically paid extra for working over the weekend, he'll be more willing to do so.

Typically, however, the number of hours that a manager works isn't the only determinant of store profits. How the manager oversees the workers, treats customers, and behaves in many other dimensions also enters into the picture. Indeed, envisioning a manager who spends much of his time gossiping with other employees, even though he does work long hours, isn't at all difficult. More broadly, a store manager rewarded only on the basis of time put in won't have an incentive to oversee employees effectively, provide good customer service, or attend to business rather than to personal matters. This exemplifies a general difficulty with input-based contracts: they tend to base payment on only some of the determinants of profits; hence, agents may not have much, or any, incentive to increase profits along other dimensions.

How can a principal attempt to ensure that the agent will perform as desired? The most direct solution is for the principal to pay to observe or otherwise assess the agent's performance. For instance, the owner of the store could hire a marketing firm to survey customers about their satisfaction. The information from the survey could be used to determine whether to pay a bonus or to decide whether to fire the manager. (Note that these uses of information introduce a performance-based element into the contract.) Such approaches to the problem of monitoring inputs that affect profits, however, are not only costly but also often provide only imperfect information about the inputs.

Finally, under a fixed-fee contract, there is no direct incentive for the agent to perform well. The principal may be relying entirely on the agent's good character, reputation, or desire for subsequent business from the principal. Or, as with the input-based contract the principal could

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<sup>3</sup> To take this one step further, let's consider not just the manager, but all employees of the store. For each of them to have perfect incentives, each would have to be entitled to 100% of the additional profits—and the difficulty that this poses is impossible to miss[.]



pay to monitor performance, perhaps making payment of the fee contingent on satisfactory effort or quality of the final product.

**Performance-Based, Input-Based,  
and Fixed-Fee Contracts in a Nutshell**

- *Performance-based* contracts create incentives for performance. But the creation of strong incentives requires that the agent receive a high percentage of profits and bear a high percentage of losses, which may be undesirable for the principal and unworkable.
- *Input-based* contracts also create incentives for performance. But to the extent that contracts of this type leave out hard-to-serve or hard-to-measure dimensions of input that affect performance, incentives for performance are incomplete. Such dimensions of input can sometimes be monitored, but monitoring is costly and often imperfect.
- *Fixed-fee* contracts don't create incentives for performance. Here, too, monitoring can sometimes be a solution.
- *Performance-based* contracts impose risk on agents, which is a drawback if agents are more risk averse than principals.

**Notes and questions on moral hazard, adverse selection, and the principal-agent problem**

1. Here is how the difference between moral hazard and adverse selection is sometimes described:

Problem A occurs when a party has an opportunity to do a hidden action once the contract is in effect

Problem B is the result of hidden information prior to entering into a contract

Is Problem A moral hazard or adverse selection? Which is Problem B?

2. Moral hazard, adverse selection, and the principal-agent problem are all closely related to the problem of externalities.

Moral hazard occurs in situations where one party (e.g. the insured) can impose costs on someone else (e.g. the insurer).<sup>4</sup> Those costs could be classified as externalities (although they are not always seen that way). Of course, since moral hazard usually involves parties in a contractual relationship, one might think that the parties resolve it in their contracts. In fact, they

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usually try to using devices described in the readings. Nevertheless, because it is difficult, if not impossible, for the insurer to know (and prove to a court) whether the insured has taken proper precautions, the problem cannot usually be completely resolved by contract.

Similarly, adverse selection also involves a kind of externality, albeit a subtle one. Suppose the market for used cars initially only contained high quality cars. Then someone selling a low-quality car entered the market selling a car whose low quality could not be ascertained before purchase. The presence of such a car lowers the price that buyers are willing to pay even for high quality cars. In that way, the presence in the market of low-quality cars imposes a negative externality on sellers of high quality cars. (Or put another way, the presence of high-quality cars grants a positive externality to sellers of low-quality cars.) Again, one might think the parties would bargain to an efficient solution (allocation of cars to people according to their willingness to pay for quality). Indeed, they do, these efforts seldom completely solve the problem.

The principal-agent problem often involves the ability of the agent to impose costs or benefits on the principal.<sup>5</sup> Those costs could be classified as externalities (although they are not always seen that way). For example, a good manager provides benefits to shareholders. That is, the good manager runs the firm in a way that provides profits to owners. Conversely, a bad manager imposes costs, e.g. by shirking her responsibilities or stealing from the company. The purpose of the contract between the manager and the firm is to try to give the manager incentives to maximize the benefits. Because shareholders lack the information necessary to monitor manager performance, transactions costs are high and manager performance is unlikely to be optimal. Nevertheless, contracts can be drafted to try to give the manager incentives to come as close to efficiency as possible.

3. The readings above generally described moral hazard and adverse selection as problems relevant to private contracting parties. Nevertheless, these are also problems for the government. For example, the government insures bank deposits. This means that consumers have less incentive to avoid putting their money in financially shaky banks and that banks have less incentive to avoid risky loans. This is a classic moral hazard problem. Government attempts to help people buy health insurance similarly encounter adverse selection problems. Such insurance is generally most attractive to those with the highest anticipated medical costs. If government-supplied health insurance were voluntary, those buying it would probably be those with the highest anticipated health costs, which would make the per-person cost of coverage very high. One solution to this adverse selection problem is requiring everyone to be covered. This is a motivation for the "individual mandate" that has been such a controversial part of Obama's health care legislation.

4. Consider an employment decision. A law firm is considering whether to offer an associate position to a 2L, and the 2L is deciding whether to accept the offer.

a) What are the information asymmetries in this potential transaction? What relevant information does the 2L know which the firm does not? What relevant information does the firm know which the 2L does not?

b) What can the firm do to (partially) overcome the information asymmetry?

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c) What can the 2L do to (partially) overcome the information asymmetry?

d) Note that many law firms and lawyers have no written contracts. In such cases, the law provides default rules. One of those default rules is “employment at will,” which means that the employee can quit at any time, and the employer can fire the employee at any time. How does employment at will help overcome informational asymmetries or at least reduce their adverse effects?

e) Are there any legal rules which help overcome the informational asymmetries?

5. Consider the way home mortgages are often sold. A bank contracts with a mortgage broker. A mortgage broker is an independent businessperson, not an employee of the bank. The mortgage broker solicits customers and, when a customer wants a loan, helps the customer fill out the relevant paperwork and sends the paperwork to the bank for approval of the loan.

a) The contract with the mortgage broker might specify that the mortgage broker gets a fixed salary—perhaps \$3000 per month. What problems might occur under such a contract? Would the bank be wise to offer such a contract?

b) The contract with the mortgage broker might specify that the mortgage broker gets a percentage of the value of all loans approved. For example, the mortgage broker might get 0.5% of the value of each loan, which would be \$2500 on a \$500,000 loan. What problems might occur under such a contract? Would the bank be wise to offer such a contract?

c) What macro-economic problems might occur if most loans were negotiated through contracts such as those described in (b)?

d) If you were a lawyer for a bank, how could you draft a better contract between the bank and the mortgage broker?

e) The relationship between a bank and a mortgage broker presents all three types of asymmetric information problems discussed in readings—adverse selection, moral hazard, and principal-agent. Identify which aspects of the relationship present which kinds of problems.

### **Gilson, “Value Creation by Business Lawyers: Legal Skills and Asset Pricing”**

Ronald Gilson

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What do business lawyers really do? Embarrassingly enough, at a time when lawyers are criticized with increasing frequency as nonproductive actors in the economy, there seems to be no coherent answer. That is not, of course, to say that answers have not been offered; there are a number of familiar responses that we have all heard or, what is worse, that we have all offered at one time or another without really thinking very hard about them. The problem is that, for surprisingly similar reasons, none of them is very helpful.

Clients have their own, often quite uncharitable, view of what business lawyers do. In an extreme version, business lawyers are perceived as evil sorcerers who use their special skills and professional magic to relieve clients of their possessions. Kurt Vonnegut makes the point in an amusing way. A law student is told by his favorite professor that, to get ahead in the practice of

law, “a lawyer should be looking for situations where large amounts of money are about to change hands.” Though this advice is hardly different from standard professional suggestions about how to build a practice, the reasons offered for the advice lay bare a quite different view of the business lawyer’s function:

In every big transaction [the professor said], there is a magic moment during which a man has surrendered a treasure, and during which the man who is due to receive it has not yet done so. An alert lawyer will make that moment his own, possessing the treasure for a magic microsecond, taking a little of it, passing it on. If the man who is to receive the treasure is unused to wealth, has an inferiority complex and shapeless feelings of guilt, as most people do, the lawyer can often take as much as half the bundle, and still receive the recipient’s blubbering thanks.

Clients frequently advance other more charitable but still negative views of the business lawyer that also should be familiar to most practitioners. Business lawyers are seen at best as a transaction cost, part of a system of wealth redistribution from clients to lawyers; legal fees represent a tax on business transactions to provide an income maintenance program for lawyers. At worst, lawyers are seen as deal killers whose continual raising of obstacles, without commensurate effort at finding solutions, ultimately causes transactions to collapse under their own weight.

Lawyers, to be sure, do not share these harsh evaluations of their role. When my question—what does a business lawyer really do—is put to business lawyers, the familiar response is that they “protect” their clients, that they get their clients the “best” deal. In the back of their minds is a sense that their clients do not appreciate them, that clients neither perceive nor understand the risks that lawyers raise, and that as a result clients do not recognize that it is in their best interest when lawyers identify the myriad of subtle problems unavoidably present in a typical transaction.

A more balanced view is presented in the academic literature. Here the predominant approach has been functional. The lawyer is presented as a counselor, planner, drafter, negotiator, investigator, lobbyist, scapegoat, champion, and, most strikingly, even as a friend. Certainly this list of functions rings true enough. An experienced practitioner can quickly recall playing each of these roles.

Despite the surface dissimilarity of these characterizations of what a business lawyer does, they do share both an important similarity and a common failure. To be sure, the unfavorable views ascribed to the client reflect the view that business lawyers reduce the value of a transaction, while both the quite favorable view held by business lawyers themselves and the more neutral but still positive view offered in the academic literature assume that business lawyers increase the value of a transaction. But both sides do seem to agree on the appropriate standard by which the performance of business lawyers should be judged: If what a business lawyer does has value, a transaction must be worth more, net of legal fees, as a result of the lawyer’s participation. And the common failure of all of these views is not their differing conclusions. Rather, it is the absence of an explanation of the relation between the business lawyers’ participation in a transaction and the value of the transaction to the clients. In other words, precisely how do the activities of business lawyers affect transaction value?

I recognize that I may appear to have shifted the focus of my inquiry—from what business lawyers really do to whether whatever they do increases the value of a transaction. But this emphasis on the business lawyer’s effect on transaction value should not shift attention from examination of the particular activities in which business lawyers engage. Rather, my goal is to develop a mode of analysis that allows identification of those activities that have value; in the absence of a tie to transactional value, a particular legal function is simply besides the point.

I am now some distance analytically from where I began. The unstructured inquiry into what a business lawyer does has been narrowed to the question of how to identify what part, if any, of what a lawyer does has the potential to be of value. And the standard that controls the answer to that question has also been identified: Transaction value must be increased. It remains to answer the question and, in so doing, to delineate those activities in which business lawyers engage which meet that standard. In Part I, I develop the content of the transactional-value standard in greater detail and confront the issue, which I expect has already come to most readers’ minds, of whether the standard can actually be applied. In Part II, I build on capital asset pricing theory to develop a hypothesis concerning how business lawyers might create value: business lawyers as transaction cost engineers. I then evaluate that hypothesis in Part III by examining a typical corporate acquisition agreement, among the highest forms of the business lawyer’s craft, to see whether the agreement reflects the types of techniques my hypothesis predicts. I conclude that the role of the transaction cost engineer does have the potential to create value and that the terms of the corporate acquisition agreement demonstrate that business lawyers do play the role. This theory of what business lawyers do leads, in turn, to a corresponding theory of the function of different portions of the acquisition agreement that has normative implications for how such agreements should be thought of and negotiated. . . .

#### I. The Idea of Value Creation . . .

Consider . . . the case of distributive bargaining. Imagine that a client has had the good fortune to retain a very talented business lawyer when the other party is represented by a dullard. Assuming that the lawyers can have any impact on the value of a transaction, we might anticipate that it would be to alter the allocation of gains from the transaction between the parties. Here the claim would be merely that one lawyer’s greater skill in distributive bargaining results in that client’s receiving a greater share of the gain than would have been the case if the lawyers were more evenly matched. One might then argue that the performance of the talented lawyer meets the value-creation standard. From the perspective of that lawyer’s client, the transaction is worth more than if that lawyer had not participated.

One reaches a different conclusion if the transaction is viewed from the perspective of both clients. Then the value of the transaction has not changed as a result of participation by business lawyers; rather, resources have been expended to alter the distribution of gains that, by definition, would have been forthcoming even without the lawyers’ participation. And for purposes of evaluating whether the participation of business lawyers increases the transaction’s value, the appropriate perspective is not that of the client with the more talented lawyer, but the joint perspective of both clients.

As in many other areas, evaluating whether a practice is beneficial depends on whether the issue is evaluated *ex post* or *ex ante*. If the evaluation is *ex post*—that is, if the transaction is one in which it has already been determined that both sides will retain a lawyer—then a lawyer whose skill in distributive bargaining results in his client receiving a larger portion of the gain from the transaction will be perceived as having increased the transaction’s value to that client. If, however, the evaluation is *ex ante*—before either side has decided whether to retain a lawyer—the result is quite different. In this situation, clients would determine jointly whether to retain lawyers for the transaction, recognizing that if either retained a lawyer, so would the other. From this perspective, there is little doubt that, if all a business lawyer offers is skill in distributive bargaining, the clients’ joint decision would be to hire no lawyers at all because, net of lawyers’ fees, the surplus from the transaction to be divided between the clients would be smaller as a result of the participation of lawyers, rather than larger. Only a client who believed that its lawyer would be better than the other party’s with sufficient frequency that the expected gain from better distributive bargaining exceeded the cost of both lawyers would still use lawyers in the transaction. Given any reasonable assumption about the availability and distribution of legal talent among lawyers, this disparity is unlikely to exist with any frequency.

We can thus add one condition to the proposition that business lawyers have potential to add value to a transaction: The increase must be in the overall value of the transaction, not merely in the distributive share of one of the parties. That is, a business lawyer must show the potential to enlarge the entire pie, not just to increase the size of one piece at the expense of another. . . .

## II. The Relationship Between Legal Skills and Transaction Value

Framing a hypothesis that explains the relationship between the participation of business lawyers in a transaction and the transaction’s value requires recognition that the subjects of these transactions are typically capital assets: assets whose value is determined solely by the income, whether in cash flow or appreciation, they are expected to earn. What we normally think of as a transaction, then, is simply the transfer of a capital asset from one party to another. Characterizing transactions as the transfer of capital assets is important, because over the last fifteen years, financial economists have developed a substantial body of theory to explain how capital assets are valued. If capital asset pricing theory can identify the factors that determine transaction value, then these factors can be examined to determine whether business lawyers can influence them in a way that will alter transaction value. And if the systematic application of legal skills can affect transaction value, then two important results follow. First, I should be in a position to examine what business lawyers really do and determine if their activities are such that they could bear on transaction value. That is, it would be possible to inquire positively into the efficiency of the common “lawyer.” This is the focus of Part III. . . .

### *A. Capital Asset Pricing Theory*

The modern development of capital asset pricing theory began with the insight of Harry Markowitz that risk-averse investors will always hold a diversified portfolio of capital assets. This conclusion follows from two premises: that investors prefer more return to less, given the same level of risk, and that investors prefer less risk to more given the same level of return. By holding a number of assets—a portfolio—an investor can reduce risk without reducing return. A rational

investor thus will select the portfolio of assets that offers the most return for the desired level of risk.

The next step in the theory's development is a closer look at what kind of risk is reduced by diversification, e.g., by holding a portfolio of assets as opposed to a single asset. The risk consists of two components: unsystematic and systematic risk. Unsystematic risk is that associated with holding a particular asset. For example, if the capital asset in question is a specialized machine tool, the risk of a reduction in the demand for the particular product it makes is unsystematic. In contrast, systematic risk is that associated with holding any asset. For example, increases or decreases in GNP or changes in the level of inflation affect the value of all assets, and thus present systematic risk. Diversifying one's portfolio eliminates unsystematic risk; as long as the investor holds a sufficient number of assets, the impact of one event on a particular asset will be balanced both by that event's different impact on other assets in the portfolio, and by the occurrence of other events affecting other assets in the portfolio. On balance, the value of the portfolio as a whole will be unaffected. Thus, a diversified portfolio is not subject to unsystematic risk.

The only risk that remains in a diversified portfolio, then, is systematic risk: the risk of events that will alter the value of all assets. And the final step in the development of capital asset pricing theory is the recognition that investors will not be paid to bear risk that can be avoided by diversification. As a result, the return on, and therefore the price of, a capital asset depends on how much systematic risk is associated with it. If an asset is subject to a great deal of systematic risk, an investor will require a higher return, and the asset will sell at a lower price, than would be the case with a less sensitive asset. As long as the capital market is relatively efficient in informational terms, arbitrageurs who identify an asset whose market price is different from what would be expected based on the asset's systematic risk would push prices toward the predicted level.

Although there have been important criticisms of this formulation of capital asset pricing theory, they do not blunt its central insight for our purposes: In a world in which assets are valued according to any version of capital asset pricing theory, there is little role for business lawyers. Because capital assets will be priced correctly as a result of market forces, business lawyers cannot increase the value of a transaction. Absent regulatory-based explanations, the fees charged by business lawyers would decrease the net value of the transaction.

The matter, of course, cannot be left there. Simple principles of survivorship require a more positive role for business lawyers. Identifying it, or at least establishing its absence, requires another look at capital asset pricing theory.

Like many economic models, capital asset pricing theory can be derived only after a number of important simplifying assumptions are made. The reason for such assumptions in economic models is straightforward enough: Reality is too complicated and admits of too many interactions to be modeled. The assumptions function to eliminate those complications not critical to understanding the relationship under study. To be sure, when one makes these assumptions, the examined relationship no longer corresponds exactly to the real-world relationship, curiosity about which originally gave rise to the inquiry. The value of the model, however, rests not on how well it describes reality, but on whether it allows us better to understand it. And as has been the case

with capital asset pricing theory, the effect of relaxing the assumptions can also be modeled once the structure of the simple relationship is understood.

The difference between the simple world of capital asset pricing theory and the complex world in which transactions actually take place provides the focus for developing a hypothesis concerning the potential for a business lawyer to increase a transaction's value. In the world described by capital asset pricing theory's simplifying assumptions, the lawyer has no function; in my terms, the business lawyer really does nothing. What happens, however, when we relax the assumptions on which capital asset pricing theory is based? Is there a role for the business lawyer in this less orderly world?

At this point we need to look more carefully at the assumptions on which capital asset pricing theory is built. Of particular importance to our inquiry are four:

1. All investors have a common time horizon—i.e., they measure the return to be earned from the asset in question over the same period of time.
2. All investors have the same expectations about the future, in particular, about the future risk and return associated with the asset in question.
3. There are no transaction costs.
4. All information is costlessly available to all investors.

These assumptions, of course, do not describe the real world. Investors do not have the same time horizons; indeed, it is often precisely because they do not—for example, an older person may wish to alter the composition of his portfolio in favor of assets whose earnings patterns more closely match his remaining life span—that a transaction occurs in the first place. Similarly, investors do not have homogeneous expectations; the phenomenon of conflicting forecasts of earnings or value even among reputed experts is too familiar for that assumption to stand. Transaction costs, of course, are pervasive. Finally, information is often one of the most expensive and poorly distributed commodities. In short, the world in which capital assets are priced and transactions actually carried out differs in critical respects from the world of perfect markets in which capital asset pricing theory operates.

For a business lawyer, however, the unreality of these perfect market assumptions is not cause for despair. Rather, it is in the very failure of these assumptions to describe the real world that I find the potential for value creation by lawyers. When markets fall short of perfection, incentives exist for private innovations that improve market performance. As long as the costs of innovation are less than the resulting gains, private innovation to reduce the extent of market failure creates value. It is in precisely this fashion that opportunity exists for business lawyers to create value.

#### *B. A Hypothesis Concerning Value Creation: Business Lawyers as Transaction Cost Engineers*

The basic assumptions on which capital asset pricing theory is built can be reduced to the simple statement that there are no costs of transacting; there are neither informational disparities between the parties nor any of the more traditional forms of transaction costs. In such a setting, even one unfamiliar with capital asset pricing theory hardly would be surprised that assets would be correctly priced. In this Coasean world, private outcomes are always optimal, and capital asset



pricing theory is no more than the inevitable result of the investor's ability costlessly and thoroughly to diversify his portfolio in a frictionless world. The accuracy of capital asset prices, however, is reduced to the extent there are deviations from capital asset pricing theory's perfect market assumptions. For assets to be correctly priced, the real-world deviations from these assumptions must be constrained. This insight is the first step toward a hypothesis explaining how business lawyers might create value.

The next step, then, is to focus on the mechanisms which reduce real-world deviations from the capital asset pricing theory's central assumptions. From this perspective, the variance between assumption and reality is, in effect, a form of market failure. My concern here is with the character of the market response to that failure. Just as competitive conditions create incentives that encourage reduction of production costs, the market also encourages private efforts to reduce transaction costs. A service that reduces the net cost—transaction [cost] or other [cost]—of a good will earn a positive return. To the extent that private economizing successfully reduces transaction costs, the deviation between the real world in which assets are transferred and the frictionless world of the capital asset pricing theory is minimized. The continued presence of a voluntary social convention—for example, the pervasive use of business lawyers—raises an inference that it is a cost-saving, in my terms value-creating, phenomenon.

Formulating a hypothesis about how business lawyers create value, however, requires more than establishing the importance of private innovation as an important method of reducing transaction costs. Two steps are necessary: the specification of precisely how business lawyers can reduce transaction costs, and the tie between their activities and transaction value.

It is useful at this point to return to the idea that a business transaction is the transfer of a capital asset in which the central aspect of the transaction is the asset's valuation. And the role of the business lawyer is precisely as Vonnegut described it: to look "for situations where large amounts of money are about to change hands." The lawyer places himself strategically in the transfer of valuable assets so as to control the process. He will survive economically—be allowed to take a little of the treasure before passing it on—as long as the gains to the parties exceed his fees. Completing the hypothesis of how business lawyers create value now requires only specifying where these gains come.

I suggest that the tie between legal skills and transaction value is the business lawyer's ability to create a transactional structure which reduces transaction costs and therefore results in more accurate asset pricing. Put in terms of capital asset pricing theory, the business lawyer acts to constrain the extent to which conditions in the real world deviate from the theoretical assumptions of capital asset pricing. My hypothesis about what business lawyers really do—their potential to create value—is simply this: Lawyers function as transaction cost engineers, devising efficient mechanisms which bridge the gap between capital asset pricing theory's hypothetical world of perfect markets and the less-than-perfect reality of effecting transactions in this world. Value is created when the transactional structure designed by the business lawyer allows the parties to act, for that transaction, as if the assumptions on which capital asset pricing theory is based were accurate.

The central role of transaction cost economizing in private ordering is, by now, no longer surprising. What has received less attention is the link between capital asset pricing theory and transaction cost economics, and the institutional framework in which transaction cost economizing takes place. My hypothesis—the business lawyer as transaction cost engineer—thus asserts the dual claim that skilled structuring of the transaction’s form can create transaction value and that business lawyers are primary players at the game. In the next two Parts, I test the hypothesis and respond to a question that I suspect has already come to mind. Even if there is a role for a transaction cost engineer, it is not, intuitively, a legal role. Why, then, do lawyers play it?

### III. Testing the Hypothesis: Examination of the Work Product of Business Lawyers.

Stating a hypothesis concerning what business lawyers really do brings me back to the problem that I raised earlier but postponed: How can a hypothesis concerning the efficiency of a social institution be tested? Because study of historical experience does not seem promising—the necessary data is unlikely to be available—and because the creation of a laboratory experiment also seems unpromising, I will use an analytic technique that is akin to discovering who was present at a meeting by reading the tracks that were left. If the tracks are observable and have some distinctive character that allows identification of their maker, our inability to observe who was actually present at the meeting, while unfortunate, does not prevent us from learning something about the actual attendance. If my hypothesis, that business lawyers constrain the divergence between the perfect market assumptions of capital asset pricing theory and the imperfections of the real world, is correct, then we should be able to find “tracks” of this activity in their transactional behavior.

This approach is particularly promising in our setting because business lawyers acting for clients typically leave a wide array of tracks. Anyone who has attended the closing of a major transaction has witnessed the avalanche of paper exchange that accompanies--indeed, actually constitutes--the closing. Examination of these tracks should reveal whether the posited tie between legal skills and asset value exists. More specifically, I intend now to examine a standard form of corporate acquisition agreement. If the hypothesis is correct, the traditional contractual approaches reflected in the agreement should be explainable by their relation to one or more of the perfect market assumptions on which capital asset pricing theory is based. And if major elements of a corporate acquisition agreement can be understood by reference to their impact on these assumptions, then this discovery would constitute substantial empirical evidence of business lawyers’ potential to create value. Moreover, we would not only better understand the function of different portions of the agreement but also be better able to draft and negotiate them.

Before examining a standard form of acquisition agreement, I should explain briefly why I selected this form of transaction for study in preference to, for example, a complex real estate transaction or joint venture formation. First, a corporate acquisition is obviously the transfer of a capital asset; indeed, the valuation of corporate securities--the indicia of ownership of a corporation--has dominated the empirical tests of capital asset pricing theory. Second, the business lawyer’s role in corporate acquisitions is pervasive. This pervasiveness gives the lawyer the opportunity to play the hypothesized role, and also makes the strongest case for the inference that because the lawyer’s role in the transaction has survived, it serves a useful function. Third, negotiation and preparation of the acquisition agreement is the lawyer’s principal charge in the

transaction. There is thus a fairly complete set of “tracks” of the lawyer’s activity. Finally, but of at least equal importance, I have experience as a practitioner in this form of transaction. While I do not want to overemphasize the importance of actual experience in understanding a business lawyer’s function, such experience is helpful to understand why a business lawyer believes he is doing something even if the point is to formulate a more comprehensive explanation of the behavior. It is simply helpful for an entomologist, seeking to explain some aspect of an insect’s behavior, to have once been a beetle.

#### *A. An Overview of the Acquisition Agreement*

Using an acquisition agreement as the data sample for my examination is desirable not only because it covers a form of transaction particularly appropriate to the lens of theory through which I view the problem, but also because of the very development of a form of agreement. Without having become [boilerplate]—enormous amounts of time still are spent on their negotiation—the general contents of the agreement have by now become pretty much standardized. This is not to say that the distributive consequences of acquisition agreements are likely to be the same. Rather, it is that the problems confronted and the mechanics of the solutions adopted are similar, even if the impact of the specific application of the solution to the parties will differ from transaction to transaction. Because the overall approach and coverage of typical acquisition agreements, and the types of contractual techniques they contain, are largely the same, they can be taken fairly to reflect not merely an individual lawyer’s inspired response in a particular situation, but the collective wisdom of business lawyers as a group. This representative character, of course, is central to my inquiry. If I can establish the potential for value creation by reference to a typical acquisition agreement, then the conclusion cannot be dismissed as mere anecdote, the idiosyncratic result of the presence of a particularly talented business lawyer. Rather, I can fairly claim to have identified a more general phenomenon with important insights for understanding the role played by most business lawyers.

A description of the subject necessarily precedes an examination of the functional significance of its parts. A skeletal outline of the form of a typical agreement provides a representative picture.

*Description of the Transaction.* The initial, and usually most straight-forward, portion of the agreement provides an overall description of the transaction. The parties are identified, the structure of the transaction—for example, a purchase of stock or assets, or some triangular variation—is described, and details concerning such matters as the timing and location of the closing of the transaction are set forth.

*Price and Terms of Payment.* The next portion of the agreement typically focuses on the price to be paid and the medium and timing of payment. The text is most straightforward when the medium of payment is cash and the entire amount is to be paid on closing. But where the transaction contemplates other than immediate payment of the entire purchase price, the document inevitably becomes a great deal more complicated. For example, at the time the agreement is prepared, it may be possible to describe the purchase price only by reference to a formula because its amount depends on the performance of the business over some period following the agreement’s execution. As I discuss shortly, the need to specify the appropriate performance

measure and to protect against manipulation of the indicia of performance makes for a more expensive discussion in the document. Similarly, when the medium of payment is other than cash, the need to address valuation issues--for example, if the consideration will be shares of the buyer's stock, how the effects of pre-closing changes in the market price of the stock will be shared--also expands the document's text. Of course, if the timing of the payment will be delayed--for example, if the medium of payment will be the buyer's note--the agreement must cover what is, in effect, an additional transaction: a loan from the seller to the buyer.

*Representations and Warranties.* The next major portion of the agreement consists of representations and warranties made by the seller and, typically to a much lesser extent, by the buyer. These provisions consist of a series of detailed statements of fact concerning the relevant business. The seller commonly will warrant, inter alia, the accuracy of its financial statements; the absence of any liabilities for taxes or other matters accruing after the date of its most recent audited financial statements including, most importantly, the absence of contingent liabilities; the ownership and condition of various assets of importance to the operation of the seller's business; the existence of litigation against the seller, whether actual or threatened; and the extent to which the seller's operations are unionized. Thoroughly done, this portion of the acquisition agreement paints a detailed picture of the seller--the capital asset that is being acquired.

*Covenants and Conditions.* The two final steps in our survey of the major portions of a typical acquisition agreement result from the fact that many acquisition transactions contemplate a significant gap between the date on which the acquisition agreement is signed and the date on which the transaction is closed. Whether delay is caused by regulatory necessity, such as the requirement that a proxy statement seeking the approval of the transaction by the seller's shareholders be filed and reviewed by the Securities and Exchange Commission, by regulatory convenience, such as the need for an Internal Revenue Service ruling as to the income tax consequences of the transaction, or simply by the buyer's need for additional time to complete its investigation of the seller, the temporal gap between execution and closing requires contractual bridging. This is accomplished by two complementary techniques: covenants governing the operation of the business during the gap period, and conditions which, if not satisfied, relieve a party of its obligation to complete the transaction. Typically these two techniques combine with the representations and warranties to operate as a unit, providing a hierarchy of obligations and the potential for a hierarchy of remedies if one or more of the other party's obligations are not met. Thus a covenant may require that the seller maintain working capital above a specified level pending closing. At the same time, the seller may also have warranted that working capital was, and at closing will be, above the specified level, and the buyer's obligation to close the transaction may be conditioned generally on the accuracy of the seller's representations and warranties as of the date of closing, on the seller's satisfaction of all covenants during the pre-closing period, and, specifically, on the required level of working capital at the closing date. A failure to maintain adequate working capital will then constitute both a breach of warranty and a violation of a covenant, as well as providing the buyer with a number of justifications for not completing the transaction.

In formal terms, then, the acquisition agreement is simply a more complicated version of what one would expect in any sales agreement: It states the form and terms of the transaction,

describes the asset to be transferred, and specifies the manner in which the asset will be preserved pending the completion of the transaction. The possibility that this contractual structure has the potential to create value, however, arises not from a formal overview, but from the manner in which different elements of the agreement respond to the problem of constraining the effect of real world deviations from capital asset pricing theory's perfect market assumptions. For this purpose, it is necessary to focus attention directly on the assumptions themselves, particularly the assumptions that all investors have homogeneous expectations . . . that information is costlessly available to all, and that there are no other transaction costs. It is in response to the potential impact of this unholy host that my hypothesis holds out the potential for a value-creating role for business lawyers.

*B. The Failure of the Homogeneous-Expectations Assumption: The Earnout Response*

I want to begin with the assumption that can be most clearly examined from my perspective: The assumption that all investors have homogeneous expectations. The critical place in asset pricing theory of the assumption that all investors share the same beliefs about the future risk and return associated with owning the asset in question, in our case a business, is obvious: As long as we all agree about the future income stream associated with owning the business and about the systematic risk associated with that income, there is no reason to expect potential buyers and sellers of the business to disagree about its price. But it is also obvious that buyers and sellers often do not share common expectations concerning the business future.

Imagine a negotiation between the presidents of a buyer and seller concerning the price at which the transaction will take place. Imagine further that the negotiations have progressed to the point where agreement has been reached on an abstract, but nonetheless important, pricing principle, that the appropriate way to value the seller's business is \$1 in purchase price for each \$1 in annual sales. The critical nature of the homogeneous-expectations assumption should be apparent. Even after agreement on a valuation principle, the parties will agree on price only if they share the same expectations about the seller's future sales. The problem, of course, is that they will not. The negotiating dance that results is familiar to practitioners.

Now suppose that the buyer's president, having done his homework, believes that there is a 50% chance the seller will do \$10 million in sales next year and a 50% chance that it will do only \$5 million. The expected value of the alternatives is \$7.5 million which the buyer's president offers as the purchase price which the agreed-upon valuation principle dictates. The president of the seller, not surprisingly, has different expectations. He is much more optimistic about the probabilities associated with next year's sales. His homework suggests an 85% chance of \$10 million in sales and only a 15% chance of sales as low as \$5 million. These figures yield an expected value, and a purchase price under the agreed valuation principle, of \$9.25 million. The result is inaccurate pricing at best and, because of the resulting conflict over the purchase price, at worst no transaction at all if the parties are unable to resolve their differences.

It is important to emphasize at this point that the problem which "kills" our hypothetical deal is not distributional conflict--disagreement over sharing the gains from the transaction. The distributional principle in the form of a valuation formula has already been approved. Rather, the problem is an example of the failure of the homogeneous-expectations assumption: The parties

simply have different expectations concerning the future performance of the business. If this problem could be solved, a deal could be made. Tautologically, the value of the transaction would be increased. And if my hypothesis about what business lawyers do is correct, a particularly inviting opportunity then exists for value creation by a business lawyer. The lawyer can increase the value of the transaction if he can devise a transactional structure that creates homogeneous expectations.

As my hypothesis predicts, there is a familiar remedy, commonly called an “earnout” or “contingent price” deal, for this failure of the homogeneous-expectations assumption. It is intended, as a prominent practitioner has put it, to “bridge the negotiating gap between a seller who thinks his business is worth more than its historical earnings justify and a purchaser who hails from Missouri.” The solution that business lawyers resort to for this problem is one that economists refer to as state-contingent contracting. Its central insight is that the difference in expectations between the parties as to the probabilities assigned to the occurrence of future events will ultimately disappear as time transforms a prediction of next year’s sales into historical fact. If determination of the purchase price can be delayed until next year’s sales are known with certainty, the deal can be made. The solution, therefore, is to formulate the purchase price as an initial payment, here \$7.5 million, to be followed by an additional payment at the close of the next fiscal year equal, in this case, to \$1 for each \$1 of sales in excess of \$7.5 million. The problem of non-homogeneous expectations is avoided by making the failure irrelevant. Only uncertainty concerning the future forced the parties to rely on expectations about the future; the earnout solution allows the purchase price to be set after that uncertainty has been resolved. That is, each party is allowed to act as if his expectation were shared by the other. In effect he bets on the accuracy of his expectation, with a settling up only after the uncertainty has been eliminated and the parties really do have homogeneous beliefs concerning the matter.

The business lawyer’s traditional response to failure of the homogeneous-expectations assumption can thus create value by allowing a transaction to go forward that might otherwise not have occurred. . . .

#### *D. The Failure of the Costless-Information Assumption: Representations, Warranties, Indemnification, and Opinions*

Perhaps the most important assumption of all is that information is costlessly available to all parties. Its central importance derives in part because it is, in a sense I will consider shortly, a master assumption that controls the other assumptions we have considered, and in part because it is in response to its failure that business lawyers have been most creative.

The relation between the costless-information assumption and the homogeneous-expectations assumption illustrates the central role for information problems in our analysis. For our purposes, information is data that can alter the parties’ beliefs about the price of an asset. But it is also useful to characterize information in terms of a second attribute: to distinguish between the “hard” information of known “facts” and the “soft” information of forecasts and predictions.

This fact/forecast dichotomy rests on the simple difference between the fixed past and the uncertain future, a distinction that Reinier Kraakman and I have elsewhere illustrated by reference to a hypothetical fully informed trader. Imagine a trader who has knowledge of all past events—

“hard” information because it concerns events that have already occurred—relevant to pricing an asset. Even so thoroughly endowed a trader would still lack a type of information critical to asset pricing. Because asset value ultimately depends on predictions of future earnings, hard information about past events alone is insufficient for accurate pricing. Soft information—forecasts of future events—is also necessary.

The homogeneous-expectations assumption considered earlier is thus really an assumption that all parties have the same soft information. Understanding the relation between soft and hard information then should also disclose the relation between the homogeneous-expectations assumption and the costless-information assumption. The critical point is that our forecasts of the future are based, in significant part, on our knowledge of the past; if we know, for example, that high interest rates adversely affected performance of a company in the past, our prediction of future performance will be substantially influenced by that fact. Changes in hard facts will change soft projections.

So understood, a major part of the reason for the failure of the homogeneous-expectations assumption—potential buyers and sellers having different soft facts—is that they base their expectations on different hard facts. In this sense, the costless-information assumption might be rephrased as the assumption of homogeneous retrospection. The assumption of homogeneous expectations would require that the parties share common soft facts; that of homogeneous retrospection would require common hard facts. And if acquisition of hard facts is not only costly, but differentially so, the impact on asset pricing is clear: There will be greater disagreement about the price of an asset, and the resulting pattern of prices will be suboptimal.

The business lawyer’s response to the failure of the homogeneous-expectations assumption has been to devise a structure—state-contingent pricing—which does not eliminate the parties’ differences in expectations, but merely reduces the impact of the disagreement. Because the disagreement in significant measure results from differences in the hard information held by the parties, efforts to constrain the extent of the conflict in expectations (in contrast to efforts to minimize the impact of the conflict) respond to the failure of the costless-information assumption. And because these differences result from differential information costs for the buyer and seller, if business lawyers do function to alleviate failures of the perfect market assumptions underlying capital asset pricing theory, we would then expect the typical corporate acquisition agreement to contain provisions designed to reduce the extent of information asymmetry—information differences between the buyer and seller.

The portion of the acquisition agreement dealing with representations and warranties—commonly the longest part of a typical acquisition agreement and the portion that usually requires the most time for a lawyer to negotiate—has its primary purpose to remedy conditions of asymmetrical information in the least-cost manner. To understand the way in which the device of representations and warranties operates to reduce information asymmetry between the buyer and seller, it is helpful to distinguish between the costs of acquiring new information and the costs of verifying previously acquired information. I consider first the contractual response to information-acquisition problems. . . .

*a. Facilitating the Transfer of Information to the Buyer*

In the course of negotiating an acquisition, there is an obvious and important information asymmetry between the buyer and the seller. The buyer will have expended substantial effort in selecting the seller from among the number of potential acquisitions considered at a preliminary stage and, in doing so, may well have gathered all the available public information concerning the seller. Nonetheless, the seller will continue to know substantially more than the buyer about the business. Much detailed information about the business, of interest to a buyer but not, perhaps, to the securities markets generally, will not have been previously disclosed by the seller.

It is in the seller's interest, not just in the buyer's, to reduce this asymmetry. If the seller's private information is not otherwise available to the buyer at all, the buyer must assume that the undisclosed information reflects unfavorably on the value of the buyer's business, an assumption that will be reflected to the seller's disadvantage in the price the buyer offers. Alternatively, even if the information could be gathered by the buyer (a gambit familiar to business lawyers is the seller's statement that it will open all its facilities to the buyer, that the buyer is welcome to come out and "kick the tires," but that there will be no representations and warranties), it will be considerably cheaper for the seller, whose marginal costs of production are very low, to provide the information than for the buyer to produce it alone. From the buyer's perspective, the cost of acquiring information is part of its overall acquisition cost; amounts spent on information reduce the amount left over for the seller.

This analysis, it seems to me, accounts for the quite detailed picture of the seller's business that the standard set of representations and warranties presents. Among other facts, the identity, location and condition of the assets of the business are described; the nature and extent of liabilities are specified; and the character of employee relationships—from senior management to production employees—is described. This is information that the buyer wants and the seller already has; provision by the seller minimizes its acquisition costs to the benefit of both parties. . . .

## *2. Costs of Verifying Information*

Problems of information cost do not end when the information is acquired. Even if cooperative negotiation between the buyer and seller minimizes the costs of reducing the informational asymmetry confronting the buyer, another information-cost dilemma remains: How can the buyer determine whether the information it has received is accurate? After all, the seller, who has probably provided most of the information, has a clear incentive to mislead the buyer into overvaluing the business.

Just as the market provides incentives that offset a seller's inclination to withhold unfavorable information, the market also provides incentives that constrain a seller's similar inclination to proffer falsely favorable information. If, before a transaction, a buyer can neither itself determine the quality of the seller's product nor evaluate the accuracy of the seller's representations about product quality, the buyer has no alternative but to treat the seller's product as being of low quality, regardless of the seller's protestations. To avoid this problem, a high quality seller has a substantial incentive to demonstrate to a buyer that its representations about the quality of its product are accurate and can be relied upon. And because it is in the seller's interest to keep all information costs at a minimum, there is also an incentive to accomplish this verification in the most economical fashion.



Verification techniques, then, are critical means of reducing total information costs. Like efforts to reduce acquisition costs, verification techniques can be implemented both by the parties themselves and through the efforts of third parties. It is helpful to consider each approach to verification separately.

*a. Economizing by the Parties*

Perhaps the cheapest verification technique is simply an expectation of future transactions between the buyer and seller. When the seller's misrepresentation in one transaction will be taken into account by the buyer in decisions concerning future transactions, whether by reducing the price to reflect lowered expectations, or, at the extreme, by withdrawing patronage altogether, the seller will have little incentive to mislead. In a corporate acquisition, however, the seller has no expectation of future transactions; for the seller, a corporate acquisition is, virtually by definition, a one-shot transaction. Thus, the expectation of future transactions is simply not available as a constraint on the seller's incentive to misrepresent the information provided.

Nonetheless, the insight gleaned from understanding how an expectation of future transactions serves to validate a seller's information can be used to create an inexpensive verification technique that will work even in the one-period world of a corporate acquisition. The expectation technique works because of the existence of additional periods; the insight is simply to devise what Oliver Williamson has called a "hostage" strategy, i.e., an artificial second period in which misrepresentations in the first period--the acquisition transaction--are penalized. If any of the seller's information turns out to be inaccurate, the seller will be required to compensate the buyer; in effect, the seller posts a bond that it has provided accurate information. This technique has the advantage of being quite economical: Beyond the negotiating cost involved in agreeing to make the buyer whole, there is no cost to the seller unless the information proves inaccurate.

This technique is among the most common approaches to verification that appear in corporate acquisition agreements. The seller verifies the accuracy of the information it has provided through its representations and warranties by agreeing to indemnify the buyer if the information turns out to be wrong, i.e., if a breach of a representation or warranty occurs. And the hostage metaphor rings especially true because the seller's promise to indemnify the buyer is frequently backed by the buyer's or a neutral third party's retention of a portion of the consideration as a fund to assure the seller's performance of its indemnification obligation.

Emphasis on verification costs also highlights that indemnification, like the seller's representations and warranties, ultimately works principally to the seller's advantage. As long as the seller recognizes that the perceived quality, as well as the amount, of the information provided by the seller will be reflected in the price the buyer is willing to pay, the subject provides the opportunity for cooperative, rather than merely distributive, bargaining. . . .

*E. Summary and Evaluation*

The analysis of a typical acquisition agreement in this Part was intended to provide some empirical verification for the hypothesis that business lawyers serve as transaction cost engineers and that this function has the potential for creating value. If business lawyers do act to bridge the gap between the perfect market assumptions of capital asset pricing theory and the drastically less-than-perfect market conditions of the world in which transactions actually take place, this activity

should be visible from examination of a by now standardized document—the acquisition agreement—that creates the structure for the transfer of a significant capital asset. From this perspective, the traditional contractual approaches reflected in the agreement should act to ameliorate the failure of one or more of the key perfect market assumptions.

Although my examination of the contents of a typical corporate acquisition agreement has not been exhaustive, and although aspects of the agreement can be explained in terms different from mine, I think the core of my hypothesis has been established: Important elements of the acquisition agreement serve to remedy failures of the perfect market assumptions on which capital asset pricing theory is based. Earnout or contingent-pricing techniques respond to the failure of the homogeneous expectations assumption . . . and the panoply of representations and warranties, together with provisions for indemnification and other verification techniques, respond to the failure of the costless-information, or as I have characterized it, the homogeneous-retrospection assumption.

### **Questions on Gilson and information**

1. Would you characterize the informational problem in a typical corporate acquisition agreement as primarily an adverse selection, moral hazard, or principal-agent problem?
2. Gilson mentions “Covenants and Conditions” as one of the four main components of an acquisition agreement, but he doesn’t say much about them. What kind of informational problem do you think they address? Adverse selection? Moral hazard? Principal-agent?
3. Gilson focuses on private, contractual solutions to the informational problems posed by corporate acquisitions. Is there a role for courts, legal rules, and/or legislation?
4. Are you convinced that the primary role of transaction lawyers is to be “transactions costs engineers,” and thus that transactional lawyers perform a valuable role in the economy akin to that performed by electrical or mechanical engineers? If not, what alternative (and perhaps less positive) roles do you think transactional lawyers play?