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ABSTRACT

In a short sale, an investor sells a share of stock he does not own and profits when the price of the stock declines. A peculiar feature of short sales is the apparent increase in the number of shares of stock beneficially held by investors over and above the actual number of shares issued by the corporation. It has previously been noted that this may create problems in the execution of proxy votes. In this paper we illustrate a related problem in the prosecution of claims of securites fraud. We examine this problem using the recent case of Computer Learning Centers, Inc., (CLC) in which the number of short sales was extremely large. Plaintiffs in the Computer Learning Centers case proposed a class including all those who purchased CLC common stock from April 30, 1997 to April 6, 1998. Defendants opposed certification of the class, focusing on the large number of short sales and the resulting difficulty in establishing which members of the class actually had standing to sue. The court denied the motion for class certification. Although the court gave plaintiffs leave to amend the class, the case was settled before a new class was identified.

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1. Introduction

In a short sale, an investor sells a share of stock he does not own, and only later purchases a share to close out the transaction. The short seller profits when the price of the stock declines. A peculiar feature of short sales is the apparent increase in the number of shares of stock beneficially held by investors over and above the actual number of shares issued by the corporation. It has previously been noted that this may create problems in the execution of proxy votes.[1] In this paper we illustrate a related problem in the prosecution of claims of securities fraud. We examine this problem using the recent case of Computer Learning Centers, Inc., (CLC) in which the unusually large number of short sales factored significantly into the case. *See Ganesh, L.L.C. v. Computer Learning Centers, Inc.*, 183 F.R.D. 487 (E.D. Va. 1998).

Plaintiffs in the Computer Learning Centers case proposed a class including all those who purchased CLC common stock from April 30, 1997 to April 6, 1998, with some exceptions. Defendants opposed certification of the class, focusing on the large number of short sales and the resulting difficulty in establishing which members of the class actually had standing to sue. The court denied the motion for class certification. Focusing on the fact that the fraud on the market presumption of reliance does not apply to short sellers, the court found that individual issues in regard to proof of reliance would overwhelm common questions of law or fact. The court gave plaintiffs leave to amend the class, but the case was settled before a new class was identified. The case raised a number of interesting legal questions surrounding short sales that did not get addressed prior to settlement.

[1] Short-Selling Activity in the Stock Market: Market Effects and the Need for Regulation, Part I, Report of the Committee on Government Operation, U.S. House of Representatives, December 6, 1991, pp. 24-35.

2. The Computer Learning Centers Case

Computer Learning Centers, Inc., provided education and training in computers and information technology. Its adult students obtained associate and non-degree diplomas in pursuit of entry-level jobs. Students were expected to complete their programs in 8 to 16 months for full-time students and 16 to 32 months for part-time students. CLC also provided shorter continuing education and training programs. As of January 31, 1998, shortly before the class action suit was filed, CLC enrolled about 12,000 new students annually at its 25 locations. At that time, tuition ranged from $6,100 to $16,500 for diploma programs and from $15,210 to $21,995 for associate degree programs. The majority of CLC's students participated in some federally supported student financial aid program, and in 1998 approximately 73% of the company's revenues were funded from Title IV of the Higher Education Act of 1965.[2]

CLC was incorporated in 1987. In 1995 it made an initial public offering and its started trading on the NASDAQ. At the start of 1998 there were 16.2 million shares outstanding. Of these, either officers or directors of CLC owned about 5 million shares. Institutional investors owned another 6.1 million shares. Only about 5 million shares were available for active trading.

On March 10, 1998 news stories appeared describing a complaint filed by the Attorney General of Illinois in the Circuit Court of Cook County, which asserted that CLC had defrauded students at its Schaumberg, Illinois Learning Center.[3] This precipitated a nearly 50% drop in the price of CLC stock in the two days following the announcement, from $36.875 on March 9 to

[2] Computer Learning Centers, Inc., 10K, Fiscal year ended January 31, 1998.

[3] The suit alleged violation of Illinois Private Business and Vocational Schools Act and the Illinois Consumer Fraud and Deceptive Business Practices Act.

$19.734 on March 11. The next day the company announced financial results for fiscal year end 1998 and the stock fell further to $18.625.

On March 13, 1998 a class action lawsuit was filed against CLC in the US District Court for the Central District of California on behalf of all purchasers of CLC Common Stock from April 30, 1997 through March 10, 1998. Eight other similar cases were filed in subsequent months. All of the suits were consolidated and transferred to the US District Court for the Eastern District of Virginia. The complaints alleged violations of the Securities Exchange Act of 1934. They claimed that CLC was admitting a large number of unqualified students in order to increase revenue, providing a substandard education, and covering up these actions by providing misleading statistics regarding the quality of students, the success rate of job placement and salaries, the quality of faculty and equipment. The complaints also alleged that CLC insiders profited by selling their shares of CLC stock while in possession of materially adverse information.

On April 6 CLC disclosed that the Illinois State Board of Education had entered a preliminary administrative order limiting CLC's ability to enroll new students at the Schaumberg center. CLC was also notified by the U.S. Department of Education that it had placed all of the company's schools on what DOE describes as "heightened cash monitoring status." The next day the stock fell another 26% from $17.625 to $13.00. When the various class action suits were consolidated, the class period was extended through April 6, 1998.[4]

Figure 1 shows a graph of CLC's stock price with the proposed class period marked. The events prompting the suit clearly mark a sharp drop from the peak price. A subsequent run-up in

[4] Plaintiffs' Consolidated Amended Class Action Complaint, US District Court for the Eastern District of Virginia, Alexandria Division, Ganesh, L.L.C., et al. v. Computer Learning Centers, Inc., et al., Case No. 98-859-A, August 7, 1998.

the price and second sharp drop are also in part tied to ongoing legal difficulties. On May 5 CLC's stock price climbed 27% to $14.625 on rumors that the Illinois State Board of Education's suspension was to be lifted. The next day there was word that the United States Department of Education was inquiring after details of the company's participation in the Title IV program and the stock fell again by 8%. The following day, May 7, official announcement of the Illinois State Board's action started the stock climbing again by 21% to $16.25. On June 8 the Illinois Attorney General announced a settlement with CLC. The stock price leapt again by 28% from $17.75 to $22.6875. The stock continued to climb and reached its peak of $30 per share on July 14, 1998. Between July 14 and August 10 the stock drifted generally downwards. On August 11 the price dropped 25% from $22.625 to $16.875 on news of a new lawsuit alleging that the company had discarded student-related files sought by federal auditors. The stock continued drifting generally downwards until August 28 and 29 when it fell a precipitous 64% from $13.375 to $4.75 after the company announced weak second quarter earnings results related to its legal difficulties and low enrollment. Following the second collapse the stock price performance has been poor and in January 2001 the company filed for bankruptcy to liquidate its assets.

One of the unique features of the Computer Learning Centers case is the volume of short sales during the period leading up to the large price movements. Figure 2 shows the size of the outstanding short interest in CLC stock as a percent of shares outstanding. By April, the 6 million shares sold short exceeded the 5.1 million shares in CLC's float, the number of shares available for active trading. For the typical firm on the New York Stock Exchange and the American Stock Exchange short sales outstanding are less than 2% of actual shares outstanding. Short sales outstanding climb to 7% of actual shares outstanding for fewer than 5% of the firms,

and to 13% of actual shares outstanding for fewer than 1% of the firms.[5] Short interest for Computer Learning Centers was a markedly greater fraction of shares outstanding—25% on February 13, 1998, 26% on March 13, 1998 and 37% on April 15, 1998.

3. Short Sales

3.1. Short Selling Mechanics

The typical investor purchases a stock hoping the price will rise so that he can then sell it at a profit. A short seller takes the opposite position, first selling a stock hoping that the price will fall. The short seller will then be able to purchase the stock at this lower price and close out of the transaction with a profit.

Conceptually the simplest way to implement a short sale is something like a forward contract: a short sale is a sale at a price fixed now for delivery later.[6] Another relatively simple way to implement a short sale is to take advantage of the window of time allowed for the actual delivery of shares on a sale. A seller of stock has three days to make delivery of the stock sold. A short seller can execute a sale if he is able to obtain a share for delivery within this window of time. A short sale made without possession of an actual share is called a naked short.

In practice, short selling is more commonly facilitated through an accompanying borrowing transaction. The short seller enters into an agreement to borrow a share from one investor in order to sell it to another investor. The short seller hopes to be able to purchase a share at a later date and at a lower price. He can then return this share to the investor from whom

[5] Paul Asquith and Lisa Meulbroek, "An empirical investigation of short interest," Harvard Business School Working Paper 96-012, Table 1, results for 1993, the most recent date for which they present data. The data show that mean short interest has been increasing over time.

[6] This is how Judge Posner characterizes a short sale in *Sullivan & Long v. Scattered*, 47 F.3d 857, 858.

he had originally borrowed one. The short seller's profit is the difference between the initially high selling price and the later low buying price, less the costs of borrowing the stock in the interim.

When borrowing a share, the short seller agrees to return a like kind and amount of stock within a specified period of time, and also posts collateral as security for the loaned stock. The lender of the stock earns a profit by charging a fee for the loan and by investing the collateral less a rebate on such earnings paid to the borrower. The lender continues to expect to enjoy the gains from any increase in the price of the stock (and suffers the loss from any decrease) since she will receive the share back at the end of the loan period and can then sell it at the higher (or lower) price. The borrower also typically agrees to make the lender whole for any cash distributions made on the stock during the period of the loan.

3.2. The Apparent Expansion of Beneficial Ownership Due to Short Sales

Figures 3A, 3B and 3C show the steps in a short sale transaction. Figure 3A shows the situation before a short sale. Persons J and K each own one share of stock issued by Company X. They are the two shareholders of record. Figure 3B shows the execution of a short sale. Short Seller S borrows a share from person K and sells this share to Person L. Although we say that the share is borrowed, since the borrowed share is then sold to a third party, we must be careful about what we mean by borrowed. Two persons, the one who lent it to the short seller and the one who bought it from the short seller, cannot own the same share simultaneously. For the moment, let us say that person L becomes the true owner of record while person K is not an owner of record, at least not while her share is lent out. Later we will describe the institutional features of actual short sales and discuss what is known about who is an actual owner of record.

Figure 3C shows the situation immediately after the execution of a short sale. There are still two shares outstanding that were issued by Company X. Persons J and L are now the shareholders of record for these two shares. While person K is no longer a shareholder of record, she has a beneficial interest in a share of stock, an interest that has been created by the short seller's promise to return a share and to make-up for any cash distributions paid by the company in the interim. In this sense, we say that person K owns an 'artificial' share created by the short seller.

To illustrate the short seller's role in creating an artificial share it is convenient to review what happens in the event that Company X makes a dividend payment while the short sale is in place. The company only makes a dividend payment on two shares—to its shareholders of record, persons J and L. However, three persons—J, K and L—believe themselves to be beneficial owners of a share and expect to enjoy the benefit of any cash distributions made by the company. It is the short seller who makes the third dividend payment, the one to person K.

In this sense the short sale has resulted in an apparent expansion of the beneficial ownership of the company's shares. Where previously investors had held beneficial ownership in only two shares of the company's stock, now investors hold beneficial ownership in three shares. This expansion is only apparent, however, as it must be. The short seller who issues a sort of 'artificial' share creates the apparent expansion in the beneficial ownership. He takes the mirrored position, paying a dividend when the corporation pays a dividend, enjoying a loss when the third shareholder enjoys a gain and vice-versa. After netting out the short seller, the total beneficial ownership matches the number of shares actually issued by the firm. There is an expansion of beneficial ownership when the short seller himself has been left out of the equation, but taking the short seller's offsetting position into account there is no expansion. Table 1 below

shows the situation. Three investors have long positions in the company's stock. One investor has a short position. The net position is 2 longs.

Table 1

Illustration of the expansion of beneficial share ownership due to short sales

Investor	Long Positions	Short Positions	Net Positions
J	1	0	1
K	1	0	1
L	1	0	1
S	0	1	-1
Total	3	1	2

The fact that the expansion of the number of shares is only apparent and not real manifests itself in the matter of shareholder votes. This is one characteristic of an actual share of stock that the short seller cannot reproduce. In the event of a shareholder vote, only as many shares as were issued by the company can be voted. In our example that is, two shares. The shareholders of record will vote these. The artificial share created by the short seller cannot be voted. These artificial shares are therefore not truly identical with the actual shares issued by the company.

3.3. Short Selling and Damages in 10b-5 Actions

In the case of a 10b-5 action, this apparent expansion of the beneficial ownership has real consequences. It multiplies the number of investors that are potential claimants in a suit and correspondingly multiplies the potential damages. In many cases, where the number of short sales is relatively small, this effect may not be very great. In the Computer Learning Centers case where the number of short sales was extraordinarily large, the effect was significant. Damages asserted by holders of artificial shares created by short sellers increase by nearly 50% the total

estimated damages. Defendants in the case asserted that holders of artificial shares had no standing and that therefore the company was not liable for these damages.

The extra damages arising from short sales can be illustrated using the simple example given above. Suppose that both investors J and K had purchased their shares at the price of $10. Suppose as well that the short seller originally sold a share to person L at the same price of $10. Furthermore, let us suppose that $10 is an inflated price given information that the company's management has not revealed. On revelation of this information, the price falls to $7. The short seller is now able to purchase a share at $7 and close out his short position, returning a devalued share to person K. Investors J and L, the two shareholders of record, each suffer a loss of $3. Investor K, the holder of the artificial share has also lost $3, while the short seller has gained the same $3. Damages calculated on trades in the company's actual shares are $6, while damages calculated on trades including the artificial share created by the short seller, are $9 or 50% more.

In the sections that follow we present illustrative damage calculations for the Computer Learning Centers case, with and without the artificial shares created by short sales.

3.3.1. Price Inflation, Affected Shares and Damages

The first step in calculating damages in a 10b-5 matter is determining the inflation—the amount by which the alleged fraud has pushed the price of the stock above its true value. Figure 4 shows a graph of a hypothetical price inflation that plaintiff might have alleged in the Computer Learning Centers case. The premise underlying the calculation is that the share prices at the start and at the end of the class period reflect the true value of the stock. The price of a share of stock in Computer Learning Centers, adjusted for stock splits, was $13.31 on April 30, 1997, the start of the class period, and $13.00 on April 7, 1998, the close of the class period. For simplicity in the hypothetical calculation we set the true value of a share of stock in Computer

Learning Centers at $13 throughout the class period. The price inflation during the class period is simply the difference between the actual price on any given day and the true value. In the hypothetical example the inflation climbs above $25 per share by February 2, 1998, is still above $23 per share on March 9, 1998, and then falls precipitously below $10 per share until April 7, 1998 when all of the inflation is gone.[7]

An investor who purchases a share while the stock price is inflated is damaged by the difference between the amount of the inflation at the times it purchased and sold the share. Assuming that the investor holds the share until the inflation is entirely eliminated, the investor is damaged by the amount of the original inflation. If the investor sold the share while the price was still inflated, he may or may not be damaged depending upon whether the inflation increased or decreased during the time he held the share. If the inflation at the time of the sale is greater than the inflation at the time of purchase, then the investor is not damaged. But if the inflation at the time of the sale is less than the inflation at the time of purchase, then the investor is damaged by the decrease in the inflation. If an investor had owned a share before the stock price became inflated and held it throughout the period of inflation, then the investor is not damaged, regardless of whether the later price is above or below the initial price. When an investor is damaged on a purchase of shares, the shares are called 'affected shares'. Shares held by investors that do not incur damages are called 'unaffected shares'.

With the inflation in hand and with each investor's record of purchases and sales, it is straightforward to determine the total damages in a securities fraud case. Unfortunately, in most securities fraud cases it is necessary to estimate damages before much detailed information is

[7] The Computer Learning Centers case settled before specific price inflation was alleged. The inflation shown here is used purely for illustration and is therefore very simply constructed. A proper model of the price inflation would be based on a detailed analysis of the facts of the case. It would also incorporate information about general stock market movements and the performance of comparable companies over the class period.

available regarding individual purchases and sales of shares. Information about the total number of purchases on each day is available, but it is not possible to match the purchases made on a given day with sales made on a later date. Therefore the second step in calculating damages is estimating the number of affected shares.

Estimating the affected shares begins with an estimate of the number of shares available for active trading during the period when the price is inflated. This is called the float. The starting point for calculating the float is the number of shares outstanding. Next, any shares known to have been held throughout the entire class period are subtracted since these holdings were not available for active trading during the period. Typically the only holdings for which information is available are those owned by insider and institutional investors that are required to file with the SEC. The solid line in Figure 5 graphs the float throughout the class period for the Computer Learning Centers case. On April 30, 1997, at the start of the class period, the number of shares outstanding was 15.7 million and the number of shares held by insiders was 5.6 million.[8] The number of shares held by institutions throughout the class period was 6.1 million, and therefore the float was 3.9 million shares on April 30, 1997. By March 11, 1998 the number of shares outstanding was 16.2 million, and the number of shares held by insiders was 5.0 million. Therefore the float was 5.1 million on March 11, 1998. The float was 5.1 million shares on April 7, 1998, the close of the class period.

The next step is to take the shares actively traded and determine a profile of the affected shares: which shares were bought and sold at which prices and therefore how many are affected by the inflation. Public data on the volume of shares bought and sold each day is the starting point for this calculation. These public data on total transactions are combined with an

[8] Figures for dates prior to January 9, 1998 have been adjusted to account for a 2-for-1 stock split.

assumption about which shareholders have sold their shares on a given day. One assumption is that all shareholders are equally likely to sell their shares on any given day. This is the premise of the Proportional Trading Model. An alternative assumption is that some shareholders are more likely to hold their positions for a longer period of time, while other shareholders are more likely to hold their positions for a shorter period of time. This is the premise of the Accelerated Trading Model and the Multiple Trader Model. A trading model generates a profile of which shareholders traded on which day and therefore which shares are affected.[9] The solid line in Figure 6 shows a graph of the estimated affected shares using the Proportional Trading Model. The affected shares reached 5.1 million shares by March 11, 1998.

Once a profile of affected shares has been estimated, this is combined with the estimated price inflation to yield an estimate of damages for this hypothetical example. The solid line in Figure 7 shows a graph of the cumulative damages on shares purchased through any given date. Estimated damages using the hypothetical price inflation reached nearly $126 million.

3.3.2. The Impact of Short Sales on the Estimate of Affected Shares and of Damages

As noted earlier, short sales increase the total number of shares outstanding in the market by adding artificial shares to the actual shares issued by the company. Because short sales were so significant in the Computer Learning Centers case, the effect on damages is likely to be greater than in the typical securities fraud case. One can gain a fair estimate of the likely impact using the hypothetical inflation described earlier together with the calculation of affected shares. This is done by simply changing the assumption about whether the artificial shares created by

[9] There is significant dispute about the validity of any of these models in estimating the true pattern of purchases and sales. The effect of short sales on the calculation is similar for any of these models, and therefore we illustrate results using the simplest one, the Proportional Trading Model. If one has access to actual trading records, it is not necessary to use any of these models.

short sellers are to be included in the calculation of shares available for active trading. The difference between the total damages calculated using both actual and artificial shares and the total damages calculated earlier using only actual shares is an estimate of the impact short sales have on damages in the Computer Learning Centers case.

The dashed line in Figure 5 is the float for Computer Learning Centers shares calculated including short sales. This is calculated by taking the total number of shares outstanding, adding the outstanding short interest, and then subtracting shares held by insiders and shares held by institutional investors throughout the class period. On April 30, 1997, at the start of the class period, the number of shares outstanding was 15.7 million, the short interest outstanding was 0.1 million shares, and the number of shares held by insiders was 5.6 million. Subtracting the number of shares held by institutions throughout the class period, the float with short sales was 4.1 million shares on April 30, 1997. By March 11, 1998 the number of shares outstanding was 16.2 million, the short interest outstanding was 4.2 million, and the number of shares held by insiders was 5.0 million. Subtracting the number of shares held by institutions throughout the class period, the float with short sales was 9.4 million on March 11, 1998. The float with short sales was 10.4 million shares by April 7, 1998 after the close of the class period. The majority of the increase in the float with short sales over the class period is due to an increase in the outstanding short interest. The short interest in Computer Learning Centers shares went from 0.1 million shares on April 30, 1997 up to 5.3 million shares by April 7, 1998.

The dashed line in Figure 6 is the number of affected shares calculated including short sales. The affected shares including short sales reached 8.6 million shares by March 11, 1998 and 9.6 million shares by April 7, 1998. Short sales raise the total affected shares by 3.5 million shares by March 11, 1998 and 4.5 million shares by April 7, 1998.

The dashed line in Figure 7 shows the damages calculated including short sales. The final damages at the end of the class period calculated including short sales are nearly $187 million or 48% more than the $126 million in damages calculated excluding short sales.

The effect of the substantial number of short sales in Computer Learning Centers stock during the class period is to overstate the damages associated with the actual shares issued by Computer Learning Centers. Using the higher damage numbers, Computer Learning Centers would be subjected to paying damages on shares that were effectively issued by the short sellers.

3.4. The Mystery of Who is the Owner and Who the Lender

In our earlier example we described short seller S as borrowing a share of stock from investor K and selling it to investor L. We noted that the term 'borrowed' was problematic since it implies that investor K continues to own the share which has simultaneously been sold to investor L. In fact, the borrowing transaction is more like a sale from investor K to short seller S, combined with a forward sale in which S promises to return the share to K at the same price plus interest and dividends, if any. Conceived this way, it is clear that investor K has temporarily surrendered ownership and there is no complication created by two investors simultaneously owning the same share.

3.4.1. Institutional Changes in Custody Practices

Before 1973, almost all settlements of stock transactions were made by delivery of physical stock certificates. A "stock power" on the back of the certificate would be endorsed in favor of the purchaser. Short sellers typically had to obtain physical certificates to borrow from lenders. Lenders with physical certificates registered in their names had to endorse their stock over to the borrower. This was in accordance with Article 8 of the Uniform Commercial Code.

In the standard Securities Loan Agreements published by the Security Industry Association as well as the standard customer agreements between brokerages and their customers, the parties agree that the lending customer waives his right to vote proxies for any securities that have been lent. The reason for this waiver of the right to vote is operationally critical to the stock loan transaction. On the record date for the proxy or annual shareholders meeting, only the "stock holder of record" is entitled to vote. Among our hypothetical customers, 'K' and 'L', only L, the purchaser of the lent shares (who bought her shares from the short) is entitled to vote at the meeting. If the lender of the shares, K, had them out on loan on the record date, she is not entitled to vote.

In these circumstances it would have been clear that investor K owned the artificial share while investor L owned the actual share. In lending her share, investor K surrendered ownership in the actual share and substituted ownership in the artificial share.

Circumstances changed significantly starting in 1973 because of the adoption of the practice of holding securities in nominee name ("street name") through intermediaries including brokers, banks and securities depositories. The move to holding securities in street name was part of a wider shift that followed on the securities industry's paperwork crisis in the late 1960's, when processing problems associated with the physical certificated transfer of millions of securities caused a major disruption in the financial industry. The Depository Trust Company (DTC) was created in 1973 as a privately operated 'Federal Reserve for stocks' designed to provide efficient, secure and accurate central custody and post trade processing services for transactions in the United States securities markets. The DTC is owned by several hundred brokerage firms, financial institutions (collectively, the DTC "participants"), and the New York and American Stock Exchanges. Its vaults in New York contain over $23 trillion of securities,

including stocks, corporate bonds, mutual funds, warrants, and municipal bonds and government obligations.

The DTC carries out two major functions. The first is the immobilization of the securities of DTC participants, which reduces the need for participants to maintain their own certificate safekeeping facilities. Second, the DTC maintains a computerized book-entry system in which changes of ownership among participants are recorded. This replaces costly, problem-prone physical delivery of securities for settlement.

The DTC holds all securities in "fungible status" (also known as "fungible bulk"), with the DTC's computers recording ownership of aggregate amounts of each security in the name of a participant firm. The DTC does not maintain records describing the ownership of securities by individual customers, other than for the holdings of major institutions that are themselves DTC participants. Instead, the DTC regards the participant firms as the nominal holders, in "street name", of all their customers' securities. Customer level record keeping is the responsibility of the participant firms.

The DTC's book entry system allows participants to deposit securities for safekeeping, transfer them conveniently to other participants, collect payment for the securities transferred and withdraw certificates, if desired by a customer. It is the widespread use of these services by DTC participants that creates economies of scale, permitting low-cost processing and speed without the sacrifice of security and accuracy. In 1999, for example, the DTC processed more than 189 million computer book entry deliveries between brokers and clearing corporations, with a value of over $94 trillion. Today over 72% of all common shares issued by NASDAQ-listed companies are immobilized at the DTC, and not held by the investors themselves.

Not all changes in security ownership result in DTC transfers. The National Securities Clearing Corporation (NSCC) operates clearing, netting and settlement services that assist member firms in processing transactions. The NSCC compares buy and sell transactions and nets them down to reduce the number of transactions requiring a transfer of securities positions on the books of DTC. For example, if, during the same day, customers of Merrill Lynch sell customers of Goldman Sachs 50,000 shares of XYZ stock, and customers of Goldman Sachs sell customers of Merrill Lynch 50,000 shares of XYZ stock in numerous separate transactions, the NSCC will automatically net down the transactions, and no transfers will result on DTC books. In 1999, DTC and NSCC combined together under a new umbrella organization called Depository Trust and Clearing Corporation (DTCC).

Under the standard arrangements between customers and their brokerage and banking firms, the securities held in brokerage accounts are commingled in a single fungible mass. For example, if Merrill Lynch had five customers who held CLC stock on a single day, Merrill Lynch would hold all of the shares of these five customers in a single commingled fungible bulk account at DTC in Merrill Lynch's name. Of course, Merrill would have a record of the identity of the investors whose stock is represented in the mass. Consequently, where securities are held in street name, the task of keeping records as to which individual customer owns how much of which security is the responsibility of the brokerage firm. In the absence of paper shares, the only written evidence that an individual customer has of his or her holdings are brokerage statements or trade confirmation slips.

The typical brokerage customer margin account agreements allow the brokerage to hypothecate or lend the customers' securities without notice or benefit to the customer. It is the brokerage that earns interest on the loan, and not the shareholder, and this fact is acknowledged

in the account agreement. When brokerage firms lend their customers' stock, they do so out of the general pool of marginable fungible securities held by the firm. Having deposited all of their customers' securities into a fungible mass, they cannot and do not keep records documenting the ownership of the securities that have been lent. Brokers cannot tell their customers when their stock has been lent (or returned) because it is the fungible pool of stock that serves as the source of the loans. In fact, this pool of stock has no identifying characteristics linking it to particular customers, because it is simply an electronic entry at the DTC and the brokerage.

The move to holding shares in street name significantly complicates identifying which investor holds an actual share and which investor holds an artificial share. Figures 8A, 8B and 8C reproduce the short sale transaction previously shown in Figures 3A through 3C, with the difference that shares may be owned through a broker and kept at a brokerage account. In Figure 8 investors J and K have bought their shares through the broker who holds them in street name. The short seller borrows a share from the broker. In contrast to the example shown in Figure 3B, in which investor K knows that its share had been lent, in the example shown in Figure 8B, neither investor K nor J knows that one of their shares has been lent. Customers whose shares are held in street name do not possess an actual stock certificate evidencing their ownership. The only written evidence an individual customer has of his or her holdings are the records of the brokerage, including statements or trade confirmation slips.

3.4.2. Short Sales and Proxy Votes

This problem manifests itself in the execution of proxy votes. On the record date for the annual meeting, the company identifies the names of the holders of its stock. Typically the largest such holder is "CEDE & Co.," the nominee name of the DTC. The company requests from the DTC a list of the participants for whom the DTC is holding the shares on the record

date. It also obtains from the DTC an Omnibus Proxy in which the DTC transfers its rights to vote to each of its participants in accordance with the amount of stock held by each such firm on the record date. With respect to securities that have been lent from one DTC participant to another, DTC's Omnibus Proxy shows the securities as being held by the DTC participant that purchased the shares from the short seller. Nothing in the DTC's Omnibus Proxy identifies the shares as having been loaned or identifies the parties to the stock loan transaction.

Each DTC participant firm listed on the DTC Omnibus Proxy asks each beneficial owner of stock to give the firm direction on how to vote on their behalf. Shares are to be voted according to these instructions and in the case of contested issues are not to be voted in the absence of instruction. However, when the broker has lent shares, the number of shares owned beneficially exceeds the number of shares owned as a matter of record, and it is possible for investors to collectively return proxy instructions for more shares than the broker controls. Since it is impossible to determine who has—and who does not have—the right to direct the participant firm to vote the shares, many shares are never voted, or are voted only partially, using a pro rata allocation formula generated by the brokerage firm itself. There is little information about how often this happens. In response to an inquiry from a Congressional subcommittee, the New York Stock Exchange referred to the "rare instance that such a situation occurs," although the Congressional report suggested it may not be rare.[10] Even when the broker receives instructions for fewer shares than it controls, in voting the shares it is effectively allocating the voting rights to those shareholders who gave specific instructions as against those shareholders who gave no instructions.

[10] Short-Selling Activity in the Stock Market: Market Effects and the Need for Regulation, Part I, Report of the Committee on Government Operation, U.S. House of Representatives, December 6, 1991, p. 29, fn. 24 and pp. 29-31.

The November 1998 proxy battle for control of Integrated Circuit Systems, Inc., a Pennsylvania semi-conductor firm, illustrates the problems created by short selling in the context of proxy contests. Dr. Stavro Prodromou, the former chairman of the firm, proposed an opposition slate of directors. Prodromou was trying to take back control of the company from the directors who had ousted him less than two years earlier. Only about 15% of the outstanding shares were registered in the names of individuals or corporations holding share certificates. The remaining 85% of the shares were registered in the name of The Depository Trust Company ("DTC"). That is, they were held in "street name." DTC held these shares for the benefit of its participants, the major "street name" firms such as Smith Barney and Prudential. These brokerage firms, in turn, held the shares in the brokerage accounts maintained for their customers.

The "registered certificated" holders were entitled to vote by virtue by of their inclusion in the list of shareholders maintained by the registrar. All but one of these holders received Prodromou's solicitation materials directly and were invited to return their votes directly to the vote tabulator. The large "registered certificated" holder who did not, and does not as a matter of policy, return a vote was DTC. Instead, DTC executed an "omnibus proxy," a document that assigns the depository's right to vote to the banks and brokers who held their customers' stock through DTC. Each such broker was assigned voting rights equal to the number of shares on deposit with DTC on the record date. The DTC participant firms, in turn, were required by SEC rule to forward proxy material to the customers for whom they hold stock and to seek instructions from such customers – the beneficial owners of the shares – on how to vote such customer shares.

To initiate the shipping of Prodromou's shareowner solicitation material to "street name" customers, each DTC participant firm was asked for a report on the number of sets of materials they would require to reach each of their customers – and how many shares all of such customers held. It was at this time that the existence of a short sale/stock lending/ownership imbalance situation was identified. Several of the "street name" firms requested copies of Prodromou's solicitation materials for customers whose aggregate holdings totaled more shares than existed in their accounts at DTC. This meant that brokers could have received voting instructions from their customers for more shares than the broker was entitled to vote by DTC's "omnibus proxy" assignment. Table 2 shows the brokers and banks that mailed ICS proxy materials to customers in excess of the firms' holdings at the DTC.

It is believed that these firms had lent a portion of their customers' stock, thus reducing the number of shares held at DTC below the level "owned" by their customers. SEC and SRO rules provide that brokerage firms and bank nominees are to send to their customers proxy instruction forms requesting their customers' positions only with respect to the amount of securities for which such customers have a right to vote. And, such rules provide that votes presented on the behalf of their customers must be for customers who actually own the securities and have a right to vote. Rather than disenfranchise some of their customers from voting, the firms followed what we understand to be industry practice – mailing copies of the materials to all of their customers who had deposited ICS shares, obviously hoping that fewer customers would return ballots than those originally solicited. Brokers explained that in regularly scheduled annual meeting proxy votes, they generally try to "undo" securities loans before proxy record dates – thus providing them with sufficient quantities of stock at DTC. However, in Prodromou's contest the meeting was moved so there was not enough warning in advance of the record date to

accomplish this unwinding. In this case some of the firms actually over voted their record date position.

The voting in the ICS meeting was contested on the grounds that many of the votes were cast in violation of Regulation A under the Securities Exchange Act of 1934 and the rules of the NYSE. However, the Judges of Election of the Connecticut Corporation System affirmed the results.

4. Standing and Class Certification Issues

The practice of short selling raises questions about the relationship of three distinct sets of investors in a 10b-5 matter. There are questions about the short sellers themselves. Does a short seller have standing? Can he properly be included in the class? There are also questions about those investors who have lent their shares to a short seller and maintain their beneficial interest through their agreement with the short seller. Does the holder of an 'artificial' share have standing? Is it proper to certify a class that may include these investors? Finally, what about those who purchase the stock from the short seller? Are these shareholders the only investors who may participate in a plaintiff shareholder class?

4.1. "Real" and "Artificial" Shares

As pointed out above, the act of shorting a share of stock creates an artificial share. These artificial shares are called "shares", but they are not. They are not stock that is issued by the company; they are not authorized for issuance by the company's Board of Directors. In fact, in some cases the sum of these artificial shares and the real shares exceeds the number of shares the company even is authorized to issue. The shares are not registered with (or approved for sale by) the Securities & Exchange Commission, and the company neither sells, nor receives value

for, them. *See* Committee on Government Operations Report, 3-5, 24. Similarly, these are not shares of stock that have an entitlement to dividends or distributions from the company and, to the extent they even have a right to vote, it is pursuant to the contract between the short seller and the brokerage firms that loaned the stock, not because they are actually "shares" of a company's stock. The artificial nature of these shares is even more telling in the case of "naked" short sales, that is, where a short seller sells stock without first borrowing it.

One of the perplexing questions about short sale transactions is the issue of who truly "owns" the share that is loaned. The question is a difficult one because, according to the standard industry Master Securities Loan Agreement, both the lender of the share and the short seller each have some rights that fall within the rubric of "ownership". For example, the SIA's Master Securities Loan Agreement stipulates that the short seller will enjoy "all of the incidents of ownership," including the right to transfer title to the share. On the other hand, the lender of the share retains the right to dividends and, it seems, the right to vote the share when the shares are held through a broker and the DTC in a fungible mass.

Under the federal securities laws, the fact that the short seller has the right to transfer title to the share indicates that he is the "owner". "A person shall be deemed to own a security if (1) he or his agent has the title to it…." 17 C.F.R. § 240.3b-3 (1998). This conclusion is supported by other evidence, notably the fact that a person who buys that share from the short seller is, under the securities laws, considered the share's new owner. *Id.*, § 240.3b.3(2). But if this is true, then the "share" that still appears on the customer account statement of the brokerage firm as belonging to the lender of the share must be the "artificial" share.

4.2 "Are Artificial Shares "Securities"?

This, in turn, leads to the questions whether that "artificial" share is itself some form of a "security" within the meaning of the federal securities laws and whether that "artificial" share is a security upon which a lawsuit can be brought. Although there is room for debate, the more persuasive view is that the "artificial" share is not a security. As noted before, the "artificial" share is not even a "share" to begin with: it simply is called a "share" because of the bookkeeping conventions of brokerage houses. In terms of economic and legal reality, the artificial share is a different thing to different people. To the brokerage house that loaned the actual share to the short seller, the artificial "share" is actually nothing more than a contract right to make the short seller return the real share (or another real share) at some date in the future at the end of the loan period.[11]

It is worth remembering that the character of a securities loan is different for the brokerage firm than for the short seller. From the short seller's point of view, the transaction is a borrowing of stock and the pledging of cash collateral to secure the short seller's obligation to return the stock at a future date. The short seller will earn modest interest on that cash collateral, but also pay the brokerage firm a fee for letting him borrow the share. At the end of the transaction, the short seller returns the stock, and receives in return the cash collateral he posted. From the brokerage's standpoint, on the other hand, the transaction is a short-term loan of cash (*i.e.*, the cash collateral posted by the short seller) from the short seller to the brokerage house, collateralized by the stock the brokerage pledges to the short seller. When the transaction is unwound, the short seller repays his borrowing of stock and the brokerage house repays its

[11] To the brokerage house's customer, the share remains the "securities entitlement" that he has always had to demand that the brokerage house hold, deliver or sell the share. *See* revised UCC § 8-501.

borrowing of cash. Thus, while these two cross-loans are outstanding, the brokerage's firm's right in the "real share" is simply the right to get its collateral back when it repays its loan from the short seller.

The "artificial share" held on the brokerage house's books is a reflection of this right to the return of collateral.[12] As such, it does not have the obvious characteristics of a "security" as that term generally is understood. Indeed, to the extent that it represents a contract right to obtain a security that itself might change in value over time, the artificial share resembles creatures like "stock appreciation rights", which have been held to *not* be securities. *See Clay v. Riverwood Int'l Corp.,* 157 F.3d 1259, 1264 (11th Cir. 1998). *See also Marine Bank v. Weaver,* 455 U.S. 551, 560-61 (1982); *Caiola v. Citibank, N.A.,* 2001 U.S. Dist. LEXIS 3736* (S.D.N.Y 2001) (swap contracts); *Procter & Gamble Co. v. Bankers Trust Co.,* 925 F. Supp. 1270 (S.D. Oh. 1996) (swap contracts); *In re EPIC Mortgage Ins. Litig.,* 701 F. Supp. 1192, 1247 (E.D. Va. 1988), *aff'd in part, rev 'd in part, sub nom. Foremost Guar. Corp. v. Mentor Say. Bank,* 910 F.2d 118 (4th Cir. 1990).

Although it is possible to liken these artificial shares to stock options, the analogy is a weak one. First, artificial shares do not have the same characteristics as stock options. Artificial shares are not — like stock options — expressly included within the definition of "security" in § 3(a)(10) of the Securities Exchange Act of 1934. 15 U.S.C. § 78(c). Second, where options are traded on established markets, artificial shares are not traded at all and probably could not be. In fact, the value of artificial shares should not fluctuate at all, since they are a fully-collateralized contract right to obtain the return of a specified share of stock at a fixed time.

[12] In fact, the Master Securities Loan Agreement permits the return of cash or other things of equivalent value instead of stock, demonstrating the insignificance of the stock itself in the transaction.

Even if these artificial shares were some form of a security, it remains unclear that they would be a security *upon which an issuer could be sued.* In the area of puts and calls, courts are divided on the issue whether a company that issues the stock underlying the put or call relates can itself be sued for securities fraud by holders of the puts or calls.[13] *See, e.g., Laventhall v. General Dynamics Corp.*, 704 F.2d 407, 414 (8th Cir. 1983); *Data Controls N., Inc. v. Financial Corp. of Am., Inc.,* 688 F. Supp. 1047, 1050 (D. Md. 1988), *aff'd,* 875 F.2d 314 (4th Cir. 1989); *Starkman v. Warner Communications, Inc.*, 671 F. Supp. 297, 304-7 (S.D.N.Y. 1987); *Bianco v. Texas Instnu. Inc.*, 627 F. Supp. 154, 161 (N.D. Ill. 1985). *But see Deutschman v. Beneficial Corp.*, 841 F.2d 502, 508 (3d Cir. 1988). In *Fry v. UAL Corp.* 84 F3d 936, 939 (1996), the Seventh Circuit held that option traders did have standing to sue under Rule 10b-5. Curiously, the court found this to follow from the fact that short sellers were held to have standing in *Zlotnick v. TIE Communications,* 836 F.2d 818, 821 (3d Cir. 1988), although *Zlotnick* specifically distinguished between option traders and short sellers.[14]

Many of the characteristics of options that have caused courts to reject them as proper grounds for a securities fraud action apply with at least equal force to artificial shares. Like stock options, the issuer did not issue the artificial shares and has no ability to control their issuance. *See Laventhall,* 704 F.2d at 410-11; *Bianco,* 627 F. Supp. at 159. Short sale transactions are more risky than buying shares of stock. *See Laventhall,* 704 F.2d at 410; *Data Controls,* 688 F. Supp. at 1050; *Bianco,* 627 F. Supp. at 161. Finally, artificial shares do not

[13] A more extensive review can be found in Elizabeth M. Sacksteder, Securities regulation for a changing market: option trader standing under rule 10b-5, Yale Law Journal 97, March 1988, 623-642.

[14] *Zlotnick* was also questionable authority in another respect. *Zlotnick* held that short sellers had standing to sue precisely *because* they had been both sellers and purchasers of the actual security, since the short sellers sold the security when they shorted the stock and purchased the security when they covered. 836 F.2d 818, 821. Both steps, obviously, involved transactions in "real" shares of stock, and not artificial shares.

represent capital investment in the issuer. *See Laventhall,* 704 F.2d at 411; *Data Controls,* 688 F. Supp. at 1049.[15]

4.3 Class Certification

The twin facts (1) that there is no right to bring or maintain a federal securities action based on the holding of "artificial" shares and (2) that it is all but impossible to distinguish between real and artificial shares make it difficult for a court to grant class certification to a plaintiff class in circumstances where there has been a high level of short-selling. Although there are various reasons for this, the most fundamental reason is that class certification in these circumstances will lead to an enormous volume of false claims for damages.

As mentioned before, there are at least three classes of persons who might be included in a securities class action case against the issuer of a stock. The first would be the short sellers themselves, since they were indeed "purchasers" of the stock during the class period. *See, e.g., Zlotnick,* 836 F.2d at 820-21. The second group would be the investors whose stock was loaned by their brokerage firms to short sellers. The third group consists of those investors who purchased the borrowed shares from the short sellers.

At the outset, one question is simple to answer. Most courts have concluded that the short sellers themselves should not be included within a plaintiff class of purchasers. Courts have

[15] There is an interesting circumstance created by the broker's repeated lending, then collection, of the investor's shares. Since title to the shares passes to the short seller with each loan, and title also presumably returns to the brokerage house with each return, it would seem from a legal standpoint that the brokerage house is constantly selling and re-purchasing the shares during the periods of time it is lending securities. It is an anomaly of short-selling, though, that when the brokerage house repurchases the shares (*i.e.*, obtains their return from the short-seller), it does *not* do so at the market price, but rather does so at the contractual price agreed with the short seller (*i.e.*, the market price at the time the securities were loaned). Consequently, the price the brokerage house "pays" for the shares when they are returned is not a product of any information known to the market at that time of the repurchase and, thus, the brokerage house cannot be considered to have relied upon it. Since reliance upon information known contemporaneously to the market is an element of a § 10(b) and Rule 10b-5 claim, any such re-purchases of shares when the share lending is unwound should not be a purchase that would give the brokerage house (or, by implication, its clients the investors) rights to sue.

reasoned that short sellers, because they are gambling that the stock will drop in value, cannot take advantage of the fraud-on-the-market method for providing reliance and must instead show individual reliance. *See, e.g., Zlotnick v. TIE Communications*, 836 F.2d 818, 823 (3d Cir. 1988). This generally is fatal to participation in a class action. In the Computer Learning Centers case it was the inclusion of short sellers in the class that was the basis for the court's denial of class certification. 183 F.R.D. at 491-92.

The question becomes more difficult when one looks at the two remaining categories of potential class members. Much of the analysis turns, as it must, on the method by which class members are identified and upon which claims for damages are submitted.

In a customary class action lawsuit under the federal securities laws, an investor proves his membership in the class and claims his damages by submitting to plaintiffs' counsel copies of the confirmation slips he received from his broker showing that he purchased the stock at a particular time for a particular price. But, as pointed out before, in a short sale, there are two different people who will hold confirmation slips evidencing the purchase of the same share. Both holders of real shares and holders of artificial shares will have in their possession evidence showing that they have purchased the stock and, further, the transfer agent's records (from which the list of class members ultimately is compiled) will show that *both* people were members of the plaintiff class.

There is no easy way to disentangle this overlapping ownership. Unlike the regime during the days of paper certificates, stock held in "street name" does not have certificate numbers or any other form of numerical identifier to distinguish one investor's stock share from another. In fact, revised UCC Article 8 (which governs dealings in investment securities) stipulates that, in a book-entry system, a shareholder owns only a *pro rata* share of his broker's

overall holdings of any given security. UCC § 8-503(b). "The idea that discrete objects might be traced through the hands of different persons has no place in the Revised Article 8 rules for the indirect holding systems." § 8-503, Official Comment 2. In other words, since all securities of any given issuer are fungible, it is not possible to determine *whose* stock is being loaned in the first place. Lacking a system to trace down which stock is being loaned, it is impossible to determine in any individual case whose stock is being sold or is being purchased in a short sale and, ultimately, who it is who holds real shares and who holds artificial shares.

This becomes both a legal problem and a practical problem with profound legal implications. On the purely legal level, this becomes an issue of legal standing to bring a claim. By definition, a class in a securities action may consists only of those persons who purchased the defendant company's *securities,* and were damaged thereby. This is a necessary element of standing that each class member must meet before he can bring and maintain suit in the first place. *See, e.g., Blue Chip Stamps v. Manor Drug Stores,* 421 U.S. 723, 750 (1975). The burden of proving standing rests with each plaintiff, not with the defendant. *See Sea Shore Corp. v. Sullivan,* 158 F.3d 51, 54 (1st Cir. 1998); *Takhar v. Kessler,* 76 F.3d 995, 1000 (9th Cir. 1996). Where there has been a high incidence of short selling, the defendants will raise the defense of lack of standing against each member of the class. As noted before, there are serious issues whether the holders of the "artificial" shares – whoever they might be – owned a "security" at all or, alternatively, owned a security that they could sue upon. In addition, since the "artificial" members of the Class may not all be artificial for the same reason, each class member's proof of

standing will vary considerably.[16] And since this would cause individual questions to predominate over common ones, class certification would be inappropriate under F.R. Civ. P. 23(b).

Even past this threshold, there are pervasive problems of class certification. In most cases, both the investor whose shares were loaned and the investor who purchased those shares from the short seller will believe themselves to be holders of the security in question and also have confirmation slips from their brokers that document their purchase of the share. Both will thus seek membership in the class and also, ultimately, submit claims for payment of damages. This fact guarantees a large number of false claims, since owners of "artificial" shares will be claiming damages they are not entitled to. Moreover, because there is no way of knowing who is a "artificial" claimant and who is a "real" claimant, a court asked to certify such a class would do so only by creating a massive liability for the defendant issuer for damages to people who had no right to damages.

5. Conclusion

The only certain way to mitigate these problems would be to limit the class to those shareholders who held paper certificates or whose brokerage accounts do not permit the lending of securities. This would eliminate the problem of "artificial" shares altogether, although at the cost of seriously reducing the size of the class. Another means of mitigating the burdens would be to develop a model that applies a *pro rata* discount in damages to claimants who had accounts

[16] Because of the manner in which short sales work, the question of who holds the real share and who holds the artificial share may depend on the timing and circumstances of each short sale. For example, an investor who purchased from a "naked" short may never have owned a real share of stock; an investor who purchased from a short seller but who had not yet taken delivery of the stock on the day the company's stock price fell may not have been a purchaser of stock on the day the damages occurred; and so on. In each of these cases, there will be a need for *each plain tiff* to demonstrate that it purchased stock on the relevant dates and this, in turn, requires a particularized factual inquiry into the circumstances of each claim.

with brokerage firms that loaned securities, such discount to reflect the number of shares that were loans and when they were loaned. But the use of any such model will result in an impossible administrative problem. It would require extensive discovery of various brokerage houses and short sellers, and require the court and the litigants to engage in a detailed attempt to reconstruct the trading positions of thousands of dealers, brokerage houses and investors in millions of shares of stock over the months of the class period. Various courts have made clear that it is inappropriate to certify a class when damages cannot be determined by a formula and the court would have to preside over a series of mini-trials on damages. *See, e.g., Windham v. American Brands, Inc.*, 565 F.2d 59, 70 (4th Cir. 1977). In the Computer Learning Centers case the court did not address the standing and certification issues pertaining to the holders of artificial shares since class certification was denied on the basis of the inclusion of the short sellers themselves. While the court gave leave for an amended class to be proposed, the case settled before this was done.

Table 2

Brokers and Banks Who Mailed ICS Proxy Materials to Customers Holding Shares in Excess of the Firms' Holdings at DTC[1]

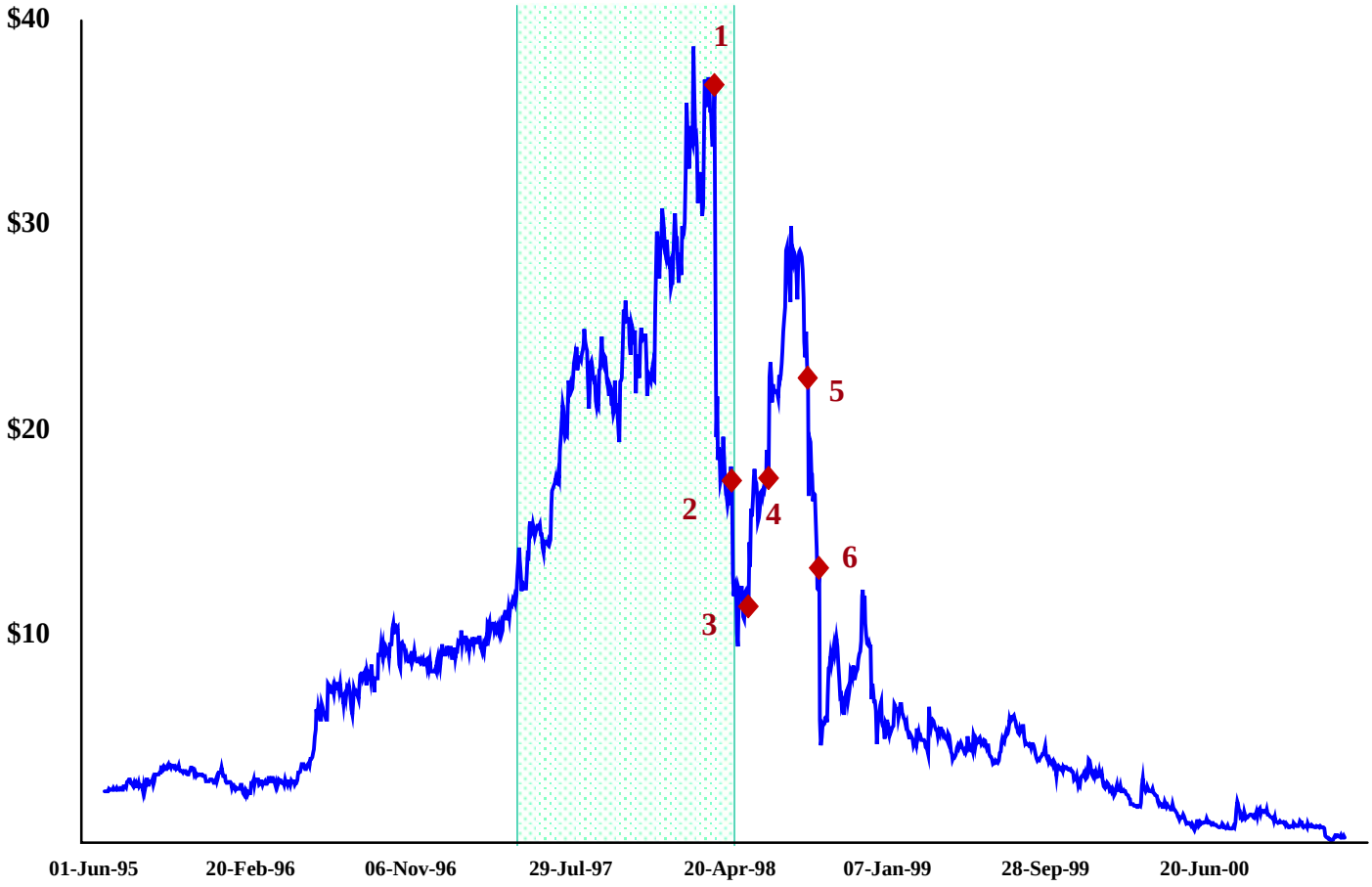
Firm	DTC Account Number	Shares Mailed and/or Voted[2]	Shares Held[3]	Actual or Potential Over Vote
Prudential Securities	30	554,670	447,326	107,344
Smith Barney	418	188,729	110,329	78,400
Morgan Stanley and Company Incorporated	50	106,002	50,760	55,242
Merrill Lynch	5198	265,947	241,760	24,187
Bank One Trust Company NA	2609	35,300	21,700	13,600
Paine Webber	221	212,643	199,483	13,160
Donaldson Lufkin and Jenrette	443	588,640	581,090	7,550
Piper Jaffray Incorporated	311	35,670	30,970	4,700
Herzog Heine Geduld Incorporated	327	11,600	9,600	2,000
National Financial Services	226	237,385	235,685	1,700
US Clearing Corporation	158	89,351	87,651	1,700
Nesbitt Burns Incorporated	5043	1,450	100	1,350
Dreyfus Brokerage Service Incorporated	272	43,633	42,533	1,100
Lehman Brothers	74	6,100	5,002	1,098
BT Alex Brown	573	140,272	139,272	1,000
ABN AMRO Incorporated	792	14,600	13,800	800
Advest	107	2,830	2,030	800
CIBC Oppenheimer	438	42,850	42,349	501
Olde Discount	756	52,591	52,091	500
Advance Clearing	188	94,026	93,776	250
Nations Bank Montgomery	773	84,935	84,735	200
Lewco Securities Corporation	277	433,157	433,133	24
Total		**3,242,381**	**2,925,175**	**317,206**

[1] In some cases, these firms actually over voted their record date position.

[2] These are the aggregate amounts of shares held by each firm's customers as reported by the firms themselves.

[3] These amounts are the number of shares DTC reported holding for each firm in its “omnibus proxy.”

Figure 1
Computer Learning Centers Stock Price



The price shown has been adjusted for stock splits on April 15, 1997, and January 9, 1998. The price shown after January 8, 1998, is the actual stock price. The price shown from April 15, 1997, through January 8, 1998, is one-half the actual stock price. The price shown before April 15, 1997, is one-third the actual stock price.

1. March 9, 1998. News stories appear describing a complaint filed by the Illinois Attorney General against CLC for allegedly defrauding students at the Schaumberg center.

2. April 6, 1998. CLC discloses that the Illinois state Board of Education entered a preliminary order limiting its ability to enroll new students at the Schaumberg center.

3. May 5, 1998. Rumors begin that the Illinois State Board of Education lifts its suspension.

4. June 8, 1998. Settlement with Illinois Attorney General is announced.

5. August 11, 1998. New lawsuit alleging destruction of student-related files requested by federal auditors.

6. August 18, 1998. CLC announces weak earnings due to legal problems.

Figure 2
Short Sales of Computer Learning Center Stock

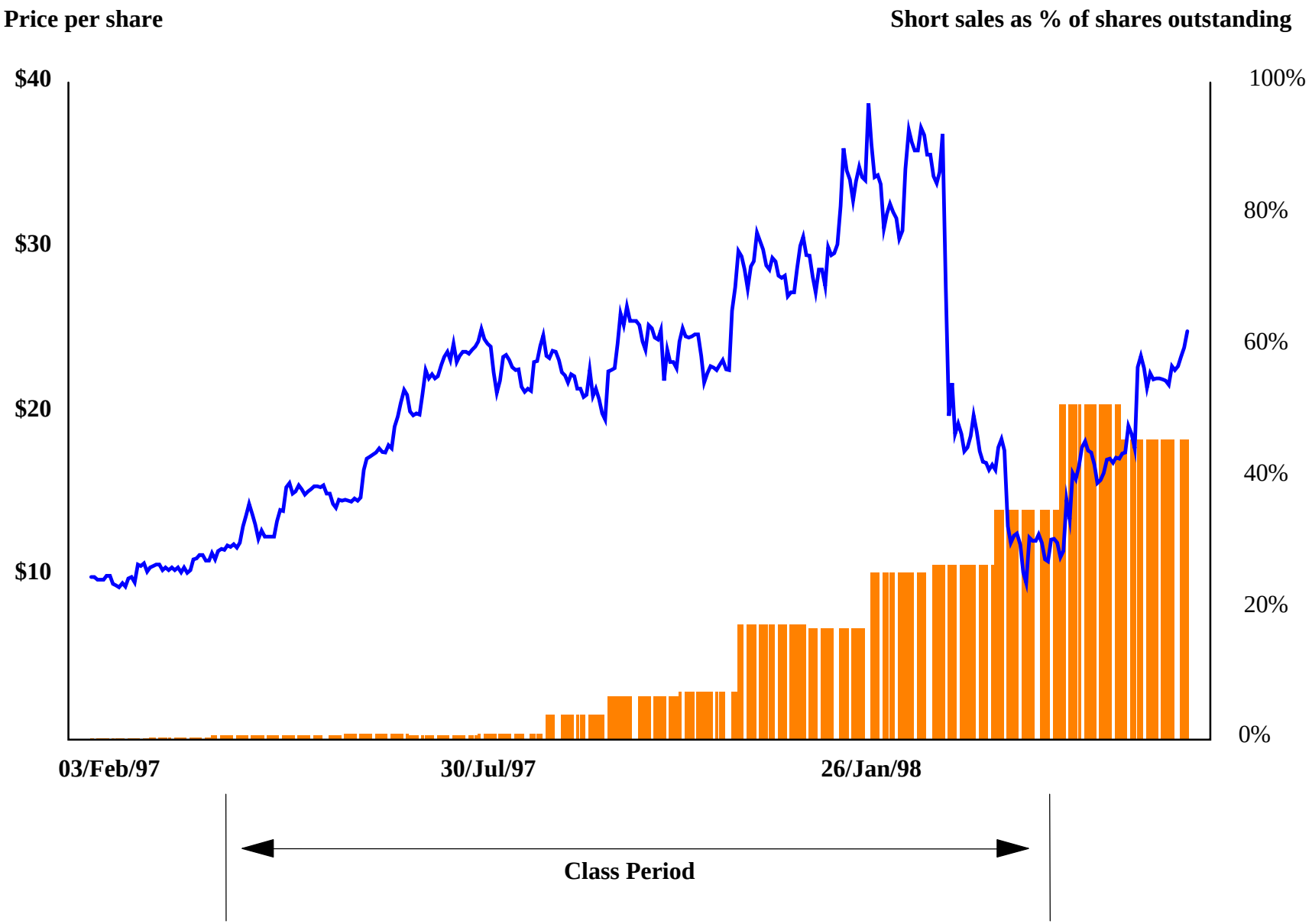


Figure 3A
Short Sale Illustration — Before the Short Sale

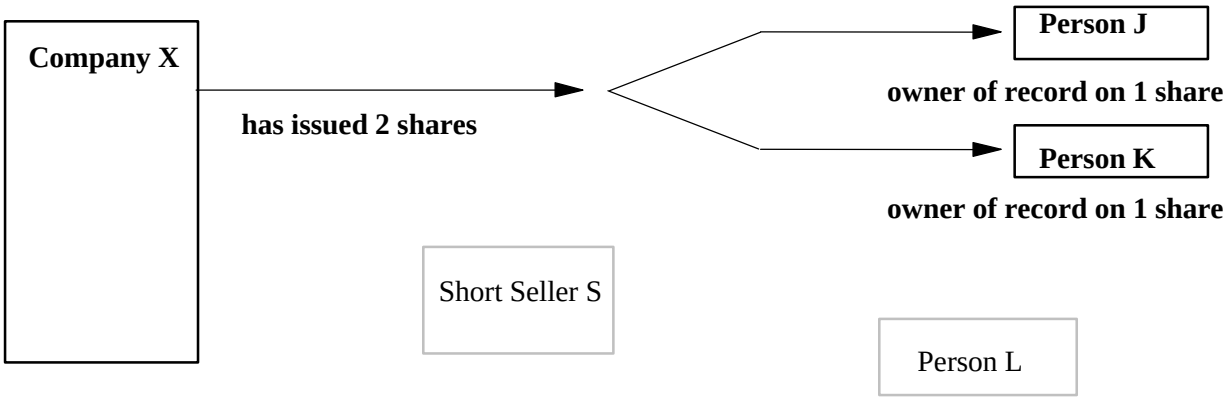


Figure 3B
Short Sale Illustration — Execution of a Short Sale

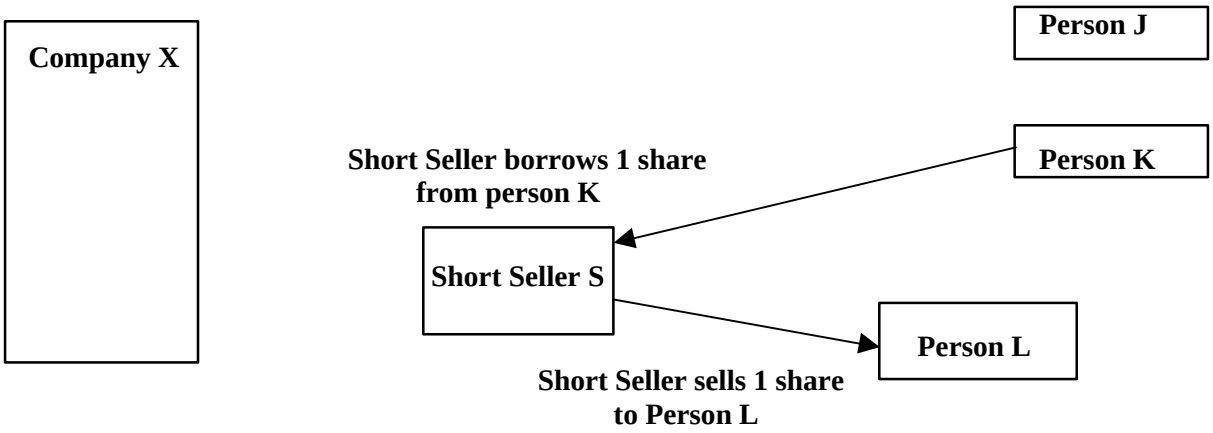


Figure 3C
Short Sale Illustration — While the Short Sale is Outstanding

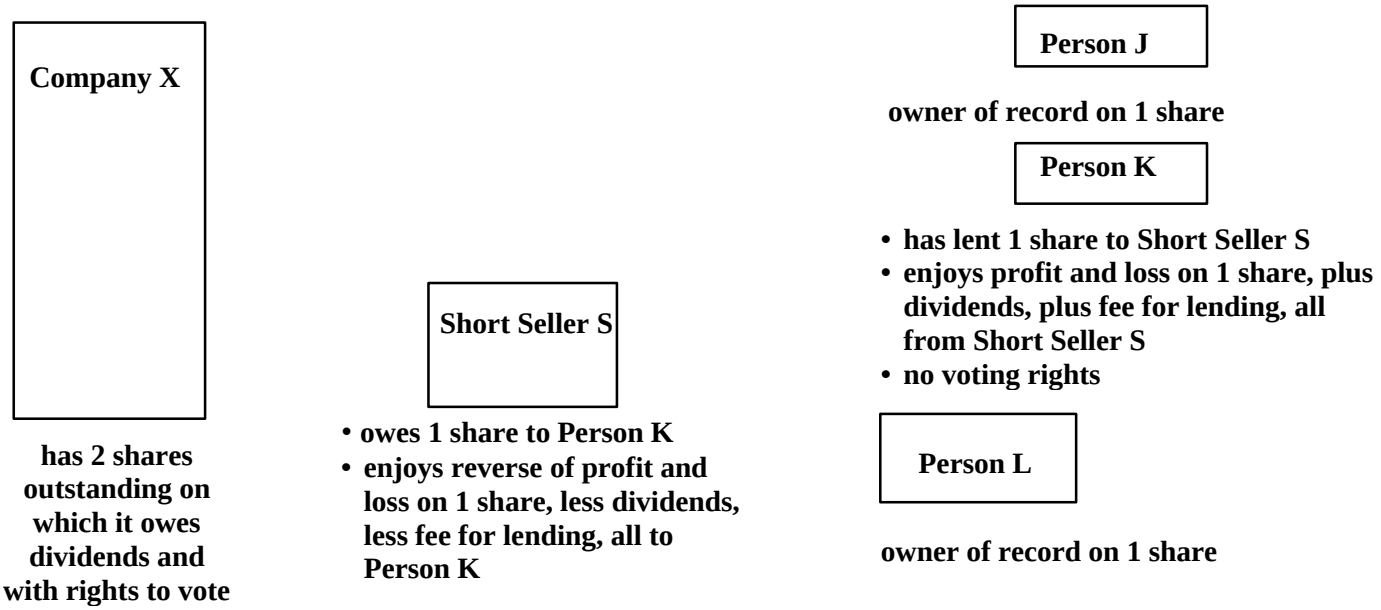


Figure 4
Hypothetical Inflation in the Computer Learning Centers Case

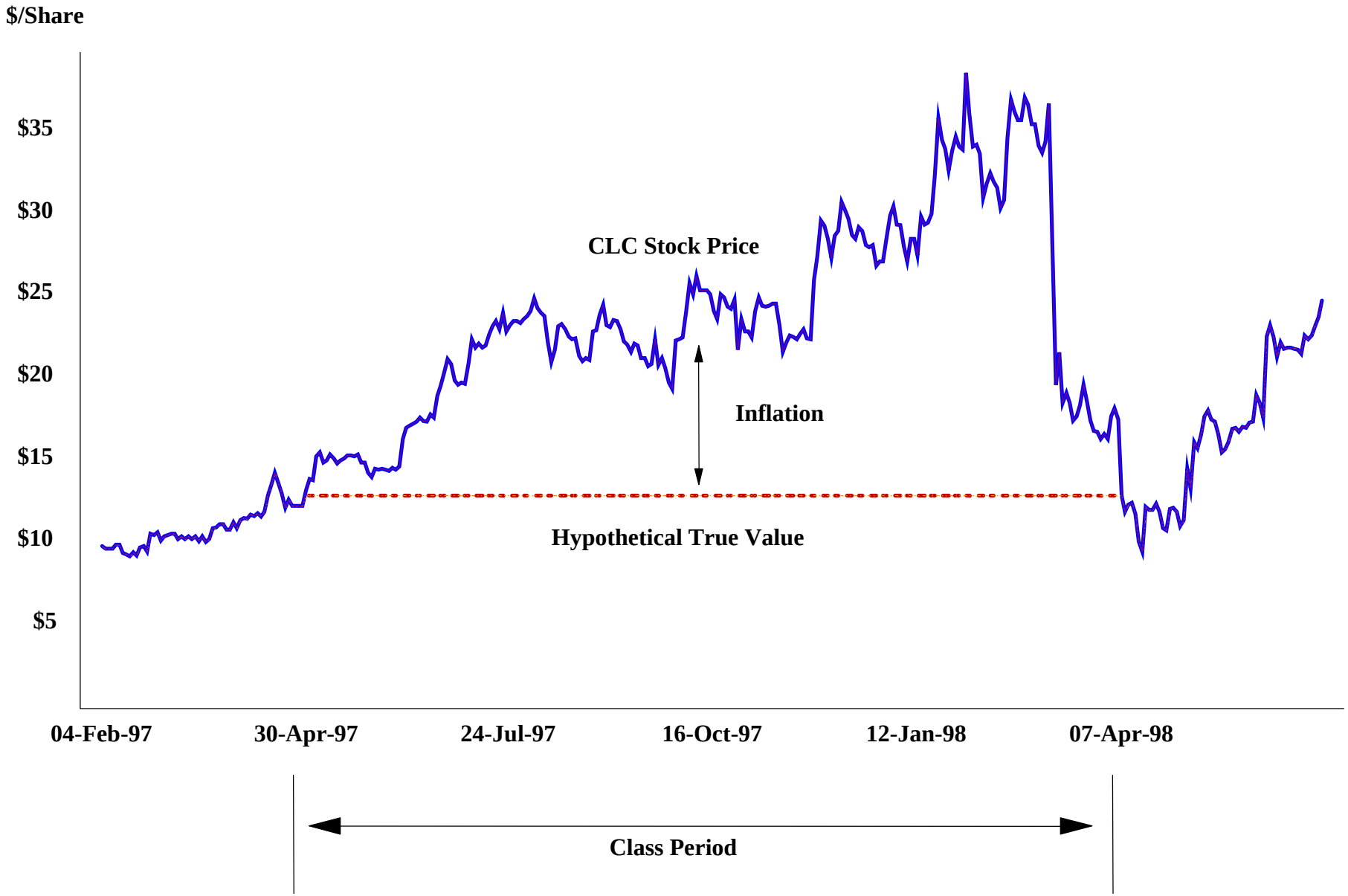


Figure 5
Float in the Computer Learning Centers Case, Calculated With and Without Short Sales

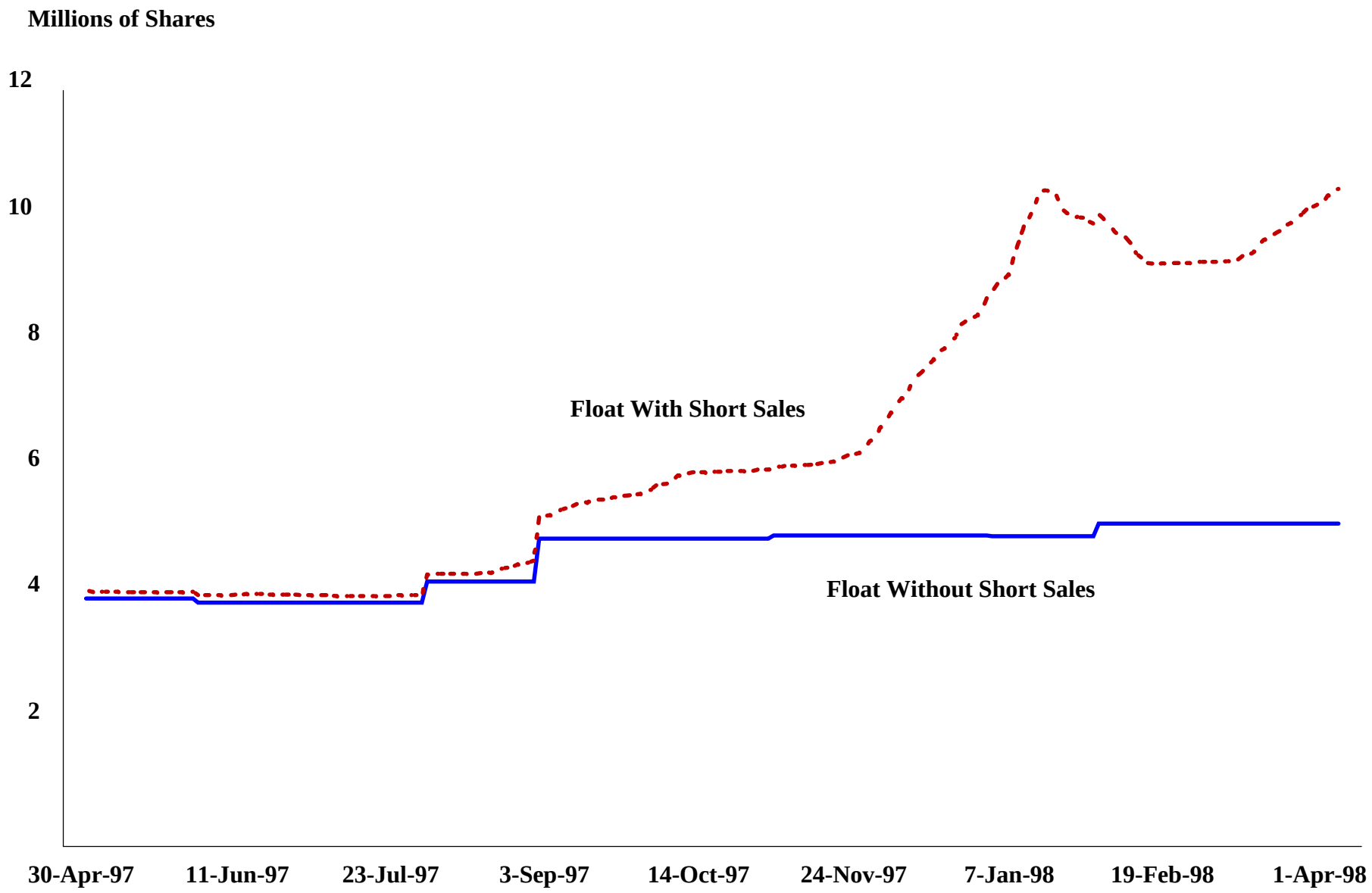


Figure 6
Affected Shares in the Computer Learning Centers Case, Calculated With and Without Short Sales

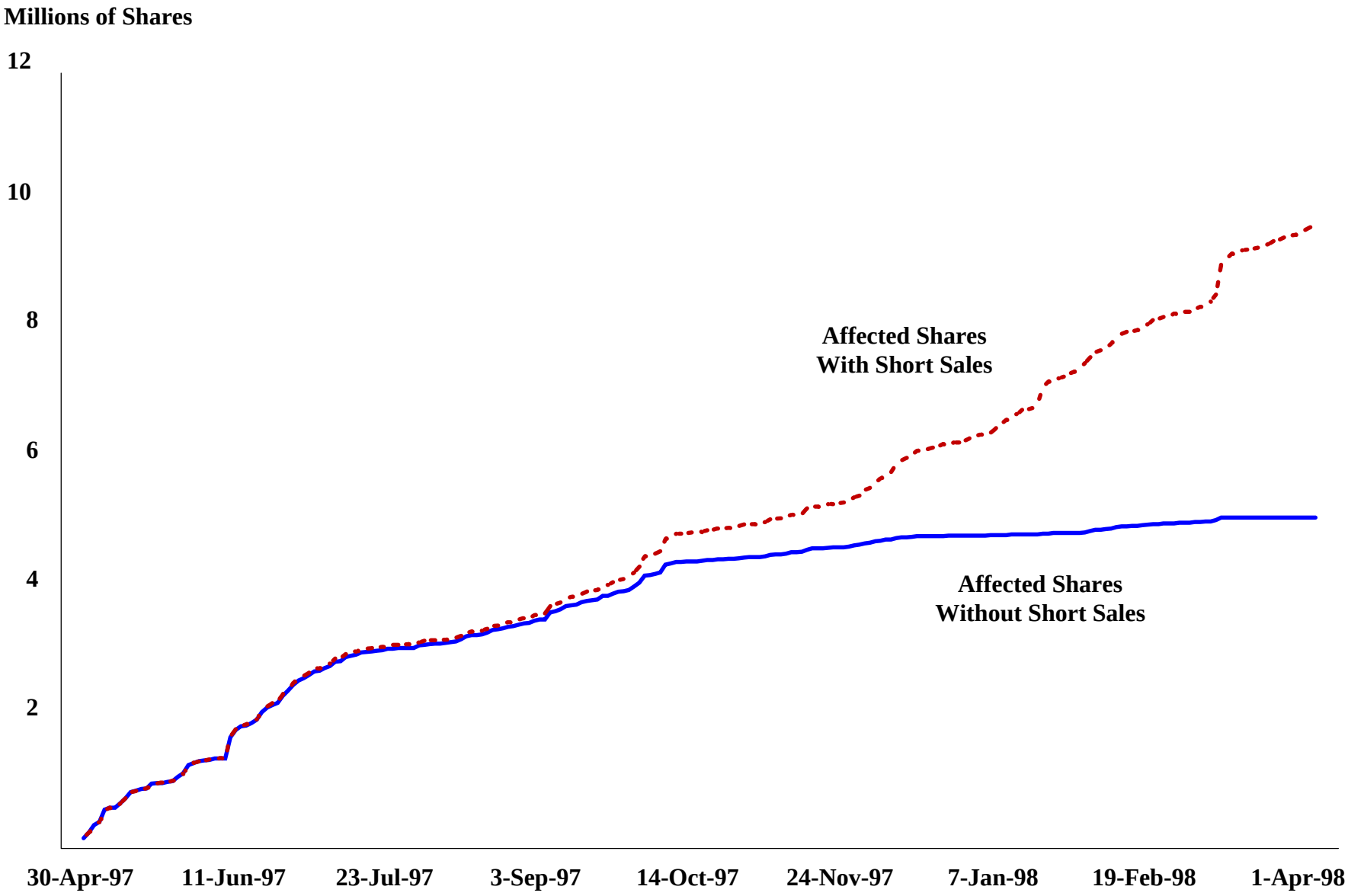


Figure 7
Hypothetical Cumulative Damages in the Computer Learning Centers Case, Calculated With and Without Short Sales

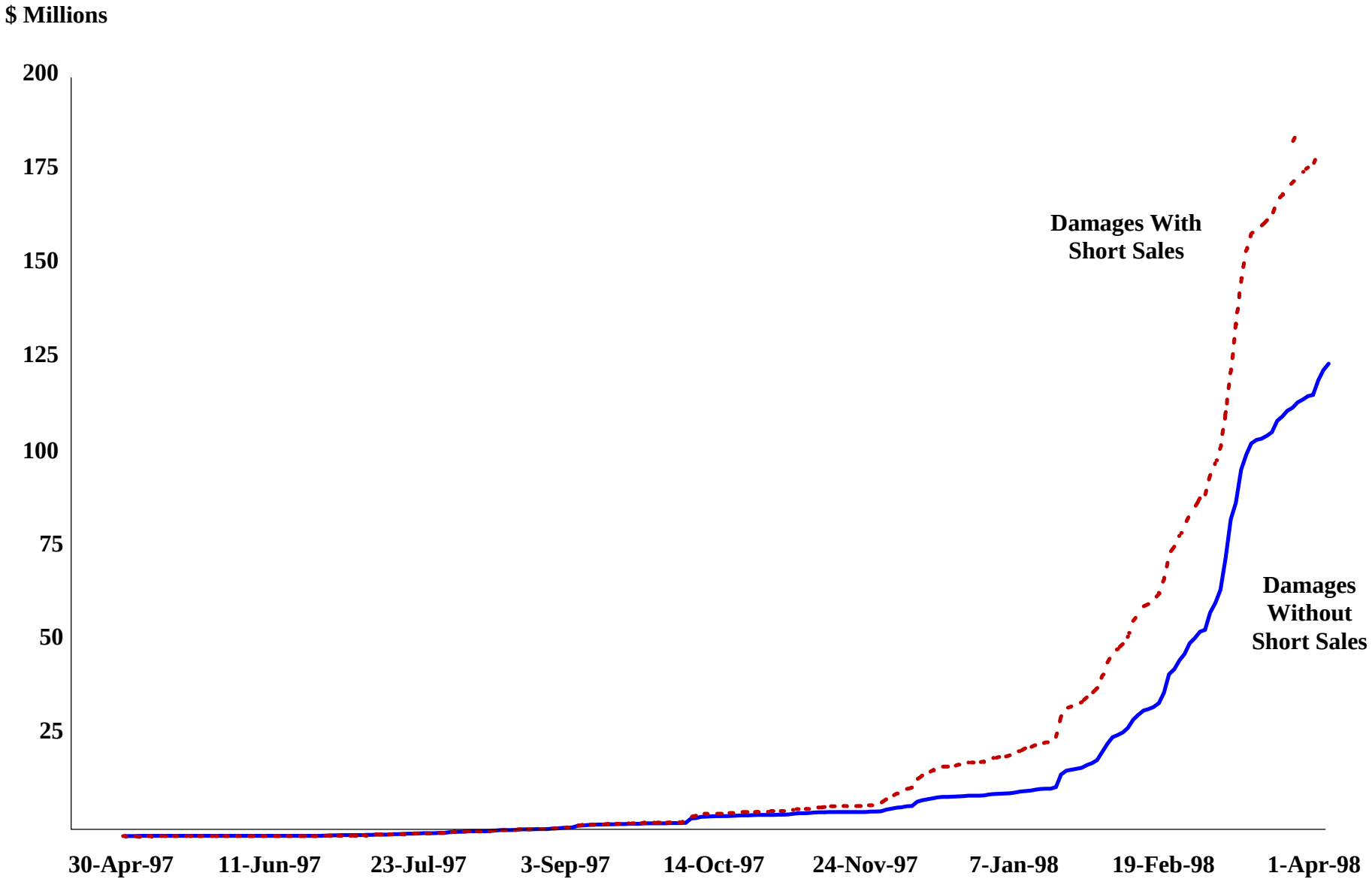
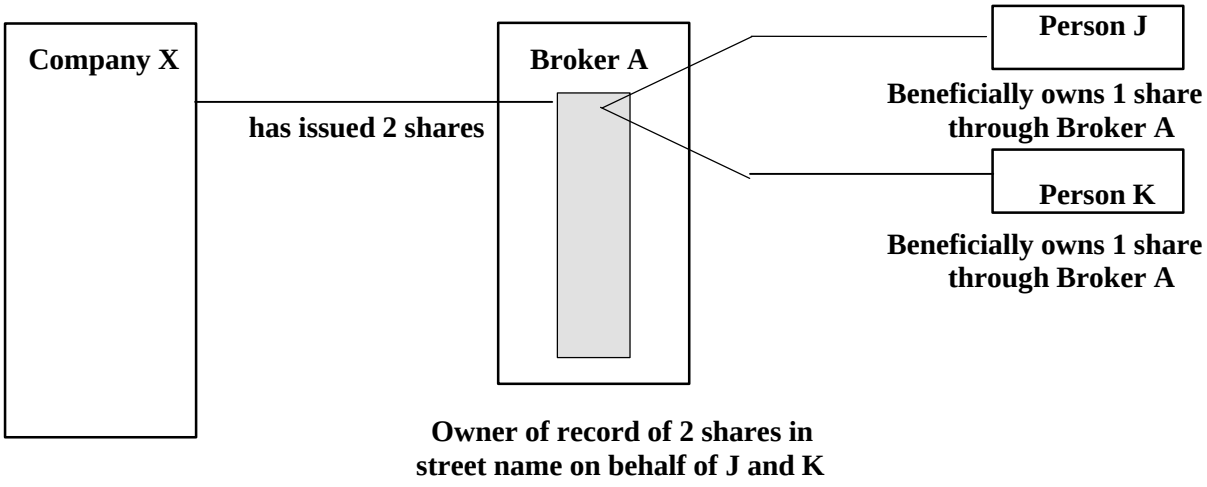


Figure 8A
Short Sale Illustration — Before the Short Sale



Short Seller S

Person L

Figure 8B
Short Sale Illustration — Execution of a Short Sale

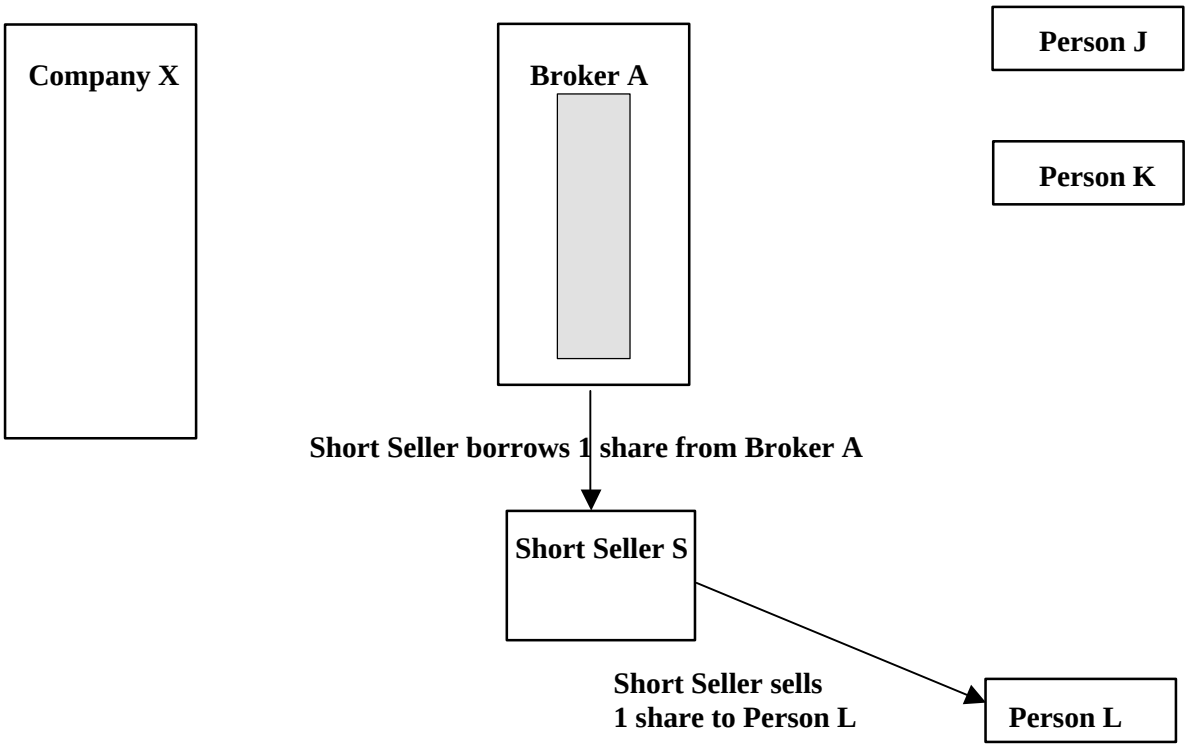


Figure 8c
Short Sale Illustration — While the Short Sale is Outstanding