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Date: September 9, 2002  
Subject: Effects of *Amchem/Ortiz* on the Filing of Federal Class Actions: Report to  
the Advisory Committee on Civil Rules<sup>2</sup>

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## A. Summary

The Class Action Subcommittee of the Advisory Committee on Civil Rules asked the Federal Judicial Center (FJC or Center) to examine the impact, if any, of the Supreme Court decisions in *Amchem*<sup>3</sup> and *Ortiz*<sup>4</sup> on the rate at which plaintiffs file class actions in federal courts. The subcommittee's question also implicates whether, post-*Amchem/Ortiz*, defendants more frequently removed class actions from state to federal court and whether class actions in federal courts ended in settlements less often than before the *Amchem* and *Ortiz* decisions. Similarly, for securities cases, we analyzed filing patterns before and after the 1995 and 1998 securities legislation.

This report describes trends in federal class action filings, removals, settlements, and dismissals during the period from January 1994 through June 2001 and identifies certain discernible changes after the two decisions.

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1. We also thank David Rauma for performing the time-series analyses and authoring subsections B and C of Appendix II; Tim Reagan for helpful comments on drafts and advice on statistical methods; Professor Edward H. Cooper, Professor Richard L. Marcus, and Laural Hooper for their helpful comments on drafts of this report; and Vashty Gobinpersad and Estelita Huidobro for their help in data collection.

2. This Federal Judicial Center publication was undertaken in furtherance of the Center's statutory mission to conduct and stimulate research and development for the improvement of judicial administration. The views expressed are those of the authors and not necessarily those of the Federal Judicial Center.

3. See *Amchem Prods. Inc. v. Windsor*, 521 U.S. 591 (1997) [hereinafter *Amchem*].

4. See *Ortiz v. Fibreboard Corp.*, 527 U.S. 815 (1999) [hereinafter *Ortiz*].

Data collected on federal class actions for this study show that

- filings of nonsecurities class actions increased over our study period (January 1994 through June 2001), including an increase during the two years following the *Ortiz* decision;
- filings of personal injury class actions more than doubled from 1994 through June 2001, including an increase during the two years or so following the *Ortiz* decision;
- removals of personal injury and property damage class actions decreased briefly after the *Amchem* decision and increased during 2000–2001—removals of such case types quadrupled from 1994 through June 2001;
- removals of class actions other than personal injury and property damage actions doubled from 1994 through 1996 and then remained at approximately the same level from 1996 through June 2001;
- class actions filed in or removed to federal court with jurisdiction based on diversity of citizenship more than doubled from 1994 through June 2001; and
- the proportion of class actions that settled within 2.5 years of filing changed only within a narrow range for class actions filed from 1994 through 1999 (the last year for which we could study dispositions).

We cannot say with any certainty that either decision caused the changes observed. The report, however, discusses the results of a time-series analysis that tested whether there were any statistically significant relationships between the two decisions and the filing/disposition patterns we found. We found that certain of the changes we observed were not likely to have occurred by chance. In other words, they were statistically significant. Because many other factors might have affected filings, we cannot say what caused the observed changes.

## B. Background

The Class Action Subcommittee of this Committee asked the FJC to obtain various kinds of caseload data and other information with which to assess whether *Amchem* and *Ortiz* had any discernible effects on the rate and type of class action filings in federal district courts. The subcommittee's primary purpose is to determine whether there has been any notable decrease in the filing of federal class actions after the Supreme Court decisions in *Amchem* and *Ortiz*. The subcommittee also expressed an interest in whether settlements of such actions decreased or dismissals increased post-*Amchem*/*Ortiz*.

In *Amchem*, the Supreme Court affirmed a Third Circuit decision that vacated the order of the district court certifying a class of individuals with asbestos injury claims against a number of defendants and approving a Fed. R. Civ. P. 23(b)(3)

opt-out settlement. The district court had combined in one class action plaintiffs with present asbestos injuries and future claimants (absent and unknown) who might discover an asbestos injury in the future. According to the Court, the district court's ruling had allowed a settlement of a "sprawling" class action that failed to adequately protect the rights of the injured, particularly those in whom a disease had not yet manifested itself.

In *Ortiz*, the Court reversed a Fifth Circuit decision that had affirmed an asbestos settlement with similar features to those the Court criticized in *Amchem*. The settlement in *Ortiz*, however, focused on a single manufacturer of products containing asbestos and used a mandatory "limited fund" settlement class certified under Rule 23(b)(1)(B).<sup>5</sup>

The Supreme Court found that neither of the two class action settlements complied with Federal Rule of Civil Procedure 23 because each allowed classes too large and varied to meet federal standards governing class actions. Various commentators have predicted that, after *Amchem/Ortiz* and other developments, plaintiffs will file fewer federal class actions than before. Reasons given include that federal courts will

- pay more attention to the breadth of a class;
- be less willing to certify classes;
- require that plaintiffs more fully support that a case qualifies as a class action;
- be less willing to approve settlement even if the class is suitably narrow; and
- be more likely to exclude scientific evidence.

Certain commentators have forecasted that the effects of *Amchem* and *Ortiz* will include much more frequent filing of class actions in state courts.<sup>6</sup> We did not include in this report any analysis of state court class action filings because we could not locate a suitable database of such filings. The attorney survey discussed in the next subsection, however, will ask a sample of lead class counsel to comment on why they did or did not file in state court. The survey results will not provide comprehensive information on state-court filing rates over time, but questionnaire responses should shed some light on the subject of state filings.

### C. Two-part Study

We are conducting this research in two parts by collecting and analyzing statistical data on class action filings and by preparing, administering, and analyzing

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5. *Ortiz*, 527 U.S. at 821.

6. See, e.g., Linda S. Mullenix, *Abandoning the Federal Class Action Ship: Is There Smoother Sailing for Class Actions in Gulf Waters?*, 74 Tul. L. Rev. 1709 (2000) (stating "many class counsel have abandoned the federal courts in favor of what are perceived to be more receptive state court forums").

results from a survey of counsel in class actions. This memorandum deals only with the statistical data on class action filings that we collected from existing databases and a discussion of whether one might attribute any changes in class action filings to litigants' understanding of the interpretations of Rule 23 announced in *Amchem/Ortiz*.

A second memorandum, which we will mail to Committee members prior to the October 2002 meeting, will present a proposed survey design and a revised draft questionnaire for class action counsel. We designed the survey, at the subcommittee's request, to explore factors affecting decisions about filing class actions in state or federal court. The subcommittee had asked us to analyze whether or to what extent *Amchem* and *Ortiz* had generally affected the terms under which federal courts could approve class-wide settlements. The subcommittee also requested that we analyze whether the two decisions might deter litigants from filing in, or removing cases to, federal court.

## D. Hypotheses

For part one of the study, we reformulated the subcommittee's questions into statements that could be tested empirically (hypotheses) and we gathered and analyzed data to test those hypotheses. We formulated four hypotheses, viz., that after the decisions in *Amchem* and *Ortiz*:

- the volume of class action filings in federal court would decline;
- removals of class actions from state court would decline;
- class action settlement rates would decline; and
- dismissals of class actions, voluntary and otherwise, would increase.

Filings in this report include cases removed from state court to federal court. See subsections F.3 and F.5–6 below for data showing original filings and removals broken out separately.

## E. Database Description

This report shows data on national filing frequencies and trends in class actions from January 1, 1994, through June 30, 2001, in 82 federal district courts. We could not gather data for all 94 federal districts. For 12 districts,<sup>7</sup> Public Access to Court Electronic Records (PACER) or other data sources did not provide us with the data we needed at the time of our data gathering. All case counts in the report exclude prisoner and pro se class actions.

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7. Alabama Middle, Alaska, Arkansas Western, Guam, Indiana Southern, Mariana Islands, Nevada, New Mexico, North Carolina Eastern, Oklahoma Eastern, Virgin Islands, and Wisconsin Western.

We used the period from January 1, 1994, through June 30, 2001, because it covers at least two years before the Third Circuit's May 1996 *Amchem* decision and about three years before the Supreme Court's June 1997 *Amchem* decision. At the other end, we decided to use the most recent data available, which at the study's inception brought us to about two years after the Supreme Court's June 1999 *Ortiz* decision.

Unless otherwise indicated, the analyses in this report used our class action database, which contains the following:

- consolidated lead class actions (1,648 lead class actions from intradistrict consolidations);
- multidistrict litigation (MDL) lead class actions (192 lead class actions from interdistrict (or MDL) consolidations); and
- cases filed as class actions that were not consolidated or transferred to MDL (13,197 "unique class actions," as we call them).

These case categories total 15,037, which is the total number of class actions in our study database.

We did not include the following counts in our final database for the analyses described in this report:

- 8,335 member class action cases from the 1,648 intradistrict consolidations listed above;
- 4,182 member class action cases from the 192 interdistrict or MDL consolidations also listed above; and
- 1,850 "undetermined" cases, as described in Appendix I.

We identified class action filings through the LexisNexis CourtLink database plus additional cases found on the FJC's Integrated Data Base (IDB). The IDB includes statistical records for all civil cases filed in the federal courts. The methods and limitations related to our data gathering are explained in Appendix I.

We derived data for the graphs and analyses in this report from all federal district courts that participate in the PACER system. We also used FJC and private databases to systematically identify missing cases and exclude duplicate cases. For example, for consolidated and MDL data, we removed from our study case counts "member" cases that had been consolidated with a lead case, either in a consolidation within a single district or a consolidation among districts by the Judicial Panel on Multidistrict Litigation (JPML). In so doing, we eliminated what would otherwise have been duplicative case counts. In other words, we aggregated member cases into their respective lead cases and counted only the lead case.

As we collected data, we identified certain relevant characteristics of those filings, which we describe in the next subsections.

## F. Findings and Data Analysis

This subsection describes our findings on the frequency of class action filings over time, before and after *Amchem* and *Ortiz*, and examines certain relevant characteristics of those filings as follows:

- frequencies for all class action filings (subsection F.1);
- nature of suit (subsections F.2–4);
- origin of the case: original proceeding or removal from state court (subsections F.5 and F.6);
- jurisdiction: federal question or diversity (subsection F.7); and
- disposition: settled, voluntarily dismissed, or other dismissal, but excluding dismissals after trials (subsections F.8–10).

Each subsection below provides some background discussion and an overview of six-month-interval data in Charts 1–10, with references to monthly data which we graphed in Appendix II as part of our time-series analysis. As we discuss the data, we note filing patterns before and after *Amchem* and *Ortiz* where appropriate. We also assess, where appropriate, whether observed differences in filing patterns can be attributed to the two decisions or whether the differences are likely the result of chance or other extraneous factors. Likewise for securities cases, we evaluate whether the 1995 and 1998 federal securities acts had any statistically significant relationship to observed changes in filing patterns. Even where these tests (time-series analyses) could not detect statistical significance in the observed changes, the changes shown in the charts may be of interest to the Committee.

Numerous events may have had some effect on class action filing and disposition patterns. These events include, of course, the Supreme Court decisions in *Amchem* and *Ortiz* and the 1995 and 1998 securities acts. We have made no attempt to account for any other factors—such as those related to the general economy, financial markets, or the frequency of detectable unlawful behavior—which might have had competing or enhancing effects on the findings discussed below. Nor have we made any attempt to evaluate how these many factors may have interacted with each other and with the effects of the *Amchem/Ortiz* decisions.

### **1. Class actions, generally (excluding securities cases)**

We first looked at frequencies for all class action filings generally, to give a global view of any change after the two decisions. The case counts in this and most other subsections exclude securities class actions. Text and charts will make specific mention when securities cases are included. We decided to analyze separately securities class actions because we assumed that legislative changes in 1995 and 1998 would overshadow any impact that *Amchem* and *Ortiz* might have. See subsection F.4.

For the 82 districts in our study, Chart 1 graphs the six-month frequencies for class action filings (excluding securities). We identify the timing of the decisions

in the charts below by adding broken vertical lines in the six-month period immediately following each decision. We use these because the Supreme Court decided both *Amchem* (June 1997) and *Ortiz* (June 1999) at the end of a six-month, January to June period. Graphs of monthly data are in Appendix II, with vertical lines indicating the timing of each decision.

#### a. Overview of findings

There was a fairly steady increase in nonsecurities filings until approximately the time of the *Amchem* decision. At this point, monthly filings began a steady decline of about 10% until approximately the time of the *Ortiz* decision. See Table 2 in Appendix II (monthly data). Filings then began to increase slowly and then leveled off. The time-series analysis does not establish definitively that either change in filings began exactly at the time of a court decision; these changes may have begun before the decisions were issued. Nevertheless, the changes in monthly filings are clear and the decline after *Amchem* may be more than coincidental to the Court's decision.

#### b. Time-series analysis

As described in more detail in Appendix II, we conducted a time-series analysis to test the statistical significance of any relationship between changes in filing rates and *Amchem* or *Ortiz*. It is clear that something is happening around the time of the two decisions, but the data do not allow the timing of these changes to be determined with precision. Statistically significant changes were obtained but only when each decision was moved back three months. This makes us less confident that the observed changes were the result of the two decisions. These findings could have resulted from other extraneous variables we did not measure. Nevertheless, the patterns over time clearly change from pre-*Amchem* to post-*Amchem* and pre-*Ortiz* to post-*Ortiz*. The change after *Ortiz*, however, is an increase in class action filings, not the decrease the Committee anticipated.

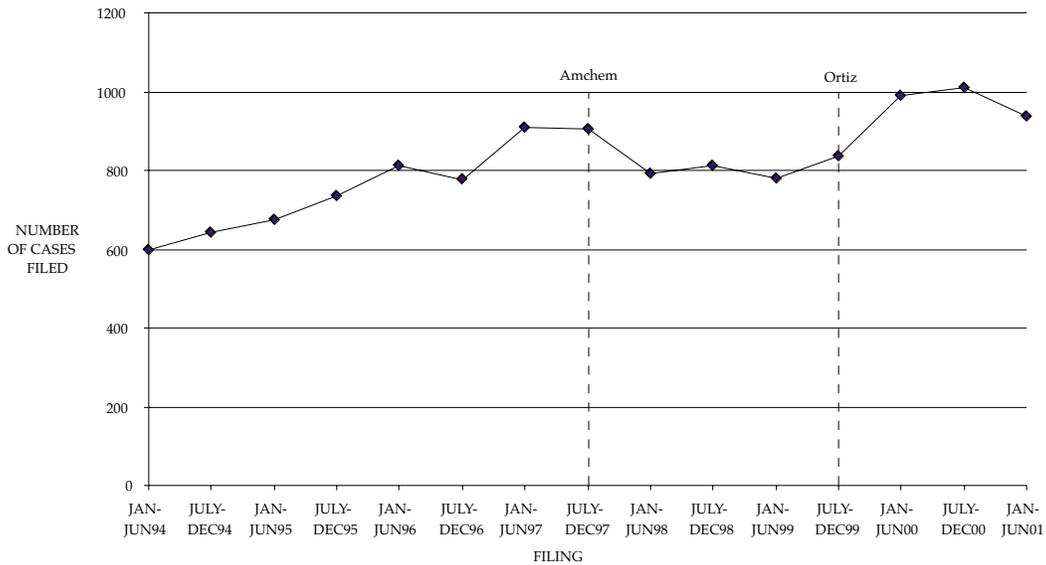
#### c. Further analysis

We compared filing patterns for all civil cases to class actions filing patterns. Nonsecurities class action filings generally followed the trend curve for all nonsecurities civil case filings. Most likely, various other factors were at work to create the variations in overall civil case filing rates, and at least some of those factors probably also affected nonsecurities class action filings. See Appendix III for more on this methodology.

We used Chart 1 and other graphs to examine the magnitude of any effect overall civil filing patterns may have had on our class action data (excluding securities). We found that adjusting our class action data to remove the fluctuations in overall civil case filing patterns did not have a great impact on our graph of unadjusted class action filing patterns. In other words, it appears that the nonse-

curities class action filing fluctuations we observed in this study cannot be traced to the fluctuations we observed for overall filing patterns for nonsecurities civil cases. Further, the filing patterns for nonsecurities class action filings remain similar to the overall filing patterns for all nonsecurities civil cases, even after adjusting our class action data for overall civil filing patterns.

**Chart 1: Class action filing frequencies  
(excluding securities cases)**  
(six-month totals with connecting lines)

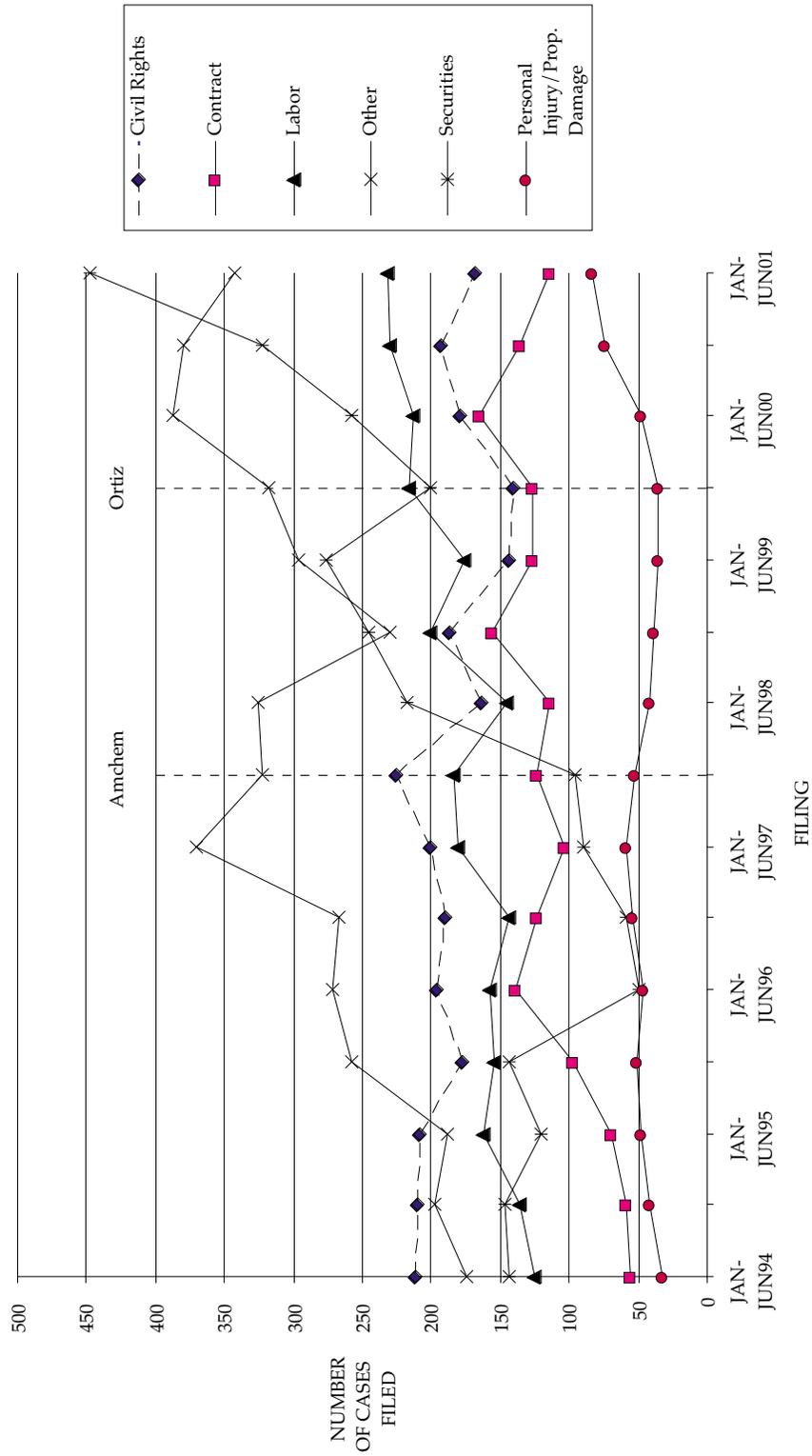


## 2. Nature of suit

### a. Generally

We identified nature of suit for all class action filings in our database. We did this to address whether the Supreme Court decisions, if they had an effect, affected certain types of cases more than others. Changes in sixth-month filing totals are shown in Chart 2.

**Chart 2: Number of class action filings by nature of suit**  
 (six-month totals with connecting lines)



## b. Overview of findings

The bottom line on Chart 2 shows the sum of personal injury and property damage filings. Because *Amchem* and *Ortiz* were personal injury cases, we describe torts cases in detail in subsection F.3. Other nature-of-suit categories include:

- *Civil rights*. A post-*Amchem* declining trend appears to have reversed itself after *Ortiz*, only to fall off again toward the end of the study period.
- *Contracts*. Filings increased somewhat after *Amchem* but, by the end of the study period, they were about the same as they were at the time of *Amchem*.
- *Labor*. Filings continued their upward trend with minor interruptions between *Amchem* and *Ortiz*. Given that these cases generally relate to various federal statutes, the changes seen were likely not related to *Amchem* or *Ortiz*.
- *Other statutes*. After having doubled from 1994 through the time of *Amchem*, these cases slumped between *Amchem* and *Ortiz*. But they then exceeded their prior high point, before falling off some at the end of the study period. Given that these cases generally relate to various federal statutes, the changes seen were likely not related to *Amchem* or *Ortiz*.
- *Securities*. A pre-*Amchem* slump was followed by unprecedented growth during the rest of our study period. See subsection F.4.

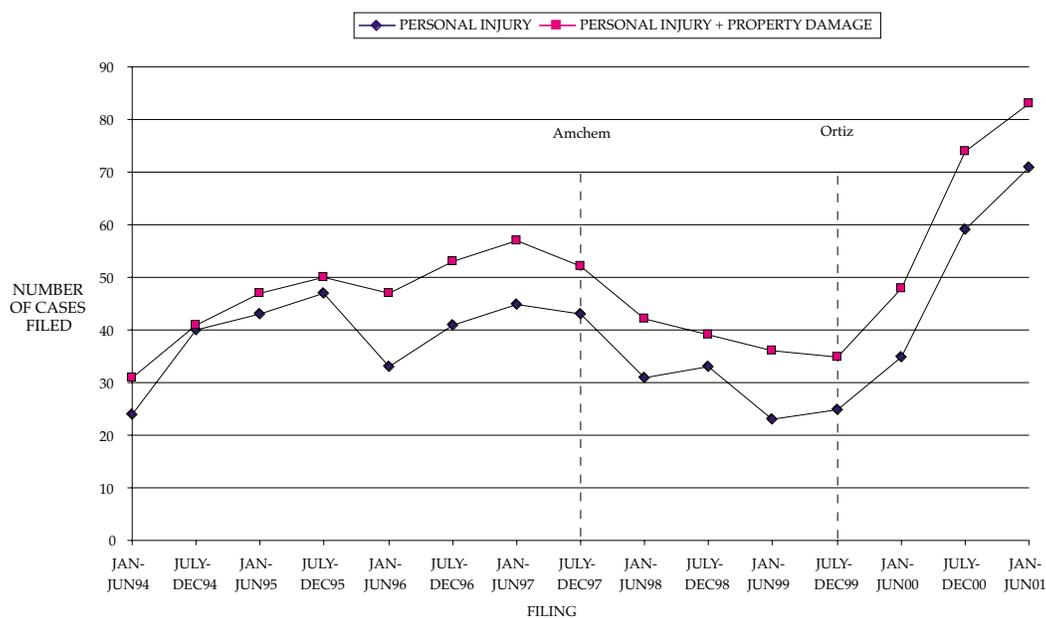
## 3. Personal injury & property damage

### a. Generally

Because both *Amchem* and *Ortiz* were asbestos personal injury cases, personal injury and property damage class actions (PI/PD) may have been more likely affected by *Amchem/Ortiz* than other case types. Given this, we discuss them separately from the others. Most of the PI/PD cases were personal injury cases. The nature-of-suit category “personal injury” also includes product liability cases.

Chart 3a below displays sixth-month filing frequencies for PI/PD class actions. The top line in Chart 3a contains the combined total of personal injury and property damage cases. The lower line (personal injury only) shows that a large majority of these tort cases involved personal injury. Property damage class action filings in all 82 districts combined were generally fewer than three per month.

**Chart 3a: Personal injury & property damage  
class action filing frequencies**  
(six-month totals with connecting lines)



### b. Overview of findings

Our time-series analysis indicates a statistically significant, but short-lived, change in filings after the *Amchem* decision. This decline in filings lasted through just after the *Ortiz* decision. While the graph shows a steady increase in filings after *Ortiz*, this could be interpreted as a return to the pre-*Amchem* trend line.

### c. Time-series analysis

The time-series model proved to be somewhat unstable, possibly a result of the small number of cases. The effect associated with the *Amchem* decision was short-lived and ended at approximately the time of the *Ortiz* decision. The filing increase after *Ortiz*, which was not found to be statistically significant, runs counter to the effect we hypothesized. As we found in subsection F.1, the timing of the observed effects could not be precisely linked to the two decisions, therefore we cannot determine if the decisions are associated with the changes in filing rates or if some other extraneous variables are the cause.

#### d. Further analysis

The time-series analysis for PI/PD shows a long-term filing curve similar to that for nonsecurities class action filings. PI/PD class action filings, however, decreased by about 30% after *Amchem* until around the time of *Ortiz*. This is compared to a decline of approximately 10% for nonsecurities class actions and a decline of approximately 19% for nonsecurities *civil* cases during that same time period.

PI/PD class action filings also roughly followed the directions of the trend curve for all nonsecurities *civil* case filings, but with a greater percentage decline post-*Amchem* and a far greater percentage increase post-*Ortiz*. We cannot say, however, whether the more pronounced changes we observed for PI/PD class actions were caused by *Amchem*, by overall filing trends, or by something else. See Appendix III.

#### e. Removals, personal injury & property damage cases

For the purposes of this study, we examined the basis for federal jurisdiction in terms of whether a case had been filed originally in federal court or removed from state court to federal court. We reasoned that any changes we might find in removals could indicate, for example, a change in the preference of defendants to litigate class actions in federal court. Such changes also might indicate, indirectly, any changes in plaintiffs' preferences for filing class actions in state courts.

Recall that removals of state court cases to federal court are counted as case filings in our database and in the previous charts. In Charts 3b and 5, we show removals as a separate category.

##### *i. Overview of findings*

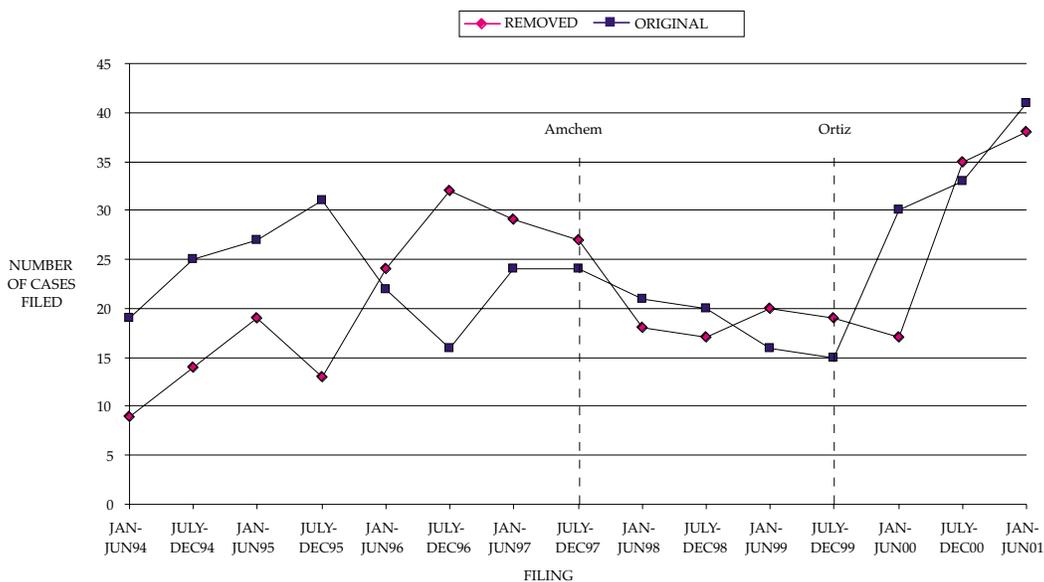
Removals of PI/PD cases have been erratic over time. The decrease in removals seen in the years between *Amchem* and *Ortiz* was temporary, followed by post-*Ortiz* increases through the end of our study period. Over the entire study period, the overall direction of removal frequencies has been upward. Removals increased more than fourfold over the study period. However, the six-month removal frequency counts are relatively small.

##### *ii. Further analysis*

After a mostly upward removal pattern during the first three years in Chart 3b, removals decreased by nearly half over the first year or so after *Amchem*, leveled off just before and after *Ortiz*, and then increased during the last year of the study period.

For a graph of these frequencies in the context of all class action removals, see subsection F.5 below.

**Chart 3b: Class action removal and original frequencies, personal injury & property damages cases**  
(six-month totals with connecting lines)



f. Original proceedings, personal injury & property damage

To round out our discussion of removals for personal injury and property damage cases, we discuss original proceedings here separately. See Chart 3b above.

Original proceedings decreased in the two years after *Amchem*. However, an increase in original proceedings occurred immediately following *Ortiz* and continued through the end of the study period.

For a graph of original proceedings for all class action filings, see subsection F.6 below.

**4. Securities**

Before presenting more data for all nature-of-suit categories, we examine securities class actions separately. We did not expect to see an impact from *Amchem/Ortiz* on these filings, but we were interested in observing any impacts after the effective dates of the

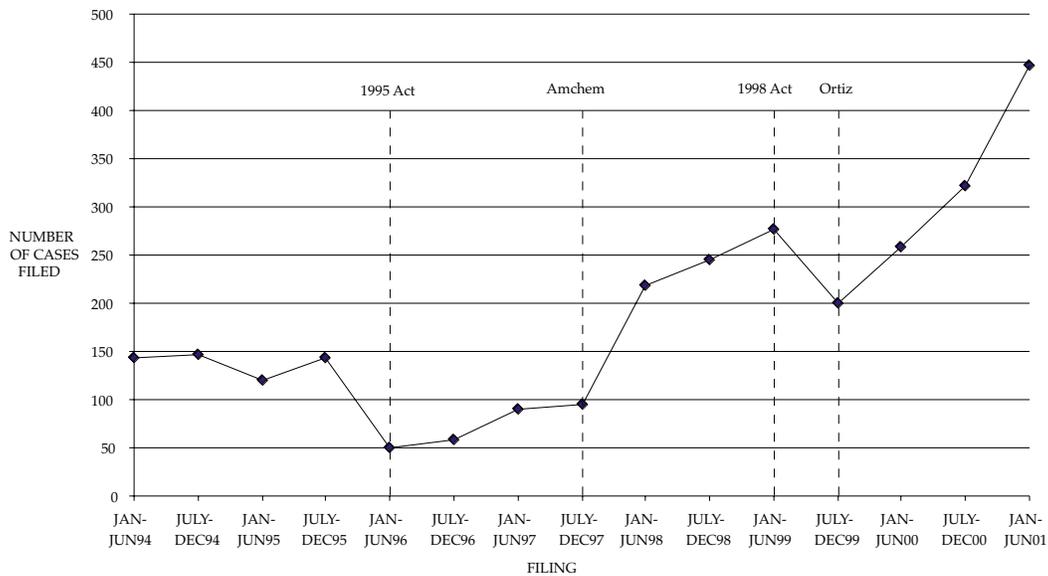
- Private Securities Reform Act of 1995 (1995 Act)<sup>8</sup> (which generally made it more difficult for plaintiffs to prove a securities violation); and

8. Private Securities Litigation Reform Act of 1995, Pub. L. No. 104-67, 109 Stat. 737 (codified in scattered sections of the U.S.C.) (affecting pleading standards and substitut-

- Securities Litigation Uniform Standards Act of 1998 (1998 Act) (which channeled securities-related cases into federal courts).<sup>9</sup>

Chart 4 graphs securities case filing frequencies in six-month totals. We highlight the effective dates of the 1995 Act (December 22, 1995) and the 1998 Act (November 3, 1998) by adding broken vertical lines in the six-month period subsequent to each effective date. We did this because the effective dates each fell near the end of their respective six-month periods. See Table 1 in Appendix II for monthly data.

**Chart 4: Securities class action filing frequencies**  
(six-month totals with connecting lines)



**a. Overview of findings**

The time-series analysis showed that a marked decrease in the number of securities filings occurred in January 1995, the month after the 1995 legislation became effective. This statistically significant decrease was followed by an at first slow rise in monthly filings from that low-point until the filings were far above pre-1995 levels by the effective date of the 1998 legislation. Six months later, securities filings began to increase at a faster rate. However, this latter increase began

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ing proportionate liability for joint and several liability).

9. Securities Litigation Uniform Standards Act of 1998, Pub. L. No. 105-353, 112 Stat. 3227 (codified in scattered sections of the U.S.C.) (requiring most private class actions alleging fraud in the sale of nationally traded securities to be based on federal law and brought in federal court).

before the 1998 legislation became effective and, according to the time study analysis, cannot be associated definitively with the legislation. Neither *Amchem* nor *Ortiz* appear to have affected securities filing rates.

#### b. Time-series results

The statistically significant, abrupt decrease after the effective date of the 1995 Act cannot be fully seen in Chart 4 for two reasons. First, Chart 4 displays six-month, not monthly, intervals. The underlying monthly data used in the time-series analysis, however, clearly indicate a statistically significant decrease in securities filings in January 1996 after the 1995 Act became law. See Table 1 in Appendix II.

Second, in Chart 4, we inserted the dotted, vertical line in the six-month period *after* the Act's December 22, 1995, effective date. Chart 4 may make it appear to some that the decrease in filings occurred in the July–December 1995 period, whereas the abrupt decrease actually occurred in January 1996.

Among all the time-series analyses completed for this report, this decrease is the only change whose onset coincided precisely with the date of the hypothesized intervention, that is the effective date of the 1995 Act.

Changes following the 1998 legislation were not consistent, especially when observed by month. The time-series analysis found nothing statistically significant about the post-1998 Act changes.

#### c. Further analysis

An objective of the 1998 Act was to channel securities class actions into federal courts. From January 2000 to June 2001, filings increased at a relatively high rate to the highest point of the study period. We have, however, no way to determine what part of this increase is related to the 1998 Act and what part is related to increasing volatility, losses, or a burst of filings during this period that were related to initial public offerings (IPOs) in the equity markets.

### ***5. Removals of class actions from state courts (nonsecurities & securities)***

Subsection F.3 above discusses removal of personal injury and property damage cases. Here, we show removals for all class actions. Chart 5 graphs the frequencies of removed class actions in six-month totals. As explained in more detail in the text below, Chart 5 displays separate lines for

- securities and nonsecurities, i.e., total removals for all class actions (top line);
- personal injury and property damage removals (bottom line); and
- nonsecurities (middle line).

a. Overview of findings

Removals of class actions doubled from January 1994 through June 1996. After that, removal activity generally held at about the same level for the remainder of the study period.

b. Total removals for all class actions (securities & nonsecurities)

A fairly rapid rate of increase for total removals (top line in Chart 5) nearly leveled off about a year before *Amchem*. But total removals (primarily nonsecurities removals) dropped by over 35% during the five or so months before the Supreme Court decided *Ortiz*. Then removal frequencies increased again after *Ortiz* and within a year removals were back up to around pre-*Ortiz* levels.

c. PI/PD removals

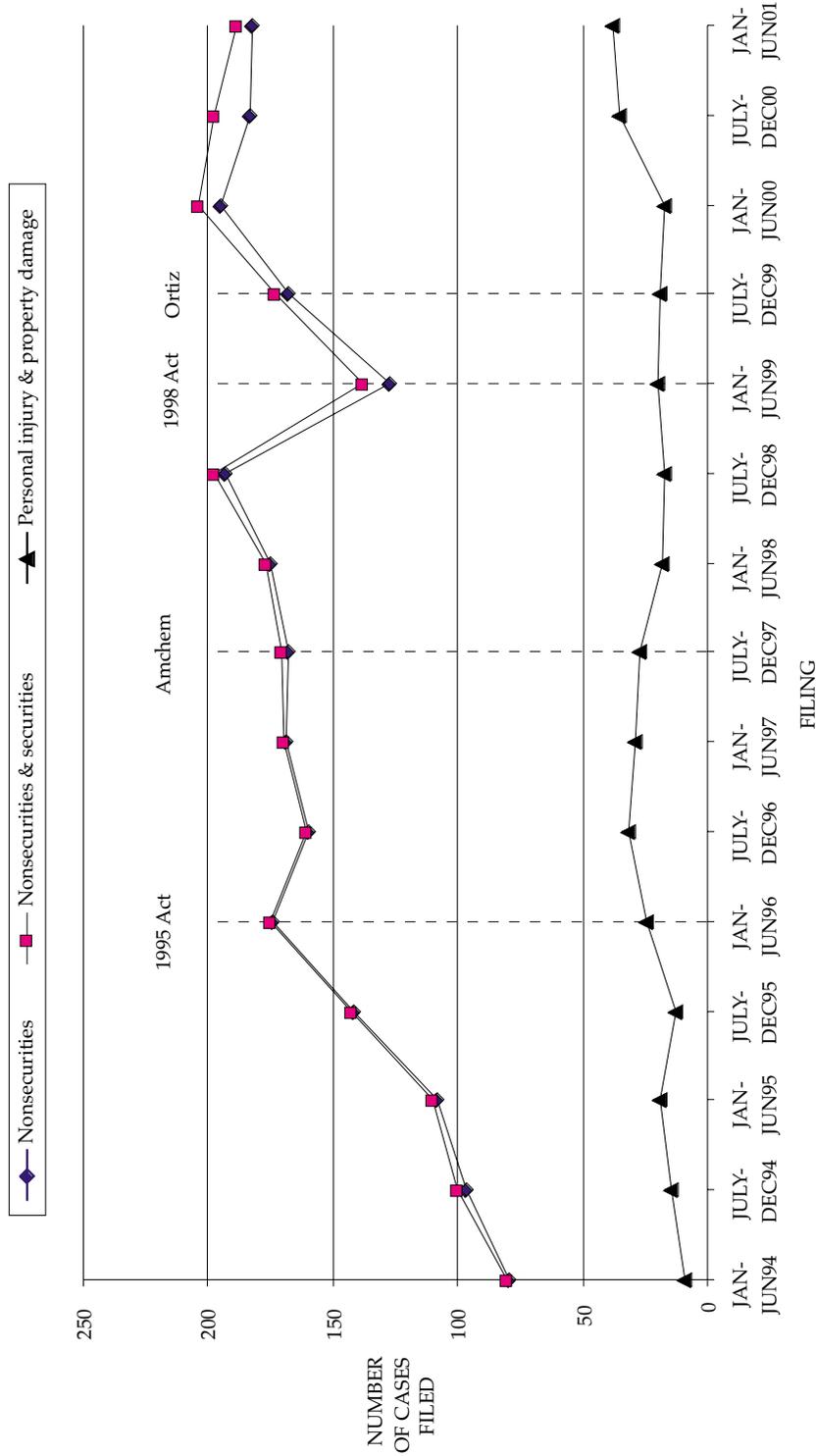
The bottom line on Chart 5 shows PI/PD removals, which we showed on a different scale in Chart 3b above. These removals were small in number, though not as small as securities removals. The PI/PD removal frequencies ended the study period with a six-month total about four times the comparable total in January–June 1994. Chart 3b shows a downturn in removals after *Amchem* and an upturn that began shortly after *Ortiz*. See Chart 3b and accompanying text for a more detailed analysis of these same data.

d. Securities removals

Securities cases are generally filed in federal court as original proceedings. After the 1995 and 1998 Acts, however, some cases appear to have been removed from state to federal court.

Chart 5's small gap between the top line (nonsecurities and securities removals—i.e., all class action removals) and the line just below it (nonsecurities removals only) demonstrates that most of the removed class actions were not securities cases and that a relatively small number of securities cases were removed. Removal frequencies for securities cases stayed within the range of 3–15 (mean of 7.1) cases per six-month period from right after *Amchem* until the end of the study period. Prior to *Amchem*, removals were within the range of 1–3 (mean of 1.4) cases per six-month period. Notice, though, that the number of removed securities class actions began to increase to about 5–15 (mean of 9.4) cases per month beginning with the six-month interval after the 1998 Act.

**Chart 5: Class action removal frequencies:  
nonsecurities, nonsecurities & securities, and PI/PD cases**  
(six-month totals with connecting lines)



**6. Original class action proceedings (nonsecurities & securities)**

The cases discussed in this subsection are class actions originally filed in U.S. district courts. Chart 6 graphs the frequencies of these original proceedings in six-month totals, displaying PI/PD, securities and nonsecurities, and nonsecurities cases, as separate lines.

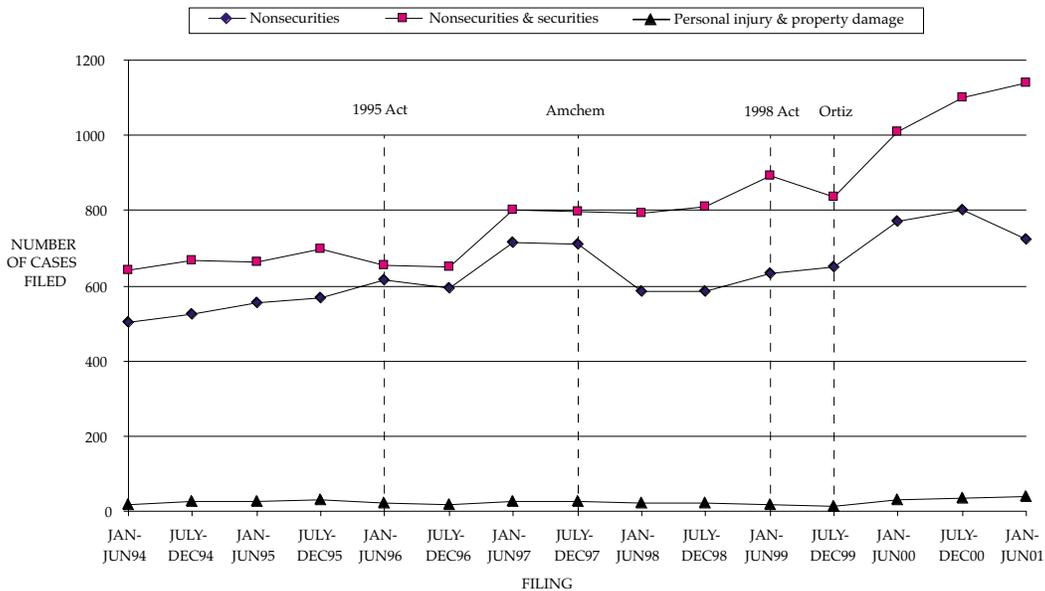
**a. Overview of findings**

Total class action original proceedings nearly doubled over the study period. In particular, securities cases began a general increase in 1997 from the low levels that immediately followed the 1995 Act.

**b. Total original proceedings (securities & nonsecurities)**

Looking at monthly data (not shown here), filings of original-proceedings class actions appear to show greater volatility (month-to-month variation) post-*Amchem* and even greater volatility post-*Ortiz* than in periods before these decisions.

**Chart 6: Class action original proceedings frequencies: nonsecurities, nonsecurities & securities, & PI/PD cases (six-month totals with connecting lines)**



### c. PI/PD original proceedings

Personal injury and property damage original cases were relatively small in number. Trends cannot be seen on Chart 6. Chart 3b and accompanying text above, however, provide a more detailed analysis of these same PI/PD original proceeding data. Chart 3b shows a decrease in original proceedings after *Amchem* and an increase beginning shortly after *Ortiz*.

### d. Securities original proceedings

Not unlike Chart 5 for removals, Chart 6 shows that most of the original proceedings class actions were not securities cases. The reader can observe this by looking at the relative size of the gap between the top line (nonsecurities and securities) and the line just below it (nonsecurities only). As seen in Chart 6, securities “original” class actions began to decrease just after the 1995 Act, as discussed more broadly in subsection F.4. The increases that followed became greater during the second half of the study period.

## ***7. Federal question and diversity jurisdiction (excluding securities)***

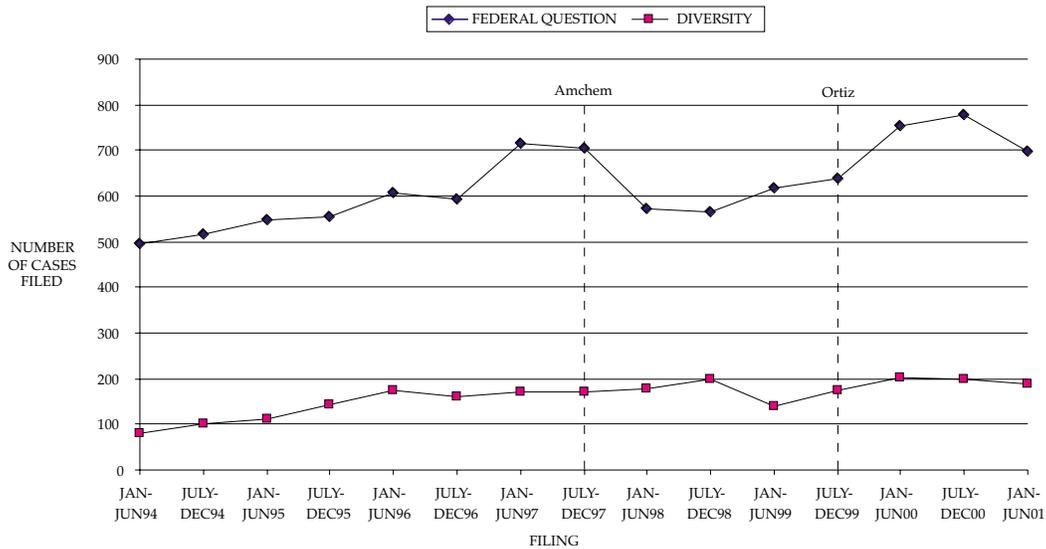
### a. Generally

*Amchem* and *Ortiz* were asbestos product liability class actions based on diversity jurisdiction. Chart 7 below shows federal question and diversity frequencies for all nonsecurities class action filings. Subsection F.4 above discusses securities filings, which are usually based on federal question jurisdiction.

### b. Overview of findings

The filings of nonsecurities class actions based on federal question jurisdiction saw an overall rate of increase during the study period, with higher increases in 1997 and 2000. The 1997 increase came pre-*Amchem*. The number of filings moved downward after *Amchem*, only to increase again after *Ortiz* in the second half of 1999 and 2000. The filings based on diversity jurisdiction approximately doubled over the 90-month study period.

**Chart 7: Class action filing frequencies federal question and diversity jurisdiction (nonsecurities cases)**  
(six-month totals with connecting lines)



## 8. Settled cases (excluding securities cases)

### a. Methodology for disposition data

To see whether *Amchem* had any effect on the approval of class settlements, voluntary dismissals, and other nontrial dismissals, we gathered data on dispositions that occurred within 2.5 years of case filing. We could not gather disposition data for cases filed toward the end of our study period, because most class actions are not concluded until years after filing.<sup>10</sup> To adjust for this feature of our data, we compiled disposition data from our study database, but only for cases that had been open for at most 2.5 years after their respective filing dates. In Charts 8, 9, and 10, we used nonsecurities filing data from the start of the study period through June 1999 (two years prior to the end of the study period). We did not collect disposition data for cases filed after July 1, 1999, to ensure that we had 2.5 years of such data—given that we only had disposition data available for periods through December 31, 2001.

To account for variations over time in filing frequencies, we graphed the proportion of settled cases to total filings for each six-month interval shown in Chart 8. More precisely, for each six-month period, the numerator for the pro-

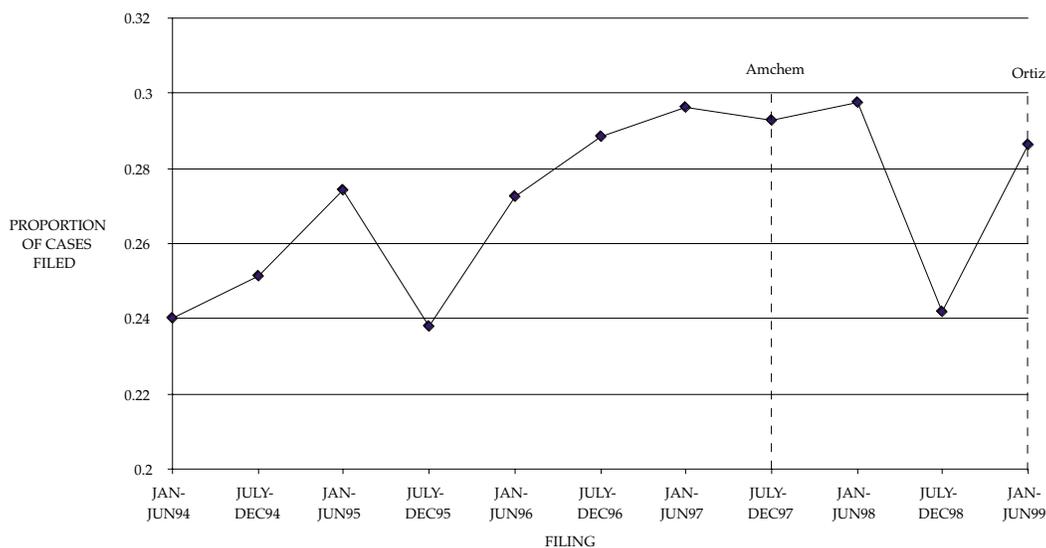
10. See Thomas E. Willging, Laural L. Hooper & Robert J. Niemic, *An Empirical Study of Class Actions in Four Federal District Courts: Final Report to the Advisory Committee on Civil Rules* 28, 61–62 (Federal Judicial Center 1996).

portion was the number of cases filed in that period that settled within 2.5 years of the filing date. The denominator for the proportion was the total of class action filings in that six-month period. Subsections 9 and 10 discuss frequencies for cases voluntarily dismissed and other nontrial dismissals. The only effects we could analyze were from the *Amchem* decision; the *Ortiz* decision was issued at the very end of the time period we used for Charts 8–10.

### b. Overview of findings on settlements

Based on monthly data, the proportion of filed cases that settled within 2.5 years of filing varied greatly over time, but within a fairly small range. The proportion levels just before and after *Amchem* remained somewhat steady. Exceptions were the dip and subsequent resurgence in the last two six-month periods shown on Chart 8. The frequency of settled cases ranged from 596–911 (mean of 766) cases per six-month interval.

**Chart 8: Class action filings that settled within 2.5 years of filing as a proportion of class actions filed (nonsecurities cases)**  
(six-month totals with connecting lines)



### c. Time-series analysis

The time-series analysis showed no clear, statistically significant post-*Amchem* changes in the proportion of nonsecurities class actions that settled within 2.5 years of filing. We found the same result for PI/PD cases settled within 2.5 years. The same can be said about the analysis for such cases that were voluntarily dismissed within 2.5 years of filing. See Appendix II, subsection C.4.

**9. Voluntarily dismissed (excluding securities cases)**

We also compiled data on cases voluntarily dismissed. We recognized that voluntary dismissal of class actions does not signify a settlement of *class* claims, which must be approved by the court. We also recognized that there are different interpretations concerning whether individual dismissals require court approval under the current version of Rule 23. See Chart 9. See subsection F.8 for a description of the methodology we used for Chart 9.

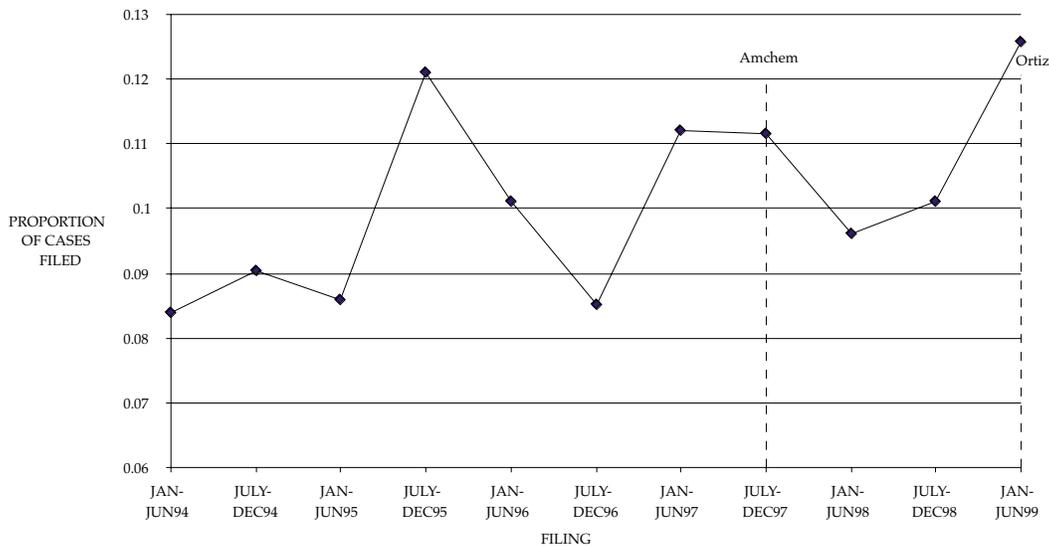
**a. Overview of findings**

The proportion of filed cases that were voluntarily dismissed within 2.5 years of filing changed erratically over time, but within a fairly small range. The overall trend has been an increasing one. The frequency of voluntarily dismissed cases ranged from 50–102 (mean of 78) cases per six-month interval.

**b. Time-series analysis**

See subsection 8.C above for a description of the time-series analysis.

**Chart 9: Class action filings voluntarily dismissed within 2.5 years of filing as a proportion of class actions filed (nonsecurities cases)**  
(six-month totals with connecting lines)



## 10. Other dismissed (excluding securities cases)

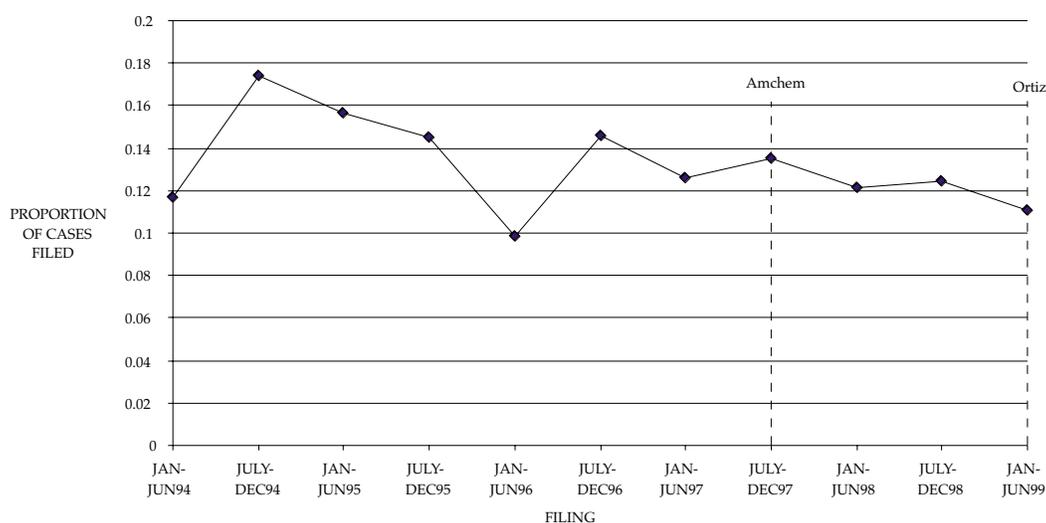
### a. Generally

Finally, the category “other dismissed” includes dismissals other than settled, voluntarily dismissed, dismissed for want of prosecution, and dismissed for lack of jurisdiction. This category does not include dismissals after trial. See Chart 10. See subsection 8 above for a description of the methodology we used for Chart 10.

### b. Overview of findings

The proportion of filed cases with other dismissals within 2.5 years of filing appears to have declined slightly over the data-collection time period. The six-month levels after *Amchem* were generally lower than those before *Amchem*. The frequency of other-dismissed cases ranged from 50–277 (mean of 144) per six-month interval.

**Chart 10: Class action filings other dismissed within 2.5 years of filing as a proportion of class actions filed (nonsecurities cases)**  
(six-month totals with connecting lines)



## G. Conclusions

Statistical data from the entire 1994–2001 study period indicate that most of the relevant indicators of class action activity that are of interest to the Advisory Committee have increased. That is true of all filings and personal injury filings (including removals). Separate examinations of trends in removals and in diversity filings indicate that both have increased. Within the limits of the study, we

found no evidence that the proportion of class actions that settle within 2.5 years has changed notably over the years.

## Appendix I

### Methods for Report on the Effects of *Amchem/Ortiz* on the Filing of Federal Class Actions

#### A. Introduction

We first determined the population of class action filings for the period January 1, 1994, through June 30, 2001. The database covers at least two years before the Third Circuit's May 1996 *Amchem* decision and about three years before the Supreme Court's June 1997 *Amchem* decision. At the other end, we decided to use the most recent data available, which at study inception brought us to about two years after the Supreme Court's June 1999 *Ortiz* decision. Because the Supreme Court's decisions in *Amchem* and *Ortiz* both occurred in mid-year (June), we decided to look at six-month intervals to discern filing patterns both before and after *Amchem/Ortiz*.

For this research, we broadly defined class action filings to be cases where a class allegation was either considered or made at some point in the life of the case but not necessarily certified by the court. To give equal weight to all cases, we identified which cases had been consolidated, either within a district or across districts by consolidation orders or by orders of the Judicial Panel on Multidistrict Litigation (JPML). We then aggregated these "member" cases to the lead case for that consolidation.

We could not gather data for all 94 federal districts. For 12 districts,<sup>11</sup> PACER or other data sources did not provide us with the data we needed at the time of our data gathering. Our study results include data for the other 82 districts.

#### B. Population of Class Action Filings

We searched for class action identifiers using the online services of LexisNexis CourtLink. This service maintains a database of docket sheets for nearly all the federal district courts. CourtLink's service allows full text searching capabilities of the electronic docket files maintained in its "CaseStream Historical" database. We supplemented this approach with data from the Federal Judicial Center's Integrated Data Base (IDB), an historical database of all federal cases drawn from the Administrative Office's federal case statistics, but with corrections and re-

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11. Alabama Middle, Alaska, Arkansas Western, Guam, Indiana Southern, Mariana Islands, Nevada, New Mexico, North Carolina Eastern, Northern Oklahoma Eastern, Virgin Islands, and Wisconsin Western.

finements. We also obtained data from the JPML to cross-check our listing of multidistrict litigation (MDL) cases.

### ***1. Search of the CourtLink database***

CourtLink has its own method of identifying and flagging class action cases in its database. The company performs electronic searches of the litigants' name field for the terms "similarly situated" and "representative of the class" and also searches electronically the first five docket entries of each docket sheet for the term "class action complaint." If either of these conditions is met, the case is flagged as a class action.

In past FJC projects involving class actions, we discovered that CourtLink's flagging scheme overlooks many class action filings. After performing a review of the language on the docket entries of a sample of class action cases, we formulated an expanded version of CourtLink's method of identifying these cases. We searched the CourtLink database for the following terms *anywhere within the entire* docket sheet:

- "similarly situated"
- "representative of the class"
- "class action complaint"
- "class counsel"
- "class representative"
- "class allegation"
- "class certification"
- "class certify" and
- "class settlement."

The search engine also allowed us to use "word-stemming" to find words that have a common root, such as class representative, class representatives, and class representation. Using this expanded search, we created a database of possible class action filings that we called "Unadjusted CourtLink Cases."

### ***2. CourtLink database limitations***

#### ***a. Description of "updating problem"***

One inherent problem with CourtLink's searching service is that not all of the docket sheets on its system are up-to-date. We will first discuss here the limitations and extent of the so-called "updating problem." We will then describe how we addressed that problem.

In CourtLink's current business model, all new cases filed in the federal district courts are downloaded each night and added to its database. Those cases remain as they were first retrieved until one of two things happens: (1) a customer asks CourtLink to obtain an updated docket sheet from the court or (2) a customer identifies a case for "tracking" (i.e., regular, automated updates of the

case's CourtLink docket sheet from court records). Both of these options require the customer to pay an additional fee for this service. Customers can "view" a docket sheet in the CourtLink database at no additional charge, but the case information is only as current as the last time CourtLink updated it. When a customer makes an inquiry about a case, CourtLink tells the customer when CourtLink last downloaded the case so the customer can determine if the last update is current enough for the customer's purposes.

CourtLink initially "seeded" its database several years ago when it downloaded all docket sheets from the PACER system of all the courts that had them available on PACER during the period from November 1997 to February 1998. Because of the huge cost, CourtLink does not employ a regular or programmatic system for "updating" its docket sheets. The problem that results from this is that, for all cases that are not the subject of recent or frequent customer requests for "updating" or "tracking," the docket sheet information can be outdated. As a result, it is not possible for CourtLink to identify cases for us where the court added any of our search terms to the court's docket entries on a date after CourtLink's last update of that case. For the FJC to perform these searches on the PACER databases in all districts would far exceed our available resources. Likewise, it would be cost-prohibitive for the Center to pay CourtLink for an update of its entire docket sheet database.

#### b. Extent of updating problem

The special search CourtLink performed for us, as described above in section 1 of this Appendix, yielded 31,252<sup>12</sup> class action cases. We used another resource to determine if we were missing any class action cases in our population because of the CourtLink updating problem. We used the FJC's Integrated Data Base (IDB) to search for cases that were identified on the Civil Action Cover Sheet as class actions at the time of filing or later upon termination. This exercise yielded 3,334 additional cases that our expanded CourtLink search had not identified as class actions.

We reviewed a random sample of 93 docket sheets of the 3,334 additional cases from the IDB to find out the extent of the updating problem.<sup>13</sup> We compared the most recent docket sheet obtained through PACER with the docket sheet maintained by CourtLink. We found that the expanded CourtLink search had missed 19% of these docket sheets because one of our search terms appeared in a docket sheet entry that occurred after the most recent update of the CourtLink's docket sheet. We also discovered a small percentage of our sample (2%)

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12. The original number was 31,303 cases; however, we excluded 51 Court of Federal Claims cases from study because we wanted to examine only class action activity within Article III courts.

13. We determined that given our population of 3,334 IDB cases we would need to sample 93 cases in order to have a 95% confidence level with a +/- 10 confidence interval.

had the term “similarly situated” in the header of the docket sheet but CourtLink’s header field was truncated and, thus, the search term was not present in the truncated version. We also found that 8% of the sample of IDB cases had original filing dates outside our study period. These latter cases were most likely reopened cases (see section 5 of this Appendix for a discussion of reopened cases).

In the 93-case sample of IDB cases, 71% had docket sheets with none of our search terms anywhere in the docket sheet. These are cases that the IDB flagged as class actions based on the “check-off” box on the Civil Action Cover Sheet but that had no other references to class action activity in the text of the docket sheets. We presumed that they were class actions and included them in the database as “undetermined” cases (see section 5 of this Appendix for our count of “undetermined” cases). We did not, however, include these cases in the final database and analyses for this report.

### ***3. Addressing “updating problem” and verifying data***

#### **a. Adding cases from IDB**

We developed ways to address CourtLink’s “updating problem.” As we recorded information on consolidations from the docket sheets of cases we found through CourtLink and the IDB, we made note of any cases that were related to the consolidation but that were not in our original population of class action cases. When we finished making notes on these cases, we had a list of 1,597 “notes cases.” Again these were cases that were not found in the CourtLink or IDB search. We downloaded the docket sheets for notes cases for six districts,<sup>14</sup> a total of 305 cases, and reviewed those docket sheets to see whether these cases were also class actions that were not captured by our initial text search. We found that 96% of the notes cases for these six districts were class action cases. We also found that the information we had already obtained—from the docket sheets that mentioned those notes cases—contained all of the information we needed. Based on these findings, we felt comfortable adding all 1,597 notes cases to our database, without reviewing the rest of the docket sheets for the notes cases.

#### **b. Verifying MDL cases**

The Judicial Panel for Multidistrict Litigation (JPML) offered us assistance in cross-checking our MDL cases.<sup>15</sup> The clerk’s office for the JPML matched all of the

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14. Alabama Northern, Alabama Southern, Arizona, Arkansas Eastern, California Central, and California Eastern.

15. We would like to thank Michael Beck, clerk of the JPML, as well as Ariana Estariel and Alfred Ghiorzi in the clerk’s office for their detailed assistance.

cases we had in our database with all MDL cases in their database.<sup>16</sup> The office was able to match 1,950 cases in our database. From this matching we found that 262 cases we had originally thought were “unique” (single) class action cases were actually MDL member cases. This miscategorization most likely occurred because the MDL transfer came *after* the last update of docket sheets at CourtLink. With the information we received from the clerk’s office, we were also able to verify that each of our MDL cases was only counted once—that is, counted only for the final transferee district. This enabled us to eliminate our concerns about double counting of MDLs that would have occurred if MDLs were counted in both the transferor and transferee districts.

### c. Verification from IDB

The IDB also contains information that helped us to verify the data in our database. We looked at the IDB origin and disposition codes for all cases. If a “unique” class action case had an IDB origin code of “case transferred to this district by MDL Panel Order,” we determined our database was not up-to-date because of the CourtLink updating problem. We recoded such cases in our database as MDL member cases. Likewise, if a unique class action case had a disposition code of “MDL transfer,” the case was recoded as an MDL member case.<sup>17</sup>

Lastly, all cases that were coded as unique class actions and had a disposition of “transfer to another district” were recoded as “undetermined” and not included in our database or analyses. By doing this, we excluded from our database cases that were transferred to another district and then given a new case number in the transferee district. Such a transfer would have produced duplicates had we not recoded them.

## ***4. Intradistrict consolidations and interdistrict MDL transfers***

Once our population of class action case filings was determined, we attempted to identify which of those cases were consolidated within a district (usually intradistrict consolidations) and which were transferred to the Judicial Panel on Multidistrict Litigation (interdistrict consolidations). Recall that we wanted to aggregate intradistrict and MDL consolidations to the lead case for that consoli-

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16. The clerk’s office reported that it does not always receive case data for all MDL member cases.

17. Even after these adjustments, we realize that there still may be “unique” class action cases left in our database that, rather than being unique, are really MDL member cases. This might include cases where the only MDL identifier in the docket sheets is the MDL number, such as 95-MD-1234. Our search for MDLs did not include the search term “MD.” Such a search term would have produced too many cases that were not true MDLs. Given the adjustments described above, we conclude that we have no practical way to find any remaining MDL member cases that we might have improperly coded as unique class actions.

dation in order to count each lead case (and its associated member cases) as a single filed class action. Once again we used the LexisNexis CourtLink searching service to identify which of our cases had terms in its docket entries relating to consolidations and multidistrict litigation. Upon reviewing a sample of the dockets to identify possible search terms, we finalized a search strategy that searched for the terms:

- “consolidate”
- “member case”
- “lead case”
- “related case”
- “relating case”
- “relatedness”
- “42(a)”<sup>18</sup>
- “MDL”
- “M.D.L.”
- “Judicial Panel”
- “Multidistrict”
- “Multi-District”
- “Multi District”
- “JPML”
- “J.P.M.L.”
- “conditional transfer order” and
- “28 U.S.C. Section 1407.”

Again we allowed for “word-stemming”—case, cases, case(s), etc. Based on our search results, we determined that our provisional population of 31,252 cases contained approximately 18,275 “unique” class action filings that contained no mention of consolidation or MDL transfer. The remaining cases we estimated were comprised of approximately 3,656 MDL member cases and 9,321 intradistrict member consolidations, after doing these searches for all the 82 districts for which we have data.

#### a. Reviewing the docket sheets

After identifying these cases, we proceeded to download the PACER docket sheets for CourtLink-identified cases that we believed were MDL member cases and intradistrict member consolidations based on the search terms listed above. We reviewed each docket sheet for any mention of consolidation or MDL transfer. If a docket sheet contained a lead case or MDL number, that information was recorded. If a docket sheet included information on a lead case or other consolidated member cases we verified that these cases were already in our database. If the case was not in our database, we recorded the docket number to determine

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18. Referring to Fed. R. Civ. P. 42(a).

later whether the case was a class action that should be included in our study (these cases were referred to as “notes cases” in section 3 of this Appendix). We coded information from each docket sheet so that lead cases, member cases, and MDL lead cases could be counted and identified by district and identified chronologically over our time period.

#### b. Filing dates

In this study, the filing date represents the date the case was originally filed in or removed to federal district court. These dates are used to categorize case filings into six-month intervals or monthly intervals over the study’s time period. The filing date of the lead consolidated case and consolidated member case represents the date those cases were filed within our study period. However, for MDL’s, because we could not always identify the “true” lead MDL case, we chose the earliest filed MDL case to represent the MDL filing date.

#### **5. Other excluded cases**

We excluded approximately 3,400 reopened cases from our database. If a case was originally filed *outside* our study time period then reopened *within* our time period, we did not include the case in the study’s database. If a case was originally filed within our time period, then reopened during our time period, we included only the original filing in our database. We did this to avoid double counting because the IDB contains a separate record for each reopening in addition to the record for the original proceeding.

We also excluded all prisoner cases. We decided it is highly unlikely that *Amchem* and *Ortiz* would have an effect on prisoner class actions because they are generally actions for injunctive relief rather than actions for damages and because they rarely survive as class actions.

We also excluded pro se cases because, if a case is a true class action, counsel must represent the class. A nonlawyer who is unassisted by counsel cannot represent a class without, by that representation, engaging in the unauthorized practice of law. In total, we excluded approximately 3,900 prisoner and/or pro se class actions.

We had to exclude six districts (Alaska, Guam, Northern Mariana Islands, Nevada, Virgin Islands, and Wisconsin Western) from the study, because they were not linked to PACER at the time of our search.

We also had to exclude six additional districts (Alabama Middle, Arkansas Western, Indiana Southern, New Mexico, North Carolina Eastern, and Oklahoma Eastern). The docket sheets for these six districts could only be retrieved via CourtLink; they do not participate in WebPACER. CourtLink identified a total of 1,083 class actions in these districts. Because of the updating problem with CourtLink, we decided to eliminate these districts from our study, thus reducing to 82 the total number of districts in our study database.

## **6. Final database**

After excluding all these cases, our final database contains the following number of class action cases:

- 13,197 “unique” class actions;
- 1,648 lead class actions among all intradistrict consolidations; and
- 192 lead class actions among all interdistrict (or MDL) consolidations.

We did not include the following counts in our final database for the analyses described in this report:

- 8,335 member consolidations;
- 4,182 MDL member cases; and
- 1,850 “undetermined” cases.<sup>19</sup>

Unless otherwise noted, the analyses in this report used only the first three groups of cases: “unique,” lead consolidations, and lead MDL cases.

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19. The 1,850 “undetermined” cases are IDB cases that had no mention of any of the search terms.

## Appendix II

### Time-series Analysis Report on the Effects of *Amchem/Ortiz* on the Filing of Federal Class Actions

#### A. Background

Social scientists commonly use interrupted time-series designs to assess possible causes and effects of legal and policy changes.<sup>20</sup> In this report, we examine the effects that two Supreme Court decisions had on class action filing rates. Using an interrupted time-series model with monthly data from January 1994 through June 2001, we test the hypothesis that *Amchem* and *Ortiz* reduced the filings of class actions in federal courts.

##### 1. Use in policy analysis generally

An interrupted time-series research design allows an evaluation of the effect of a Supreme Court decision (e.g., *Amchem*, *Ortiz*) on a dependent variable of interest (e.g., class action filings). This type of quasi-experiment has been used widely in research that evaluates the impact of legal policies and decisions because it allows statistical testing of the impact of the decision over time.<sup>21</sup>

##### 2. Specification of the intervention model

Two issues concern the researcher when specifying an intervention in an interrupted time-series model.<sup>22</sup> One issue focuses on when and how the intervention occurred. Was the onset of the intervention immediate or gradual? The second issue focuses on whether and how the intervention (e.g., the *Amchem* decision) influenced, for example, class action filing rates. Was the influence temporary or permanent?

Prior to our analysis we hypothesized that the impact of *Amchem* and *Ortiz* on class action filing rates would be gradual and permanent. We assumed that any effect of the two decisions would be gradual because change in the legal system in general—and in lawyer and client decision making in particular—typically follows a gradual course. We expect that awareness of the impli-

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20. Abraham R. Tennenbaum, *Influence of the Garner Decision on Police Use of Deadly Force*, 85 J. Crim. L. & Criminology 241 (1994).

21. Malcolm D. Holmes et al., *Plea Bargaining Policy and State District Court Caseloads: An Interrupted Time Series Analysis*, *Law & Soc'y*, 139, 143 (1992).

22. Barbara G. Tabachnick & Linda S. Fidell, *Using Multivariate Statistics* 837–900 (4th ed. 2000).

cations of Supreme Court decisions like *Amchem* and *Ortiz* filters down to lawyers and clients over a period of months as opposed to having an immediate impact. We assumed that the Advisory Committee would be interested primarily in testing for a permanent effect of the decisions because the Committee’s mission is to write rules designed to remain in effect indefinitely, if not permanently.

## B. Methodology for Data Analysis

Interrupted time-series models were estimated for the monthly series described in this report. This class of models is frequently used to assess the over-time impact of changes in public policy and/or related events on some outcome.<sup>23</sup> These models take the form:<sup>24</sup>

$$y_t = \mu + \sum_i \frac{\omega_i(B)}{\delta_i(B)} I_{it} + \frac{\Theta(B)}{\Phi(B)} a_t$$

- $y_t$  represents the time series of interest, such as the number of securities cases filed monthly (the subscript  $t$  denotes time periods). It is composed of three parts: a mean or expected value for the series, one or more policy changes (again which social scientists call interventions), and an error process.
- $\mu$  represents the mean of the time series  $y$ .
- $\frac{\omega_i(B)}{\delta_i(B)} I_{it}$  represents the impact of the  $i$ th intervention  $I$  on  $y$ .
- $\frac{\Theta(B)}{\Phi(B)} a_t$  represents an error component that includes a random error  $a_t$ .

This model is similar to a standard regression model, which represents a dependent variable as the function of dependent variables and an error process. In conceptual terms, an important difference between the time-series model and the regression model is that the temporal ordering of the time series—the dependent variable—creates the possibility of effects over time in both the impact of the interventions and the error process. The result of this difference is an iterative process of identifying, estimating, evaluating, and, if necessary, re-estimating the over-time processes using a variety of diagnostic tools unique to time-series analysis.

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23. See G.E.P. Box & G. Jenkins, *Time Series Analysis: Forecasting and Control* (1976); G.E.P. Box & G.C. Tiao, *Intervention Analysis with Applications to Economic and Environmental Problems*, *J. Am. Stat. Ass’n* 70 (1975).

24. Interrupted time-series models are a subset of a larger class of models in which other time series may be used to model the outcome series.

Five time series were analyzed here:

- the number of securities class action cases filed monthly from January 1994 to June 2001;
- the number of nonsecurities class action cases filed monthly from January 1994 to June 2001;
- the number of tort class action cases<sup>25</sup> filed monthly from January 1994 to 2001;
- the proportion of nonsecurities class action cases filed each month that were settled or voluntarily dismissed within two and one-half years of filing, for the period January 1994 to June 1999; and
- the proportion of tort class action cases filed each month that were settled within 2.5 years of filing, for the period January 1994 to June 1999.

Four interventions were tested. The effective dates of the 1995 and 1998 securities acts were tested for their impact on securities class action filings in federal courts. The Supreme Court's decisions in *Amchem* and *Ortiz* were tested for their impact on nonsecurities and tort class action filings. However, because the series did not extend far enough in time<sup>26</sup> only the *Amchem* decision was tested for its impact on the proportion of nonsecurities class action cases settled or voluntarily dismissed. These four interventions are described in more detail in the body of the study report.

Monthly data were used for the time series reported below. All series begin in January 1994. The filings data end in June 2001; the settled and voluntarily dismissed data end in June 1999. The four interventions are represented by dummy or binary variables coded 0 before the month the legislation took effect or the Supreme Court decision was issued and 1 afterward. One feature of these models is that different effects of the interventions on the outcome series mean can be modeled, including the following: abrupt, permanent changes to a new level; gradual over-time changes to a new level; and abrupt changes in level followed by gradual decline in that change. All of these changes were found among the five time series analyzed and are shown graphically below.

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25. This category consists of property damage and personal injury cases. It is a subset of nonsecurities cases.

26. These two series could only be calculated through June 1999, in order to calculate the proportion of cases settled or voluntarily dismissed within 2.5 years after the last month in the series.

## C. Results

A word of caution is necessary. With one exception, the onset of the interventions in these models could not be determined to be unique. In other words, changes in the outcome time series were associated with the onset of the intervention, but could also have begun earlier than the intervention. Whether this is due to the behavior of litigants or to the construction of reporting periods (months) is not known. As a result, *the estimated models use the “theoretical” starting points of the interventions, and little emphasis will be placed on the exact values of the estimated changes. Instead the direction and nature of the estimated changes will be emphasized and supported graphically.* Finally, all of the reported models passed the time-series diagnostic tests for stationarity and serial correlation.

### 1. Securities filings: effects of 1995 and 1998 legislation

Before we turn our analysis to the effects of *Amchem* and *Ortiz*, we discuss the effects of the 1995 and 1998 securities legislation. (See also subsection F.4 in the main body of this report.) Table 1 below contains the results for the analysis of securities filings. Two interventions were tested: the 1995 legislation ( $I_{1t}$ ) and the 1998 legislation ( $I_{2t}$ ). Following Table 1 below in this Appendix is a graph of the series and its estimated value based on the model.<sup>27</sup> The graph contains two lines going from left to right over time. The smoother line denotes the estimated values for the model; the jagged line denotes the actual monthly filings.

The two vertical lines indicate the beginning of the interventions. The first line denotes the 1995 legislation; the second line denotes the 1998 legislation.

The estimated model shows that there was an abrupt shift downward in filings after the onset of the 1995 legislation, followed by a gradual return to a higher level of filings. Overall, this change is represented by  $\frac{\omega_{10}}{(1-\delta_{11})B}$ . The estimates for the shift parameter ( $\omega_{10}$ ) and the change parameter ( $\delta_{11}$ ) are statistically significant. This over-time change is clearly seen in the graph following the table. Among the analyses reported in the tables below in this Appendix II, this is the only change whose onset clearly coincides with the intervention. No such abrupt change followed the 1998 legislation.

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27. The estimated values are actually forecasted values using the observed values of the time series and the interventions.

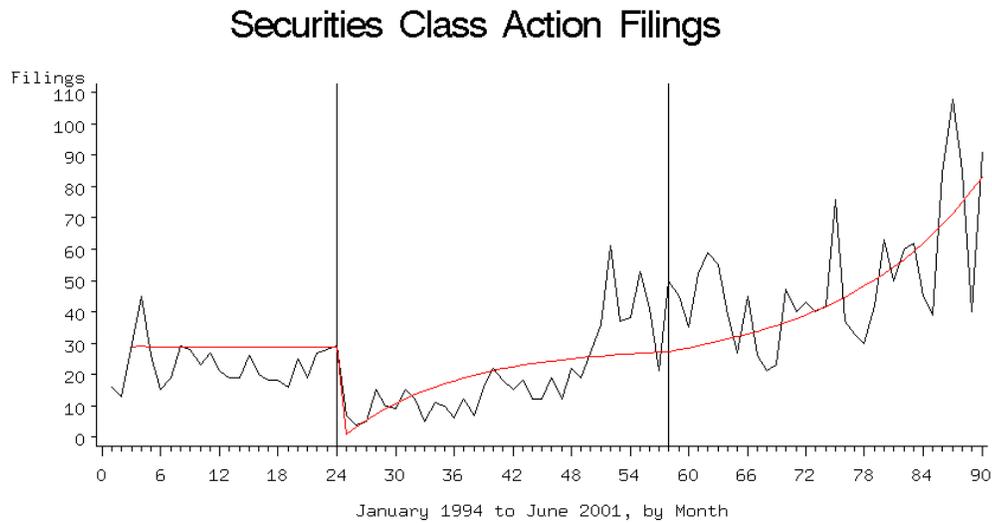
The shift parameter is small and not statistically significant; however, after the 1995 Act, the change parameter is statistically significant and denotes a gradual increase over the time period from the 1995 Act to the 1998 Act. This effect is represented by  $\frac{\omega_{20}}{(1-\delta_{21}B)}$ . The gradual change is also evident in the graph of the observed and estimated series.

**Table 1**  
**Securities Class Action Filings**

$$y_t = \mu + \frac{\omega_{10}}{(1-\delta_{11}B)} I_{1t} + \frac{\omega_{20}}{(1-\delta_{21}B)} (1-B) I_{2t} + \frac{a_t}{(1-\phi B)}$$

Coefficient	Estimate	t-value
$\mu$	28.84	7.53*
$\omega_{10}$	-27.99	-2.92*
$\delta_{11}$	0.92	17.03*
$\omega_{20}$	0.46	1.29
$\delta_{21}$	1.07	24.78*
$\phi$	0.37	3.62*

\*Statistically significant at the .05 level for a two-tailed test.



## 2. Nonsecurities filings

Table 2 below contains the estimated results for nonsecurities filings, all of which are statistically significant. As shown in the graph following Table 2, nonsecurities filings were increasing prior to the Supreme Court's *Amchem* decision ( $I_{1t}$  in the table and the first vertical line in the graph). At approximately that time, nonsecurities filings began to steadily decrease, until the *Ortiz* decision ( $I_{2t}$  in the table, and the second vertical line). At approximately the time of the *Ortiz* decision, nonsecurities filings began to increase, but that increase gradually slowed over time. At the end of the observed series, these filings appear to have reached a plateau or even began to decline. These patterns are reflected in the model's estimated values (smooth line).

The timing of the two interventions could not be determined with precision. Statistically significant changes were obtained when the beginning of each intervention was moved back several time periods, making it less likely that each intervention caused the observed change. Nevertheless, the over-time patterns clearly change from pre-*Amchem* to post-*Amchem*/pre-*Ortiz* to post-*Ortiz*. It is clear that something is happening, but the time-series data do not allow the timing of these changes to be determined exactly.

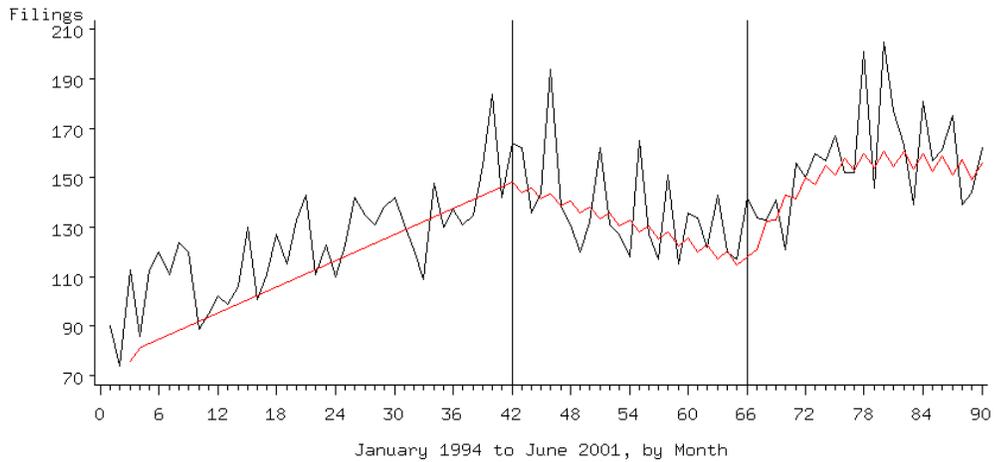
**Table 2**  
**Nonsecurities Class Action Filings**

$$y_t = \mu + \frac{\omega_{10}}{(1 - \delta_{11}B)} I_{1t} + \frac{\omega_{20}}{(1 - \delta_{21}B)(1 - B)} I_{2t} + \frac{(1 - \theta B)a_t}{(1 - B)}$$

Coefficient	Estimate	t-value
$\mu$	1.76	5.42*
$\omega_{10}$	-6.20	-4.87*
$\delta_{11}$	-1.01	-34.63*
$\omega_{20}$	9.09	2.82*
$\delta_{21}$	0.87	15.98*
$\theta$	0.91	18.27*

\*Statistically significant at the .05 level for a two-tailed test.

**Nonsecurities Class Action Filings**



### 3. Torts filings

The results for the analysis of torts filings are reported in Table 3. The Supreme Court's decisions in *Amchem* ( $I_{1t}$  in the table and the first vertical line in the graph) and *Ortiz* ( $I_{2t}$  in the table and the second vertical line in the graph) are again tested as interventions. The results for this analysis are slightly more difficult to interpret, because the natural log of filings rather than filings was analyzed. The torts filing series showed a great deal of variability over time, and the degree of that variability changed. As a result of this variability, a stationary model could not be estimated. Instead, a model was estimated for the natural log of series  $[\ln(y_t)]$ .<sup>28</sup> The estimated values were exponentiated<sup>29</sup> and plotted against filings in the graph accompanying the table.

The over-time pattern for torts filings resembles that of nonsecurities filings. There are differences however. Apart from the mean, the only statistically significant estimate for the effect of the interventions is the change parameter ( $\delta_{11}$ ) for the *Amchem* decision. This indicates there was not an immediate effect of the *Amchem* decision, but a gradual decline in the number of filings after the decision. This was a change from the steadily increasing filings prior to the *Amchem* decision.

Neither the shift ( $\omega_{20}$ ) nor the change ( $\delta_{21}$ ) parameter for the *Ortiz* decision is statistically significant. While the graph shows a steady increase in filings after the *Ortiz* decision, this may be interpreted as a return to the pattern before *Amchem*. In other words, the effect associated with the *Amchem* decision was short-lived and ended at approximately the time of the *Ortiz* decision.

Once again, the timing of these interventions could not be precisely determined, but the over-time patterns suggest that changes occurred that coincided with at least the *Amchem* decision.

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28. This is a standard and recommended solution when the variance of the time-series changes over time. Logging the series compresses the variance and may allow a model to be estimated.

29. The estimated values were also corrected for the standard error of forecast.

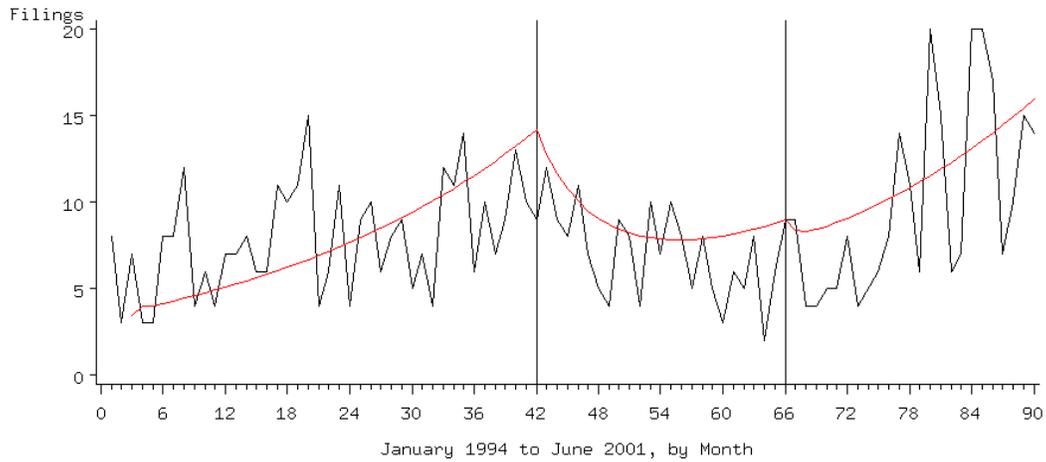
**Table 3**  
**Torts Class Action Filings**

$$\ln(y_t) = \mu + \frac{\omega_{10}}{(1-\delta_{11}B)} I_{1t} + \frac{\omega_{20}}{(1-\delta_{21}B)} I_{2t} + \frac{(1-\theta B)a_t}{(1-B)}$$

Coefficient	Estimate	t-value
$\mu$	0.03	2.96*
$\omega_{10}$	-0.14	-1.89
$\delta_{11}$	0.90	12.16*
$\omega_{20}$	-0.09	-0.25
$\delta_{21}$	0.38	0.15
$\theta$	0.85	14.43*

\*Statistically significant at the .05 level for a two-tailed test.

**Torts Class Action Filings**



**4. Nonsecurities cases settled or voluntarily dismissed**

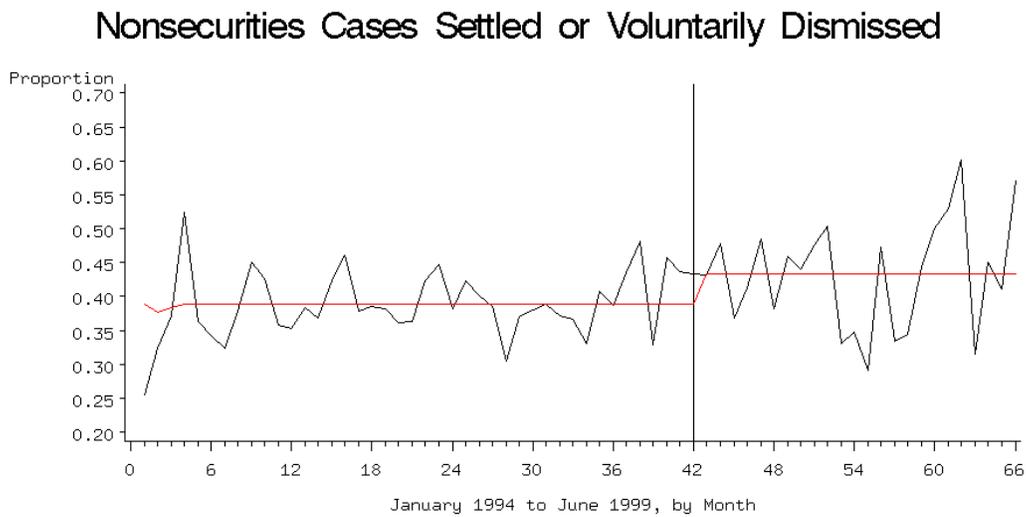
Table 4 reports results for the analysis of the proportion of nonsecurities cases settled or voluntarily dismissed within 2.5 years of filing. The only intervention tested for this series was the *Amchem* decision ( $I_t$  in the table and the vertical line in the graph); the *Ortiz* decision was issued at the end of the period covered by this series and could not be tested. The results are straightforward. There was a small but statistically significant increase (denoted by  $\omega_0$ ) in the mean proportion of cases settled or voluntarily dismissed. However, the timing of this change cannot be determined precisely; it could have begun several months earlier, making it less likely that *Amchem* caused the change. Nevertheless, there was a shift upward at about the time of the *Amchem* decision. Nearly identical results were obtained for separate analyses of voluntarily dismissed and settled cases.

**Table 4**  
**Nonsecurities Cases Settled or**  
**Voluntarily Dismissed**

$$y_t = \mu + \omega_0 I_t + a_t$$

Coefficient	Estimate	t-value
$\mu$	0.39	39.73*
$\omega_0$	0.04	2.69*

\*Statistically significant at the .05 level for a two-tailed test.



### 5. Torts cases settled

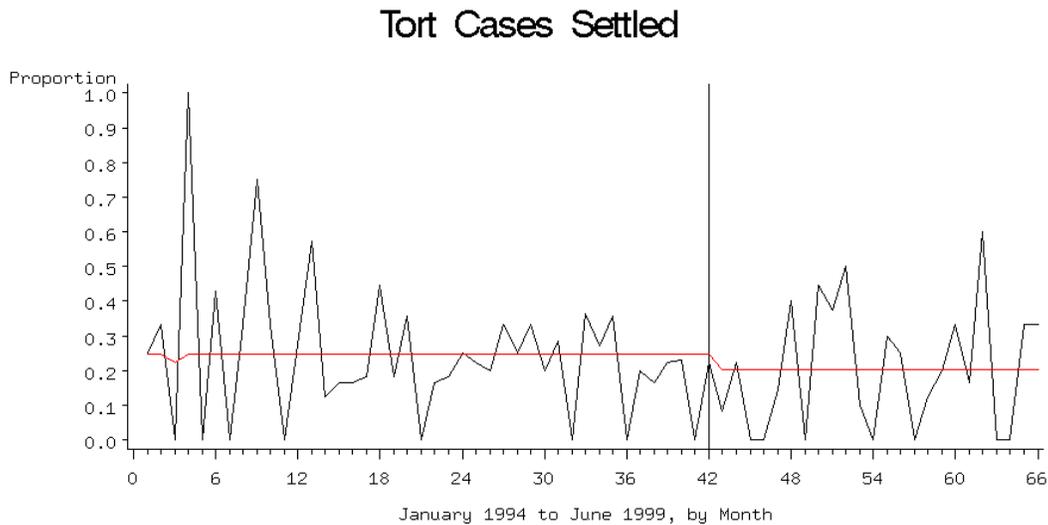
Table 5 contains the results for the analysis of the proportion of torts cases settled. As with prior analysis, only the *Amchem* decision ( $I_t$  in the table and the vertical line in the graph) could be tested as an intervention. The results show no statistically significant change at the time of that decision. There is one caveat for this analysis. The series shows the same problem as the torts filing series—changes in the variability of the series over time. Because of the presence of zeros in the time series, it could not be logged.<sup>30</sup> Therefore, these results on settled torts cases must be considered with caution.

**Table 5**  
**Tort Cases Settled**

$$y_t = \mu + \omega_0 I_t + (1 - \theta B) a_t$$

Coefficient	Estimate	t-value
$\mu$	0.25	11.62*
$\omega_0$	-0.04	-1.22
$\theta$	0.27	2.25*

\*Statistically significant at the .05 level for a two-tailed test.



30. As a test, zeros in the series were changed to very small positive values and the series logged. The analysis of this logged series yielded the same results as reported in Table 5—no significant change following the *Amchem* decision.

## D. Conclusions

Overall, the time study analysis indicates that the decline in class action filings in the two-year period between *Amchem* and *Ortiz* may be more than coincidental to the Court's decision in *Amchem*. Said another way, the analysis found that *Amchem* was associated with reduced class action filing rates during that two-year time period. After *Ortiz*, filing frequencies returned to their pre-*Amchem* pattern of increases. We found no long-term effect of *Amchem* or *Ortiz* on filing rates or settlements of class actions. We also found a statistically significant relationship between the Private Securities Litigation Reform Act of 1995 and the filing of federal securities class actions.

An interrupted time-series design is susceptible to history effects.<sup>31</sup> Our results cannot rule out the possibility that the patterns we might attribute to the impact of the Supreme Court decisions or the securities acts may have actually resulted from the influence of other collinear or unmeasured influences. Events other than the decisions could have influenced filing.

The interrupted time-series design is a good research method to determine causal inferences, but the external validity of most interrupted time-series design is problematic in many applications.<sup>32</sup> For this study we have reduced the external validity concern and feel comfortable generalizing our findings to all federal districts, based on data from 87% of all federal districts.

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31. See *supra* note 21 at 155.

32. *Id.*

## **Appendix III**

### **Trend and Proportion Analysis Report on the Effects of *Amchem/Ortiz* on the Filing of Federal Class Actions**

We wanted to remove from our class action data the effects of general trends in the filing of federal civil actions during the study period. In other words, we wanted to adjust our class action study data to account for filing patterns for federal civil case filings for each month of our study period.

#### **A. Overview**

We looked to see if the filing patterns we observed in filing rates for class actions (Chart 1) were also present in the filing patterns for all civil cases generally. When we did this comparison, we observed that nonsecurities class action filings generally followed the trend curve for all nonsecurities civil case filings. This was our finding still, even after we adjusted Chart 1 data to proportion data, effectively removing from Chart 1 data the increases and decreases in nonsecurities civil case filing patterns during our study period. To accomplish this, we reviewed a scatter plot of the monthly proportion of nonsecurities class action filings to all federal nonsecurities civil case filings. We then looked at a computer-generated trend curve for these adjusted proportions. We observed that the adjusted curve is very similar to the unadjusted curve.

#### **B. Calculations**

We chose not to include these proportion charts in this report in the interests of clarity and brevity. The method for computing these proportions is as follows. We took the data for monthly filings and computed "Proportion of Cases Filed." We calculated "Proportion of Cases Filed" by dividing the number of class actions filed by the number of federal civil cases filed for each month of our study period. The data used for the numerator is taken from the class action database we created for this study and the data for the denominator is from civil case counts on the FJC's Integrated Data Base (IDB).

In calculating the proportion, the data in the numerator excludes securities, prisoner, and pro se cases but includes consolidated class action member cases. The data in the denominator excludes securities, prisoner, and pro se cases but includes consolidated class action member cases and MDL member cases. We had no way of identifying all class action MDL member cases to add them to the numerator or to subtract them from the denominator. Based on the relatively small number of such cases compared to the relatively large denominator, we

assume that having those cases in the denominator does not have a significant effect on the calculated proportions.

### **C. Analysis and Conclusion**

Based on Chart 1 and other graphs, we determined that adjusting our class action data to remove the filing patterns for civil case filings had no significant effect on unadjusted trend curves for our study's class action data. One of the reasons is that nonsecurities civil case filings did not vary greatly, relatively speaking, over our study period. In calculating these proportions, the number of class actions (the numerator) was very small compared to the total number of civil case filings. As a result, changes in the denominator would have to be quite large before they would begin to significantly change the calculated proportion.

We concluded that, even after adjusting for nonsecurities civil case filing patterns, class action filings generally followed the trend curve we observed for all nonsecurities civil case filings. This leaves open the question of whether the influences we observed at play for all civil case filings might have been at play for class action filings as well.