Chapter 1

Tracking the Damage

Overview

Abstract

Big Deals and other serials bundles did slow the rate of increase of serials spending—but that rate continues to be much higher than inflation. It also appears to be unsustainable for many libraries. Chapter 1 of Library Technology Reports *(vol. 50, no. 4) shows overall trends since 1996 and for comparable libraries since 2002.*

In the 1990s, the serials crisis in academic libraries was becoming acute. Prices for refereed scholarly journals were increasing at such a pace that more and more libraries were finding it impossible to keep up, much less add needed new journals.

Publishers began offering Big Deals: bundling electronic access to many or all of their journals at a price that, on a per-journal basis, was considerably lower than piecemeal institutional access. At the time, it must have seemed like a win-win-win situation: publishers could remain profitable, libraries could slow the rate of increase for serials spending, and users could gain access to many more journals. Many academic libraries and groups of libraries signed up for a variety of Big Deals and other bundles during the last years of the twentieth century and the first years of the twenty-first.

It's fair to note that some observers—specifically, Kenneth Frazier in "The Librarians' Dilemma: Contemplating the Costs of the 'Big Deal'"—saw the dangers of Big Deals.[1] But most academic librarians either ignored those dangers or didn't feel they could turn down the Big Deals.

It seems clear that changes in access to serials—Big Deals, smaller bundles, and a general shift to electronic-only access—did, in fact, slow the rate of increase in serials spending. Figure 1.1 shows the changes in spending for US academic libraries as a whole from 1996 through 2012, adjusted for inflation, in three parts: current serials, "books" (all acquisitions except current serials), and the remainder (all library spending except acquisitions). There's a distinct change from 2000 on, with the rate of increase for serials much lower than it was before that.

Note that for figure 1.1, as for all figures, tables, and numbers throughout this report, everything prior to 2012 is adjusted for inflation: if spending just kept up with inflation, it would show as 0% change and as a flat line on a graph.

Figure 1.1 seems to show complete flattening of serials spending from 2000 to 2002—but that's not quite right. Between 1996 and 2000, serials spending increased by an astonishing 33% more than inflation in just four years. While current serials spending was 36% higher in 2002 than in 1996 (that is, 3% more than in 2000), that's a much smaller increase. After 2002, serials spending started to pick up more rapidly, but still not at the hectic pre-2000 pace.

Short-Term Win, Long-Term Problem?

Many publishers and librarians continue to tout the Big Deal as a wonderful thing. Some commentators have gone so far as to declare that the serials crisis was over by 2004, thanks to the Big Deal.

Looking at the reality of library spending on serials since 2002, it's tempting to use the analogy of a person who's been gut shot and is bleeding at the rate of one pint of blood per hour. If doctors patch things up so that the patient is now losing one pint of blood per day, that's a substantial improvement—but only a fool

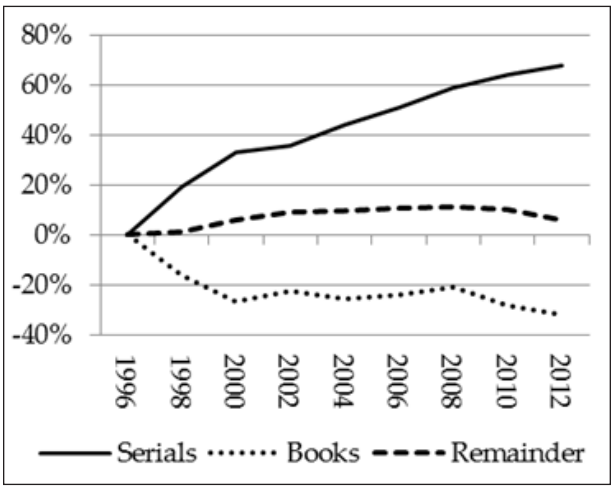

Figure 1.1
Percentage change in median spending in all US academic libraries (*ALS* 1996–2012)

would say the problem has been solved and send the patient home.

Academic libraries are still bleeding, although at a slower rate. The long-term effects of bundled serials pricing include less flexibility to do responsible collection development for serials, less money available for books and other acquisitions—and less money available for everything else libraries spend money on, including librarians, staff, preservation, technical processing, computers, new initiatives, and keeping the doors open. This report won't address the flexibility issue; it will look at the dollars.

The bleeding affects some fields more than others. Specifically, humanities and social sciences, where monographs and books are still central to the field, are hamstrung by the extent to which the most expensive journals and packages—primarily in science, technology, and medicine (STM)—chew up available funding.

The Big Deal and the Damage Done

In 2013, I looked at the situation and produced a self-published book, *The Big Deal and the Damage Done*, analyzing budget impact primarily from 2000 to 2010. (Figures for 2012 were not yet available.)

I believe that book (now out of print) made a strong case. This study builds on the work done in that book and uses more rigorous methods and more carefully designed tables to show the situation. It also uses a later period, 2002 to 2012—a period during which surveys of academic libraries by the National Center for Educational Statistics (NCES) used consistent definitions, making results more comparable.

Inclusion

The universe initially considered for data analysis consists of all academic libraries in the NCES Academic Library Survey files.[2] Figure 1.1 reflects all libraries in those data files.

That is misleading for two reasons:

1. Some libraries do not respond to the survey. NCES does a superb job of imputing values for those libraries—but imputed values can't be assumed to be correct.
2. Academic institutions come and go, as do library responses. The set of institutions reflected in the 1996 data is not the same set reflected in 2012.

Except for the section The Big Picture later in this chapter, the remainder of this study looks at the comparable universe. That universe consists of academic libraries that responded fully in 2002 and 2012 and also appeared (sometimes with imputed figures) in 2004, 2006, 2008, and 2010. That's a considerably smaller set of libraries: 67% of *all* academic libraries listed in 2012 and 79% of all those that responded in 2012. It does represent the bulk of all academic library spending, 95%, and includes the vast majority of most general public and nonprofit private institutions. To put this another way: although one-third of American academic libraries aren't included in this study, those libraries represent only one-twentieth of library spending.

Dollars and Percentages

All dollar amounts are normalized to 2012 dollars, using the US Consumer Price Index (CPI) averages for each year.[3] All percentages are similarly normalized, since they're based on normalized dollars. This has the effect of reducing the apparent increases. So, for example, $1 in 2002 translates to $1.276231 in 2012 dollars, and $1 in 1996 translates to $1.463314 in 2012 dollars.

All figures and tables except figure 1.1 and figure 1.2 start from 2002, omitting the rapid increase from 1996 to 2000 (and before: ARL reports starting from 1986 show more than 400% increase in serials spending since then).[4] Thus, serials spending changes are much less dramatic than they would be if longer periods were shown. The period 2002–2012 was chosen not only because NCES used consistent data definitions during that period but also because response issues, institutional changes, and other factors mean that the more years you include in a report, the fewer institutions you can include. For example, extending the study back to 2000 would require dropping another 160 libraries or so.

For convenience in calculation, reports of $0 spending for serials or books were changed to a nominal $1. That may throw off some reported totals, but since there are no more than 17 cases in either serials or books, the discrepancy is never as much as 0.01%, or one in ten thousand.

Typical Tables and Graphs

Except for the first and last chapters, most of this study consists of discussions for groups of academic libraries.

Libraries are grouped by budget size (2012 total spending), by sector, or by Carnegie classification. For some segments, the discussion is split into two groups: libraries where total spending has at least kept up with inflation between 2002 and 2012, and those that have fallen behind inflation.

A discussion typically includes most or all of these parts:

- A summary of the number of institutions and total full-time equivalent (FTE) students in 2012. The summary for full groups will typically also show the potential number of institutions in this group (that is, the number responding in 2012) as some indication of institutional volatility, and—as feasible—the percentage of spending represented by the libraries that are included here, which is almost always higher than the percentage of libraries included.
- A table offering key figures for 2012, including changes since 2002 for Q1, Median and Q3, as in table 1.1 later in this chapter. Q1 is the first quartile, the point at which 25% of libraries show lower figures and 75% show higher; Q3 is the third quartile, the point at which 75% of libraries are lower and 25% are higher. The median is also the second quartile.
- Brief textual discussion of apparent impact over the period and special cases, including notes on the percentages of libraries that lost ground in books spending and percentages of substantial changes up or down (typically defined as gaining or losing at least 25% for books and remainder spending after accounting for inflation, losing at least 25% for serials, or gaining at least 50% for serials, since such a high percentage of libraries spent at least 25% more on serials in 2012 than in 2002).
- A graph showing median percentage changes from 2002 through 2012 (with 0 as the 2002 starting point) for serials, books, and remainder.

Some smaller groups omit portions of this discussion. Additional graphs and tables, including tables for the smaller groups, will appear in an online supplement to this report; see chapter 6 for details.

Substantial Changes

Consider the parenthetical comment in the penultimate bullet in the previous section. Serials spending typically outpaces other spending to such a degree that I eventually defined *substantial* as starting at a 50% increase (above inflation), rather than a 25% increase as for other acquisitions and total acquisitions.

Consider the actual numbers among the 2,594 institutions reflected in most of this report. If you define *relatively unchanged* as anything from a 10% decrease to a 10% increase between 2002 and 2012 (as always, with inflationary increase normalized to zero), *slightly changed* as anywhere from 10.01% to 24.99% in either direction, and *substantially changed* as at least a 25% change in either direction, here's what you'll find:

- **Total spending**: 19% substantial increases, 13% slight increases, 29% relatively unchanged, 21% slight decreases, and 18% substantial decreases.
- **Books spending**: 20% substantial increases, 5% slight increases, 9% relatively unchanged, 10% slight decreases, and 56% substantial decreases.
- **Serials spending**: 42% substantial increases, 9% slight increases, 14% relatively unchanged, 10% slight decreases, and 25% substantial decreases. For that matter, 30% of libraries showed at least a 50% increase (above inflation) in serials spending—which is why I chose that as the lower limit for commentary in the rest of this study.

The Big Picture, 1996–2012

Figure 1.1 shows one other important thing, even though it involves a shifting universe of campuses: the damage to books budgets overall was most severe in the early years, before the period covered in most of this report. But the figure is also misleading, not only because it includes a shifting universe of libraries (anywhere from 3,527 to 3,881 institutions) but also because it includes institutions that didn't respond.

Figure 1.2 shows 2012 dollars for those institutions that did respond—as few as 85% of institutions, but representing 94% of spending. It's still a shifting set of institutions, but at least it's made up of actual responses.

How bad is the damage to non-serials acquisitions budget (noting that "books" includes everything else, including back runs of serials)? For responding institutions—anywhere from 3,082 to 3,516 of them—the total dropped from $1.023 billion (in 2012 dollars) in 1996 to $739 million in 2000, a drop of $284 million or 28%. After that, it varied between $739 million and $822 million until 2008—but since then, it's dropped rapidly, to $679 million in 2012, a reduction of 34%, or $344 million, from 1996. Academic

Figure 1.2
Spending by responding institutions, 1996–2012 (*ALS* 1996–2012)

libraries as a whole managed to increase non-acquisitions or remainder spending for quite some time—but even that's started falling back since 2008.

The Comparable Picture, 2002–2012

From here on (as well as in the section Substantial Changes earlier in this chapter), we'll look at the comparable picture: a smaller set of institutions that have been around since 2002 and responded in both 2002 and 2012. The remainder of this study involves 2,594 libraries in all. Most graphs show percentage change (from 2002) for the median within a group—the point at which half of the libraries did better and half did worse. As always, all such changes are adjusted for inflation.

All 2,594 Libraries

These 2,594 libraries (79% of the 3,286 responding in 2012, but representing 95% of spending) supported 13,755,798 FTE students in 2012 (*ALS* 2012). Table 1.1 shows key figures for those libraries. I should note that two of the very largest academic libraries in America are not included here—one apparently failed to respond in 2002, the other apparently failed to respond in 2012.

Looking at table 1.1, a 13% median increase for serials spending over a decade doesn't look too bad—but that's in addition to inflation, and the overall increase is 24%. The median for books should be distressing: it says that most libraries lost close to one-third of their books budgets from 2002 to 2012—with a quarter losing more than half. Overall, 1,848 libraries (71%) reduced spending for books and other acquisitions.

Definitions

These definitions apply to table 1.1, the similar "key figures" tables throughout the report, and other tables, figures, and discussion. *Serials* means all spending on current serials, whether electronic or print. *Books* means all acquisitions except current serials; it's sometimes rendered as "Books (etc.)" or "other acquisitions." *Remainder* means the total library budget minus acquisitions spending.

Serials % and *Books %* are percentages of total budget. *Total Change*, *Serials Change*, *Books Change*, and *Remainder Change* are percentage changes from 2002 to 2012. These primarily appear in tables that show the figures for the first quartile (Q1, the point at which 25% of libraries are lower), median (half lower, half higher), and third quartile (Q3, the point at which 25% of libraries are higher), as well as overall percentages and dollars (either 2012 dollars or changes). Remember that Q1, median, and Q3 numbers are for the particular data element—they don't reflect a single library. So, for example, the Q1 figure for total spending, $305,637, is midway between two libraries, one spending $305,514 and one spending $305,994—but the Q1 figure for Books %—5%—reflects neither of these libraries (10% and 12% respectively). So don't expect that percentages in tables can be calculated directly from the figures above them—except that Serials % and Books % in the All column will match calculations done on the top three dollars amounts—for example, $1,775,036,853 is 28% of $6,299,815,626.

Sectors divide two-year and four-year colleges into public, private nonprofit, and private for-profit and are discussed in chapter 3. CC numbers, used in chapters 4 through 6, are Carnegie classifications as used by NCES, specifically the classifications as of 2000.[5] The sector and CC for any given institution are as of 2012—which means that group changes over time may be affected by institutions that change Carnegie classifications. (CC 40, Associate's Colleges, is discussed in chapter 3.) FTE is the count of full-time-equivalent students in 2012 as reported by NCES.

Major Changes

Among these 2,594 libraries, 30% showed at least a 50% increase in serials spending (after inflation), including 16% where it more than doubled. Serials spending also fell at least 25% in 25% of libraries, including 13% where it fell by half or more. Figure 1.3 shows the median spending changes over time.

For books and other acquisitions, 56% of these

	Q1	Median	Q3	All	Dollars
Total	$305,637	$692,804	$1,882,741		$6,299,815,626
Serials	$28,500	$95,424	$401,742		$1,775,036,853
Books	$22,152	$55,766	$145,470		$645,206,280
Serials %	8%	16%	27%	28%	
Books %	5%	8%	12%	10%	
Total Change	-20%	-3%	17%	2%	$98,315,545
Serials Change	-25%	13%	62%	24%	$339,151,530
Books Change	-58%	-31%	10%	-13%	-$92,587,693
Remainder Change	-20%	-4%	18%	-4%	-$148,248,281

Table 1.1
Key figures: changes since 2002 for all comparable libraries (*ALS* 2002–2012)

libraries lost at least 25% of other acquisitions spending, including 23% cut in half or worse. One out of five libraries saw 25% or higher increases in books spending, including 6% where it went up by 50% or more.

Finally, 19% lost at least a quarter (25%) of remainder spending (what's left over after acquisitions), including 3% where such spending was cut in half. On the other hand, 21% increased non-acquisitions spending by at least 25% more than inflation, including 10% where it went up by at least half.

Figure 1.4 shows how libraries are distributed in terms of spending changes for books (etc.) and current serials, rounding to the nearest 10% and showing everything above 195% as 200%. As should be clear, while there's a fair amount of overlap, most libraries are well to the left of the zero-change vertical line for books (etc.), while most are widely scattered to the right of that line for current serials. (The online supplement mentioned in chapter 6 will have similar graphs for subsets of libraries.)

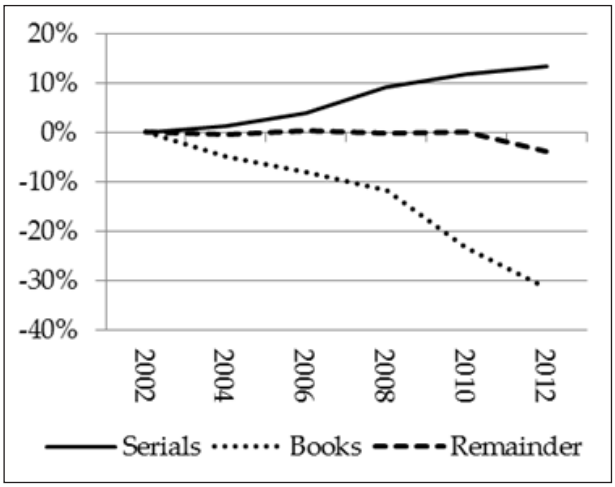

Figure 1.3
Percentage change in median spending, all 2,594 libraries (*ALS* 2002–2012)

Skimming the Cream

The universe of academic libraries really is heterogeneous, more so (in some ways) than even public libraries. Within a given group of libraries, the median is likely to be more meaningful than the totals.

Before moving on, it might be useful to note the reality of the $92.6 million drop in non-serials spending in table 1.1. To wit: It's worse than it looks.

Two dozen libraries managed to increase books and other non-serials acquisitions by $1 million or more (after inflation) since 2002. Those libraries added a total of $65.4 million in books and other acquisitions. Removing those 24 libraries leaves a net loss of $158 million in books and other acquisitions. Another 722 libraries kept ahead of inflation for books spending, adding another $56.7 million, meaning that the others—1,848 of them—actually lost $214.7 million.

How much money would it take for America's academic libraries to be in good shape for books and other acquisitions? There's no easy answer, but here are two possible answers (in addition to $214.7 million), two of them discussed more in chapter 6:

- $408.1 million would increase books and other non-serials acquisitions spending so that all libraries within each Carnegie classification increased spending above 2002 levels by at least as much as the median increase for those libraries that did spend more in 2012.
- $400.5 million would mean that every library spent at least as much on books and other acquisitions per FTE student as it did in 2002, adjusting for inflation. On the other hand, for all library budgets to be at least as high per capita as they were in 2002, adjusting for inflation, would take more than $2 billion in additional funding.

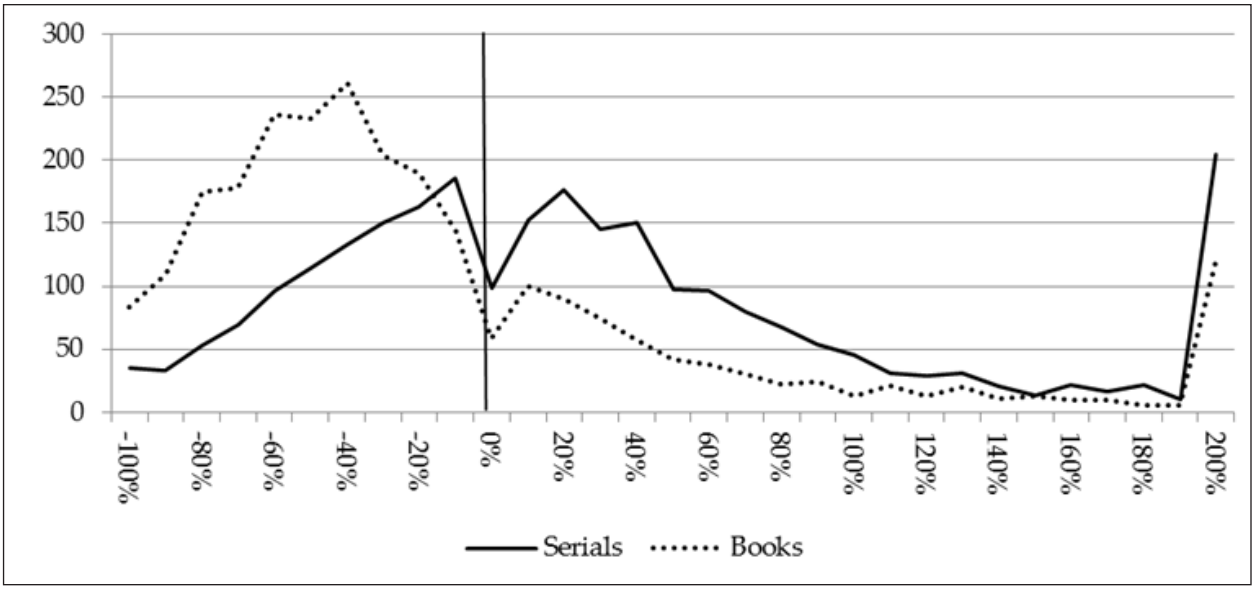

Figure 1.4
Distribution of spending changes, all 2,594 libraries (*ALS* 2002–2012)

The patient's not gushing blood—but it's still bleeding. But it's not one patient, it's somewhere between 1,845 and 2,594 patients (accepting that some libraries appear to be doing pretty well!). The damage is in the details.

Notes

1. Kenneth Frazier, "The Librarians' Dilemma: Contemplating the Costs of the 'Big Deal,'" D-Lib Magazine 7, no. 3 (March 2001), www.dlib.org/dlib/march01/frazier/03frazier.html.
2. US Department of Education, National Center for Education Statistics, "Academic Library Data Files" for 1996–2012, http://nces.ed.gov/surveys/libraries/aca_data.asp; hereafter cited in text as *ALS* 1996–2012.
3. Malik Crawford and Jonathan Church, eds., CPI Detailed Report: Data for January 2014 (Washington, DC: US Bureau of Labor Statistics, January 2014), 94.
4. "Monograph & Serial Costs in ARL Libraries," from Association of Research Libraries, ARL Statistics 2010–2011 (Washington, DC: ARL, 2012), www.arl.org/storage/documents/monograph-serial-costs.pdf.
5. Tai Phan, Laura C. Hardesty, and Jamie Hug, *Documentation for the Academic Libraries Survey (ALS) Public Use Data File: Fiscal Year 2012*, NCES 2014-039 (Washington, DC: US Department of Education, National Center for Education Statistics, 2014), A-5–A-6, http://nces.ed.gov/pubs2014/2014039.pdf.