USPS-T-7

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, D.C. 20268-0001

POSTAL RATE AND FEE CHANGES, 2001

Docket No. R2001-1

DIRECT TESTIMONY
OF
GEORGE S. TOLLEY
ON BEHALF OF THE
UNITED STATES POSTAL SERVICE

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DIRECT TESTIMONY
OF
GEORGE S. TOLLEY

AUTOBIOGRAPHICAL SKETCH

My name is George S. Tolley. I am Professor Emeritus of Economics and formerly Director of the Center for Urban Studies at the University of Chicago. I am Honorary Editor of the professional journal Resource and Energy Economics. I am a Fellow of the American Association for the Advancement of Science. Formerly I was a member of the Energy Engineering Board of the National Research Council of the National Academy of Sciences. I am also President of RCF, Inc., an independent firm located in Chicago, Illinois, specializing in economic and econometric analyses for policy uses.

I received a Bachelor of Arts degree in Economics from American University in 1947, and an M.A. and Ph.D. in Economics from the University of Chicago in 1950 and 1955, respectively.

I was an assistant professor at the University of Chicago from 1950 to 1955 and have occupied my present position at the University since 1966. I was an associate professor and then a professor of economics at North Carolina State University from 1955 to 1966. I was a visiting professor at Purdue University in 1970, and a visiting professor in 1962 and visiting scholar in 1971 at the University of California at Berkeley.

I was director of the Economic Development Division, Economic Research Service, United States Department of Agriculture, from 1965 to 1966 and was Deputy Assistant Secretary and director of the Office of Tax Analysis in the Department of Treasury from 1974 to 1975. In these positions I directed staffs whose primary function was to conduct research and analysis for policy purposes. My other duties in government have included advising Cabinet and White House officials, participating in

the legislative proposal process, and writing testimony for and participating in congressional hearings.

My published works include 16 books and over 40 articles. Among the journal articles, four were published in Econometrica, three each in the Journal of Political Economy and the American Economic Review, and one in the Quarterly Journal of Economics.

I have participated in the preparation of 19 technical bulletins, over 70 chapters contributed to books, conference proceedings, and other research studies, and have written 11 book reviews and made a number of published remarks as a professional meeting discussant.

As a member of the faculty at the University of Chicago, I have taught economics courses, and chaired and attended workshops and seminars dealing with economics and econometrics.

I have served as a consultant on economic and agricultural policy in Egypt, Iran, Israel, Korea, Panama, Puerto Rico, Thailand and Venezuela, and I have performed analyses of mortgage interest deductions, accelerated depreciation and housing instability for the Department of Housing and Urban Development and of capital taxation for the Treasury Department. I served as a consultant on econometric and simulation techniques in work on postal prices and competition and demand component markets of mailstreams carried out for the U.S. Postal Service. During 1989, I served as a consultant to Australia Post on mail volume forecast methodology and as a consultant to the World Bank on housing policy for China. I have testified on behalf of the Postal Service as the volume witness in Docket Nos. R80-1, R84-1, R87-1, R90-1, R94-1, MC95-1, MC96-2, R97-1 and R2000-1.

PURPOSE AND SCOPE OF TESTIMONY

The major purpose of this testimony is to present forecasts of volumes for the major categories of mail service offered by the United States Postal Service. Two sets of forecasts are presented:

(a) Mail volumes that will occur in the Test Year if the current Postal Service rate schedules remain in effect, referred to as the "before-rates" forecast; and

(b) Mail volumes that will occur in the Test Year if the rates proposed by the Postal Service in this proceeding are adopted, referred to as the "after-rates" forecast.

The method used in forecasting mail volumes is to project changes in mail volumes between a Base Year and a Test Year. The Base Year used in the forecasts is comprised of the four consecutive quarters consisting of the fourth postal quarter of 2000 through the third postal quarter of 2001. The Test Year is Government Fiscal Year (GFY) 2003, which begins October 1, 2002 and ends September 30, 2003.

In the testimony, recent volume experience is reviewed, and factors determining mail volumes which are taken into account in making the forecasts are discussed. A detailed explanation of the econometric analyses used in making the volume forecasts is provided in the direct testimony of Thomas Thress (USPS-T-8). In addition, the direct testimony of Peter Bernstein (USPS-T-10) provides a complementary analysis of the impact of the Internet and various electronic alternatives to the mail. The testimonies of Thress and Bernstein serve as inputs to the volume testimony presented here. Additional information that is considered in making volume forecasts is discussed where appropriate below.

SUMMARY

This testimony presents the Test Year volume forecasts for 30 domestic mail categories and 7 special services offered by the Postal Service. Priority Mail and Express Mail forecasts are made by Dr. Gerald Musgrave (USPS-T-9) but are also presented in the summary table below. In the before-rates forecast, the existing postal rate schedules are projected to continue to prevail through the Test Year, whereas in the after-rates forecast, the new rates proposed by the Postal Service in this proceeding are projected to be implemented on the first day of the Test Year.

The Base Year for these forecasts is comprised of the four postal quarters consisting of the fourth postal quarter of 2000 (2000Q4) through the third postal quarter of 2001 (2001Q3). The Test Year coincides with Government Fiscal Year (GFY) 2003 which starts on October 1, 2002 and ends on September 30, 2003. After-rates Test Year volumes are projected assuming that proposed rates will be implemented on October 1, 2002. Table 1 summarizes the before- and after-rates projections of mail and service volumes for the Test Year. Also presented for comparison are Base Year volumes used in this rate case from which the Test Year volumes are projected. The Base Year and Test Year volumes include mail of the executive and legislative branches of the federal government.

TABLE 1
VOLUME PROJECTIONS
(Million Pieces)

Category of Mail or Service	Base Year (2000Q4-2001Q3)	Before-Rates Test Year GFY 2003	After-Rates Test Year GFY 2003	Adjusted After-Rates GFY2003
FIRST-CLASS MAIL				
First-Class Letters & Flats	**97,717.469**	**99,198.602**	**98,187.484**	
-- Single-Piece	51,373.392	47,899.389	46,865.402	
-- Workshared	46,344.077	51,299.213	51,322.082	
(Nonautomated Presort)	3,873.737	3,679.940	3,579.306	
(Automated)	42,470.340	47,619.273	47,742.776	
First-Class Cards	**5,419.554**	**5,633.776**	**5,266.679**	
Stamped Cards	182.059	182.342	170.412	
Private Cards	5,237.496	5,451.434	5,096.267	
-- Single-Piece	2,493.770	2,520.666	2,454.000	
-- Workshared	2,743.726	2,930.767	2,642.267	
(Nonautomated Presort)	516.202	424.530	216.053	
(Automated)	2,227.524	2,506.237	2,426.214	
TOTAL FIRST-CLASS MAIL	**103,137.023**	**104,832.378**	**103,454.162**	
Priority Mail	**1,177.068**	**1,257.064**	**1,178.757**	
Express Mail	**70.565**	**77.239**	**69.911**	
Mailgrams	**3.607**	**2.725**	**2.725**	
PERIODICAL MAIL				
Within County	**881.217**	**855.781**	**853.535**	
Nonprofit	**2,101.762**	**1,959.377**	**1,940.225**	
Classroom	**63.340**	**58.942**	**58.335**	
Regular Rate	**7,146.061**	**7,163.763**	**7,110.414**	
TOTAL PERIODICAL MAIL	**10,192.380**	**10,037.863**	**9,962.508**	
STANDARD MAIL				
Regular Rate Bulk	**76,071.365**	**82,298.337**	**80,421.874**	
Regular	44,384.704	48,424.553	47,296.185	
-- Nonautomated	5,277.124	4,390.785	4,106.231	
-- Automated	39,107.579	44,033.768	43,189.954	
Enhanced Carrier-Route	31,686.661	33,873.784	33,125.689	
-- Nonautomated	29,800.404	31,768.962	31,087.181	
-- Automated	1,886.257	2,104.822	2,038.508	
Nonprofit Rate Bulk	**14,627.290**	**15,195.806**	**15,119.320**	
Nonprofit	11,428.781	11,943.287	11,882.923	
-- Nonautomated	2,764.166	2,254.286	2,221.295	
-- Automated	8,664.615	9,689.001	9,661.629	
Nonprofit ECR	3,198.508	3,252.519	3,236.397	
-- Nonautomated	2,906.071	2,951.383	2,936.533	
-- Automated	292.437	301.137	299.864	
TOTAL STANDARD MAIL	**90,698.655**	**97,494.143**	**95,541.195**	

TABLE 1
(Continued)
VOLUME PROJECTIONS
(Million Pieces)

Category of Mail or Service	Base Year (2000Q4-2001Q3)	Before-Rates Test Year GFY 2003	After-Rates Test Year GFY 2003	Adjusted After-Rates GFY2003
PACKAGE SERVICES				
Parcel Post	**339.014**	**405.634**	**371.533**	
Non-Destination Entry	87.418	69.498	56.848	
Destination Entry	251.596	336.136	314.684	
Bound Printed Matter	**565.197**	**594.824**	**588.557**	
Media Mail	**171.296**	**159.100**	**158.641**	
Library Rate	**26.199**	**27.111**	**27.047**	
TOTAL STANDARD B MAIL	**1,101.706**	**1,186.669**	**1,145.778**	
Postal Penalty	**382.284**	**353.484**	**353.484**	
Free-for-the-Blind	**43.027**	**46.859**	**46.859**	
TOTAL DOMESTIC MAIL	**206,806.314**	**215,288.424**	**211,755.380**	
DOMESTIC SPECIAL SERVICES[1]	**985.632**	**1,056.130**	**1,002.692**	
Registry	8.464	7.214	7.089	
Insurance	60.624	62.861	60.543	
Certified[2]	277.856	283.708	279.412	302.882
Collect-on-Delivery	3.564	3.100	3.100	
Return Receipts[3]	235.249	231.238	221.655	220.887
Money Orders	231.227	230.427	228.243	
Delivery Confirmation[4]	168.648	237.582	202.650	308.722

[1] The special service forecasts discussed in section VIII below are for total special services, including international special services. The total special service forecasts are divided into domestic and international special services in Library Reference USPS-LR-J-125.

[2] Source: USPS-LR-J-136, Table FA-1

[3] Source: USPS-LR-J-136, Table FA-2

[4] Source: USPS-LR-J-136, Table FA-3 and USPS-LR-J-120. The Delivery Confirmation figures here include both Delivery Confirmation and Signature Confirmation. The adjusted after-rates forecast presented here can be decomposed into 307.166 million pieces of Delivery Confirmation and 1.557 million pieces of Signature Confirmation. Separate unadjusted forecasts for Delivery and Signature Confirmation are presented in USPS-LR-J-125. The unadjusted before-rates forecast can be decomposed into 236.862 million pieces of Delivery Confirmation and 0.720 million pieces of Signature Confirmation. An adjustment to the before-rates Signature Confirmation figure is made in USPS-LR-J-136, yielding an adjusted before-rates volume of Signature Confirmation of 1.525 million pieces. The adjusted before-rates volume of Delivery Confirmation is 236.862 million pieces, the same as the unadjusted before-rates volume.

As shown in Table 1, total domestic mail volume is projected to increase from 206.8 billion pieces in the Base Year to 215.3 billion pieces in the before-rates situation in the Test Year. The increase is 4.1 percent over a period of two years, corresponding to an annual growth rate of about 2.0 percent.[1] The projection for domestic mail volume in the after-rates situation is 211.8 billion pieces, which is a 2.4 percent increase over the same period, corresponding to an annual growth rate of about 1.2 percent.

For the 7 special services covered in the testimony, the projection is for an increase from 992.9 million transactions in the Base Year to 1,062.9 million transactions before-rates in the Test Year, an increase of 7.1 percent over the 2-year period. The after-rates projection for special services is 1,009.3 million transactions, an increase of 1.2 percent over 2 years.

The basic-volume forecasting approach consists of projecting the volume in the Test Year through use of a series of projection-factor multipliers. Each projection factor considers the impact of a particular variable on volume from the Base Year to the Test Year. A first factor considered is adult population. Increases in mail volume are closely tied to increases in adult population and, in fact, volume forecast projections are made on the basis of pieces per adult. Thus, the projected percentage rise in adult population increases the forecasted mail volume of all categories by an equal percentage amount. A 2.36 percent increase in adult population is projected to occur between the Base Year and Test Year.

A second variable considered in projecting mail volumes is the price paid by the mailer. The effect of price on volume is estimated as a response to price in real terms, i.e., nominal price deflated by an index of the general level of prices. Rather than occurring immediately, response to price occurs over a period of time. A change in real or deflated price is estimated to lead to a volume response in the quarter in which the

[1]This slightly overstates the volume growth between the Base Year and the Test Year, because the Base Year has 364 days and the Test Year has 365 days.

price change occurs and in subsequent quarters. The volume responses to price are expressed as price elasticities (where price elasticity is the percent change in volume resulting from a 1 percent change in real price). Effects of deflated price changes on the Test Year volume forecast are obtained by applying estimated price elasticities to percentage changes in real prices between the Base Year and the Test Year. The before-rates schedule assumes that the current-rate schedule remains in place, with inflation acting to decrease real postal rate between the Base Year and the Test Year. The after-rates schedule assumes that the rates proposed by the Postal Service in this case are adopted.

A third factor considered is income. For some mail categories, the impact of changes in income on volume is decomposed into separate effects of long-term and short-term changes in income. The effect of long-term growth in real income per adult on mail volume is projected by combining the long-term income elasticity of demand (the percentage increase in volume resulting from a 1 percent increase in real long-term income per adult) for each mail category with the projected percentage increase in real long-term income. The effect of short-term income changes due to business fluctuations is projected by combining the short-term income elasticity with the projected change in short-term income between the Base Year and the Test Year. For other mail categories, the impact of income is measured through an income variable found to specifically affect the volume of that mail product. For example, Standard Regular mail volume is found to be strongly affected by changes in retail sales, which are affected by changes in long-term and short-term income.

Volumes for some categories of mail are affected by the price of substitute mail categories. As a result, the price of the substitute, or cross-price, is a fourth factor considered for selected categories of mail. Cross-price elasticity of demand (the

percentage change in volume for a category resulting from a 1 percent change in price for a substitute category) is used to take account of the effects of changes in prices for substitute categories.

Additional specific factors also affect demand for some mail categories. For each such additional factor, an elasticity is estimated and used in connection with the projected percentage change for that factor. For example, the impact of the Internet is included in the volume forecasts of the following mail products: First-Class letters and cards, Periodicals Regular Rate, Standard Regular and ECR mail. Seasonal multipliers are included to reflect the seasonal pattern of mail volumes.

The text of this testimony presents a discussion of factors that affect the demand for individual mail categories and presents the resulting volume projections. The Technical Appendix and Library References provide a detailed description of the procedures used. In addition, the econometric testimony of Thomas Thress (USPS-T-8) and the electronic diversion testimony of Peter Bernstein (USPS-T-10) contain inputs used in the testimony presented here.

I. INTRODUCTION

A. Trends in Mail Volume

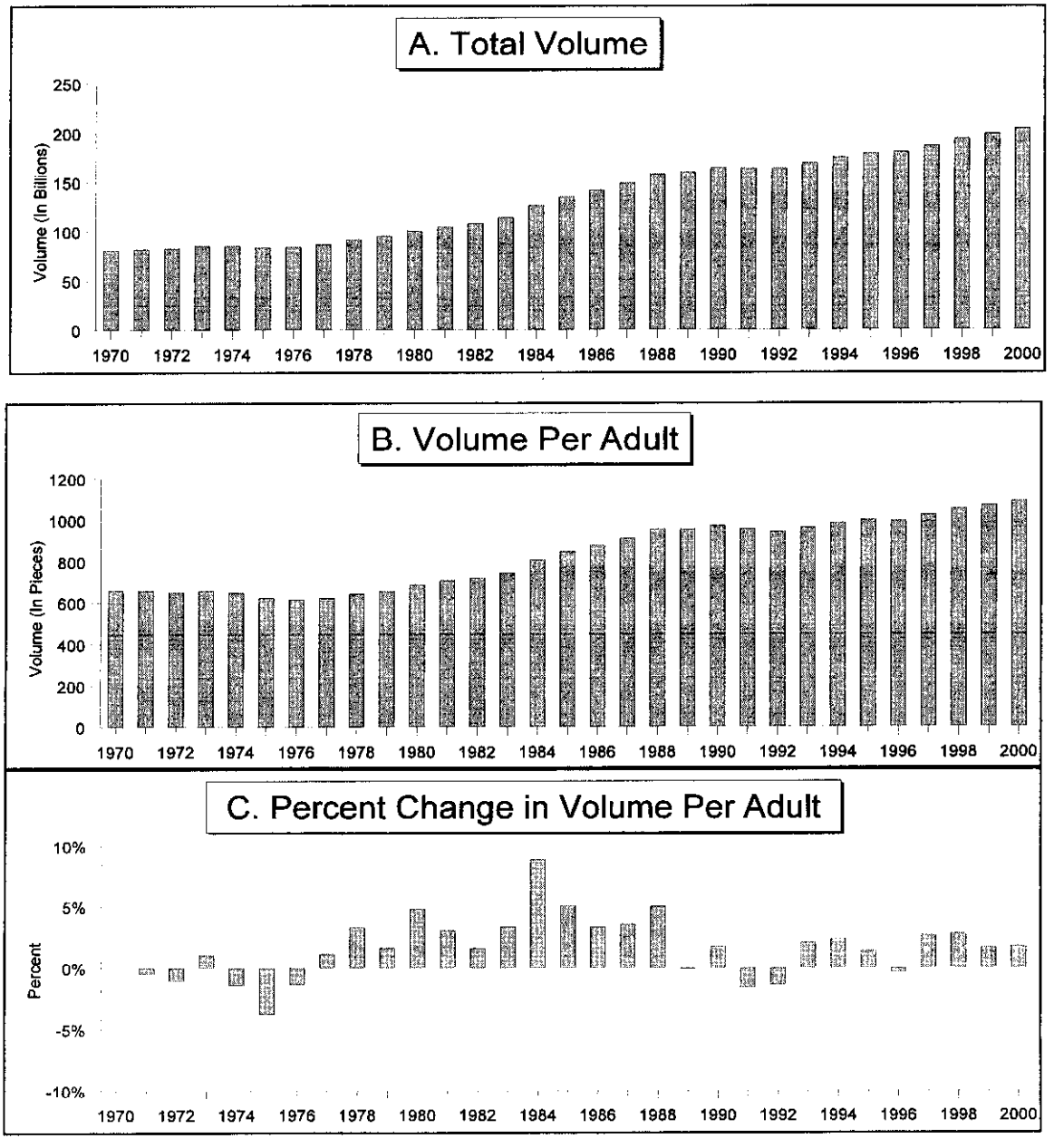
Throughout this testimony, unless otherwise noted, volumes are presented for Postal Years. A Postal Year, sometimes called Postal Fiscal Year or PFY, is similar to the U.S. government fiscal year or GFY. However, whereas the U.S. government fiscal year consists of 365 days beginning on October 1, a Postal Year consists of 52 weeks or 364 days on a day near to October 1. Quarterly volumes refer to the quarters of the Postal Year, where the quarters are I fall (1), winter (2), spring (3), and summer (4). As an example of notation, 2001Q3 refers to the third quarter or spring of Postal Year 2001.

The total volume of domestic mail handled by the U.S. Postal Service reached 205.1 billion pieces in Postal Year 2000, 2.8 percent higher than the 199.6 billion pieces in the previous year. New yearly highs have been typical for mail volume. Since the Postal Reorganization Act of 1970, when volume was 84.3 billion pieces, total mail volume has grown in every year except 1975, 1991 and 1992.

Increasing population explains much of the mail-volume growth. Adults are generally responsible for generation of mail. The adult population as measured by persons 22 years of age or older rose 54 percent from 1970 to 2000. Population growth has been a relatively steady influence. The rate of growth of the adult population has varied from about 1 percent to 2 percent per year.

The influence of population is separated out by comparing the top and middle charts in Figure 1. The top chart shows total mail volume from 1970 to 2000, revealing the general upward trend in mail volumes. The middle chart shows volume per adult, reflecting influences other than population. It reveals a more varied situation. Starting at 660 pieces per adult in 1970, pieces per adult dipped to 615 in 1976 and then

Figure 1
Total Domestic Mail



recovered to 685 pieces by 1980. On net, then, in the 1970s mail volume increased approximately in proportion to population. In the early 1980s, mail-volume growth accelerated, with pieces per adult reaching 971 in 1990, a 42 percent increase during the decade. Pieces per adult declined the next two years, but has since increased to 1,089 pieces per adult in 2000.

The lower part of Figure 1 enables a closer look by giving the yearly percentage changes in pieces per adult, derived from the middle chart. Periods of systematically different change are brought out in the lower chart. Pieces per adult declined in 5 of the 6 years from 1971 to 1976. Pieces per adult increased in every subsequent year from 1976 through 1990, including the large gain of 8.7 percent in 1984. After declining in 1991 and 1992, total mail volume per adult has increased in 7 of the last 8 years.

The total mail volume experience in Figure 1 is largely reflective of the 2 most important mail subclasses, First-Class letters and Standard Regular mail. As will be brought out later in this testimony, growth for both of these subclasses picked up in the late 1970s and early 1980s, followed by slower growth, particularly for First-Class letters.

Experience has been extremely varied for the numerous other subclasses which have a lesser effect on total mail volume. The testimony is concerned with the underlying subclass behavior leading to the volume totals shown in Figure 1.

B. Approach to Forecasting Used in This Testimony

The 2 major tasks of the testimony are (1) to explain past volume changes for each subclass with special attention to the past 5 years leading up to the Base Year and (2) to use this understanding to make projections through the Test Year.

Test Year before-rates and after-rates mail volume forecasts are made by multiplying the Base Year volume by a series of projection-factor multipliers. Each

multiplier measures the impact of a projected future change from the Base Year to the Test Year in a factor found to affect volume in the past.

1. Forecast Model Based on Explaining Past Volume Behavior

The testimony is based on the belief that past behavior of mail volumes provides the most valuable source of information about what is likely to happen in the future, particularly if the reasons for past volume changes can be understood and used as the basis for forecasting.

Population, income and price changes, which are traditional variables used to explain economic changes, are among the reasons that mail volumes change. For example, as population increases, or as incomes rise, the demand to communicate rises in the course of fulfilling the demands for growing amounts of goods and services in the economy. Prices affect mail volumes in several ways. The rate charged for a piece of mail in the subclass whose volume is being explained, or its own price, acts to deter use if the price is raised. Rates charged for mail that might be used as an alternative, or postal cross prices, as illustrated by the rate for a letter whose contents could be sent either by First-Class or Standard mail, may affect which mail subclass is used. Within First-Class letters, there are separate prices for single-piece and workshare letter categories, and changes in the workshare discount have been found to have important effects on category volumes. Cross-price effects also exist for nonpostal alternatives, as for example United Parcel Service rates that affect usage of Parcel Post mail.

In addition, mail volumes are influenced by considerations beyond the effects measured by income and price. The volume of First-Class mail, for example, is affected by electronic-communications developments which in recent years have given households, businesses, and the government new alternatives to the use of the mail.

Periodicals volume has been influenced by various demographic factors. Standard volume is affected by costs of advertising using alternative media, as well as developments in the direct-mail industry. Changes in postal rules and regulations affect volumes of certain mail subclasses or services.

Much of this testimony describes the impact that different variables have had on volume over the past 5 years. The discussion provides an understanding of the relative importance of different variables as influences on past mail volumes; and it gives a basis for assessing the impact of these variables on mail volumes in the future.

2. Use of Econometric Analysis

The starting point in gaining an understanding of volume behavior is to specify regression equations attempting to explain volume in terms of independent variables influencing volume in the past. The econometric work includes regressions usually estimated at the subclass level using quarterly data. The econometric analysis gives estimates of the responsiveness of volume to changes in the included variables, which then can be used to explain how these variables can be expected to contribute to volume change in the future.

As an example, econometric analysis indicates that in the past, a 1 percent increase in the real price of Regular Rate mail has been associated with about a 0.166 percent decline in its volume. Based on this result, the impact of future changes in Regular Rate mail price can be projected.

Ideally, ordinary least squares (OLS) regression analysis of past volume would yield satisfactory estimates of the elasticities needed in the volume forecasts. A complication precluding this simple approach is that OLS estimates in uncorrected form in some cases do not yield satisfactory estimates. One difficulty is that there exists a high degree of inter-correlation between the variables influencing volume. For example,

postal prices tend to move together rather closely so that it can be difficult to distinguish the impact on volume of a change in postal own price from the impact of a change in postal cross price. To address this kind of problem, state-of-the-art econometric methods are employed to introduce procedures into the OLS estimation to obtain more reliable estimates. These procedures take several forms. For example, the *Household Diary Study*, which gives cross-section data at a point in time, throws light on effects of income on volume. Mixed estimation introducing the cross-section data avoids reliance on the possibly unreliable income coefficients from the raw time-series regressions. As another example, economic theory is used to constrain the relations among estimates to reasonable values.

In addition to complications arising from inter-correlations among included independent variables, quarterly time-series measures in a form useable in regressions are not available for all variables affecting mail volumes. Because of limitations on data useable in regressions, the specification of the econometric equations realistically cannot be completely ideal. However, a great deal of other information exists on factors affecting volumes. The approach underlying the present testimony is that all information, not just that small subset of data that exist as a measured quarterly variable, should be used in gaining an understanding of mail volume behavior and predicting future volumes. Econometric and non-econometric techniques are employed to introduce this type of information.

3. Measurement of Important Variables

a. Postal Prices

Fixed Weight Price Index. With regard to the measured independent variables, the price of a mail subclass is measured as a fixed weight index (FWI) of the prices of the various categories of the subclass. For example, the 34 cent rate commonly

referred to as the price of a single-piece First-Class letter is only the rate of a basic letter weighing one ounce or less. Heavier letters cost more, and the FWI price of single-piece letters reflects the impact of the additional cost for letters weighing more than one ounce. Workshare letters, on which the mailer receives a discount for satisfying Postal Service workshare requirements, pay a lower 1-ounce rate than single-piece letter mail. The FWI price of workshare letters takes account of the different discounts used by mailers, as well as the impact of the additional cost for those workshare letters which exceed 1 ounce in weight. Similar adjustments are made for other mail categories so that the FWI price represents a measure of the price actually paid by mailers.

User Costs. The price paid by mailers for workshare mail is not solely represented by the postal rate paid. The reason is that mailers or their agents must bear extra costs of performing the tasks that qualify the mailing for a discount. For example, the current price of a 3-digit automated First-Class letter is 26.1 cents, but to receive this discounted price, the mail must be prepared in a way that satisfies the requirements for this category. The additional cost borne by mailers to satisfy worksharing requirements is referred to as a user cost, and user costs are included as part of the FWI price paid by mailers.

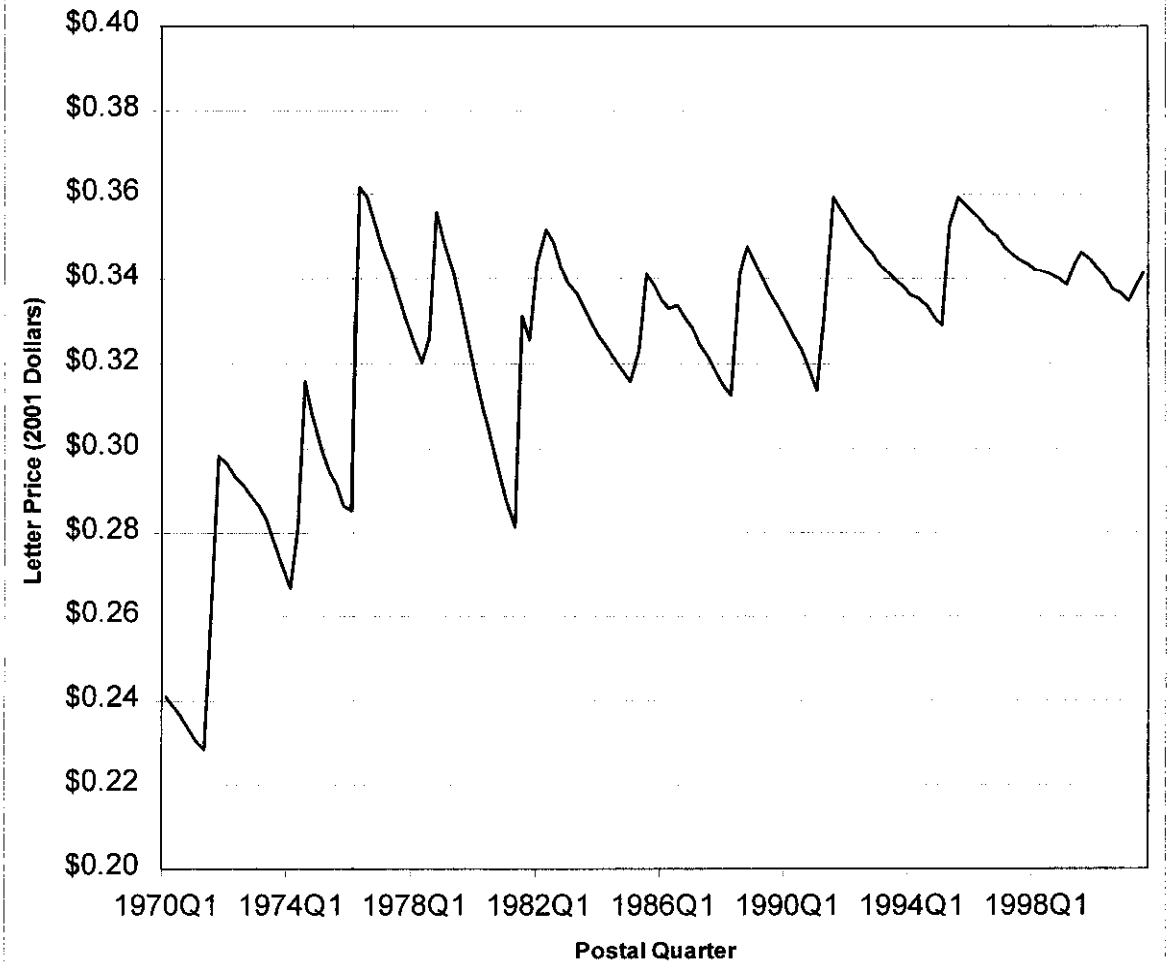
Inflation Adjustment. The price of sending a basic 1-ounce First-Class letter has risen 12 times since the beginning of 1971. In May 1971, the price was increased from 6 to 8 cents, where it remained for nearly 3 years until being raised to 10 cents in March 1974. Less than 2 years later, in December 1975, it was raised to 13 cents. Subsequent increases have occurred at approximately 3-year intervals. The price became 15 cents in May 1978, rising to 18 cents in March 1981 and 20 cents in November 1981. The price was raised to 22 cents in February 1985, to 25 cents in April

1988, to 29 cents in February 1991, to 32 cents in January 1995, to 33 cents in January 1999. The current price of 34 cents for a 1-ounce single-piece letter has been in effect since January 2001.

Although the nominal price has increased substantially over the years, much of this increase has paralleled the increase in the general price level over the same period. Mailers can be expected to respond to real or deflated postal price, which requires dividing the nominal postal prices considered so far by an index of the general level of prices. Nominal postal prices are changed only intermittently, typically staying constant between rate cases. On the day new rates go into effect, postal prices rise by the full amount of the rate increase, and then the prices in real terms begin to fall as inflation reduces the real value that must be paid to send mail. Real postal prices exhibit a saw-tooth pattern, rising vertically at the time of a nominal rate increase and then gradually falling from that day forward due to inflation until there is another vertical rise at the time of the next rate increase. Whether real or deflated postal prices rise from 1 rate case to another depends on whether nominal postal prices are raised by more, or less, in a rate case than the rise in the general price level since the last rate case.

Chart A shows the real price for a 1-ounce single-piece (non-workshare) First-Class letter. The real price in Chart A is measured in 2001 dollars, which means that the nominal prices in earlier years are adjusted to account for changes in the general price level between the earlier year and 2001. As can be seen, over and above the saw-tooth pattern, the real price rose in the first few years after the Postal Reorganization Act of 1970, reaching a peak of 36.2 cents (in 2001 dollars) in 1976. Real price declined until the early 1980s as the increase in the general price level

Chart A
Basic One Ounce Rate



exceeded increases in the basic 1-ounce letter rate. Over the past decade, the real price has fluctuated between 32 and 36 cents, with the upper end of this range occurring immediately after rate cases.

b. Population

Another factor affecting mail volume is population. Since adults are generally responsible for mail, the measure of population used in the econometric analysis is adult population age 22 and over as reported by Data Resources Inc. (DRI). Mail volumes are measured as volumes per adult so that increases in adult population lead to equal percentage increases in mail volume, excluding the impact of all other variables.

c. Income

A third factor affecting mail volume is income. For many mail subclasses, the econometric impact of income is decomposed into separate effects. One effect is from long-run income, measured as a weighted average of past real (inflation adjusted) disposable income. Short-run or transitory changes in income associated with business cycles can also affect mail volume. Short-run income is measured by the Federal Reserve Board Index of Capacity Utilization (UCAP), which is also reported by DRI.

For some mail categories, different measures related to income are used. For example, Standard Regular mail volume, which consists of advertising mail, is found to be strongly affected by retail sales.

d. Additional Variables

Other variables included in the estimation of the volume of some mail subclasses include the prices of other postal products, measured as the real fixed weight index price of the product, and the real price of important nonpostal alternatives, which include prices of both direct competitors (UPS price) and indirect competitors (like the

price of newspaper advertising). The real price of complementary products (products that are used with the mail) are included in the regressions of some mail categories. Volume analysis also takes account of changes in Postal Service rules and regulations. In addition, variables accounting for the seasonal pattern of mail volumes are included.

For the first time, volume forecasts include the explicit impact of variables measuring usage of the Internet. The volumes of First-Class single-piece letters and single-piece cards are found to be negatively impacted by the greater use of the Internet as a medium for performing some of the activities that would otherwise occur through the mail. The volumes of Standard Regular and ECR mail are found to be negatively impacted by the use of the Internet as an advertising media. Future growth in these variables are projected to reduce volumes further. The companion testimony of Peter Bernstein (USPS-T-10) provides a detailed discussion of the impacts on mail volume of the Internet and other technological developments

Beyond direct measures of variables considered so far, econometric analysis can include estimates of other influences on mail volumes, influences that do not lend themselves to measurements as a single variable. As an example, technological advancements that have lowered the cost of automating mail have contributed to the shift of volume from single-piece to workshare letters. Direct measurement of this effect is precluded by the myriad combination of factors involved and the lack of consistent and complete data.

Other examples involve more gradual changes that have to do with lifestyles, as in the general decline in the reading of newspapers and magazines. Nonetheless, these kinds of influences can be accounted for in the econometric analysis through use of trend variables designed to measure their effects on mail volume. The companion testimony of Thomas Thress (USPS-T-8) provides a detailed explanation of the

econometric analysis of volumes.

4. Non-Econometric Analysis

In addition to information obtained from the econometric analysis, considerable attention is paid to non-econometric information about mail volumes. Non-econometric information may be statistical or narrative. The purpose of this non-econometric research is 3-fold. First, it contributes to the general understanding of the mail and helps determine which variables should be included in the econometric equations. Second, non-econometric evidence may provide information that helps determine whether the elasticities obtained from the econometric estimation are reasonable and, if not, suggest alternative approaches. Third, non-econometric evidence can be introduced into the volume forecast when it has been determined that recent changes warrant special consideration.

The impact of recent non-econometric influences on volume are estimated through calculation of a net-trend term. The net trend indicates how volume changes have been different from what would be predicted by the coefficients of variables included in econometric analysis. It gives an estimate of the effects of these variables in the recent past. The net trend over the most recent 5-year period (1996 to 2001) is evaluated in light of non-econometric information. If the non-econometric information indicates that the unmeasured variables have a marked effect and will continue to act in the same way in the forecast period as in the past 5 years, the annualized net trend is added as an influence to the predicted effects using the econometric variables.

For most mail categories, it is found that econometric considerations satisfactorily account for changes in volumes. For these categories, analysis of non-econometric factors indicates that these factors do not have enough effect to warrant inclusion in the volume forecast or, in some cases, are significant but offsetting.

The Technical Appendix to this testimony presents a discussion of the volume forecasting methodology.

5. New Features Since R2000-1

In the last general rate case, Docket No. R2000-1, the Postal Rate Commission recommended rates that the Postal Service Board of Governors determined were too low to satisfy the agency's break-even requirement. Consequently, the Board of Governors adopted new rates that took effect in July 2001. The before-rates volumes in the Test Year are affected by this latter rate change since it occurred between the Base Year and the Test Year of the present rate case. The after-rates volumes are similarly affected by the rate changes in July of 2001 as well as the rate changes proposed in this case.

Another change from the previous case is the approach used to separate the forecasts of total cards into single-piece and workshare cards, the total of Standard mail into nonprofit plus Standard Nonprofit ECR mail into its 2 components, and Parcel Post into DBMC and non-DBMC components. In R2000-1, disaggregated volumes were projected by applying separate net trends to the separate base volumes. In the present case, disaggregated volumes are projected by applying share equations to aggregated volumes.

C. Guide to Testimony and Supporting Documentation

The total volume-testimony submission includes the body of my testimony, the companion testimonies by Thomas Thress and Peter Bernstein, and Library References that accompany our testimonies. A guide to these materials is as follows.

> Following the presentation of introductory background material, the body of my testimony contains separate sections on the individual mail subclasses and special services for which volume projections are made. In each of these sections, the subclass is first defined, and then its volume history is reviewed.

Then estimates of the contribution of various factors to volume change for the subclass over the most recent five years are given along with a discussion of recent developments affecting mail volume. Finally, the before- and after-rates volume projections are presented for the Test Year. Quarterly and annual before- and after-rates volume projections through Government Fiscal Year (GFY) 2004 are presented in Library Reference USPS-LR-J-125, which is described below.

The Technical Appendix and Library References accompanying my testimony provide a detailed description of the volume forecast methodology and present sufficient information to replicate the forecasts:

Technical Appendix: Forecast Model describes the basic approach to forecasting that is used and describes the multiplicative projection factor methodology by which each factor affecting future mail volumes is entered into the forecasting model. The Technical Appendix also describes the Forecast Error Analysis program used to analyze the quarter-by-quarter performance of within-sample forecasts over the past five years.

Library Reference J-122. Before-Rates Fixed-Weight Price Indices gives the derivation of the fixed weight index (FWI) values for prices in the regressions and in the before-rates volume forecasts. Included in this library reference is the Excel file used in the FWI calculations, on diskette.

Library Reference J-123. After-Rates Fixed-Weight Price Indices gives the derivation of the fixed weight index (FWI) values for prices in the after-rates volume forecasts. Included in this library reference is the Excel file used in the FWI calculations, on diskette.

Library Reference J-124. Data Used in Volume Forecasts gives the quarterly series used in the forecasts. These include before- and after-rates postal prices, and projected values of economic variables.

Library Reference J-125. Documentation of Volume Forecasting Model gives technical documentation of the Excel spreadsheet used in producing the forecasts, lists the inputs used in the forecasts and supplies instructions for running the forecast program. It includes diskettes containing the Excel spreadsheets used to generate the before- and after-rates forecasts. It also includes a printout of quarterly before- and -after rates volume forecasts through Government Fiscal Year (GFY) 2004.

Library Reference J-126. Step by Step Calculations of Volume Projections contains step-by-step calculations illustrating the derivation of the projection factors or multipliers and their use in arriving at forecasted values for First-Class letters and First-Class cards, applying the forecast methodology presented in the Technical Appendix.

The testimony of Thomas Thress is concerned with the econometric estimation leading to many of the parameters used in the forecast model.

The body of the Thress testimony presents the structure of the subclass time series econometric equations and describes the approaches used in the estimation. The final econometric coefficient estimates for each subclass are presented, and the research involved in selecting the final estimates is described. Witness Thress's testimony also develops the methodology and presents the estimates for the share equations used in forecasting the worksharing categories for First-Class, Standard, and Parcel Post mail.

Library Reference J-127. Data, Programs, and Results for Witness Thress's Econometric Work lists the sources for data used and gives values of variables that are calculated rather than being used in original source form in the subclass time series regressions.

Computer printouts are presented for the subclass time series regressions from which coefficients in the Thress testimony are obtained. The printouts include goodness of fit statistics. In addition, the econometric results from the historical share equations are presented.

This library reference includes a diskette containing data series ready for use in the regressions along with the files containing code used to generate the regression outputs.

Library Reference J-128. Estimation of Long-run Income Elasticities contains details on the estimation of cross-sectional income elasticities and standard errors from the Household Diary Study and their transformation to obtain long-run income elasticities for use in the basic quarterly time series subclass regressions. A diskette containing the programs used to generate these results is included.

Library Reference J-129. Witness Thress's Choice Trail Results presents intermediate econometric results leading to econometric results presented in Thress testimony.

The testimony of Peter Bernstein is concerned with the diversion of First-Class and Standard mail due to greater use of technological alternatives including the Internet.

The body of the Bernstein testimony presents projections of future household use of the Internet and future online advertising spending used as inputs into my volume forecasts. In addition, the Bernstein testimony provides a general discussion of the impact of technological alternatives to the mail.

Library Reference J-133 accompanying the Bernstein testimony, Projections of Future Internet Variables consists of Excel spreadsheets giving historical and projected values of household expenditures on Internet Service Providers and Internet advertising expenditures.

Library Reference J-134 accompanying the Bernstein testimony, Pricing Models consists of Excel spreadsheets calculating future postal prices implied by the Postal Rate Commission's recommended R2000-1 mark-ups and by Ramsey prices, along with estimated gains from Ramsey prices.

II. FIRST-CLASS MAIL

A. General Characteristics

1. First-Class Mail as a Means of Communication

First-Class is the largest class of mail, accounting for slightly more than half of total domestic-mail volume. Of the 205.1 billion pieces of domestic mail handled by the Postal Service in PFY2000, 101.8 billion pieces consisted of First-Class mail. The most distinguishing feature of First-Class mail is that it contains private messages. Handwritten or typewritten messages, as well as hard copy computer output if it has the character of personal correspondence, must be sent by First-Class mail. Bills, statements of account and messages associated with a business transaction are considered to be private messages and must be sent by First-Class mail.

First-Class mail is guaranteed against postal inspection and is accorded expeditious handling. It is forwarded without extra charge. First-Class letters are returned without extra charge if not deliverable. The use of First-Class mail is protected by restrictions on competition for the carriage of private messages created by the Private Express Statutes. In important instances, exceptions to these restrictions are made, permitting nonpostal carriers to deliver private messages, as in the case of private delivery of overnight mail. Electronic communication by computers is not covered by the Private Express Statutes and serves as an alternative to sending First-Class mail in many cases.

2. First-Class Mail Substreams

Chart B shows a breakdown of First-Class mail based on data from the Household Diary Study. Nonhousehold entities, primarily businesses, are involved in the preponderance of First-Class mail. Chart B shows that in 2000, 47.0 percent of

Chart B
BREAKDOWN OF FIRST-CLASS MAIL ACCORDING TO FLOWS BETWEEN SENDER AND RECEIVER GROUPS, 2000

Nonhouseholds to Households		47.0%
Business or Non-Federal Government		
Advertising Only	9.2%	
Notice of Order	2.0%	
Bill/Invoice/Premium	15.1%	
Financial Statements	5.9%	
Payments	1.4%	
Invitation or Announcement	2.1%	
Other	3.7%	
Social, Charitable, Political or Nonprofit		
Announcement/Meeting	1.8%	
Request/Confirmation of Donation	1.6%	
Other	0.8%	
Don't Know / Don't Answer	3.3%	
Nonhouseholds to Other Nonhouseholds		29.7%
Households to Nonhouseholds		15.1%
Response to Advertising	1.8%	
Payment of Bills	11.0%	
Other	1.9%	
Don't Know / Don't Answer	0.5%	
Households to Other Households		7.0%
Correspondence	2.6%	
Holiday/Greeting Cards	4.0%	
Other	0.4%	
Unknown Incoming or Outgoing		1.1%
Total		100%

Source: Household Diary Study data

First-Class mail was sent from nonhouseholds to households and an additional 29.7 percent was sent from nonhouseholds to other nonhouseholds. Chart B shows that 15.1 percent of First-Class mail sent from nonhouseholds to households consists of bills, invoices, or premiums. Other important types of nonhousehold to household First-Class mail include advertising and financial statements. First-Class mail sent by nonhouseholds to other nonhouseholds involves not only bills, but also statements, checks, correspondence and advertising.

In 2000, 15.1 percent of First-Class mail was sent by households to non-households. Much of the First-Class mail sent by households consists of payments of bills or responses to advertising. The relatively small proportion of the mail sent between households (7.0 percent of total First-Class mail) is devoted mostly to personal correspondence with greeting and holiday cards representing a majority of household to household mail. Overall, households sent 22.1 percent and received 54.0 percent of First-Class mail in 2000.

3. Changes Since 1987

Important changes in the composition of First-Class mail have occurred over the years. Chart C gives figures for 1987, based on the Household Diary Study data. Comparing Chart B for 2000 to Chart C for 1987, it can be seen that the share of mail sent from nonhouseholds to households increased from 41.2 percent to 47.0 percent in 2000. The share sent from households to nonhouseholds increased from 12.2 percent to 15.1 percent. Another change was the decrease in household-to-household mail, which fell from 9.1 percent to 7.0 percent.

Chart C
BREAKDOWN OF FIRST-CLASS MAIL ACCORDING TO FLOWS
BETWEEN SENDER AND RECEIVER GROUPS, 1987

Nonhouseholds to Households		41.2%
Business or Non-Federal Government		
Advertising Only	5.2%	
Notice of Order	1.4%	
Bill/Invoice/Premium	14.7%	
Financial Statements	5.0%	
Payments	1.9%	
Invitations or Announcements	1.5%	
Other	7.4%	
Social, Charitable, Political or Nonprofit		
Announcement/Meeting	1.3%	
Request/Confirmation of Donation	0.6%	
Other	1.6%	
Don't Know/Don't Answer	0.6%	
Nonhouseholds to Other Nonhouseholds		35.6%
Households to Nonhouseholds		12.2%
Response to Advertising	3.6%	
Payment of Bills	3.1%	
Other	4.7%	
Don't Know/Don't Answer	0.8%	
Households to Other Households		9.1%
Correspondence	2.6%	
Holiday/Greeting Cards	6.0%	
Other	0.5%	
Unknown Incoming or Outgoing		1.9%
Total		100%

Source: Household Diary Study data

4. Organization of the Remainder of Chapter

The remainder of this chapter is organized as follows. Section B discusses the characteristics of First-Class letter mail. The volume history of letters is reviewed with special attention to differences in the behavior of single-piece and workshare letters. Section C examines factors affecting the volume of single-piece First-Class letters, followed by a discussion of recent developments influencing the demand for this mail product. The Section concludes with a presentation of the before- and after-rates forecasts of single-piece letters. Section D examines factors affecting workshare letters, discusses recent developments, and presents the before- and after-rates volume forecasts. Section E follows a similar procedure for stamped First-Class cards, as does Section F for private First-Class cards.

B. First-Class Letters

1. Definition

First-Class letters are the most commonly used type of mail and consist of envelopes and sealed packages containing private messages, provided the weight is less than 13 ounces. Priority Mail, which is considered in the testimony of Dr. Gerald Musgrave (USPS-T-9), is available for weights of more than 13 ounces.

There are two major categories within the First-Class letter subclass, single-piece letters and workshare letters. Single-piece letters refer to letters that do not receive any presort or automation discounts. Workshare letters are letters for which a postal discount is granted. Workshare letters, in turn, consist of nonautomated presort letters and automated letters. Within automated letters, there are 4 presort categories: basic, 3-digit, 5-digit, and carrier-route.

2. Volume History

a. Total Letters

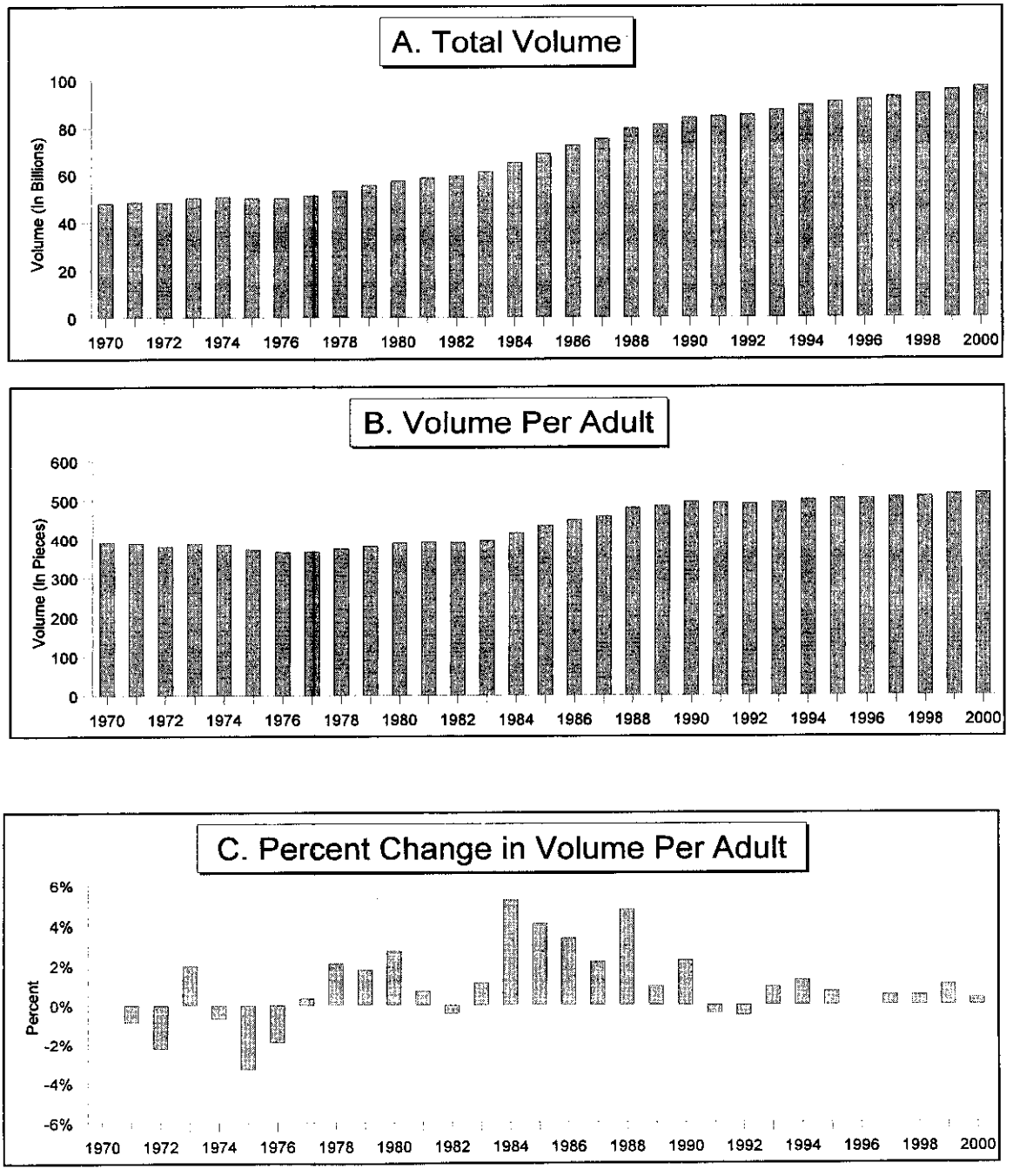
Figure 2 presents the annual volume history of First-Class letters from 1970 to 2000. As shown in the upper part of Figure 2, total First-Class letter volume grew sluggishly in the 1970s. The middle panel reveals that population growth alone was responsible for most of the growth in the 1970s. Volume was 394 pieces per adult in 1980, essentially the same as in 1970.

In the 1980s, volume growth substantially exceeded population growth, with 496 pieces per adult being reached in 1990. Volume growth was strongest in the 1983 to 1988 period, with volume per adult rising more than 20 percent over this period. Volume per adult declined again in 1991 and 1992 but has grown every year since, reaching an all-time high of 516.8 pieces per adult in 2000, more than 30 percent greater than its level in 1970 or 1980, but only 4 percent higher than its level in 1990.

Government mail consists of mail sent by government agencies, often referred to as penalty mail because unauthorized use is punishable by a $300 penalty. In 1988, the Postal Service began reporting a separate set of mail volumes with government mail distributed, meaning that the volume totals of each mail subclass include the government mail sent via that subclass. The volume presented in Figure 2 and all subsequent figures, does not include government mail in the years before 1988, but does include government mail in the years 1988 and after. Generally, government mail represents a small portion of total volume, usually less than 2 percent.

Figure 2

Total First-Class Letters



The before- and after-rates volume forecasts presented in this testimony include government mail to conform with the present reporting standards.

b. Single-Piece Letters

Single-piece letters refer to letters that do not receive any presort or automation discounts. Figure 3A shows the volume history of single-piece letters from 1970 to 2000. Prior to 1976, all First-Class letter mail was categorized as single-piece mail. Volume per adult was 392.6 pieces in 1970 and has gradually declined since then. One factor explaining this long-term decline was the introduction and expansion of presort and automation discounts, the first of which was started in 1976. In 2000, single-piece letter volume per adult was 277.1 pieces, about 17 percent less than in 1990 and 30 percent less than in 1970.

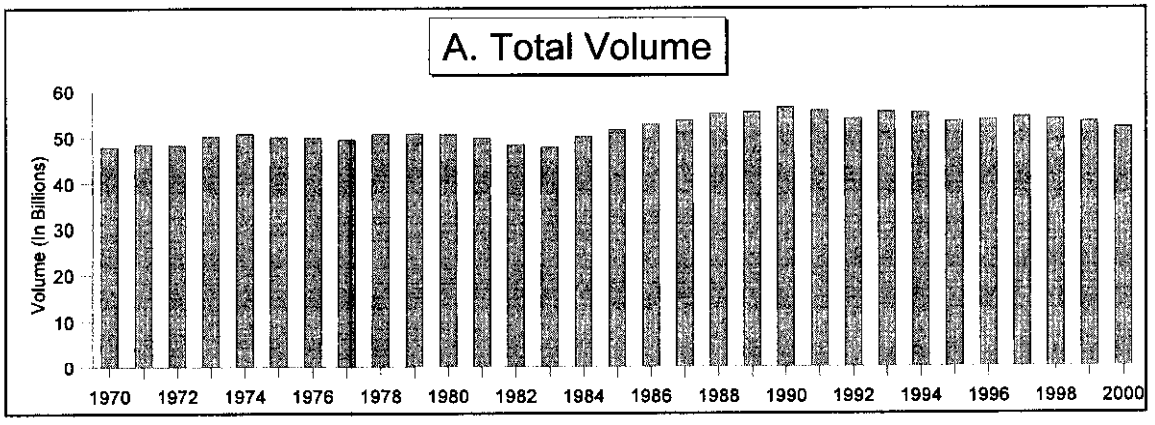
c. Workshare Letters

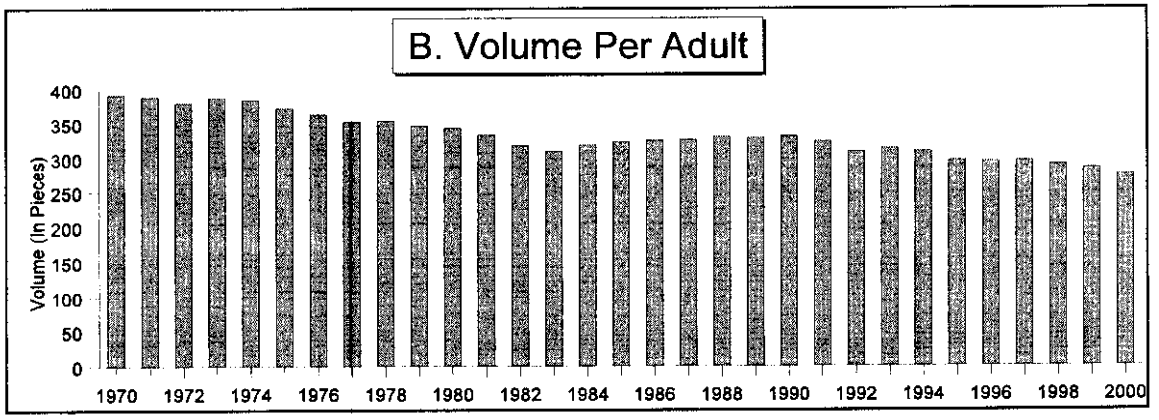
First-Class workshare letters consist of all letters that receive a discount for being presorted or automated. The 5 categories of First-Class workshare letters are nonautomated presort and the 4 automation categories: basic, 3-digit, 5-digit, and carrier-route.

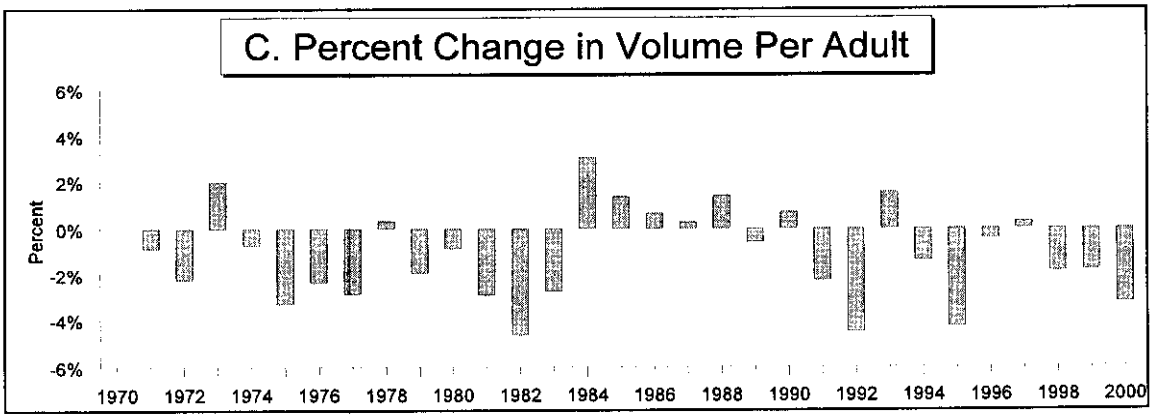
Nonautomation presort mail, called simply presort, is presorted by ZIP Code but is not barcoded by the mailer. This mail is entered in bulk. Automation mail is barcoded and can, therefore, be run directly through the Postal Service's sorting equipment with no manual processing required. Automation mail is can be presorted to the 3-digit, 5-digit, or carrier-route level. The last of these (carrier-route presorting) is only available at certain Post Offices. Automation basic mail is mail that is not presorted to the 3-digit or greater level.

Figure 3A

Single-Piece First-Class Letters







Within this testimony, volume forecasts are presented for total workshare letters and for nonautomated presort and total automated letters. The testimony of Thomas Thress (USPS-T-8) discusses the methodology employed to forecast the workshare letter categories.

Figure 3B shows the volume history of workshare letters ending in 2000 and beginning in 1977, the first full year in which workshare discounts were given. Comparing Figure 3B to Figure 3A shows important differences between the volume histories of workshare and single-piece letters. Workshare letter volume has increased every year since its introduction. Growth in volume per adult was particularly strong in the early years of this category, with double-digit percentage gains occurring every year until 1987. In 2000, workshare letter volume per adult reached 239.8 pieces, nearly 50 percent more than at the start of the decade.

The pronounced differences between the past volume behavior of single-piece and workshare letters warrants separate examination of the demand factors for these 2 products, while at the same time recognizing the interaction between the products' demands. As such, this testimony provides separate analysis of single-piece and workshare letters.

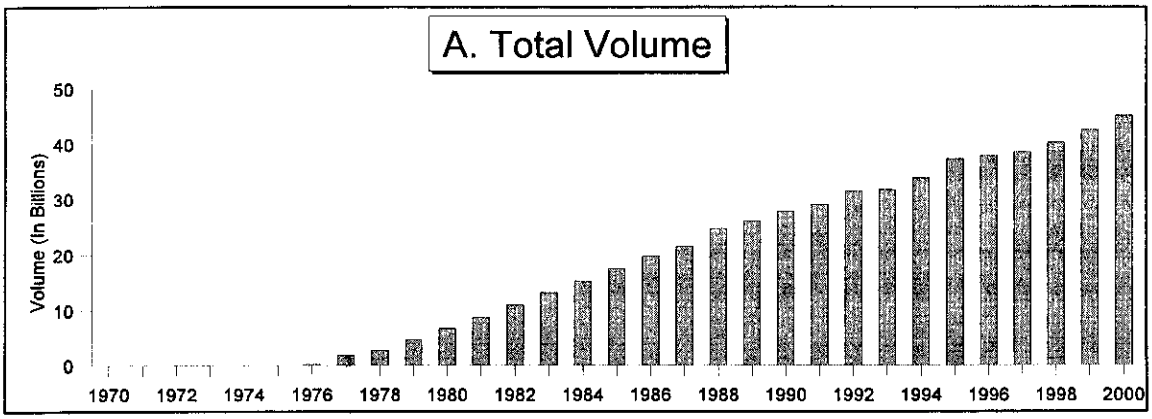
C. Single-Piece Letters

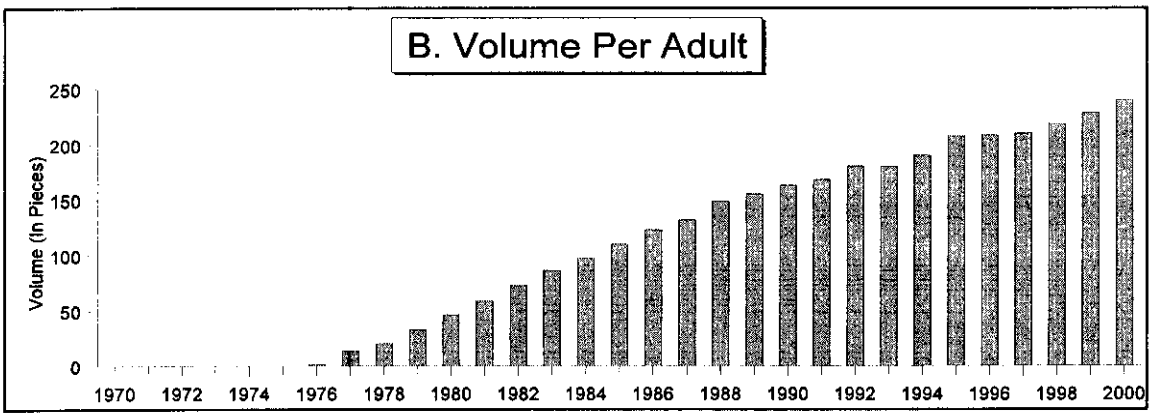
1. Factors Affecting Volume of Single-Piece Letters

The bottom row of Table 2 indicates that single-piece letter volume decreased 3.80 percent during the 5-year period ending in 2001Q3. The table also shows the contribution of different factors to this 5-year volume change. The impact of each individual factor, or variable, is calculated by combining the percentage change in the variable over the past 5 years with the estimated elasticity of single-piece volume with

Figure 3B

Workshare First-Class Letters





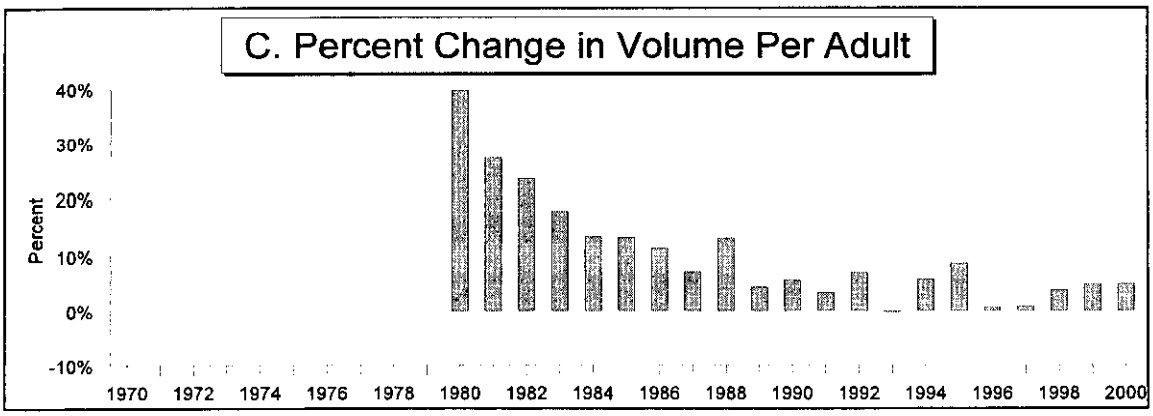


TABLE 2

CONTRIBUTIONS TO CHANGE IN
SINGLE-PIECE FIRST-CLASS LETTERS VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable Observed Over Last 5 Years	Elasticity	Estimated Effect of Variable on Volume
Own Price	-7.1%	-0.311	2.32%
Cross Prices			
Workshare Discount	22.3%	-0.027	-0.54%
Single-Piece Cards	-8.8%	0.004	-0.04%
Income			
Long-run	10.2%	0.512	5.10%
Short-run	-2.6%	0.099	-0.26
Internet Service			-8.57%
MC95-1 Rule Change			3.58%
Adult Population	4.5%	1	4.50%
Other Factors			-8.86%
Total Change in Volume			-3.80%

respect to that variable. The combined impact of the individual contributions equals the total change in volume. As a minor consideration, the sum of the individual contributions adds only approximately to the total change in volume because the individual factors combine multiplicatively, rather than additively, in affecting volume.

The contributions of each individual variable affecting the volume of First-Class single-piece letters will now be discussed in turn.

a. Own Price

Table 2 indicates that the real price of First-Class single-piece letters, measured as a FWI price, decreased by 7.1 percent over the most recent 5 years. The decrease in real price leads to an increase in volume. The response of mailers to changes in real price occurs over a period of several quarters as mailers gradually adjust to the new price. The single-piece own-price elasticity of -0.311 presented in Table 2 is the long-run own-price elasticity. The long-run price elasticity measures the impact on volume that would occur if the price were to rise 1 percent and stay at its new level indefinitely. The long-run elasticity is the sum of the elasticity responses occurring in the quarter of the price change and each quarter in which it has an effect after that.

Applying the estimated own-price elasticity of -0.311 to the 7.1 percent decrease in the real price of single-piece letters leads to a 2.32 percent increase in volume, as shown in the final column of Table 2.

b. Cross Prices

First-Class single-piece letter volume is influenced not only by its own price but also by the price for other mail categories which serve as substitutes for single-piece letters. One factor which influences the volume of single-piece letters is the discount for workshare letters, measured as an average discount of the various workshare categories. An increase in the discount for workshare letters, holding the base price of single-piece letters constant, would make workshare relatively more attractive and some mailers who were not previously presorting or automating their mail would be induced to do so. It is estimated that a 1 percent increase in the average discount for workshare letters leads to a 0.027 percent decline in the volume of single-piece letters. Table 2 shows that the 22.3 percent increase in the average workshare discount over the most recent five years led to a 0.54 percent decline in the volume of single-piece

letters.

The volume of single-piece letters is also affected by the price of First-Class single-piece cards, which can serve as a substitute for letters. Table 2 shows that the real price of single-piece cards decreased by 8.8 percent over the most recent 5 years. It is estimated that the cross-price elasticity between the volume of single-piece letters and the price of single-piece cards is 0.004. Applying this estimated cross-price elasticity to the percentage change in price yields a 0.04 percent decrease in single-piece letter volume.

c. Income

Another factor affecting volume is income. The impact of income on the volume of single-piece letters is decomposed into separate affects of long-run and short-run income. Long-run income is a weighted average of past personal disposable income. Table 2 shows that a 1 percent increase in real long-run income per adult is estimated to lead to a 0.512 percent increase in the volume of single-piece letters. Applying that estimated elasticity to the 10.2 percent increase in real long-run income per adult that occurred over the most recent 5 years yields a 5.101 percent increase in the volume of single-piece letters.

Single-piece letter volume is also affected by short-run changes in income associated with business cycles. Short-run income is measured by the Federal Reserve Board's Index of Capacity Utilization, or UCAP. The econometric analysis indicates that the impact of short-run income on single-piece volume comes after a three-quarter lag.

Table 2 shows that short-run income, lagged 3 quarters, decreased by 2.6 percent over the most recent 5 years. The estimated elasticity of First-Class single-piece volume with respect to short-run income is 0.099, meaning that the 2.6 percent decrease in short-run income contributed to a 0.26 percent decline in the volume of

single-piece letters.

d. Expenditures on Internet Service Providers

Table 2 shows that consumption expenditures on Internet Service Providers (ISPs) are estimated to contribute an 8.57 percent decline in the volume of single-piece letters over the past 5 years. The estimate comes from use of a Box-Cox transformation of the ISP variable as described in the testimony of witness Thress (USPS-T-8).

The companion testimony of Thomas Thress (USPS-T-8) provides details of the econometric estimation of the ISP variable impact. The companion testimony of Peter Bernstein (USPS-T-10) provides a discussion of the ISP variable as it relates to technological diversion of mail volume.

e. MC95-1 Rule Changes

As a result of the MC95-1 classification reforms, the discount for nonautomated presort letters was reduced substantially while the discounts for automation letters were increased. Much of the impact of these changes in discounts on single-piece letter volume is measured through the workshare discount elasticity discussed earlier. However, the workshare discount does not take into account the detailed changes in individual category workshare requirements brought about by MC95-1. To account for these rule changes, an MC95-1 variable is included in the single-piece volume demand equation, with the variable having a value of 0 before classification reform and a value of 1 after classification reform.

Table 2 shows that a 3.58 percent increase in single-piece letter volume is attributed to the MC95-1 rule change variable. The positive volume impact occurs because MC95-1 imposed greater workshare requirements while also providing greater workshare discounts. The greater workshare requirements are responsible for greater volume of single-piece letters than would be expected if only the increases in workshare discounts were considered.

f. Adult Population

Mail volumes are measured on a per-adult basis in the econometric estimation of mail demand, and the impact on mail volume of the factors discussed above is presented on a per-adult basis as well. Since total volume is equal to volume per adult multiplied by adult population, changes in volume can be decomposed into changes in volume per adult and changes in adult population. If there were no change in volume per adult, total volume would still change due to the growth in adult population over time. Table 2 shows that over the most recent five years, growth in adult population by itself is responsible for a 4.50 percent increase in the volume of single-piece letters.

g. Other Factors

In addition to variables whose impacts have been quantified above, other factors have affected single-piece letter volume. Other factors contributed a 8.86 percent decline in volume. The decline is explained primarily by a negative econometric time trend effect. Reasons for the decline will now be discussed.

i. Declining User Costs

One consideration explaining the negative contribution of other factors to single-piece letter volume is declining costs for mail automation (referred to as user costs) that have led mailers to shift from single-piece to workshare letters. Movement between single-piece and workshare letters due to changes in the workshare discount and the MC95-1 reforms have already been accounted for as separate effects in Table 2. We are concerned here with additional changes due to declining costs on the part of mailers preparing mail to satisfy discount requirements.

i.1. Direct Evidence

Evidence of declining user costs come in two basic forms: direct evidence and indirect evidence. Direct evidence of declining user costs can be found in the

improvements in automation equipment and software, which serve to lower automation costs per piece, and the growth in the number of presort/automation bureaus and their spread from major cities into smaller metropolitan areas, thereby allowing more mailers alternatives to single-piece mail.

Among the recent technological advancements that have reduced the cost of mailer workshare is the Criterion sorter, developed by Bell & Howell. The top-line model of this sorter can process 36,000 letters or 43,000 postcards per hour. Pitney Bowes' StreamWeaver® print stream process software is another recent advancement that helps reduce mailer-user costs. StreamWeaver was the first print stream tool to support new postal barcoding initiatives at the Postal Service. Recent enhancements to this software help high-volume mailers track mail, improve mail delivery internationally, and boost the processing of mail applications. StreamWeaver supports Planet Barcodes, which are utilized by the Postal Service's new software CONFIRM to scan and track in-coming and out-going letter-sized mail electronically. Electronic tracking can help mailers assure receipt of important customer mailings, coordinate delivery of mailings with advertising and telemarketing campaigns to boost response, process payments more efficiently, and provide data to better evaluate the effectiveness of advertising and marketing efforts. Other software developments have focused on sorting schemes to better meet second-pass requirements, thereby reducing error rates. Additional technological changes have been made to improve cameras and sprayers used in barcoding. However, the main focus of technological advancements has been in software development to improve address reading in the barcoding process and to provide mailers with value-added services.

For mail that is machine-readable and has a valid address, a Multi-Line Optical Character Reader (MLOCR) will read the address and place a valid barcode on it that is subsequently used to sort mail. While not all presort service bureaus necessarily

operate MLOCRs, all that do must have their MLOCRs certified by the Postal Service. A proxy for estimating the number of presort service bureaus by area is to count the facilities that have received certification each year by location.

There has been growth in the number of presort/automation bureaus across the nation. Chart D shows the distribution of MLOCRs at Presort Service Bureaus by area size, 1994 - 2000. In 2000, there were 303 companies listed on the Postal Service's web site as MLOCR Service Bureaus. This compares with just 186 listed bureaus in 1994, a 63 percent increase. The growth has been concentrated in areas with relatively smaller populations. To illustrate, metropolitan areas with populations under 250,000 experienced a 248 percent increase in the number of bureaus from 1994 to 2000, and now comprise 26 percent of all the bureaus nationwide. The actual number of presort service bureaus in these areas grew from 23 to 80. In contrast, within metropolitan areas with population of 1 million or more, the total number of bureaus with MLOCRs grew from 113 to 128, an increase of only 13 percent. This spread of bureaus into less populated areas means that more mailers have access to presort/automation opportunities and explains part of the shift of single-piece mail into workshare mail. The trend of MLOCRs found in less-populated areas can be seen by comparing single-year growth rates of MLOCRs in areas of fewer than 250,000 people with those in areas of greater than 250,000 people in Chart D. The largest single-year growth rates are associated with areas having fewer than 250,000 people.

Chart D

Distribution of Multi-line Optical Character Readers (MLOCRs) at U. S. Presort Service Bureaus, by Area Size

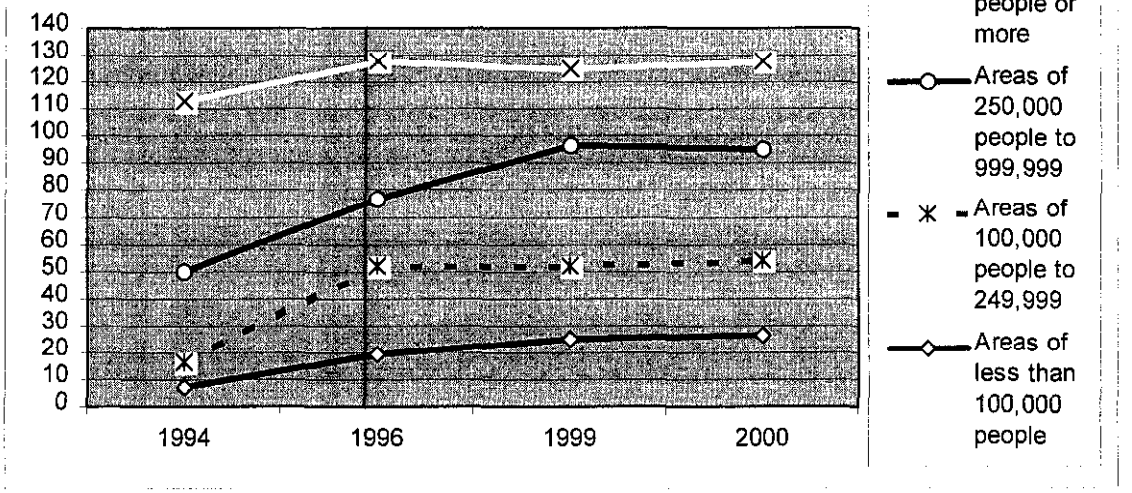


Chart D shows the growth in number of MLOCRs by area size from 1994 to 2000. While the chart illustrates an overall increase for each area size, the chart also suggests that saturation in the number of MLOCRs may be beginning. There is an upward growth for each area size that tapers off over time.

Another recent development at presort service bureaus is video encoding. Video encoding is used to read mail addresses for barcoding when automatic processing is not possible. Video encoding allows an MLOCR to take a picture of every piece of mail that it will attempt to barcode. The video image is then processed either locally or remotely to see if a barcode can be identified without manual intervention, thereby allowing for faster processing and reducing error rates. There has been a recent trend toward remote video encoding due to cost savings afforded by use of less- expensive labor and aggregation of problematic mail pieces at remote sites.

i.2. Indirect Evidence

Indirect evidence of declining user costs is found in the decreases in single-piece letter volume and corresponding increases in workshare letter volume that occur in periods during which workshare discounts remained unchanged. For example, from 1997Q1 to 1999Q1, First-Class letter workshare discounts did not change. Over this period, single-piece letter volume declined, from 12.8 billion pieces in 1997Q1 to 12.3 billion pieces in 1999Q1, despite increases in adult population and income. At the same time, workshare letter volume increased from 8.7 billion to 9.8 billion pieces. It seems likely that some of these volume changes represented shifts from single-piece to workshare and that, in the absence of a change in discount, these shifts were driven by technological advancements that lowered workshare user costs.

i.3. Evidence from Household Diary Study Data

Evidence of the impact of declining user costs comes from review of the *Household Diary Study 2001*. Information is obtained from the following tables of the study. From 1987 to 2000, nonhousehold-to-household mail grew 26.5 percent. Within this type of mail, workshare mail increased by 52 percent. Table A2-19. Between 1987 and 2000, the percentage of financial statements sent to households as workshare mail increased from 61 to 73 percent, indicating a substantial shift of financial statements from single-piece to workshare letters over the 9-year period. Table A2-19.

ii. Electronic Diversion

The testimony of Peter Bernstein (USPS-T-10) addresses the issue of the diversion of single-piece letter mail due to various recent technological developments including E-mail, electronic bill payment, and electronic data interchange. The Bernstein testimony examines the diversion impacts measured by the ISP variable included in the single-piece demand equation as well as other, more general, sources

of diversion that have contributed to the decline in single-piece letter volume over the past 5 years.

iii. Decline of Household to Household Mail

In addition to declining user costs for workshare mail and electronic diversion, a third factor contributing to the decline in single-piece letter volume is the decline in mail sent by households. The *Household Diary Study 2001* indicates that mail sent by households declined from 1.6 pieces per household per week in 1987 to 1.4 pieces per household per week in 2000. It is unlikely that much of this decline represents a shift into workshare letters as households would not be expected to send much, if any, workshare mail. The decline may be partly a reflection of a move toward electronic communication alternatives. However, it should be noted that the decline in mail sent by households is part of a longer trend in household habits that predates electronic diversion.

iv. Non-Electronic Diversion

A fourth factor contributing to declining First-Class mail volume is non-electronic, or manual diversion. This type of diversion consists of post office substitutes that directly compete for First-Class mail otherwise handled by the Postal Service. These substitutes include the use of courier or messenger services, whether local or between large metropolitan areas, and payment of bills in-person such as at a utility, grocery store, department store, currency exchange that by-passes First-Class mail delivery. Some flats and letters delivered by messengers locally and by air couriers interstate could have been delivered by First-Class mail but were not. While many mail items sent by courier are substitutes for Express and Priority, there is still some proportion that may directly compete with First-Class single-piece mail.

According to the U.S. Census Bureau, the number of establishments of all air and surface private (non-Postal Service) courier and messengers has grown from 1992

(8,605 establishments) to 1999 (11,938 establishments), an increase of over 38 percent. The number of employees has grown from 406,082 to 578,368. County Business Patterns for the United States, Five Year Economic Census, U.S. Census Bureau, census.gov/pub/epcd/cpb/cdp/view/US99.TXT and census.gov/epcd/ec97sic ec97sic/E97SUS.HTM. While some of the firms represented in these totals service international markets, many focus on domestic markets.

2. Volume Forecasts for Single-Piece First-Class Letters

a. Overview of Forecast Methodology

Details of the forecast methodology are given in the Technical Appendix to this testimony and in Workpaper 2, which gives sample calculations enabling replication of the projections. In making the Test Year volume forecast, estimates of the contributions of econometric variables are obtained by multiplying each estimated elasticity coefficient by a projection of the percentage change in the associated explanatory variable between the Base Year and the Test Year. The projections were done on a quarterly basis and then aggregated to obtain results for the entire Test Year. The projections of many of the variables were taken from projections by DRI. The projection of ISP expenditures is developed in the testimony of Peter Bernstein. The econometric variables also include econometric time trends, which account for significant recent changes in single-piece volume and are included in making the Test Year forecast.

In the before-rates projection, the present rate schedule is assumed to remain in effect through the Test Year. In previous rate cases, nominal postal rates in the Test Year before-rates forecast have been the same as in the Base Year. This is not so in the present rate case, for two basic reasons. First, because the R2000-1 rates were implemented during the Base Year (PFY2001), the Base Year prices are a mix of

R2000-1 rates and the R97-1 rates. R97-1 rates do not enter postal prices in the before-rates Test Year. This effect makes for a rise in postal price between the Base Year and Test Year that would not be present if the R2000-1 rate had been in effect throughout the Base Year. Second, the Postal Service Board of Governors modified the R2000-1 rates recommended by the Postal Rate Commission. This modification took effect in July 2001, which is beyond the Base Year used in this case. Therefore, the before-rates forecast for the 2003 Test Year includes the impact of the Board of Governor's modification of the R2000-1 recommended rates. This effect also makes for a rise in postal price between the Base Year and Test Year. With nominal prices in the Test Year before-rates forecast differing from those in the Base Year for these two reasons, the real on deflated Test Year before-rates prices are greater than the Base Year prices for some mail subclasses. This is in contrast to the usual situation that Test Year before-rates real prices are lower than Base Year real prices because inflation between the Base Year and the Test Year serves to reduce real postage prices that are the same in nominal terms.

The after-rates projection employs the same methodology as the before-rates forecast, except that the rates proposed by the Postal Service are assumed to be implemented on the first day of the Test Year, October 1, 2002.

In both the before-rates and after-rates forecast, consideration is given to the impact of non-econometric influences on mail volume. While most of the decline due to other factors in Table 2 is explained by econometric time trends, a departure from what was predicted by econometric estimates for the most recent 5 years, sometimes called net trend, was also among the considerations reviewed in my Technical Appendix. For First-Class single piece letters, the annual net trend has no appreciable effect and is not used.

More generally, in assessing whether to include continuation of the mechanical net

trend into the forecast period, recent developments affecting volume are reviewed, volume-forecast errors from the most recent 5 years of quarterly data are examined, and the relation between the non-econometric and econometric impacts on mail volume are analyzed to determine if an additional trend term is needed. This Forecast Error Analysis is included in the Technical Appendix to my testimony. In most cases, as with First-Class single-piece letters, the volume forecasts in for the present rate case do not include an additional net trend.

b. Before-Rates Forecast

Table 2A shows that the Base Year volume of First-Class single-piece letters is 51,373.392 million pieces for the before-rates situation. Non-rate factors, that is, all factors aside from postal rates, serve to reduce volume by 7.60 percent between the Base Year and the Test Year. Meanwhile, the combined effect of the difference in nominal postal prices between the Base Year and the Test Year even with a continuation of current nominal postal rates, combined with the effect of inflation on real postal prices, serves to increase volume by 0.91 percent. The resulting difference between prices in the Base Year and prices before-rates in the Test Year results in a Test Year volume forecast of 47,899.389 pieces, as shown in Table 2A.

c. After-Rates Forecast

Table 2A shows that the Base Year volume and the impact of the non-rate variables are the same after-rates as they are before-rates. The proposed increase in rates, including the proposed increase in the average workshare discount and the price of single-piece cards, after adjusting for inflation between the Base Year and the Test Year, is projected to decrease single-piece volume by 1.27 percent between the Base Year and the Test Year. Thus, the after-rates Test Year forecast of single-piece letters is 46,865.402 million pieces.

Table 2A
Volume Forecast of First-Class Single-Piece Letters

	Before-Rates	After-Rates
Base Year Volume (Millions)	51,373.392	51,373.392
Non-Rate Impact	-7.60%	-7.60%
Postal Rate Impact	0.91%	-1.27%
Test Year Volume (Millions)	47,899.389	46,865.402

D. Workshare Letters

1. Factors Affecting Volume of Workshare Letters

Over the 5-year period ending in 2001Q3, the volume of First-Class workshare letters increased 21.15 percent, as shown in the final entry in Table 3. The table shows the contributions of different factors to this 5-year volume change.

a. Own-Price

One factor contributing to this increase in volume was the 7.0 percent decrease in the real own-price of workshare letters. Table 3 shows that the estimated own-price elasticity of workshare letters is -0.07. Applying this elasticity to the 7.0 percent decrease in real price leads to a 0.50 percent increase in volume.

b. Cross-Prices

Table 3 shows that workshare letter volume is affected by the workshare discount as well as the price of workshare First-Class cards and Standard Regular mail. Over the most recent 5 years, the real workshare discount -- measured as a volume-weighted average of the various presort and automation discounts -- increased by

TABLE 3

CONTRIBUTIONS TO CHANGE IN
WORKSHARE FIRST CLASS LETTERS VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own Price	-7.0%	-0.071	0.50%
Cross Price			
Workshare Discount	213.2%	0.027	3.07%
Workshare Cards	-9.8%	0.006	-0.06%
Standard Regular	-7.6%	0.008	-0.07%
Income			
Long-run	10.2%	0.844	8.55%
Short-run	-2.4%	0.373	-0.90%
MC95-1 Rule Change			-4.53%
Adult Population	4.5%	1	4.50%
Other Factors			9.11%
Total Change in Volume			21.15%

213 percent. Applying the estimated discount elasticity of 0.027 to this change in the workshare discount leads to a 3.07 percent increase in the volume of workshare letters.

Workshare letters are also affected by the price of workshare cards which, for some mailers, can serve as a substitute. Table 3 shows that the estimated cross-price elasticity of the volume of workshare letters with respect to the price of workshare cards is 0.006. Applying this estimated cross-price elasticity to the 9.8 percent decline in the real price of workshare cards produces a 0.06 percent decline in the volume of

workshare letters.

Another substitute for workshare letters in some instances is Standard Regular mail. The estimated cross-price elasticity of workshare letter volume with respect to Standard Regular price is 0.008. Therefore, the 7.6 percent decrease in the real price of Standard Regular mail contributed to a 0.07 percent decline in the volume of workshare letters. Standard ECR mail might be thought to be another substitute for workshare letters. However, the portion of workshare letters that are presorted to the carrier-route level appear to be too small for there to be any appreciable cross-price effect from Standard ECR mail price. Analysis of the cross-price relations between First-Class and Standard mail is presented in the testimony of Thomas Thress (USPS-T-8).

c. Income

The elasticity of workshare letter volume with respect to long-run income per adult is estimated to be 0.844. Table 3 shows that long-run income per adult increased by 10.2 percent after applying an elasticity of 0.844, leads to a 8.55 percent increase in workshare letter volume.

Short-run income, measured by UCAP, also affects the volume of workshare letters. The elasticity of workshare volume with respect to short-run income is estimated to be 0.373. Short-run income decreased by 2.4 percent, acting to reduce the volume of workshare letters by an estimated 0.898 percent.

d. MC95-1 Rule Change

As explained in the section on single-piece letters, the MC95-1 classification reform increased automation discounts but in some cases imposed greater workshare requirements. While the increase in the discounts taken by themselves act to increase workshare volume, the greater workshare requirements served to reduce workshare volume. To account for this latter impact, an MC95-1 variable is included in the

demand equation for workshare letters, analogous to the approach used in single-piece letters. Table 3 shows that this variable is estimated to have reduced workshare letter volume by 4.53 percent.

e. Adult Population

Table 3 shows that growth in adult population led to a 4.50 percent increase in the volume of First-Class workshare letters.

f. Other Factors

The existence of an econometric trend term gives evidence of the influence of factors influencing volume in addition to those considered above. Table 3 shows that the other factors contributed a 9.11 percent increase in workshare letter volume over the most recent 5 year period.

i. Declining User Costs

As discussed in the section on single-piece letters, declining costs for preparing presorted and barcoded mail have caused a shift of single-piece letters into workshare letters over and above that brought about by Postal Service workshare discounts. This additional increase in workshare volume is one of several factors contributing to workshare volume.

ii. First-Class Advertising

As revealed in Charts B and C presented earlier, advertising-only mail received by households, as a share of total First-Class mail, increased from 5.2 percent in 1987 to 9.2 percent in 2000. Workshare letter volume has undoubtedly benefitted from this increased use of First-Class letters for advertising, since the multiple pieces sent in any one mailing of advertising favor the choice of worksharing over payment of single piece rate.

iii. Credit Card Mailings

Another source of increased workshare letter volume has been growth in credit card mailings. According to BAIGlobal, Inc., a market-research firm in Tarrytown, N.Y., credit card solicitation volume increased by 23 percent from 1999 to 2000, reaching an all-time peak of 3.54 billion pieces. BAIGlobal also notes that there has been a general upward trend in credit-card solicitations over the last decade. In 1991, credit-card solicitation volume was less than one billion. Mailings in 2000 are estimated to have generated 21 million applications, which in turn generate more mail as more credit card accounts are opened. At the same time, consumer response rates reached a record annual low of 0.6 percent, down from a high of 2.4 percent in 1991. In fact, there has been a downward trend in nationwide responses that is inversely related to credit card mailings. Press release, BAIGlobal (March 15, 2001).

BAIGlobal attributes the record direct-mail volume to several important trends: the resurgence of Gold card offers, aggressive marketing campaigns from companies that engage primarily in issuing credit cards, the growth of mailings targeting the sub-prime market (i.e., consumers with low or no credit rating), and the launch of new card products with Internet-related features. Andrew Davidson, vice president of competitive tracking services for BAIGlobal, attributes the low response rate to two factors: "high mailbox clutter, which is making it difficult for card issuers to differentiate their offers, and the high penetration of credit cards that already exists."

The growth in credit card mailing is partly due to the competitive nature of the business. Card issuers are making aggressive efforts to encourage consumers to transfer card balances from one company to another, and direct mail remains the most effective medium for reaching cardholders. According to Joseph Cahill of the Wall Street Journal, "Despite high-profile moves by a few issuers to peddle cards over the Internet, direct mail accounted for 76 percent of all applications last year and the

Internet only 2 percent." James Cahill "Credit Cards Get A Record Level of Solicitations," Wall Street Journal (April 9, 1999).

BAIGlobal estimates that the number of cards per household fell 11 percent from 1997 to 1999, dropping to 2.5 from 2.8. American Banker (October 5, 1999). The apparent recent decline in cards per household contrasts with a longer-term trend toward greater number of accounts. Data from the 2000 U.S. Statistical Abstract show a 40 percent increase in the number of credit-card accounts in the 8 years from 1990 to 1998. According to the *Household Diary Study*, non-advertising mailings from credit card companies to households nearly doubled from 1987 to 2000.

iv. Electronic Diversion

The continued growth of workshare letter volume suggests whatever negative impacts there might be from electronic alternatives to workshare letter mail, these impacts have been more than offset by the positive influences discussed above. The testimony of Peter Bernstein contains further consideration of diversion of workshare letter mail.

2. Volume Forecasts for Total Workshare Letters

a. Before-Rates

Table 3A shows that the Base Year volume of First-Class workshare letters is 46,344.077 million pieces. Non-rate factors are projected to increase volume by 9.34 percent between the Base Year and the Test Year. If the current postal-rate schedule remains in place, rate effects, including differences between Test Year rates and Base Year rates as well as the decline in real rates due to inflation, are projected to increase workshare letter volume by 1.23 percent. Thus, the before-rates Test Year volume forecast is 51,299.213 million pieces.

Table 3A
Volume Forecast of First-Class Workshare Letters

	Before-Rates	After-Rates
Base Year Volume (Millions)	46,344.077	46,344.077
Non-Rate Impact	9.34	9.34
Postal Rate Impact	1.23	1.28
Test Year Volume (Millions)	51,299.213	51,322.082

b. After-Rates

The after-rates volume forecast for workshare letters uses the same Base Volume and includes the same non-rate impacts as the before-rates forecast. If rates proposed by the Postal Service in this case are adopted, the real change proposed in the workshare letter price, the workshare letter discount, the price of workshare cards, and the price of Standard Regular mail combine to increase volume by 1.28 percent between the Base Year and the Test Year. Consequently, the after-rates forecast of First-Class workshare letters is 51,322.082 million pieces, as shown in Table 3A.

3. Volume Forecasts for Nonautomated Presort Letters

The subdivision of workshare letters into presort and automation categories is based on share analysis reported in the testimony of Thomas Thress (USPS-T-8).

In the Test Year, the projected before-rates volume of nonautomated presort letters is 3,679.940 million pieces. In the after-rates scenario, the estimated volume of nonautomated presort First-Class letters is 3,579.306 million pieces.

4. Volume Forecasts for Automated Letters

The projected before-rates volume of automated First-Class letters is 47,619.273 million pieces. The projected after-rates volume of automated letters in the Test Year is 47,742.776 million pieces. The after-rates volume is greater than the before-rates

volume due to a shift of nonautomated presort letters into automated letters in response to the proposed decline in the presort discount. The proposed increase in Standard mail rates also causes some volume to shift to First-Class workshare letters.

E. Stamped Cards

1. Definition

Stamped Cards are postcards sold by the Postal Service with the postage imprinted. Prior to R97-1, stamped cards were sold for the price of the postage only. At present, there is a 2-cent surcharge above the rate for a private single-piece card. Stamped Cards accounted for less than 4 percent of total card volume in 2000.

2. Volume History

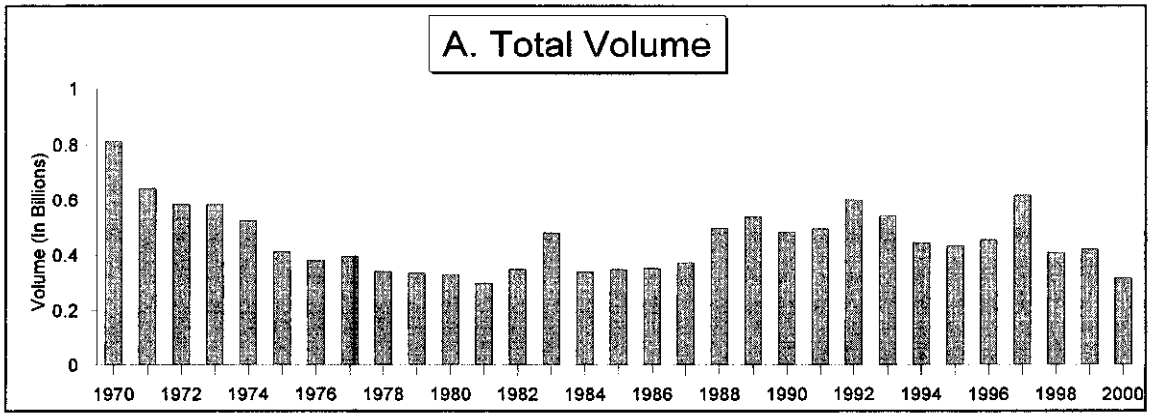
As shown in Figure 4, the total volume of Stamped Cards declined in the 1970s, increased in the 1980s, and declined again from 1990 to 2000. Total volume was 812.5 million in 1970, 329.8 million in 1980, 484.4 million in 1990 and 205.4 million in 2000.

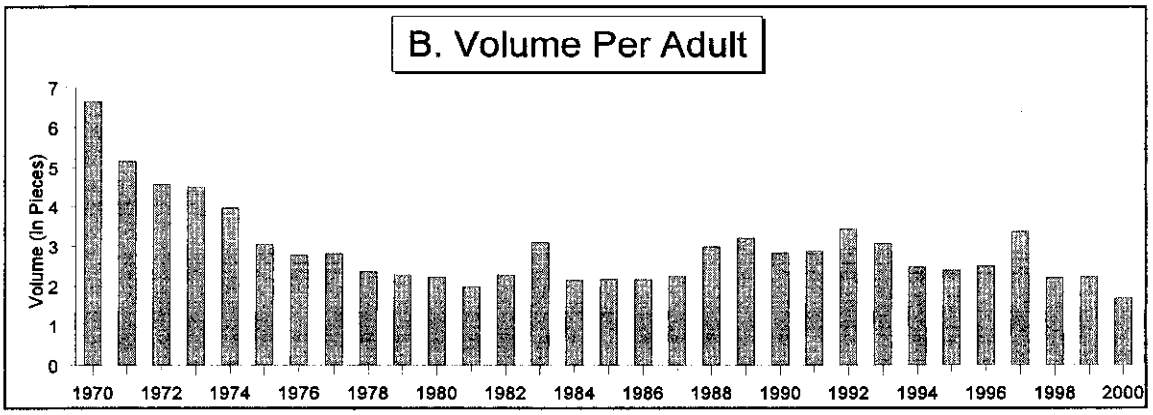
3. Factors Affecting Volume

a. Own Price

Table 4 shows that the real price of Stamped Cards decreased by 2.6 percent over the 5 years ending in 2001Q3. The estimated long-run own-price elasticity of Stamped Cards volume is -0.808. Applying this elasticity to the 2.6 percent price decline yields a 2.16 percent increase in Stamped Cards volume.

Figure 4
Stamped Cards





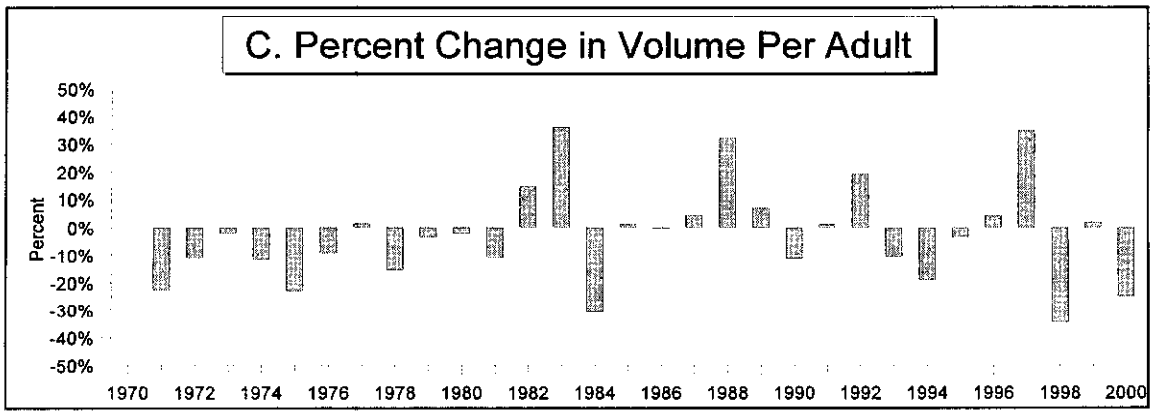


TABLE 4

CONTRIBUTIONS TO CHANGE IN
STAMPED CARDS VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own price	-2.6%	-0.808	2.16%
Long-run Income	10.2%	0.711	7.14%
Adult Population	4.5%	1	4.50%
Volume Reporting Change			-56.03%
Other Factors			-13.95%
Total Change in Volume			-59.13%

b. Income

Long-run income, measured on a per-adult basis, increased 10.2 percent. The estimated elasticity of stamped cards volume with respect to long-run income is 0.711. Therefore, the growth in long-run income contributed 7.14 percent to the volume of Stamped Cards.

c. Volume Reporting Change

Beginning in 2000Q4, the reported volume of Stamped Cards changed abruptly, presumably due to a change in the reporting method for this mail product. Accordingly, a discrete variable was included in the Stamped Cards equation to account for this change. Table 4 shows that this variable explains a 56.03 percent decline in Stamped Cards volume.

d. Adult Population

Table 4 shows that growth in adult population added 4.50 percent to the volume of First-Class Stamped Cards.

e. Other Factors

Table 4 shows that other factors were responsible for a 13.95 percent decline in Stamped Cards volume. To some extent, this decline is due to the R97-1 decision to price stamped cards differently from single-piece cards. Previously, mailers only had to pay for postage, as there was no extra charge for the stamped card. This change in pricing strategy would be expected to reduce stamped cards volume.

However, econometric attempts to measure the extent that stamped cards volume was affected by the change in pricing strategy were unsuccessful. The volume change did not occur immediately after the price change, but declines in volume were witnessed both before and after implementation of the R97-1 rates. Since volume forecasts are made from a base volume, and the base volume of Stamped Cards includes this recent decline, the factors contributing to the decline are imbedded in the volume forecast.

4. Volume Forecasts

Table 4A shows the before- and after-rates volume forecasts of Stamped Cards. In the before-rates projection, non-rate factors add approximately 1.84 percent to volume between the Base Year and the Test Year. The change in the real price of Stamped Cards over that same time period contributes -1.66 percent to volume, yielding a before-rates Test Year forecast of 182.342 million pieces.

In the after-rates scenario, the proposed increase in the price of Stamped Cards reduces volume by 8.09 percent between the Base Year and the Test Year. As shown in Table 4A, this leads to an after-rates Test Year forecast of 170.412 million pieces.

Table 4A
Volume Forecast of First-Class Stamped Cards

	Before-Rates	After-Rates
Base Year Volume (Millions)	182.059	182.059
Non-Rate Impact	1.84%	1.84%
Postal Rate Impact	-1.66%	-8.09%
Test Year Volume (Millions)	182.342	170.412

F. Private Cards

1. Definition

Private Cards differ from stamped cards in that they are privately printed and distributed, and they require that the mailer provide postage. Private Cards are used for short notices and greetings and are sent by households, respondents to firms that engage in business-reply advertising, utility companies and other firms. The current price for mailing a nonpresorted Private Card is 21 cents.

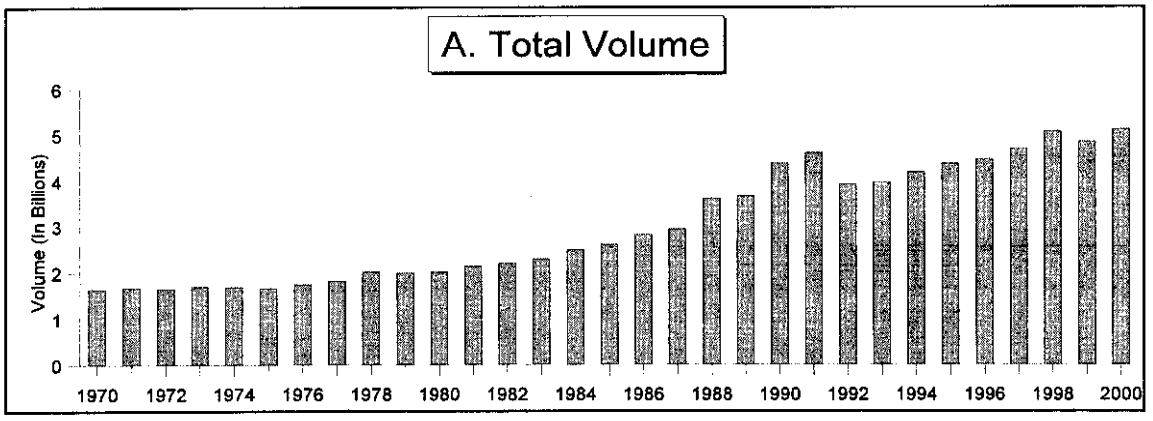
2. Volume History

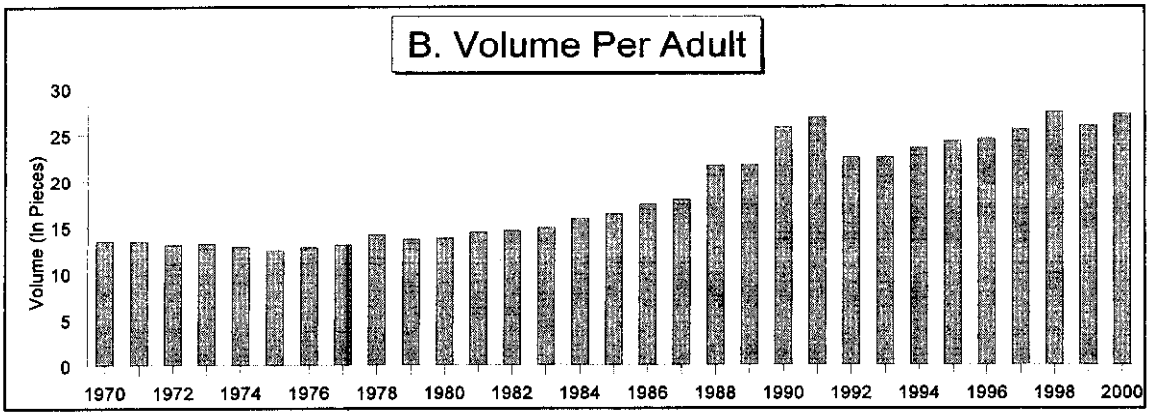
a. Total Volume of Private Cards

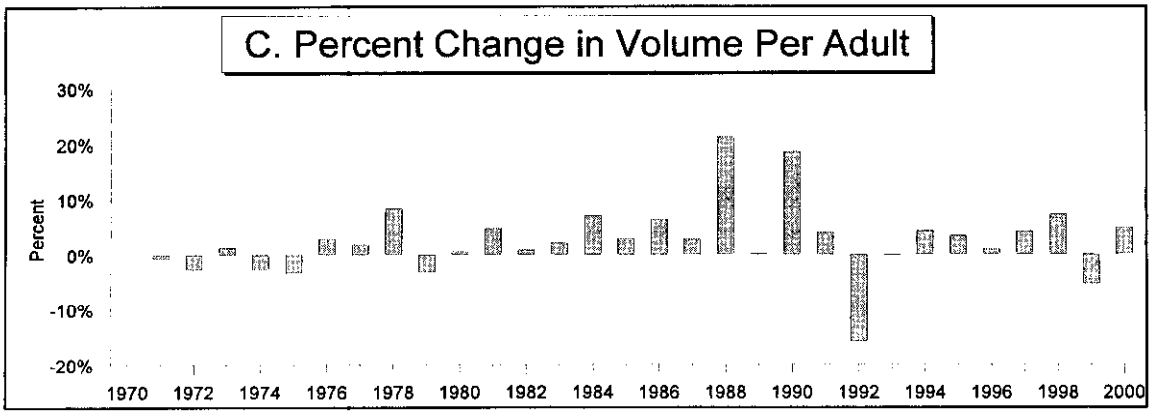
As can be seen in Figure 5, Private Cards volume has behaved somewhat similarly to First-Class letter volume (shown in Figure 2) in that per-adult volume declined in the early 1970s and then picked up, with quite vigorous growth in the 1980s. The movements for cards have been more pronounced than for letters.

Volume was 13.7 pieces per adult in 1970, and ranged between 12.7 and 14.5 pieces per adult throughout the 1970s. From 1980 to 1991, volume per adult almost doubled, rising from 13.8 pieces to 26.8 pieces. Much of this rise occurred from 1987 to 1991 as a result of the R87-1 rate changes which resulted in Presort cards being priced less than Presort third bulk regular. Private Cards were again priced more

Figure 5
Private Cards







expensively than third bulk regular after the R90-1 rate case, and volume per adult has remained fairly constant since then.

b. Volumes of Single Piece and Workshare Cards

Chart E presents single-piece and workshare volumes of total cards since 1984. Chart E shows the impact of the R87-1 pricing of presort cards less than third-class regular mail, with workshare cards rising from 28.5 percent of total Private Cards in 1987 to 45.5 percent in 1991. In 1992, workshare cards volume declined as presort cards were priced more expensively than third-class regular mail in the R90-1 case. Since 1992, the percentage of total Private Cards that are workshare (presorted or automated) has increased in each year so that in 1999, the volume of workshare Private Cards exceeded the volume of single-piece Private Cards. This trend continued in 2000.

Chart E
Single-Piece and Workshare Volumes of Private First-Class Cards
(in millions of pieces)

	Single-Piece		Workshare	
Year	Volume	Percentage	Volume	Percentage
1984	1,798.166	71.9%	703.246	28.1%
1985	2,001.836	76.5%	613.495	23.5%
1986	2,009.369	71.1%	815.431	28.9%
1987	2,105.437	71.5%	839.475	28.5%
1988	2,524.109	69.9%	1,089.185	30.1%
1989	2,437.418	66.6%	1,224.487	33.4%
1990	2,799.608	63.8%	1,591.745	36.2%
1991	2,519.904	54.5%	2,101.385	45.5%
1992	2,443.237	62.0%	1,494.472	38.0%
1993	2,386.223	59.9%	1,595.745	40.1%
1994	2,425.963	57.8%	1,770.973	42.2%
1995	2,401.699	54.8%	1,981.619	45.2%
1996	2,412.798	54.0%	2,057.333	46.0%
1997	2,424.834	51.6%	2,273.822	48.4%
1998	2,557.046	50.3%	2,523.261	49.7%
1999	2,414.013	49.8%	2,433.524	50.2%
2000	2,516.809	48.2%	2,707.744	51.8%

3. Factors Affecting Volume

a. Own Price

The real price of private cards decreased by 8.7 percent over the 5- year period ending in 2001Q3. That price decrease combined with an econometrically estimated own-price elasticity of -1.16 results in a 11.14 percent increase in volume of private cards, as shown in Table 5.

b. Cross Price

The volume of private cards is affected by the price of First-Class letters, which serve as a substitute for card mail. The estimated cross-price elasticity between the volume of First-Class cards and the price of First-Class letters is 0.163. Applying this estimated elasticity to the 8.1 percent decrease in First-Class letter price yields a 1.34 percent decrease in volume.

c. Income

The elasticity of private First-Class card volume with respect to real long-run income per adult is 0.700. Therefore, the 10.2 percent increase in long-run income over the most recent 5 years is estimated to have increased private card volume by 7.04 percent.

d. Adult Population

Growth in adult population is estimated to have contributed 4.50 percent to the volume of First-Class Private Cards.

e. Other Factors

Table 5 shows that over the most recent 5-year period, the total change in the volume of First-Class Private Cards was 18.94 percent, virtually all of which is explained by the econometric variables discussed above. Other factors were responsible for only a 0.39 percent decrease in First-Class private cards volume. Private cards are affected

by many of the same factors as First-Class letters. Thus, Private Cards volume is probably reduced as a result of electronic diversion, but volume is enhanced by growth in advertising volume. These effects are more pronounced when examining recent volume trends for single-piece cards (declining) and workshare cards (growing), consistent with the corresponding volume trends in First-Class letters.

One factor that would be expected to affect the volume of First-Class cards is the growth in travel. According to the Travel Industry Association of America web site, total U.S. domestic travel increased from 941 to 1,009 million person trips between 1994 and 1999, a total growth of 7.2 percent. In comparison, total U.S. population grew by only 4.8 percent over the same period. It is reasonable to suppose that there is a positive relation between travel and use of private postcards.

TABLE 5

CONTRIBUTIONS TO CHANGE IN
PRIVATE FIRST-CLASS CARDS VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own price	-8.7%	-1.157	11.14%
Cross Price First-Class Letters	-8.1%	0.163	-1.34%
Long-run Income	10.2%	0.700	7.04%
Adult Population	4.5%	1	4.50%
Other Factors			-0.39%
Total Change in Volume			18.94%

4. Volume Forecast

a. Total Private Cards

The before-rates forecast for total private cards is 5,451.434 million pieces in the GFY 2001 Test Year. At rates proposed by the Postal Service, the Test Year volume is projected to be 5,096.267 million pieces. Both the before-rates and after-rates volume forecasts are sums of separate forecasts of single-piece and workshare cards. Examination of recent volume trends provides strong evidence that single-piece and workshare cards have experienced different volume growth rates in recent years and this difference was taken into account in making separate forecasts of these 2 categories of First-Class cards.

Econometric efforts to estimate separate demand equations for single-piece and workshare cards, as was done for First-Class letters, did not yield acceptable results. The same estimates of effects of the net-trend, price, income and population variables based on the econometric equation for cards as a whole were used for both single - piece and workshare cards, while reflecting changes in composition through use of share equations, as described in the testimony of Thomas Thress (USPS-T-8).

b. Single-Piece Private Cards

Table 5A shows that between the Base Year and the Test Year, non-rate factors increase volume by 0.63 percent while the decline in real rates increases volume by 0.45 percent. Consequently, the before-rates Test Year volume of single-piece private cards is projected to equal 2,520.666 million pieces. Table 5A also shows that if the rates proposed by the Postal Service are adopted, including the proposed rates for First-Class letters, then the after-rates volume is projected to equal 2,454.000 million pieces.

Table 5A
Volume Forecast of First-Class Single-Piece Private Cards

	Before-Rates	After-Rates
Base Year Volume (Millions)	2,493.770	2,493.770
Non-Rate Impact	0.63%	0.63%
Postal Rate Impact	0.45%	-2.21%
Test Year Volume (Millions)	2,520.666	2,454.000

c. Total Workshare Cards

The before-rates Test Year volume of workshare private cards is projected to equal 2,930.767 million pieces. In the after-rates scenario, which includes the impact of the proposed rates, volume is projected to equal 2,642.267 million pieces.

d. Presorted and Automated Private Cards

The subdivision of private cards into workshare categories is based on share analysis reported in the testimony of Thomas Thress (USPS-T-8).

Within workshare cards, the before-rates volume of presorted nonautomated cards is projected to be 424.530 million pieces in the Test Year, with an after-rates volume equal to 216.053 million pieces. The total volume of automated cards is projected to equal 2,506.237 million pieces, before-rates, in the Test Year. At rates proposed by the Postal Service, the Test Year total volume of automated cards is projected to decrease to 2,426.214 million pieces.

III. Mailgrams

A. Characteristics

Mailgrams are offered pursuant to an agreement between Western Union and the Postal Service, and provides for delivery by the Postal Service of messages generated and printed by Western Union. Western Union reimburses the Postal Service for each message.

B. Volume History

As shown in Figure 6, Mailgrams volume is characterized by steady declines, although recent years have shown volume increases. Volume per adult peaked at 0.28 pieces in 1981 and had fallen to 0.019 pieces per adult by 2000.

C. Factors Affecting Volume

1. Adult population

Mailgrams volume is estimated on a per-adult basis so the 4.50 percent increase in adult population over the last 5 years adds an equal percentage to Mailgrams volume.

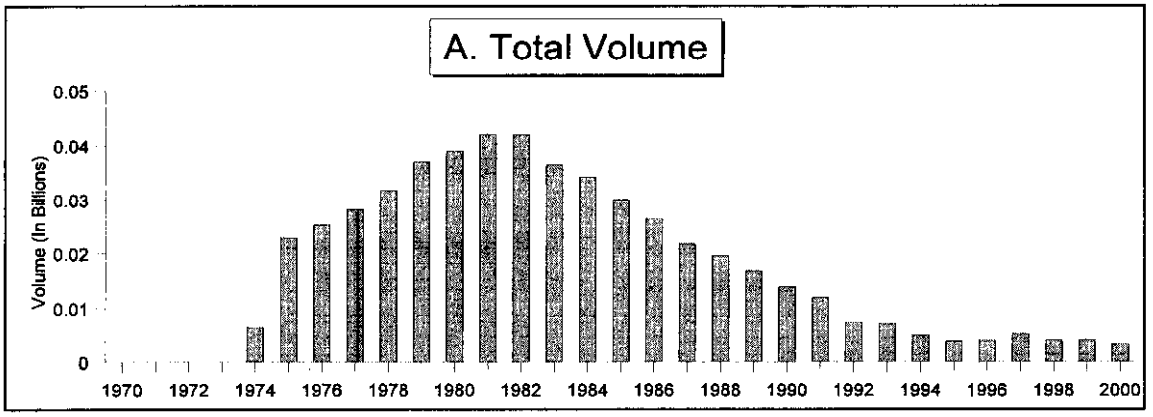
2. Other Factors

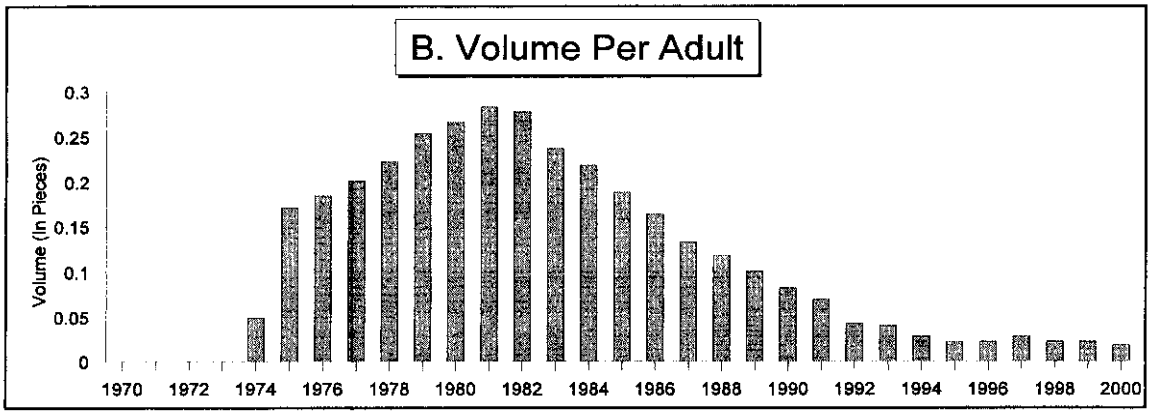
Table 6 shows that other factors, primarily measured by an econometric time trend, were responsible for 9.40 percent decline in Mailgrams volume over the past five years.

D. Volume Forecast

In the forecast, shown in Table 6A, Mailgrams volume declines according to an econometrically estimated time trend. Volume is expected to decline from a Base Year volume of 3.607 million pieces to a Test Year volume of 2.725 million pieces. As there is no proposed change in rates, the after-rates and the before-rates volume forecasts are the same.

Figure 6
Mailgrams





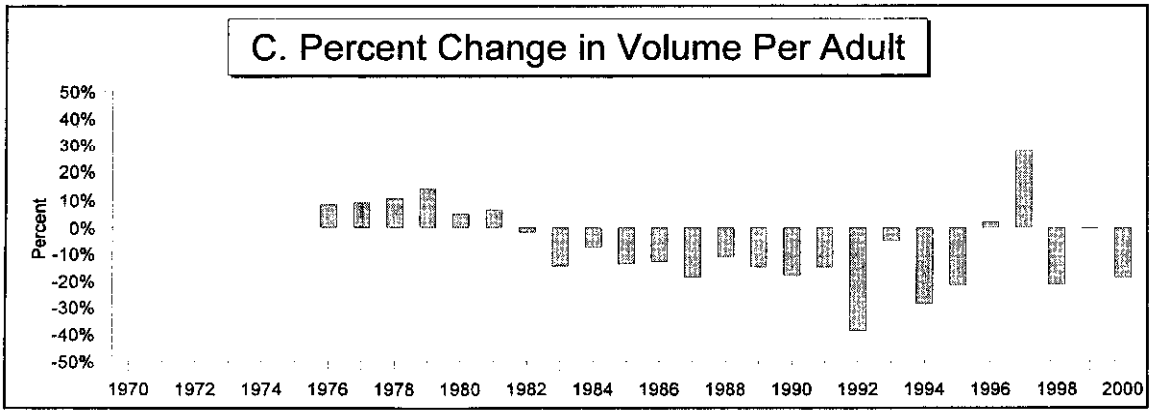


Table 6

CONTRIBUTIONS TO CHANGE IN
MAILGRAMS VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Adult Population	4.5%	1	4.50%
Other Factors			-9.40%
Total Change in Volume			-5.33%

Table 6A
Volume Forecast of Mailgrams Periodicals Mail

	Before-Rates	**After-Rates**
Base Year Volume (Millions)	3.607	3.607
Non-Rate Impact	-24.45	-24.45
Postal Rate Impact	0.0	0.0
Test Year Volume (Millions)	2.725	2.725

IV. Periodicals

A. General Overview of Periodical Mail

1. Characteristics of Periodical Mail

Periodicals consists of newspapers, magazines, and other periodicals. Four categories of periodical mail have been established: Regular Rate, Within County, Nonprofit, and Classroom.

Periodicals are used solely by the publishers and registered agents of newspapers, magazines, and other periodical publications which meet the qualifications of the *Domestic Mail Manual*. To qualify for Periodicals rates the material to be mailed must be printed and issued at least 4 times per year. Periodicals are published for the purpose of disseminating information of a public character, such as news, or are devoted to literature, the sciences, arts, or some special industry. Also to qualify for Periodicals rates, there must be a list of subscribers paying for or requesting the periodical, though exemptions are given for some organizations if there is no advertising other than that of the publisher. Publications consisting of over 75 percent advertising in more than half of the issues published in 12 months are not eligible for Periodicals rates. Periodicals are given expeditious distribution, dispatch, transit handling and delivery, preceded only by First-Class, Priority and Express Mail.

Prior to the effective date of R84-1 rates on February 17, 1985, the general public could send single copies of Periodicals material at a special transient rate, which represented an exception to bulk mail rates for the rest of Periodicals. However, in R84-1, the Periodicals transient rate became redundant given lower postal pricing of alternatives, and was eliminated. Thus, all current Periodicals are bulk and must be presorted to at least the ZIP Code level.

2. Rate Structure of Periodicals

The charge for Periodicals consists of a per-piece rate plus a pound rate. The pound rate is separated into a flat (not zoned) rate for editorial (non-advertising) portions of the publication and a zoned rate for advertising portions. The piece rate has several levels depending on the degree of presortation and destination characteristics. The rate structure also distinguishes between regular and preferred categories. Within County and Nonprofit are preferred categories. Mail in these categories has historically been eligible for preferred or lower rates. The rate structure is further affected by the fact that the preferred-rate components were subject to congressionally mandated phase-ins to higher rates, with different phase-in schedules. The routine phasing schedule has frequently been altered in response to congressional appropriations. As a result, preferred rates have experienced frequent rate changes.

3. Composition of Periodical Mail and Recent Changes

In Postal Year 2000, the total volume of Periodicals was 10,230 million pieces, accounting for about 5 percent of total mail volume. The largest subclass of Periodicals is Regular Rate mail, which had a 2000 volume of 7,144 million pieces, followed by Nonprofit mail at 2,127 million pieces, Within-county mail at 886 million pieces, and classroom mail at 63 million pieces.

The Household Diary Study indicates that 27 percent of households in 2000 received newspapers by mail, down from 36 percent in 1987. Household Diary Study 2001, Table A5-4. The same source reports that 79 percent of households in 2000 received magazines by mail, down very slightly from 81 percent in 1987. Household Diary Study 2001, Table A5-6. Newspapers mailed to households fell from 0.60 to 0.34 pieces per week from 1987 to 2000, while the figure for magazines was essentially stable, increasing from 0.96 to 0.97 pieces per week. Household Diary Study 2001, Table A5-2. As a result, the magazine-newspaper ratio increased to 2.85 in 2000

compared to 1.6 in 1987. Calculated from Household Diary Study 2001, Table A5-2.

B. Within County Mail

1. Definition

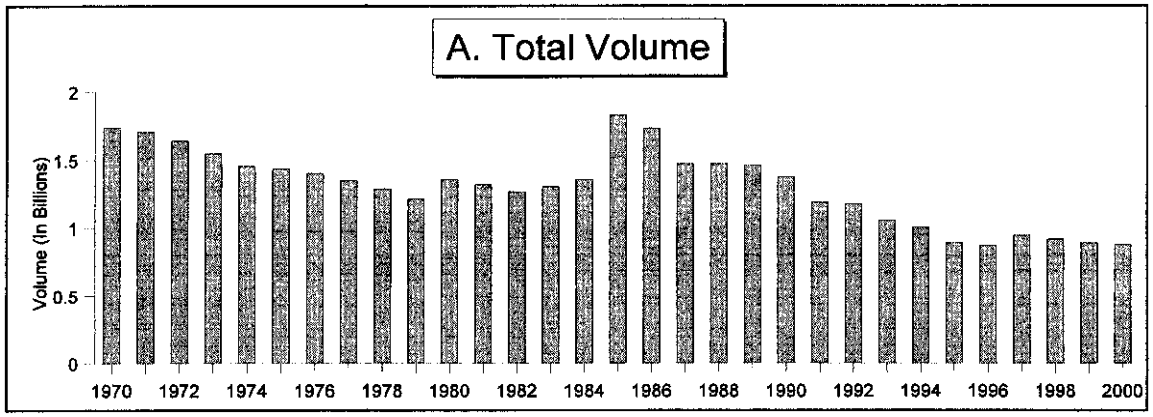
The first requirement for mail to be eligible for Within County rates is that it must qualify under the general rules regarding Periodicals. The second requirement is that it must be addressed to a location within the county where the mailer has an office of publication. In 1985, Congress moved to tighten the requirements for Within County mail. The Consolidated Omnibus Budget Reconciliation Act of 1985 denies Within County rates to publishers with more than half of their circulation outside of the county, but it specifically exempts publications with circulation of less than 10,000. Pub. Law 99-0272, April 7, 1986

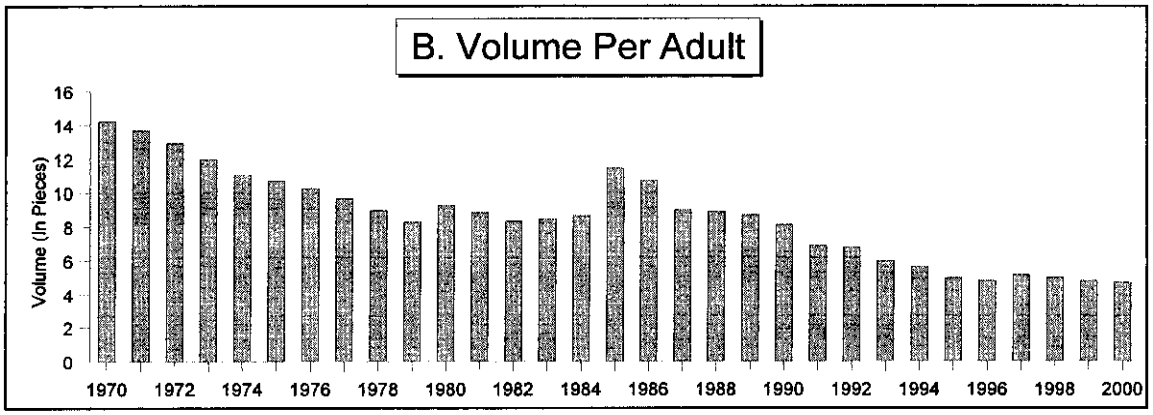
Within County rates are available for qualified Periodicals pieces which are addressed for delivery within the county where published. All periodicals mailed inside the county are charged rates which are lower than rates for similar mail traveling outside the county. Rates charged to mail traveling outside the county are referred to collectively as outside-county rates.

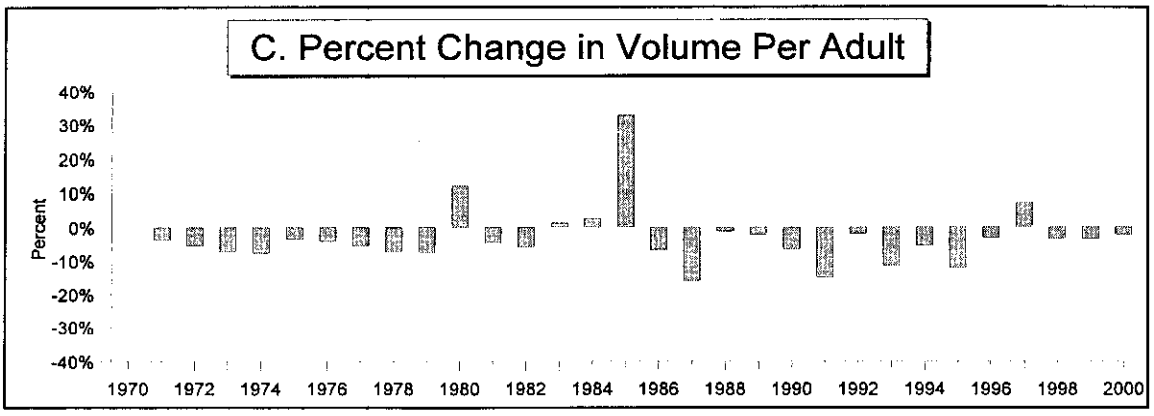
2. Volume History

The top panel in Figure 7 shows that total Within County volume generally declined or remained flat from 1970 until 1985. The increase in reported volume per adult of over 30 percent in 1985 is connected with new reporting procedures introduced to reconcile volume estimates for the subclasses of what was then second-class mail. Prior to 1985, Within County mail was under-reported relative to the other subclasses. The effect of the reporting procedure change was to increase estimated Within County volume, while decreasing the estimated Nonprofit and Regular Rate volumes. After the increase due to the reporting change, volume continued to decline. Volume per adult

Figure 7
Within County Periodical Mail







has fallen from 11.5 pieces in 1985 to 4.7 pieces in 2000. During the recent 5-year period ending in 2001Q3, volume fell from 904 million to 881 million pieces, or by 2.5 percent.

3. Factors Affecting Volume

a. Own Price

Table 7 indicates that during the recent 5-year period ending in 2001Q3 the real price of Within County mail declined 3.7 percent. The econometrically estimated long-run own-price elasticity of Within County mail is -0.157. Applying this elasticity to the change in real price yields a 0.60 percent increase in the volume of Within County mail due to this factor.

TABLE 7

CONTRIBUTIONS TO CHANGE IN
WITHIN COUNTY VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own price	-3.7%	-.157	0.60%
Long-run Income	10.2%	0.535	5.33%
Adult Population	4.5%	1	4.50%
Other Factors			-11.93%
Total Change in Volume			-2.49%

b. Income

Within County volume responds positively to long-run income. It is estimated that a 1 percent increase in long-run income increases volume by 0.535 percent. See Table 7. Therefore, the increase in long-run income per adult of 10.2 percent over the 5-year period ending in 2001Q3 is estimated to have contributed a 5.33 percent increase in Within County volume.

c. Adult Population

Growth in population contributed 4.50 percent to the volume of Within County mail, as shown in Table 7.

d. Other Factors

As indicated in Table 7, factors other than price, income and population discussed thus far contributed an 11.93 percent decline in volume over the period. Among the other factors, Within County volume has been adversely affected by factors causing declines in periodical circulation in general. Weekly newspapers tend to be locally oriented and hence prone to delivery at Within County rates. The Household Diary Study 2001 indicates that mail delivery of weekly newspapers declined from 0.30 pieces per household per week in 1987 to 0.15 pieces in 2000, and mail delivery of weekly magazines fell slightly from 0.25 pieces to 0.23 pieces during this period. Table A5-2.

Long-term changes in reading habits, and in use of time more generally, have contributed to the decline. Household time spent reading magazines has been projected to decrease between 1995 and 2001 by 6.3 percent, from 84 hours per year to 79 hours. *Statistical Abstract 2000,* Table 909. Time spent reading daily newspapers fell even more during the same period, by 8.5 percent, from 165 hours per year to 151 hours. These numbers imply a reduction of 3.1 minutes per day reading magazines and daily newspapers.

This figure compares with an increase in television time of 3.3 minutes per day. Consumer online Internet access grew by 22.9 minutes per day, while radio decreased by 12.7 minutes per day. Calculated from *Statistical Abstract 2000*, Table 909. These comparisons suggest that periodical reading time may have been influenced by substitution toward other media use, although the substitution has been a relatively small part of the time-use flux.

4. Volume Forecast

The Test Year before -and-after-rates volume forecast of Within County mail volume are made by applying the impact of the econometric factors to a Base Year volume of 881.217 million pieces. The results are given in Table 7A. In each forecast, non-rate factors reduce volume by 2.80 percent between the Base Year and the Test Year. In the before-rates forecast, the rate impact reduces volume by 0.09 percent. Combining these two impacts yields a Test Year Before-Rates forecast of 855.781 million pieces. In the after-rates forecast, the proposed rates are projected to reduce Periodicals Nonprofit mail volume by 0.36 percent between the Base Year and the Test Year, yielding a volume forecast of 853.535 million pieces.

Table 7A
Volume Forecast of Within County Periodicals Mail

	Before-Rates	After-Rates
Base Year Volume (Millions)	881.217	881.217
Non-Rate Impact	-2.80%	-2.80%
Postal Rate Impact	-0.09%	-0.36%
Test Year Volume (Millions)	855.781	853.535

C. Nonprofit Periodicals

1. Definition

Periodicals sent by qualified nonprofit organizations and certain other organizations may be mailed as Nonprofit Periodicals mail. The types of eligible nonprofit organizations are religious, educational, scientific, philanthropic, agricultural, labor, veterans, and fraternal. In addition to these organizations, certain other organizations may send publications at the Nonprofit rate if their publication falls into one of the following categories: (1) publications issued by and in the interest of associations of rural electric cooperatives, (2) one publication of the official highway or development agency of the state containing no advertising, (3) program announcements or guides published by an educational radio or television station, or (4) one conservation publication published by a state agency which is responsible for management and conservation of the fish or wildlife resources of that state.

2. Volume History

Nonprofit Periodicals volume is about the same today as in 1970, as illustrated in Figure 8. Growing population, however, has led to a steady decline in volume per adult from 17.5 pieces in 1970 to 11.3 pieces in 2000. Volume per adult has declined in each of the last eight years. During the recent five-year period ending in quarter 2001 Q3, Nonprofit Periodicals volume declined from 2,287 million to 2,165 million pieces, or by 5.48 percent.

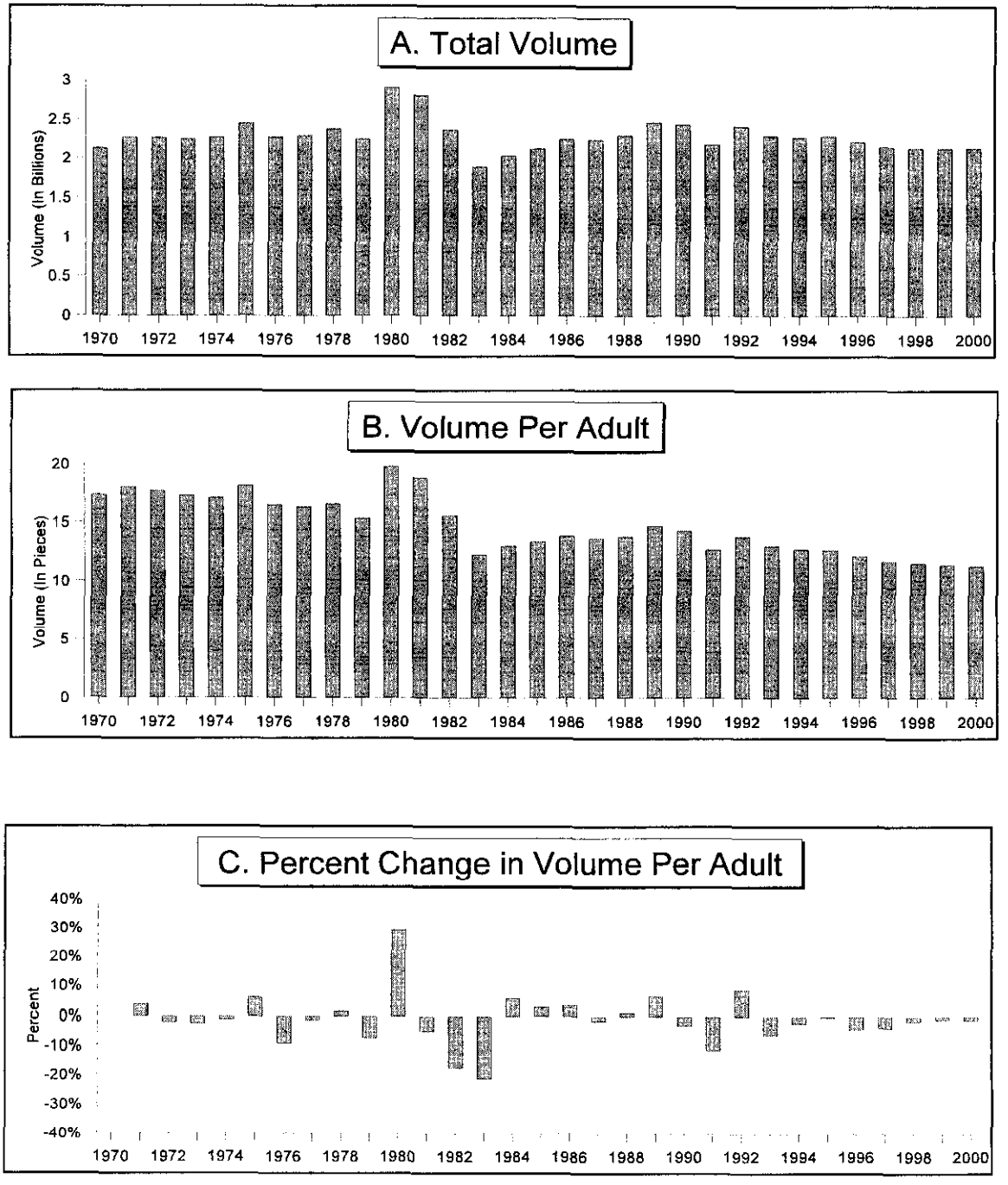
3. Factors Affecting Volume

a. Own Price

Table 8 indicates that during the five-year period ending in 2001Q3, the real price of Nonprofit Periodical mail increased 0.1 percent. The own price elasticity of -0.092

Figure 8

Periodical Nonprofit Mail



leads to a 0.004 percent decrease in Nonprofit Periodicals volume estimated to have been contributed by price change in this mail category.

b. Income

It is estimated that a 1 percent increase in long-run income leads to an increase of 0.537 percent increase in Nonprofit volume, as indicated in Table 8. Long-run income is estimated to have risen 10.2 percent during the recent 5-year period, implying a 5.36 percent increase in Nonprofit volume.

TABLE 8

CONTRIBUTIONS TO CHANGE IN NONPROFIT PERIODICALS VOLUME FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own price	0.1%	-0.092	-0.004%
Long-run Income	10.2%	0.537	5.36%
Short-run Income	-2.5%	1.306	3.33%
Price of Paper	-3.1%	-0.382	1.21%
Adult Population	4.5%	1	4.50%
Other Factors			-12.26%
Total Change in Volume			-5.48%

Short-run income is estimated to have fallen by 2.5 percent during the period. This class of mail is responsive to changes in short-run income, with an elasticity of 1.306. The resulting reduction in mail volume is 3.33 percent during the period.

c. Wholesale Price of Pulp and Paper

It is estimated that a one percent increase in the price of paper leads to a 0.382

percent decrease in the volume of Nonprofit mail. The price of paper fell by 3.1 percent during the recent 5-year period, leading to an estimated 1.21 percent increase in the volume of Nonprofit mail.

d. Adult Population

Growth in adult population was responsible for a 4.50 percent increase in the volume of Nonprofit mail over the period.

e. Other Factors

As indicated in Table 8, factors other than prices, income and population are estimated to have reduced Nonprofit Periodical volume by 12.26 percent over the period. Nonprofit mail is subject to declining preference to spend time reading, as described in the discussion of Within County mail. This change in reading habits is part of a long-term trend and thus presumably contributes to the decline due to other factors. Substitution into TV viewing, discussed in the section on Within County mail, may also affect Nonprofit mail.

While the Internet as a consumer tool was essentially launched during the past 5 years, nonprofit mail may be subject to less than average Internet substitution. The specialty nature of nonprofit mail may act to shield it from competition from other media, making substitution over time less than average. The potential for Nonprofit publications to spend resources to make the Internet complimentary to print, as has been done by daily newspapers, may be less.

4. Volume Forecast

Table 8A presents the before- and after-rates Test Year forecasts for Nonprofit Periodicals Mail. In each forecast, non-rate factors reduce volume by 6.68 percent between the Base Year and the Test Year. In the Before-Rates forecast, the rate impact reduces volume by 0.10 percent. Combining these two impacts yields a Test Year before-rates forecast of 1,959.377 million pieces. In the after-rates forecast, the

proposed rates are projected to reduce Periodicals Nonprofit mail volume by 1.07 percent between the Base Year and the Test Year, yielding a volume forecast of 1,940.225 million pieces.

Table 8A
Volume Forecast of Nonprofit Periodicals Mail

	Before-Rates	After-Rates
Base Year Volume	2,101.762	2,101.762
Non-Rate Impact	-6.68%	-6.68%
Postal Rate Impact	-0.10%	-1.07%
Test Year Volume (Millions)	1,959.377	1,940.225

D. Classroom Mail

1. Definition

Classroom mail consists of religious, educational or scientific publications intended for use in school classrooms. This mail is often sent to schools in large bundles during the school year, but mailed to individual students during the summer recess.

2. Volume History

Figure 9 shows that classroom mail volume has shown considerable variation since 1970, although over the last few years volume has been more stable. Volume renaged from 104.5 million pieces in 1970 to 31.3 million pieces in 1984. In 2000, volume was 63.3 million pieces.

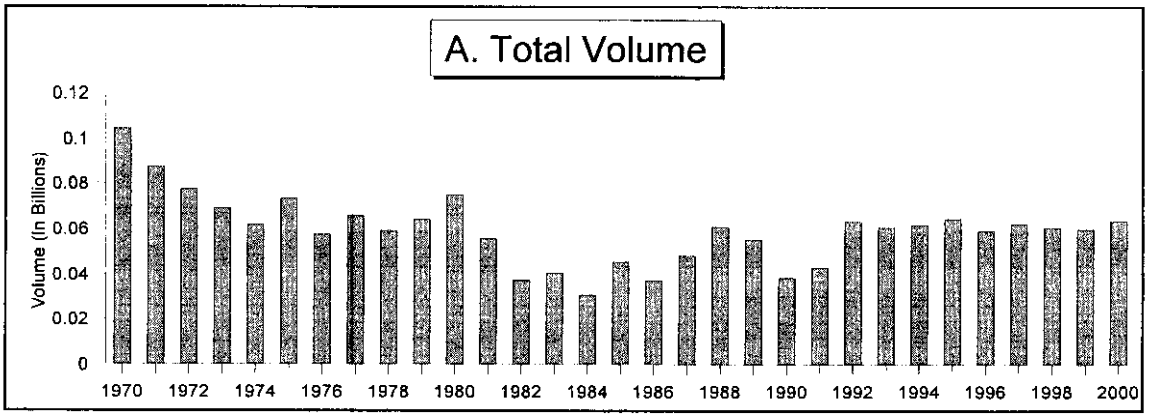
3. Factors Affecting Volume

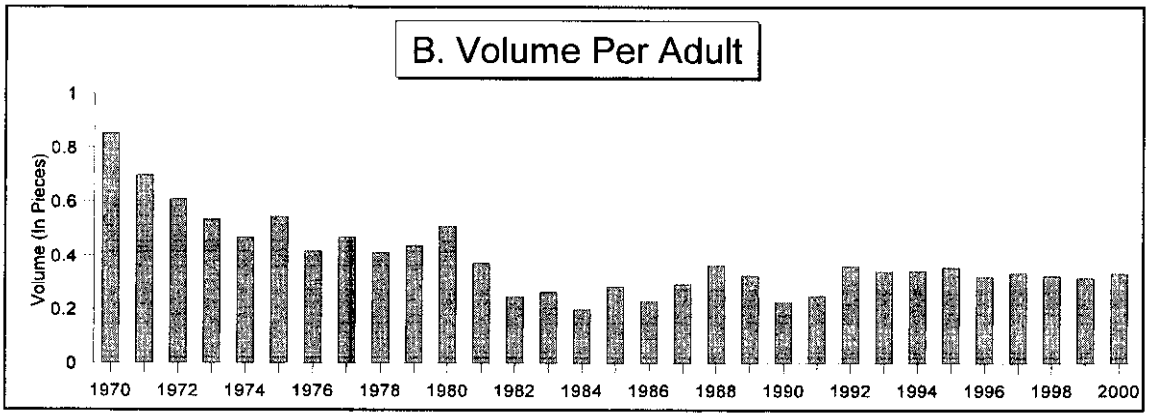
a. Own Price

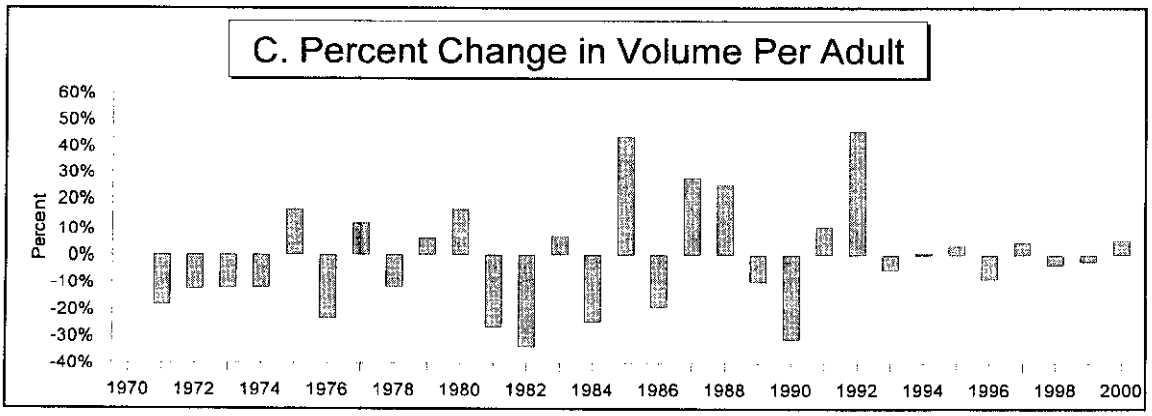
Table 9 shows that in the 5 years ending 2001Q3, the real postal price of classroom mail increased 34.2 percent. The own-price elasticity of classroom mail is estimated to be -0.092 percent. Applying this estimated elasticity to the increase in real

Figure 9

Periodical Classroom Mail







price results in a 2.65 percent increase in the volume of classroom mail.

b. Long-run Income

It is estimated that a one percent increase in long-run income per adult leads to a 0.537 percent increase in classroom mail volume. The observed gain in long-run income per adult of 10.2 percent is estimated to have contributed a 5.36 increase in classroom mail volume.

c. Short-run Income

It is estimated that a 1 percent increase in short-run income per adult leads to a 1.306 percent increase in classroom mail volume. The observed reduction in short-run income per adult of 2.5 percent is estimated to have contributed a 3.327 percent decrease in classroom mail volume.

d. Price of Paper

It is estimated that a 1 percent increase in the price of paper reduces the volume of classroom mail by 0.392 percent. The observed 3.1 percent reduction in the price of paper contributes a 1.21 percent estimated increase in the volume of classroom mail.

e. Adult Population

Growth in adult population was responsible for a 4.50 percent increase in the volume of classroom mail over the past 5 years.

TABLE 9

CONTRIBUTIONS TO CHANGE IN
CLASSROOM PERIODICALS VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own price	34.2%	-0.092	-2.65%
Long-run Income	10.2%	0.537	5.36%
Short-run Income	-2.5%	1.306	-3.33%
Price of Paper	-3.1%	-0.392	1.21%
Adult Population	4.5%	1	4.50%
Other Factors			-4.30%
Total Change in Volume			0.36%

f. Other Factors

As shown in Table 9, other factors contributed a 4.30 percent decline in volume. Negative influences are sufficient to more than offset increasing school enrollment. According to the U.S. National Center for Education Statistics, enrollment in public and private elementary schools grew from 60.3 million in 1990 to 64.8 million in 1995, a growth rate of 7.5 percent. U.S. Bureau of the Census, *Statistical Abstract of the United States*: 1998 (Table 250). From the same source, total school enrollment is projected to grow to 68.7 million by year 2001, a 6.0 percent increase from 1995 estimated levels.

A negative influence on classroom volume has been increasing public school Internet access. In 1995, 8 percent of instructional classrooms in elementary and secondary public schools had Internet access. By 1999, the number had grown to 63

percent. *Statistical Abstract, 2000* Table 277. 95 percent of these schools had Internet access in 1999, up from 50 percent in 1995. 66 percent of teachers with computer or Internet access at school used it in various forms of classroom instruction in 1999. (Table 279).

4. Volume Forecast

Table 9A shows that the before-rates volume forecast for Classroom mail is 63.340 million pieces and the after-rates forecast at rates proposed by the Postal Service is 58.335 pieces.

Table 9A
Volume Forecast of Classroom Periodicals Mail

	Before-Rates	After-Rates
Base Year Volume (Millions)	63.340	63.340
Non-Rate Impact	-6.68%	-6.68%
Postal Rate Impact	-0.28%	-1.28%
Test Year Volume (Millions)	58.942	58.335

E. Regular Rate Mail

1. Definition

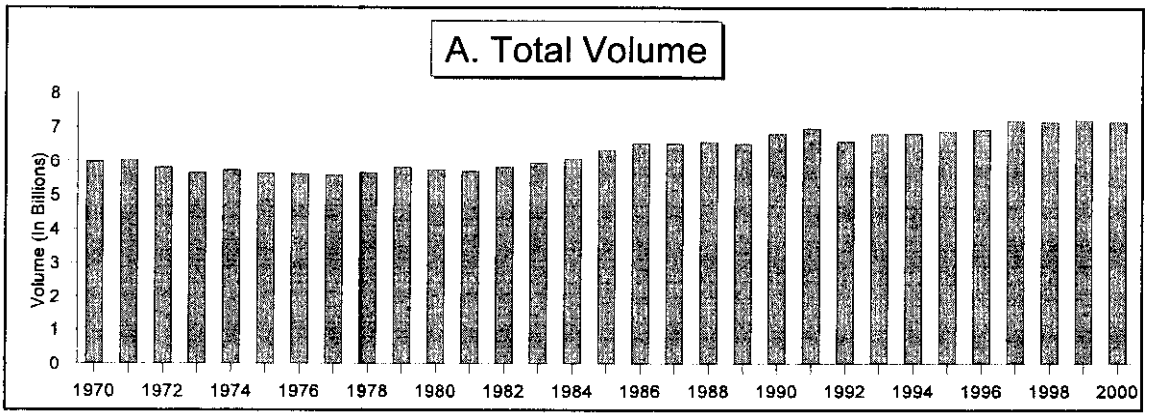
Regular Rate mail, the largest subclass in Periodicals, consists primarily of weekly and monthly magazines as well as daily and less-frequently published newspapers not eligible for preferred rates.

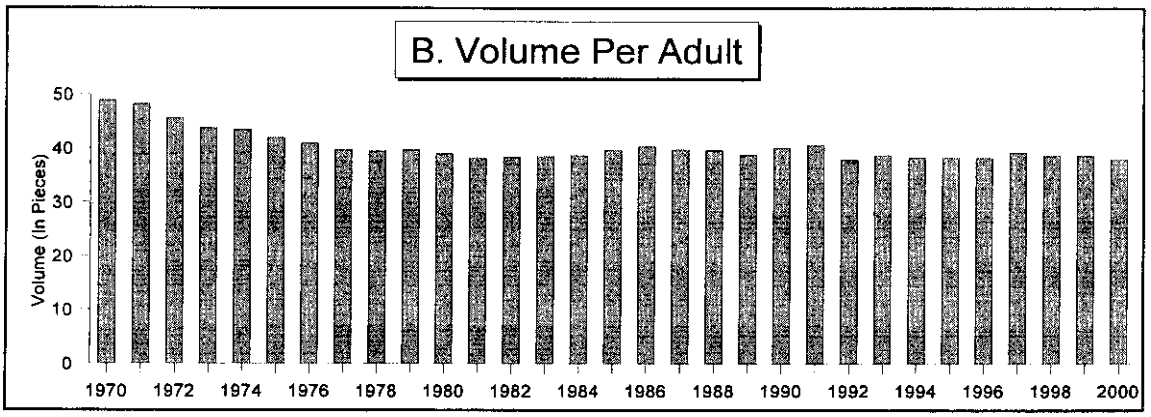
2. Volume History

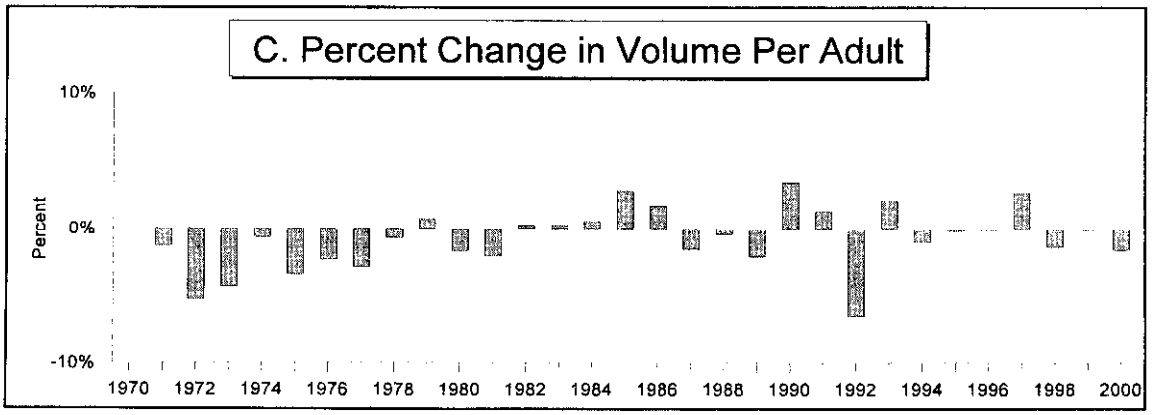
Figure 10 shows volumes for Regular Rate mail from 1970 to 2000. The top panel indicates that total volume declined during most of the 1970's and has generally increased gradually since then. In 2000 volume per adult was 38.0 pieces, about the

Figure 10

Periodical Regular Rate Mail







same level as in 1990 and 1980, but over 20 percent less than volume per adult in 1970. During the 5-year period ending in 2001Q3, Regular Rate volume increased from 6,913 million to 7,146 million pieces, or by 3.36 percent.

3. Factors Affecting Volume

a. Own Price

Table 10 indicates that the real price of Regular Rate mail, after allowing for inflation, decreased 3.9 percent during the 5-year period ending in 2001Q3. The estimated own-price elasticity of -0.166 applied to the 3.9 percent decrease in real own-price gives an estimated increase in volume due to price changes of 0.58 percent over the period.

b. Income

Applying the estimated long-run income elasticity of 0.534 to the 10.2 percent gain in long-run income per adult yields a 5.32 percent increase in Regular Rate volume during the period.

Regular Rate volume is also somewhat affected by changes in short-run income. A 1 percent change in short-run income lagged 3 quarters is estimated to lead to a 0.077 percent change in Regular Rate volume. Therefore, as shown in Table 10, the decline in short-run income of 2.6 percent is estimated to have reduced the volume of Regular Rate mail by 0.20 percent.

c. Wholesale Price of Pulp and Paper

The price of paper, an important input to newspaper and magazine production, fell by 2.2 percent. It is estimated that a 1 percent decrease in the wholesale price of pulp and paper index leads to a 0.141 percent increase in the volume of Regular Rate mail. The price reduction led to a 0.31 percent increase in the volume of Regular Rate mail over the recent 5-year period.

TABLE 10

CONTRIBUTIONS TO CHANGE IN
REGULAR RATE VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own price	-3.9%	-0.166	0.58%
Long-run Income	10.2%	0.534	5.32%
Short-run Income	-2.6%	0.077	-0.20%
Price of Paper	-2.2%	-0.141	0.31%
Internet	19.7%	-0.136	-2.41%
Adult Population	4.5%	1	4.50%
Other Factors			-4.44%
Total Change in Volume			3.36%

d. Internet Usage

Internet usage, as measured by household consumer expenditures on Internet service providers, increased by 19.7 percent during the period. Regular Rate volume, having an elasticity of -0.136 with respect to this variable, is estimated to have fallen 2.41 percent in response to increased Internet usage.

e. Adult Population

Growth in adult population contributed 4.50 percent to the volume of Regular Rate mail growth over the past 5 years.

f. Other Factors

As indicated in Table 10, other factors are estimated to have contributed a 4.44 percent decline in Regular Rate volume, which is less than the approximately 12

percent decline due to other factors in both Within County and Nonprofit Periodicals mail. Widely circulating, general-interest newspapers and magazines are subject to the decline in periodical reading time discussed in the section on Within County mail. However, comparing figures given in Section IV.A.3 and IV.B.3 (decline of total newspapers received by mail from 0.60 to 0.34 pieces per weeks accompanied by decline of weekly newspapers from 0.30 to 0.15 pieces per week) there has been a less proportionate decline in mailings of total newspapers, which include large circulation dailies, than in weekly newspapers. This situation is consistent with the hypothesis that larger circulation dailies being mailed by Regular Rate have been less affected by changes in reading habits than smaller, less frequent Within County and Nonprofit publications.

As another consideration accounting for the lesser influence of other factors, growth of the number of small-scale specialty magazines may be a positive influence on Regular Rate volume. As noted in my testimony for the R2000-1 rate case, "Assuming newsstands and distributors find it less profitable to stock specialty magazines, these magazines are more likely to be mailed than general interest publications on Regular Rate. This means that Postal Service volume of Periodicals Regular Rate mail may rise by servicing the growing demand for specialty titles that may go ignored by wholesale distributors." USPS-T-6, Docket No. R2000-1, at 104.

The smallness of the negative econometric estimate of the influence of the Internet variable on Regular Rate volume is consistent with the existence of other factors that have tended to be at least partially offsetting. While the Internet may have drawn some readers away from Regular Rate periodicals, there has been a recognition in the periodical industry of the potential importance of the Internet as a competitor, resulting in a response by newspapers and magazines, particularly those with large

circulation likely to use Regular Rate. This response, still in progress, has entailed establishing an Internet presence, principally among newspapers.

A belief has been voiced by some that online versions of newspapers and magazines, designed for the new medium, are actually complementary to their counterparts in print. Evidence for complementarity is supplied by the Newspaper Association of America as follows "Highlights:TheYear [1999]in Review," http://www.naa.org p. 1:

> • Among adults who read online newspapers, 67% read a printed daily and 78% read one on Sunday . . . . Even Internet users who don't look at online newspapers show considerable print readership . . . .
>
> • Nearly three-quarters [of online newspaper readers] . . . said there's been no change in their print-newspaper reading habits since they've begun looking at online newspapers, and 8% actually use it more.
>
> • Nearly half of all household Internet users . . . read or used classified advertising in a daily newspaper during the past year, compared to only 28% of Internet users who used electronic classifieds." [Highlights 1999]

The Columbia Journalism Review cites the New York Times as an example of complementarity between print and Web site. By 1999, the paper had attracted 11.4 million non-paying readers to its Web site, nearly half of whom had never purchased the paper. Yet in the first half of 1999 the paper had gained about 12,000 new print subscribers from those who were introduced to the product via the Web. "New Media May Be Old Media's Savior," Columbia Journalism Review (July/August 1999).

4. Volume Forecast

The volume forecasts for Periodicals rate mail are made from a Base Year volume of 7,146.061 million pieces. Table 10A shows that other factors serve to increase

volume by 1.37 percent between the Base Year and the Test Year. In the before-rates forecast, the postal impact is slightly negative at -1.11 percent. Combining the non-rate and rate impacts results in a before-rates Test Year volume of 7,163.763 million pieces. If the rates proposed by the Postal Service are adopted, then the volume projection is 7,110.414 million pieces, which is the After-Rates Test Year forecast for Regular Rate Periodical mail.

Table 10A
Volume Forecast of Regular Rate Periodicals Mail

	Before-Rates	After-Rates
Base Year Volume (Millions)	7,146.061	7,146.061
Non-Rate Impact	1.37%	1.37%
Postal Rate Impact	-1.11%	-1.85%
Test Year Volume (Millions)	7,163.763	7,110.414

V. Standard Mail

A. General Characteristics

1. Description of Standard Mail

Standard Mail contains mostly printed advertising, solicitation, and promotional materials and also small parcels. Standard Mail includes matter not required to be mailed First-Class, and is subject to postal inspection. All Standard Mail must weigh less than 16 ounces, as opposed to Packages Services mail which can weigh in excess of one pound. All Standard Mail must be presorted to the greatest degree possible within a single mailing.

Printed advertisements sent as Standard Mail come in a wide variety of forms, from single-page advertising circulars to multi-page color catalogs. Businesses, running from the very small to the extremely large, are the primary senders of Standard Mail. The scope of mailings also covers a wide range. High volume mailers may advertise a product in a Standard mailing to every known household in the country while a local business may use this same service to reach a selected audience within a single ZIP Code area. Standard Mail may be deferred at postal facilities in order to expedite the delivery of classes such as First-Class mail and Periodicals. To minimize the effect of deferred status, some large volume Standard mailers go to extra lengths to reduce the amount of handling needed before their mail is delivered to its final destination. These extra lengths include mail automating (to speed processing) and the use of dropshipping (to shorten transportation time).

2. Importance of Standard Mail

Standard mail is the second largest class of mail, behind First-Class. In Postal Year 2000, total volume of Standard mail was 89.2 billion pieces, accounting for more than 40 percent of all domestic mail. The two largest subclasses of Standard mail are

Regular and Enhanced Carrier Route (ECR), with Regular mail volume in 2000 of 42.5 billion pieces and ECR volume of 32.6 billion pieces. There is a nonprofit subclass corresponding to each of the regular rate subclass. The 2000 volume of the Standard Nonprofit subclass was 11.3 billion pieces and the volume of Standard Nonprofit ECR was 2.9 billion pieces.

In 2000, total Standard mail volume (including Standard nonprofit) was 89.2 billion pieces. Weekly volumes for the categories of Regular mail are given in Tables A3-3 and A3-80 of the Household Diary Study 2001. Multiplying these volumes by 52 and the number of households gives estimates of mail pieces for various categories of Regular mail. By this method, it is found that 63.2 billion pieces (or 70.9 percent of total Standard mail) were received by households and 26.0 billion pieces (or 29.1 percent of total Standard mail) were received by nonhouseholds. Of the 63.2 billion pieces of Standard mail received by households, 52.3 billion pieces were sent Standard Regular and an additional 10.9 billion pieces were sent Standard nonprofit. Mailings of merchants to households accounted for 26.9 percent of Standard mail and financial entities mailings to households accounted for 9.2 percent. Nonprofit mail sent to households accounted for 12.3 percent of Standard mail. A percentage breakdown of Standard mail components is given in Chart F.

The share of Standard mail received by households has fallen since 1987. In that year, 75.4 percent of Standard mail was sent to households. This compares to the 70.1 percent of Standard mail going to households in 2000. Much of this reduction is accounted for by the fall in Standard mail sent from merchants to households, which fell from 38 percent to 26.6 percent between 1987 and 2000.

Chart F. Breakdown of Standard Mail According to Flows Between Sender and Receiver Groups, 1987 and 2000

	Percentage of Standard Mail	
	1987	2000
Standard Mail Received by Households		
Financial	7.2	9.2
Merchants	38.0	26.6
Services	4.0	8.0
Other	11.4	14.1
Nonprofit Standard Mail	14.8	12.3
Total Received by Households	75.4	70.1
Standard Mail Received by Nonhouseholds	24.6	29.9
Total Standard Mail	100.0	100.

Source: Tables A3-3 and A3-80, Household Diary Study 2001

In contrast to the trend for merchants, the share of Standard mail received by households from the financial and services industries increased. For financial industries, mail sent to households increased from 7.2 to 9.3 percent of total Standard mail. Standard mail sent to households by service industry firms increased from 4 to 8 percent of all Standard mail. The share of Standard Nonprofit mail sent to households decreased from 80.3 to 77.2 percent, and with a corresponding increase in the share of Standard mail sent to nonhouseholds.

B. Standard Regular

1. Definition

The Standard Regular subclass was created as part of the MC95-1 classification reform. Standard Regular mail contains what was previously known as noncarrier-route third-class bulk regular mail. To qualify for the Standard Regular subclass, mailings must contain at least 200 pieces (or 50 pounds) presorted at least to the 3-digit ZIP Code. Each

piece must weigh less than 1 pound. Pieces in excess of 1 pound can be sent as Package Services mail.

Within Standard regular, there is a distinction between letter and nonletter mail, where nonletters consist of flats, parcels, and irregularly shaped pieces. There are 5 letter and 4 nonletter categories of Regular mail. The 5 letter categories are: basic, presort, basic automation, 3-digit automation, and 5-digit automation. The 4 nonletter categories are: basic, presort, basic automation, and 3/5-digit automation. To qualify for the automation discounts, mail must be automation compatible and 100 percent delivery point barcoded.

2. Volume History

a. Total Volume

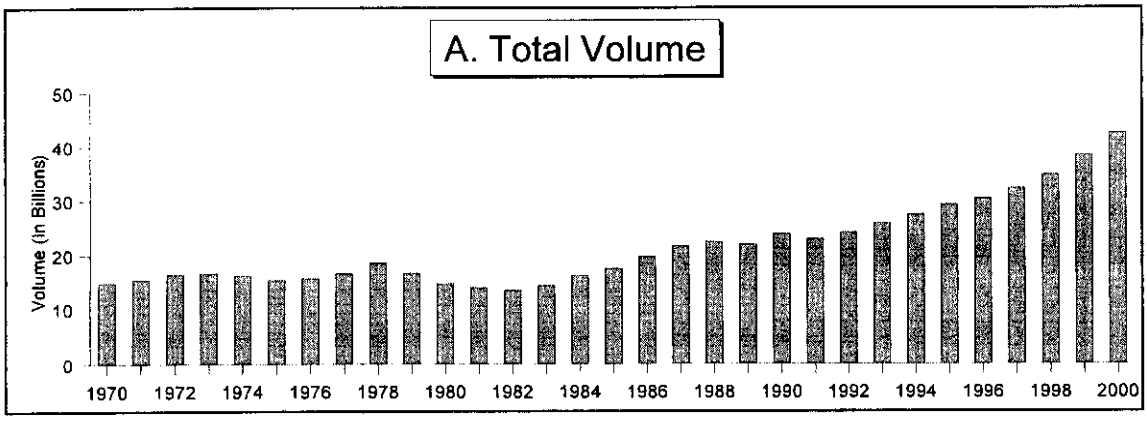
Figure 11 shows the total volume of non-carrier route or what is now Standard Regular mail from 1970 through 2000. Volume increased from just under 15 billion pieces in 1970 to 18.6 billion pieces in 1978. In 1979, the carrier-route presort discount was introduced in third-class, and the volume of noncarrier-route mail fell to under 14 billion pieces in 1982. Since 1982, the volume of noncarrier-route third-class mail has grown in every year except 1989 and 1991. Total volume was 42.5 billion pieces in 2000, up from 38.5 billion in the prior year, partly because of a price restructuring that caused some carrier-route mail volume to shift into noncarrier-route. Figure 10 shows that on a per adult basis, the volume of what is now Standard Regular mail reached 225.4 pieces in 2000, twice its level in 1985.

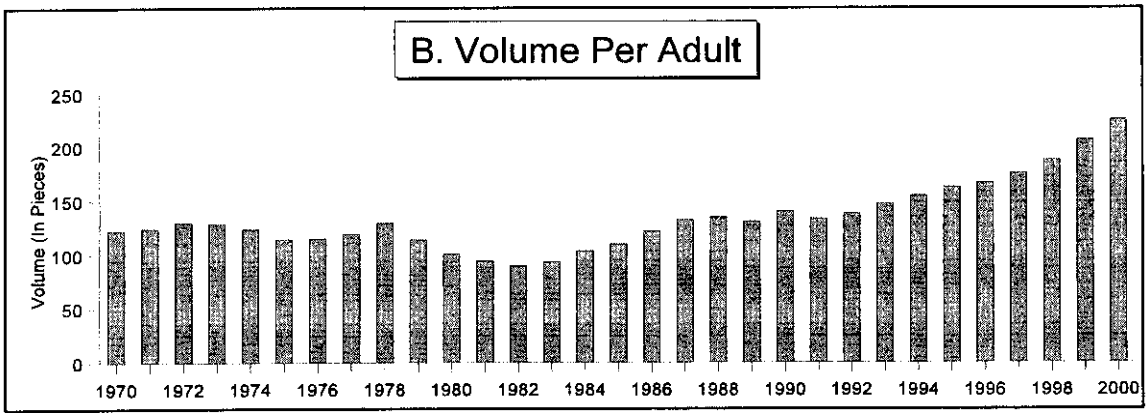
b. Nonautomated and Automated Volumes

Chart G presents the breakdown of total noncarrier-route mail volume into nonautomated and automated volumes since the introduction of the ZIP + 4 discount in 1988. Automation volume has grown in every year and overtook nonautomated volume in 1995. In 2000, 86.3 percent of noncarrier-route bulk mail volume was automated

Figure 11

Standard Regular Mail





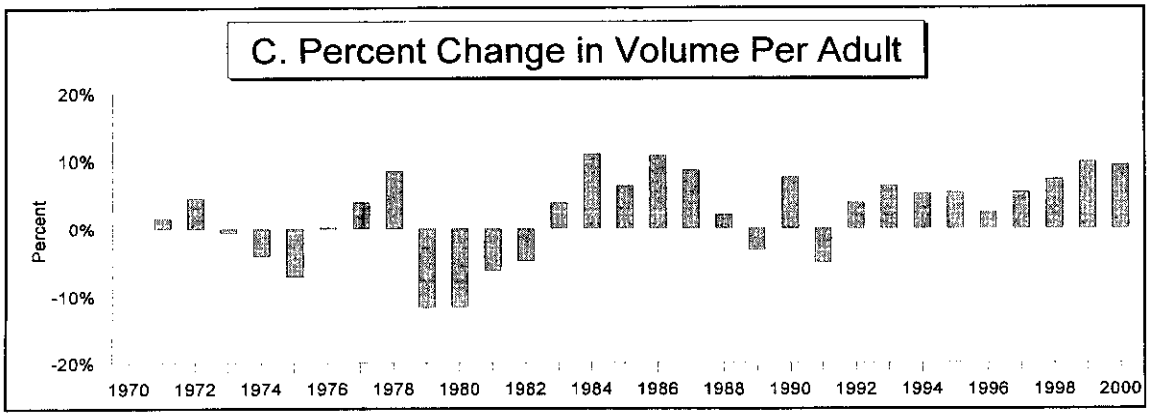


CHART G
Nonautomated and Automated Volumes of Noncarrier-Route Bulk Mail
(in millions of pieces)

	Nonautomated		Automated	
	Volume	Percentage	Volume	Percentage
1988	22,350.531	99.7%	75.405	0.3%
1989	21,472.331	97.8%	481.694	2.2%
1990	22,964.742	96.2%	913.343	3.8%
1991	20,215.138	88.2%	2,705.554	11.8%
1992	18,700.202	77.6%	5,404.346	22.4%
1993	13,634.270	52.6%	12,284.141	47.4%
1994	14,037.915	51.0%	13,483.042	49.0%
1995	13,725.016	46.9%	15,535.206	53.1%
1996	12,049.115	39.8%	18,238.603	60.2%
1997	7,972.686	24.8%	24,206.512	75.2%
1998	6,943.377	20.0%	27,833.758	80.0%
1999	6,323,525	16.4%	32,167.285	83.6%
2000	5,832.288	13.7%	36,640.643	86.3%

3. Factors Affecting Volume

Over the 5-year period ending in 2001Q3, the volume of Standard Regular mail increased 49.2 percent. Table 11 details the contributions of different variables to this volume change.

a. Own Price

The long-run own-price elasticity of Standard Regular mail is estimated at -0.388, meaning that a 1 percent increase in real own-price is estimated to elicit a 0.388 percent decrease in mail volume. Table 10 shows that the real price of regular mail decreased 9.0 percent over the 5 years. Applying the estimated elasticity to the price decrease yields a volume increase of 3.74 percent due to the decrease in real price.

b. Workshare Letters Price

The long-run elasticity of Standard Regular volume with respect to the real workshared letters price is 0.012. Therefore, the 6.9 percent reduction in the workshared letters price is estimated to have contributed a 0.09 percent decrease in the volume of Standard Regular mail.

Table 11

CONTRIBUTIONS TO CHANGE IN
STANDARD A REGULAR VOLUME
FOR THE FIVE YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own price	-9.0%	-0.388	3.74%
Workshared Letters Price	-6.9%	0.012	-0.09%
Retail Sales	19.4%	0.700	13.24%
Price of Direct Mail Advertising	-3.8%	-1.006	3.98%
Price of Newspaper Advertising	17.2%	0.135	2.18%
Internet Advertising	19.2%	-0.441	-7.46%
R97-1 Rate Crossover			10.58%
Adult Population	4.5%	1	4.50%
Other Factors			11.90%
Total Change in Volume			49.20%

c. Retail Sales

Since direct mail is sent to encourage households to make purchases, advertisers often base their mailing decisions on expected levels of retail sales. Therefore, real retail sales per adult are included in the econometric analysis of Standard volumes. The estimated elasticity of Standard Regular volume with respect to retail sales is 0.700. Therefore, the 19.4 percent increase in retail sales over the past 5 years is estimated to have contributed a 13.24 percent increase in the volume of Standard Regular mail.

d. Price of Direct Mail Advertising

The volume of advertising mail depends on other costs beyond postage. The price of direct-mail advertising is calculated by the Bureau of Labor Statistics by surveying print shops regarding revenue and quantity of advertising printing. It is estimated that a 1 percent increase in the real price of direct mail advertising leads to a 1.006 percent decline in the volume of Standard Regular mail. Therefore, the 3.8 percent real decline in price over the past 5 years is estimated to have contributed 3.98 percent to volume, as shown in Table 11.

e. Price of Newspaper Advertising

The decision to use direct mail as an advertising medium is based partly on the costs of alternative advertising options. Newspaper advertising is one of the more important alternatives to direct mail. A measure of the price of newspaper advertising is published by the Bureau of Labor Statistics. This price series is included in the volume equation of Standard Regular mail. It is estimated that a 1 percent increase in the real price of newspaper advertising leads to a 0.135 percent increase in the volume of Standard Regular mail. Over the 5 years, the real price of newspaper advertising increased by 17.2 percent leading to an estimated 2.18 percent increase in the volume of Standard Regular mail, as shown in Table 11.

f. Internet Advertising

The Internet has been a rapidly growing medium for advertisers. Internet advertising expenditures are reported on a quarterly basis by PriceWaterhouseCoopers in association with the Internet Advertising Bureau. This quarterly series, expressed as real dollars per adult, has been included in the demand equation for Standard Regular mail. Over the past five years, Internet advertising expenditures per adult increased from $0.327 to $44.55 This increase is estimated to have reduced Standard Regular volume by 7.46 percent. The testimonies of Thomas Thress (USPS-T-8) and Peter Bernstein (USPS-T-10) present detailed discussions of the Internet advertising variable.

g. R97-1 Rate Cross-Over

As a result of the R97-1 case, the rate for Standard Regular 5-digit automation letters was set below the rate for Standard ECR basic letters. This effect, termed the rate cross-over, had the effect of shifting volume from ECR to the regular subclass. To capture this effect, a 0-1 variable was included in the demand equation for both Standard Regular and Standard ECR mail to account for the shift of mail due to this rate cross-over. Table 11 shows that this variable is estimated to have contributed a 10.58 percent increase in the volume of Standard Regular mail.

h. Adult Population

The rate of growth of the adult population is estimated to have contributed a 4.50 percent increase in the volume of Standard Regular mail.

i. Other Factors

Beyond the specific factors listed above, other factors have had an impact on the volume of Standard Regular mail. These other factors include a variety of considerations such as developments in direct marketing, the catalog industry, television advertising, telemarketing, and alternate delivery. The other factors are estimated to have increased

Standard Regular mail volume by 11.90 percent over the five years, most of which is explained econometrically by a time trend.

i. Direct Marketing

Developments in direct marketing include more sophisticated targeting methods as well as the use of alternative media, including telemarketing and the Internet. The increasing sophistication of database marketing methods makes direct marketing more attractive, and hence encourages the growth of direct-mail advertising. However, these very same developments can also dampen the growth of direct marketing by allowing direct marketers to satisfy targeting objectives with lower volumes of mail. To the extent that these changes in direct marketing methods yield more effective advertising targets, direct-mail advertising objectives might be achievable with less volume.

From 1979 through 1995, direct mail's share of total-advertising expenditures increased steadily, rising from 13.6 percent to 20.2 percent. McCann-Erickson World Group, www.mccann.com. Much of the growth can be attributed to the use of more sophisticated database marketing methods. In contrast to traditional mass-mailing methods, which only utilize demographic information about potential customers, database marketing involves sellers using a mixture of demographic data, surveys, and credit-card data to group the population into segments. Susan Headden, "Special Report: The Junk Mail Deluge," U.S. News and World Report (December 8, 1997). This information is passed to a direct-marketing agency that organizes the information into profiles. Once a type is determined, the agency buys the names and addresses of similar people from mailing lists sold by list brokers. Using this information allows direct marketers to target mailings more accurately by closely matching the goods and services being marketed to potential customers. "Hi Ho, Hi Ho, Down the Datamine We Go" The Economist (August 23, 1997).

Since 1995, however, the direct-mail advertising share has decreased, falling to 18.7 percent in 2000, according to this same source. McCann-Erickson World Group, www.mccann.com. Some of this decline is due to the rapid growth in Internet advertising, which saw its share rise from essentially 0 in 1995 to 3.5 percent of all ad spending in 2000. Although its share of total advertising spending declined, total direct-mail expenditures and total Standard volume increased over this period due to general growth in advertising.

An important part of direct marketing is catalogs. According to the Direct Marketing Association, consumer catalogs in the United States were expected to produce $53 billion in sales in 1998, nearly $4 billion more than the 1997 figure. Sales of this magnitude are the result of an estimated 12 billion catalogs being sent to households. Bob Tedeschi "Catalogue Companies Slow to Set Up Shop Online," The New York Times (December 1, 1998). Business-to-business catalogs, both electronic and traditional, are growing even faster. The Direct Marketing Association estimated a growth rate of 7.1 percent per year between 1995 and 2000. In terms of total sales, mail order sales have grown by 45 percent between 1996 and 1999, increasing from $155 billion to 225 billion. www.catalog-news.com.

Much like the effect that the increased use of database marketing has had on direct marketing in general, these same more sophisticated database marketing methods have improved the ability of mail-order companies to accurately target potential customers. In particular, this development has enabled some of these companies to shift their marketing focus to specialty catalogs that present a list of products geared to particular consumers. Because the specialty catalogs are smaller, they can be sent as Standard material rather than Bound Printed Matter. Despite this trend, *The Household Diary Study 2001*, Table A3-7 reports that catalogs represented 12.7 percent of Standard mail received by households in 2000, down from 14.2 percent in 1987. However, catalog volume can be influenced by

many factors, some of which will increase mailings of catalog and others than can reduce them. Improved targeting, for one, can make catalogs a more attractive advertising media and encourage more sellers to mail more catalogs. On the other hand, improvements in targeting, for the same reasons discussed above for direct marketing, can also dampen catalog mailings since each advertiser can target more effectively and meet sales goals with fewer catalog mailings.

Greater targeting can also occur as catalogs, and sellers sending catalogs, become more specialized in their offerings. Moreover, according to a recent Catalog Age article, some sellers have found that they can increase their profits, or reduce their losses, through cutting catalog circulation. Sears, for example, stunned industry observers several years ago when it decided to cease sending its catalog, the "Sears Bible," as it was called. "The increased costs of direct mail do have an impact on our ability to prospect," Sears spokesperson Jan Drummond said. "Cutting Losses by Cutting Circ," Catalog Age (October 1999).

The recent growth of the Internet has influenced the nature of catalog mailings, allowing mail-order merchants who send catalogs to become far more specialized. According to Bruce Horovitz of USA Today, "the $111 billion catalog industry has been chopped into thousands of tiny niches. And its sales are growing at twice the rate of retail sales." Bruce Horovitz, "Catalogs Thrive on the Net," USA Today (December 8, 2000). Instead of harming the catalog industry, the Internet has been able to bring customers of specialized products and services together with sellers of specialized products and services, a feat that would have otherwise been either very difficult or very expensive. Online retailers are also using catalogs to reach those customers reluctant to use the Internet for security or other reasons. "By launching catalogs, e-tailers are aiming at customers who may be reluctant to use the Internet because of security or privacy concerns. And some consumers may be tired of computers by the time they get home from

work and not want to spend leisure time shopping online." Lorrie Grant, "E-tailers Take Page from Past with Catalogs," USA Today, December 11, 2000.

The growth in specialty catalogs has gone hand-in-hand with the increased specialization of online retailers, many of whom are adding printed catalogs to their arsenal of marketing and sales tools. According to Bob Tedeschi of the New York Times, "catalogs are the newest fad among Web merchants who, in their pursuit of profitability, have cast off any pretensions of Internet-only retailing." Bob Tedeschi, "Online Retailers Try Printed Catalogs," The New York Times (July 10, 2000). The Tedeschi article gives the following further information. Online merchants such as RedEnvelope.com, eHats, Food.com, and eZiba.com have either begun catalog mailing programs or are in the process of developing such programs. This suggests that online retailers believe in the importance of diversifying their marketing efforts to capture larger shares of the market. Catalogs by online retailers also give them the opportunity to reach the many potential customers that still do not have Internet connections. However, since many of these catalogs are designed to direct these customers to their web sites, these online retailers view moving into printed catalogs as complementary to their online presence. According to Bill Miller, the chief executive of eZiba.com, they would use the catalog to attract customers to the eZiba site. While at F.A.O. Schwarz, Miller observed increased web traffic every time they distributed a catalog.

Despite these trends, many sellers still prefer printed catalogs, and some sellers even find that catalogs represent a more effective means of generating sales. According to a recent issue of Catalog Age, one marketer of teen apparel and accessories, Alloy, finds that the print catalog is "four to five times more cost-effective than any portal relationship or other advertising method in driving traffic to the Web-site." According to the same source, "Alloy Melds Print and Online," Catalog Age (November 1999), many recent Alloy promotions combine their printed catalog with their Web-site. For example, Alloy and Sony teamed together to promote a contest where catalog recipients would search the catalog

for icons with the names of one of Sony's video games. When they found the icons, they would submit the icons to their Website.

ii. Other Advertising Media

Since direct marketing is but one of many advertising media, direct mail must compete with these other advertising media. Developments that increase the effectiveness of advertising media, or reduce the cost of using other advertising media, will likely make these other advertising media more attractive relative to direct marketing. Media that may be especially mentioned include television and telemarketing.

ii.1. Television

Cable television can in some cases be an alternative to direct mail, since cable television allows marketers to target particular audiences and air their advertisements on specific programs accordingly. Marketing success with this medium has not gone unnoticed. Expenditures for cable television advertising have risen spectacularly. According to McCann-Erickson, estimated cable network advertising and cable non-network advertising expenditures grew from $2,457 million in 1990 to $11,150 million in 2000. This more that fourfold increase represents an average annual growth rate of over 35 percent. McCann-Erickson World Group, www.mccann.com.

The recent history of cable television growth suggests continued penetration into U.S. households, although it may be approaching saturation. By 1999, the percentage of households with cable television stood at 68 percent, up from a 1990 figure of 59 percent. Nielsen Media Research, reported in *The World Almanac and Book of Facts 2001*, p. 315. Over the same period, the number of cable television systems increased from 9, 575 to 10,700, and fell slightly to 10,500 in 2000. *Television and Cable Factbook*, reported in *The World Almanac and Book of Facts 2001*, p. 314.

ii.2. Telemarketing

As discussed in my R2000-1 testimony, telemarketing, or phone solicitation, has both advantages and disadvantages as compared to direct mail. Docket No. R2000-1, Testimony of George Tolley, USPS-T-6, at 124. Direct contact is made which provides an immediate indication of household response, unlike direct mail which may be discarded immediately or held for an extended time before generating a response. The effective cost of telemarketing may have also declined in recent years as auto-dialed computer recorded messages have developed, allowing telemarketing firms to reduce labor costs.

At the same time, telemarketing is viewed as intrusive by some persons. The growth of telephone services such as Caller ID and various "privacy" options allows people to screen out unwanted calls from telemarketers. While some telemarketing could supplant direct mail, telemarketing and direct mail are also being used in tandem through integrated direct marketing. Integrated direct marketing is the use of many forms of direct marketing to reinforce advertising messages. A direct piece of mail is sent so that a hard copy advertisement can be reviewed at leisure. This initial step is followed by a phone call. In this way, telemarketing has become a complement to direct mail, rather than a substitute.

4. Volume Forecast

a. Total Volume

Table 11A presents the volume forecast for Standard Regular mail, projecting the impacts of change in the non-rate and postal-rate variables between the Base Year and the Test Year. The before-rates volume forecast is 48,424.553 million pieces. The after-rates forecast, reflecting the proposed rates for Standard mail and First-Class workshared letters, is 47,296.185 pieces.

Table 11A
Volume Forecast of Standard Regular Mail

	Before-Rates	After-Rates
Base Year Volume (Millions)	44,384.704	44,384.704
Non-Rate Impact	9.90%	9.90%
Postal Rate Impact	-0.73%	-3.04%
Test Year Volume (Millions)	48,424.553	47,296.185

b. Forecasts of Nonautomated Mail

Standard Regular nonautomated mail consists of the letter and nonletter categories of Basic and Presort Regular mail. Assuming no change in current rates, the before-rates forecasted Test Year volume of nonautomated Standard Regular mail is 4,390.785 million pieces. At rates proposed by the Postal Service, the projected volume in the Test Year is 4,106.231 million pieces.

c. Forecasts of Automated Mail

The total forecasted Test Year volume of the automation categories of Standard Regular mail is 44,033.768 million pieces in the before-rates scenario. At rates proposed by the Postal Service, the projected volume in the Test Year is 43,189.954 million pieces.

C. Enhanced Carrier Route

1. Definition

The Standard Enhanced Carrier Route subclass was created as part of the MC95-1 classification reform. To qualify for the Standard Enhanced Carrier Route subclass, mailings must contain at least 200 pieces (or 50 pounds) and each piece must be part of a group of 10 or more pieces to one carrier route. To be sent Standard, each piece must weigh less than one pound.

Within Standard Enhanced Carrier Route, there is a distinction between letter and nonletter mail where nonletters consist of flats, parcels, and irregularly shaped pieces. There are four letter and three nonletter categories of enhanced carrier route mail. The four letter categories are: automation, basic, high density, and saturation. The three nonletter categories are: basic, high density, and saturation. Automation letters must be automation compatible and 100 percent delivery point barcoded.

2. Volume History

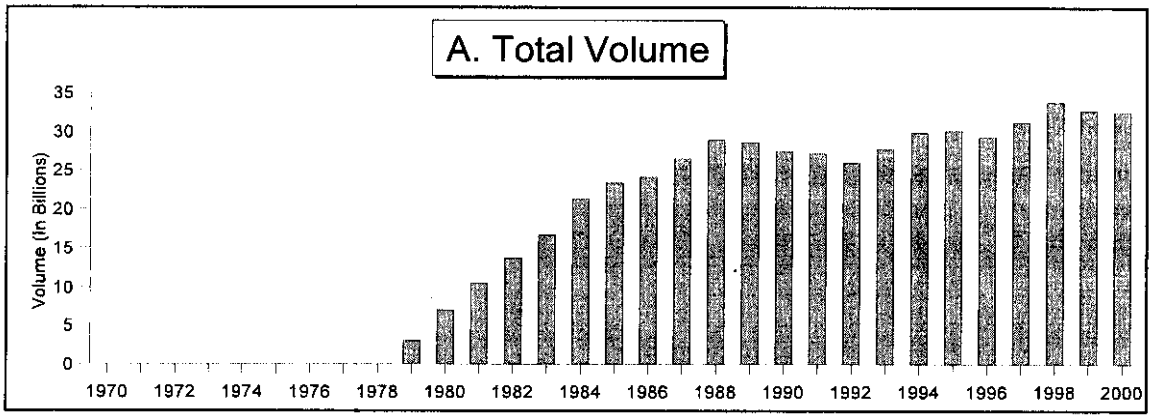
Figure 12 shows the total volume of ECR regular mail beginning in 1980, the first full year after the carrier-route presort discount was introduced. From 1980 to 1984, carrier-route volume grew rapidly and nearly tripled from 47.9 pieces per adult in 1980 to 136.1 pieces per adult in 1984. From 1985 through 1988, volume growth moderated, with total volume rising from 23.3 billion pieces in 1985 to 29.0 billion pieces in 1988. Since then the volume of ECR mail has fluctuated, dropping to 26.0 billion pieces in 1992 and increasing gradually to 33.8 billion pieces in 1998, and then falling again to 32.6 billion pieces in 2000. Volume per adult in 2000 was 173.0 pieces, having declined in both of the last two years.

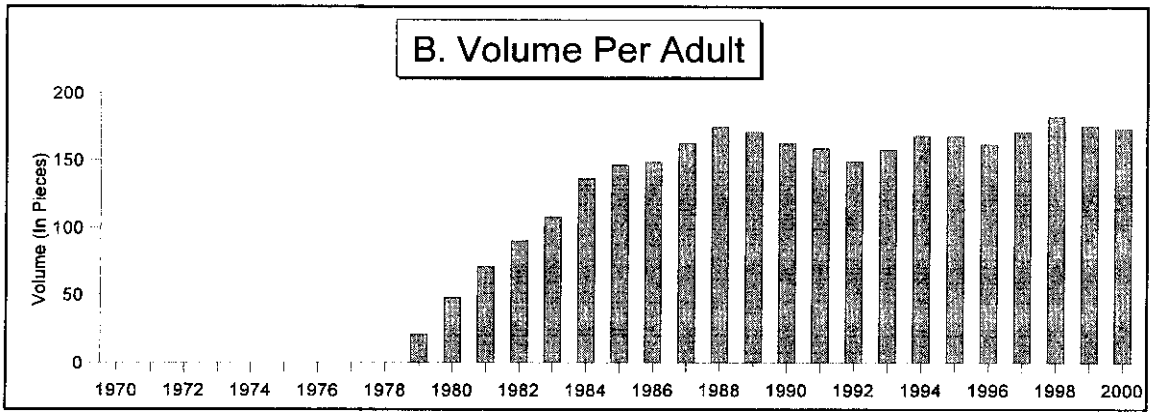
3. Factors Affecting Standard ECR Volume

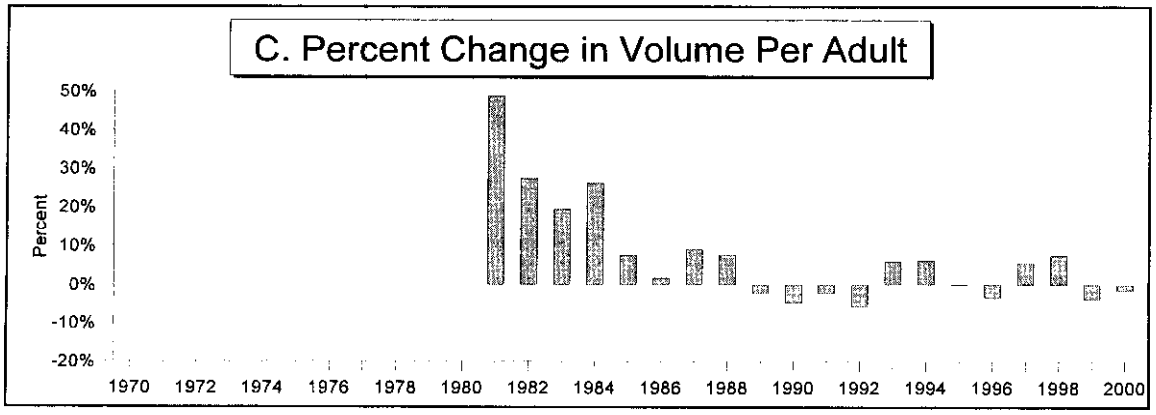
Over the 5-year period ending in 2001Q3, the volume of Standard ECR mail increased 7.40 percent. Table 12 details the contributions of different variables to this volume change.

Figure 12

Standard Enhanced Carrier Route Mail







a. Own price

The volume of ECR mail is sensitive to postage price. A 1-percent increase in the real own-price is estimated to elicit a 0.77 percent decrease in mail volume. Table 12 shows that real own-price decreased 5.2 percent over the past five years leading to a 3.95 percent increase in volume after applying the estimated own price elasticity.

b. Retail Sales

Retail Sales expenditures also influence the volume of ECR mail. It is estimated that the elasticity of ECR mail volume with respect to real retail sales is 1.223. Therefore, the 16.8 percent increase in real retail sales is estimated to contribute a 20.95 percent increase in the volume of Standard ECR mail over the past 5 years.

c. Price of Direct Mail Advertising

The estimated elasticity of ECR mail volume with respect to the real price of direct-mail advertising is -1.612. Table 12 shows that the price of direct-mail advertising has decreased by 4.6 percent over the past 5 years. This percentage increase combined with the estimated elasticity results in an increase in ECR mail volume of 7.62 percent.

d. Price of Newspaper Advertising

The estimated elasticity of ECR mail volume with respect to the cost per thousand of newspaper advertising is 0.839. Table 12 shows that the price of newspaper advertising, as reported by the Bureau of Labor Statistics, increased 17.1 percent in real terms over the past 5 years. This percentage increase, combined with the estimated elasticity, results in an increase in ECR mail volume of 14.29 percent.

Table 12

CONTRIBUTIONS TO CHANGE IN
STANDARD ENHANCED CARRIER ROUTE VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own price	-5.2%	-0.770	3.95%
Retail Sales	16.8%	1.223	20.95%
Price of Direct Mail Advertising	-4.6%	-1.612	7.92%
Price of Newspaper Advertising	17.1%	0.839	14.29%
Internet Advertising	19.2%	-0.754	-12.42%
Fall Election Year			0.29%
R97-1 Rate Cross-Over			-12.84%
Adult Population	4.5%	1	4.50%
Other Factors			-13.43%
Total Change in Volume			7.40%

e. Internet Advertising

ECR mail volume is found to be more sensitive to Internet advertising than Regular volume, with an estimated elasticity of -0.754. The $44.22 increase in real Internet advertising expenditures per adult over the past 5 years is estimated to have reduced ECR volume by 12.42 percent.

f. Fall Election Year

Since much political campaign literature is sent via ECR mail, a dummy variable

has been included to capture the effects of the fall election on ECR mail volume. Recalling that the fall quarter is actually the first quarter of the postal year, recent fall election years include 2001Q1, 1999Q1, and 1997Q1. The 5 -year period examined in Table 12 begins with the 4 quarters from 1995Q4 through 1996Q3 and ends with the four quarters beginning 2000Q4 and ending 2001Q3. Therefore, the start of this period did not include a fall election year, while the end of the period did include a fall election year. The estimated impact of this fall election year is to have increased ECR mail volume by 0.288 percent, as shown in Table 11.

g. R97-1 Rate Cross-Over

As explained in the section on Standard Regular mail, as a result of the R97-1 rate case, the price of regular automation 5-digit letters was set below the price of ECR basic letters. This led to a shift in volume from ECR to the Regular subclass. To capture this effect, an MC95-1 dummy variable is included in the volume equation for ECR mail. Table 12 shows this rate cross-over effect has reduced ECR mail volume by 12.84 percent over the past 5 years.

h. Adult Population

Growth in the adult population is estimated to have increased ECR mail volume by 4.50 percent.

i. Other Factors

Table 12 shows that the volume of Standard ECR mail increased 7.4 percent over the 5 years. In addition to the impact of the variables discussed above, other factors have combined to account for a 13.43 percent decline in ECR mail volume, primarily explained by a negative econometric time trend.

The section on Standard Regular mail discussed recent developments affecting

Standard Mail volumes. Much of this discussion applies to enhanced carrier route mail as well. Enhanced carrier route mail tends to be saturation mail as opposed to more highly targeted regular mail. The other factors affecting ECR mail to be considered in this section are related in part to the degree to which these factors affect saturation mail.

i. Improved Market Targeting of Direct Mail

Improved targeting of direct mail makes it a potentially more attractive advertising vehicle, but one that lowers mail density. Mailers could be induced to switch away from Standard ECR to better-targeted but lower-density Standard Regular direct mail.

In terms of mailing by specific industries, the two most notable changes that have occurred since 1987 have been in opposite directions. Carrier route mailings by department stores have fallen from 0.6 pieces per household per week in 1987 to 0.3 pieces per household per week in 1999. *Household Diary Study 2001*, Table 6-3. Mailings from mail-order firms have gone in the opposite direction, increasing from 0.2 pieces per household per week in 1987 to 0.7 pieces per household per week. Carrier-route mailings from other industries, such as the insurance industry, did not change dramatically.

ii. Catalogs

While the growth in catalogs discussed above in connection with Standard Regular mail is also favorable to Standard ECR, improved catalog targeting as with direct mail advertising in general disfavors ECR because of lower mail density. The effect is exacerbated by the growth in specialty catalogs that further fragment customer interests into specialized groups.

4. Volume Forecast

a. Total Volume

The Base Year volume of Standard ECR mail is 31,686.661 million pieces. Between the Base Year and the Test Year, non-rate factors contribute 6.64 percent to volume and the decline in the real price of Standard ECR mail contributes an additional 0.24 percent. Thus, the before-rates Test Year volume forecast is 33,873.784 million pieces.

In the after-rates forecast, both the Base Year volume and the non-rate impact are the same as in the before-rates forecast. The proposed increase in Standard ECR mail is projected to reduce volume by 2.21 percent between the Base Year and the Test Year, yielding an after-rates forecast of 33,125.689 million pieces.

Table 12A
Volume Forecast of Standard ECR Mail

	Before-Rates	After-Rates
Base Year Volume (Millions)	31,686.661	31,686.661
Non-Rate Impact	6.64%	6.64%
Postal Rate Impact	0.24%	-1.97%
Test Year Volume (Millions)	33,873.784	33,125.689

b. Forecasts of Nonautomated Mail

The forecasted volume of the nonautomated portion of Standard enhanced carrier route mail, if present rates are continued, is 31,768.962 million pieces in the Test Year. The forecasted volume at rates proposed by the Postal Service is 31,087.181 million pieces.

c. Forecasts of Automated Mail

The forecasted Test Year volume of Standard enhanced carrier route automated mail, if present rates are continued, is 2,104.822 million pieces. The after-rates volume forecast, assuming implementation of the rates proposed by the Postal Service, is 2,038.508 million pieces.

D. Standard Nonprofit Mail

1. Definition

Standard Nonprofit mail is sent at reduced rates by authorized charitable organizations, educational institutions, and professional associations. This category of mail is also used for alumni mailings, membership-drive activities and for nonprofit organization newsletters and magazines that have too much advertising to qualify for Periodicals rates or find Standard Nonprofit rates more favorable. Households received 1.9 pieces of Standard nonprofit mail per week in 1987 and 2.3 pieces in 2000. *Household Diary Study 2001*, Table A3-80. However, this increase in the physical number of pieces received by each household was overshadowed by larger increases in other Standard mail received by households. As a result, Standard nonprofit mail as a share of Standard mail received by households fell from 14.8 to 12.3 percent between 1987 and 2000.

2. Volume History

a. Total Volume

Standard Nonprofit mail was formerly third-class noncarrier-route nonprofit mail. Figure 13 shows that the third-class noncarrier-route nonprofit mail experienced steady growth from 1970 to 1990, rising from 4.2 billion pieces to 9.4 billion pieces. On a per-adult basis, volume grew over this time period from 34.9 pieces per adult to 55.1 pieces per adult, an increase of 58 percent.

Standard Nonprofit mail volume declined in the early 1990s but growth in the last few years has pushed total volume to over 11.3 billion pieces in 2000. On a per adult basis, volume in 2000 was 60 pieces.

b. Nonautomated and Automated Volumes

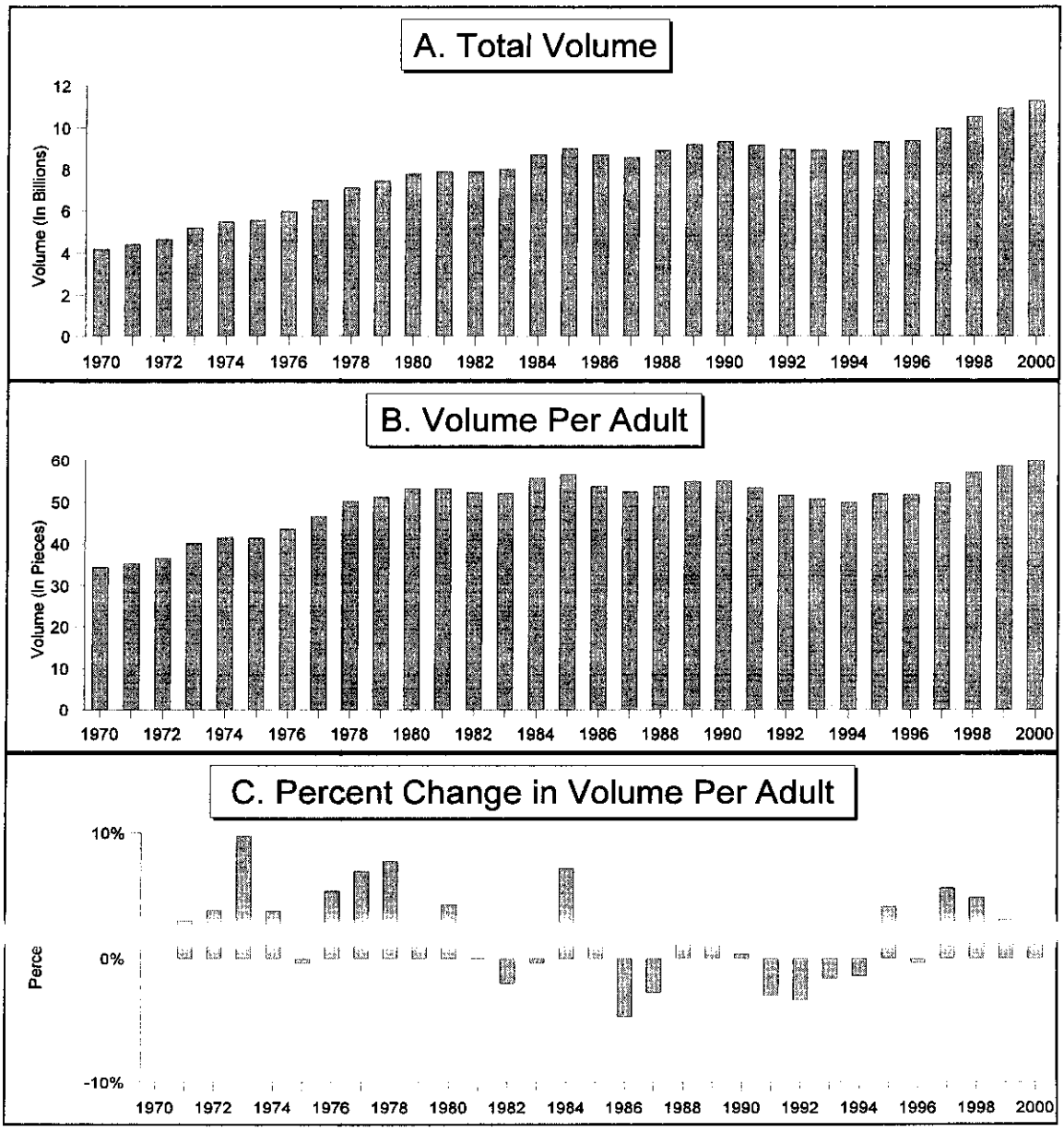
Chart H presents the breakdown of total noncarrier-route nonprofit mail volume into nonautomated and automated volumes since the introduction of the ZIP + 4 discount in 1988. Automation volume has grown in every year, both in absolute terms and as a share of total volume. In 1999, more than two-thirds of Standard A Nonprofit mail was automated.

Chart H
Nonautomated and Automated Volumes of Noncarrier-Route Bulk Mail
(in millions of pieces)

Standard Nonprofit				
	Nonautomated		Automated	
	Volume	Percentage	Volume	Percentage
1988	8,852.884	99.3%	66.152	0.7%
1989	8,983.643	97.4%	235.711	2.6%
1990	8,914.252	95.2%	445.462	4.8%
1991	8,120.310	88.4%	1,065.377	11.6%
1992	7,292.763	81.2%	1,690.670	18.8%
1993	6,133.727	68.6%	2,805.604	31.4%
1994	5,862.238	65.8%	3,041.734	34.2%
1995	5,967.290	63.9%	3,372.762	36.1%
1996	5,320.204	56.6%	4,077.993	43.4%
1997	4,278.694	42.8%	5,722.159	57.2%
1998	3,711.928	35.2%	6,839.326	64.8%
1999	3,486.325	31.9%	7,447.624	68.1%
2000	2,934.396	25.9%	8,391.262	74.1%

Figure 13

Standard Nonprofit Mail



3. Factors Affecting Volume

Table 13 shows that the volume of Standard Nonprofit Mail increased 22.51 percent over the 5 years ending in 2001Q3. Table 13 shows the factors contributing to this volume increase.

a. Own Price

Over the past 5 years, the real price of Standard Nonprofit Mail increased by 2.7 percent. The estimated own-price elasticity of Standard Nonprofit mail is -0.230, implying that the small increase in real price was responsible for a 0.63 percent decrease in volume.

b. Consumption

Real consumption expenditures per adult increased 18.6 percent over the 5 years. It is estimated that a 1 percent increase in this variable leads to a 1.019 percent increase in Standard Nonprofit volume. Thus, the increase in real consumption expenditures per adult is estimated to have contributed 18.99 percent to the volume of Standard Nonprofit mail.

c. Price of Direct-Mail Advertising

The estimated elasticity of Standard Nonprofit volume with respect to the real price of direct-mail advertising is -0.236. Table 12 shows that the price of direct-mail advertising decreased by 4.5 percent over the 5 years. This percentage increase

[illegible] Nonprofit volume of 1.11 percent.

d. Adult Population

Growth in adult population over the past 5 years is estimated to have contributed 4.50 percent to the volume of Standard Nonprofit mail.

Table 13

CONTRIBUTIONS TO CHANGE IN
STANDARD NONPROFIT VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own price	2.7%	-0.230	-0.63%
Consumption	18.6%	1.019	18.99%
Price of Direct Mail Advertising	-4.5%	-0.236	1.11%
Fall Election Year			1.72%
Spring Election Year			-0.90%
Adult Population	4.5%	1	4.50%
Other Factors			-2.71%
Total Change in Volume			22.51%

e. Fall Election Year

The national and state election committees of the Democratic and Republican parties can mail at nonprofit rates. Econometric analysis finds that Standard Nonprofit volume is greater in the fall quarter of years in which there are congressional elections. [illegible] equation for Standard Nonprofit mail. Election years are held every other year, recognizing that the calender fall quarter of a given year is actually the first postal quarter of the next year. The 5-year period addressed in Table 13 begins with the 4 postal quarters from 1995Q4 through 1996Q3 and does not include a fall election year. The period ends with the four quarters from 2000Q4 through 2001Q3 and does include

a fall election year. Consequently, the fall election year variable explains a 1.72 percent increase in Standard Nonprofit mail.

f. Spring Election Year

Primary elections are typically held in the spring of the election year. Econometric analysis reveals that the spring quarter of election years has greater volume, after accounting for the effects of the other econometric variables. The 5-year period addressed in Table 13 begins with a spring election year and ends with a year that does not include a spring election. Therefore, the spring election-year dummy variable reduced Standard Nonprofit volume by 0.90 percent, as shown in Table 13.

g. Other Factors

In addition to the effects of the variables considered above, other factors contributed a small decline in Standard Nonprofit volume of 2.71 percent, which is the result of several positive and negative impacts. On the positive side, developments in direct-mail targeting (discussed in the section on Standard Regular mail) have made Standard Nonprofit mail more attractive. Moreover, general growth in charitable giving tends to benefit all nonprofit organizations. According to a recent article in The Economist, "giving in America is forecast to soar over the coming decades." The Economist, Giving Something Back" (June 14, 2001). This article cites a study by the

during 1998-2052 could be at least $41 trillion, of which $6 trillion might be devoted to philanthropic purposes." Other influences may be discussed as follows.

i. Technological Advancements

As discussed in my R2000-1 testimony, p. 148, the same technological advancements improving targeting that have benefitted Standard Regular mail have

also benefitted nonprofit mailers, but probably to a lesser extent. Smaller nonprofit organizations often may not have the wherewithal to purchase or manage the required mailing technology. Nonetheless, more effective direct marketing has given nonprofit organizations the incentive to shift marketing expenditures toward mail and away from other advertising media. Docket No. R2000-1, Testimony of George S. Tolley, USPS-T-6 at 148.

ii. The Internet

Charitable organizations are turning to the Internet to publicize their organization and their objectives, and to provide a means to receive donations from contributors. According to Sean Bailey in the Philanthropy Journal, the "Web has presented organizations, large and small, a way to use E-mail and Web sites to broaden their potential universe of supporters." Since beginning in 1998, VolunteerMatch.org has connected volunteers with nonprofit organizations seeking help. This site allows volunteers to choose their area of interest, how far they are willing to travel, who they want to work with. The site "lists email and phone contacts, eliminating the guess work and potential run-around – and making excuses for not volunteering seem all the more lame. For nonprofit groups, which post their own listings, the site provides free, easy access to potential volunteers, considerably cutting recruiting time and costs" Gary Gately "VolunteerMatch: Made in Heaven," Business Week (August 10, 2001). Former Presidential candidate, Senator Robert Dole, has spearheaded the drive to build the World War II Memorial in Washington, DC. During television appearances, Senator Dole referred potential supporters to the memorial's web site where they can make donations directly. Stephanie Zimmerman, "Charities Shift to the New Age of E-Donations," Chicago Sun Times (November 18, 1999).

Political organizations seeking donations are turning to the Internet. In March of

1997, Common Cause launched the Internet component of their Project Independence, a campaign to collect thousands of E-mail "signatures" to support campaign finance reform. Matt Richtel, "Nonprofit and Watchdog Groups Work the Net," The New York Times (May 24, 1997). Former advisor to President Clinton, Dick Morris, asks visitors to his web site to vote yes or no on different political issues. These votes are then converted into E-mail messages that are then sent to elected officials. Morris recently wrote that his site had send more than 82,000 E-mail messages to the White House during a one week period. Rebecca Fairley Raney, "In E-Politics, Clinton's Ex-Advisor Still Plays by His Rules," The New York Times (November 12, 1999). The campaign "Our Forests" ended up delivering 187,000 E-mail messages on this issue to Vice President Gore. In April of this year, 35 Internet sites participated in a "Back the Net" initiative that encouraged individuals to go on-line to suport the Internet. Included in the suggested activities was giving to "an on-line" charity. "NetTrends: Internet Cos Turn to Old-Fashioned Fund Raising," Reuters (April 4, 2001).

Despite the growth in Internet use by charitable organizations, it still has not replaced traditional methods of fund-raising. Amnesty International still sends out "hundreds of letters every day" according to Roberto Quezada. Michael J. Martinez,, "Web Users: Click Here to Help!," ABCNEWS.com (February 11, 1998). Some others still believe that the fund-raising potential of the Internet is being over-estimated. According to Kevin Ronnie, a field director of the National Committee for Responsive Philanthropy, "It's being far oversold for its state of development." ABCNEWS.com (February 11, 1998).

iii. Shifts from Other Mail Categories

Another factor that may be positively influencing Standard Nonprofit volume is declining Periodicals Nonprofit volume. As circulation of nonprofit magazines and

newsletters declines, nonprofit organizations may find it more effective to solicit funds through direct mail sent via Standard. Furthermore, volume may be shifting from Standard Nonprofit ECR as part of more precise targeting.

4. Volume Forecast

a. Total Standard Nonprofit Volume

A single econometric equation is estimated for all of Standard Nonprofit mail. The volume forecasts for Standard Nonprofit (and Standard Nonprofit ECR, discussed in the next section) are made using the overall econometric equation plus a share trend factor that captures differences in the growth rates of these two subclasses over the past 5 years. It is projected that these influences will continue. Table 12A shows that the before-rates volume forecast is 11,943.287 million pieces of Standard Nonprofit mail in the Test Year. At the rates proposed by the Postal Service, the projection is 11,882.923 million pieces.

Table 13A
Volume Forecast of Standard Nonprofit Mail

	Before-Rates	After-Rates
Base Year Volume (Millions)	11,428.781	11,428.781
Non-Rate Impact	4.54%	4.54%
Postal Rate Impact	-0.03%	-0.54%
Test Year Volume (Millions)	11,943.287	11,882.923

b. Forecasts of Nonautomated Volume

The before-rates forecast for nonautomated Standard Nonprofit mail for the 2001 Test Year is 2,254.286 million pieces. The after-rates Test Year volume forecast is 2,221.295 million pieces.

c. Forecasts of Automated Volume

The forecast for automated Standard Nonprofit mail, if present rates are continued, is 9,689.001 million pieces. The forecast if the recommendations of the Postal Service are adopted is 9,661.629 million pieces.

E. Standard Nonprofit ECR Mail

1. Definition

Standard Nonprofit ECR mail has the same general characteristics as mail sent in the Nonprofit subclass, except that ECR mail must satisfy higher density requirements.

2. Volume History

Figure 13 shows the volume history of Standard Nonprofit ECR mail, which was known as nonprofit carrier-route mail prior to classification reform. Following the introduction of the carrier-route discount for nonprofit mail in 1980, volume grew rapidly, rising to 3.0 billion pieces in 1995. Volume fell to 2.6 billion pieces in 1998 but recovered in the last 2 years to reach 2.9 billion pieces in 2000.

Volume per adult grew every year from 1980 to 1995, with the exceptions of 1988 and 1993. In recent years, the percentage change in volume per adult has been somewhat erratic for this subclass. Volume per adult declined more than 5 percent in 1996 and nearly 9 percent in 1998, and then gained more than 9 percent in 2000. In 2000, Standard Nonprofit ECR volume per adult was 15.4 pieces, which is 8.3 percent less than the peak of 16.8 pieces per adult in 1992.

Figure 13

Standard Nonprofit ECR Mail

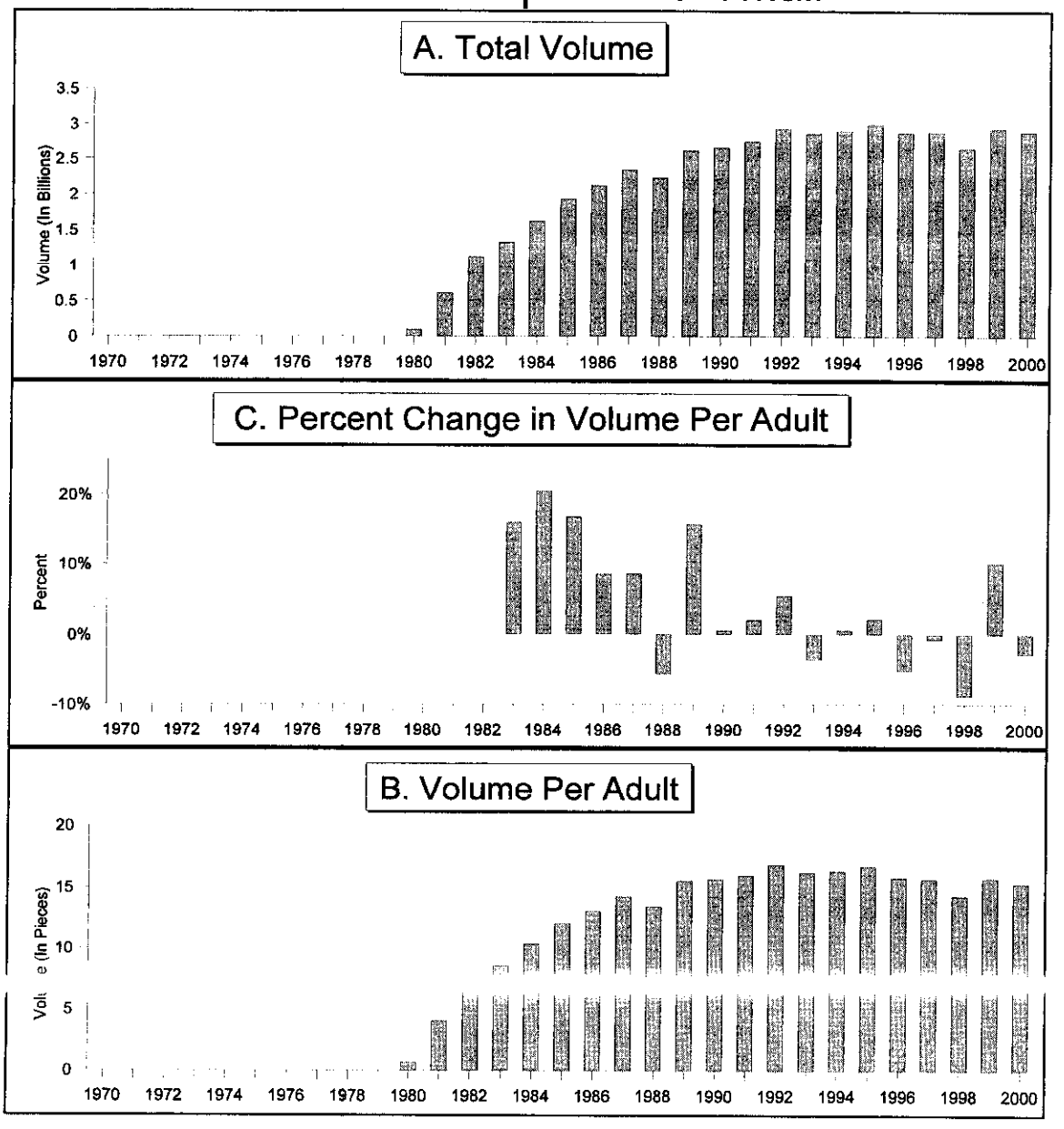


Table 14

CONTRIBUTIONS TO CHANGE IN
STANDARD NONPROFIT ECR VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own Price	-12.4%	-0.230	3.11%
Consumption	18.6%	1.019	18.99%
Price of Direct Mail Advertising	-4.5%	-0.236	1.11%
Fall Election Year			1.72%
Spring Election Year			-0.90%
Adult Population	4.5%	1	4.50%
Other Factors			14.45%
Total Change in Volume			11.79%

3. Factors Affecting Volume

Table 13 shows that over the 5-year period ending in 2001Q3, the volume of Standard Nonprofit ECR mail increased 11.79 percent. Table 13 also shows the estimated contribution of different factors to this volume change.

a. Own price

Over the 5 years, the real price of Nonprofit ECR mail decreased by 12.4 percent. Applying an estimated own-price elasticity of is -0.230 to this decrease in price leads to a 3.11 percent increase in volume.

b. Consumption

Real consumption expenditures per adult increased 18.6 percent over the past 5 years. It is estimated that a 1 percent increase in this variable leads to a 1.019 percent increase in Standard Nonprofit volume. Thus, the increase in real consumption expenditures per adult contributed 18.98 percent to the volume of Standard Nonprofit mail.

c. Price of Direct-Mail Advertising

The estimated elasticity of Standard Nonprofit Mail volume with respect to the real price of direct-mail advertising is -0.236. Table 14 shows that the price of direct-mail advertising has decreased by 4.5 percent over the past 5 years. This percentage increase combined with the estimated elasticity results in an increase in Standard Nonprofit volume of 1.11 percent.

d. Fall Election Year

The fall election year 0-1 variable was discussed in the previous section on Standard Nonprofit mail. The estimated elasticity of this variable is the same for Standard ECR mail, as is the estimated impact on volume. Therefore, as shown in Table 14, the fall election year dummy contributed 1.72 percent to Standard Nonprofit ECR volume.

e. Spring Election Year

The spring election year zero-one variable was discussed in the section on Standard Nonprofit mail. The estimated elasticity of this variable for Standard Nonprofit ECR mail is the same as for nonprofit mail. As shown in Table 14, this variable is estimated to have reduced Standard Nonprofit ECR mail by 0.90 percent.

f. Adult Population

Growth in adult population contributed 4.50 percent to Standard Nonprofit volume.

g. Other Factors

Table 14 shows that other factors were responsible for a 14.45 percent reduction in Standard Nonprofit ECR mail volume. A principal consideration is that volume may be shifting to Standard Nonprofit mail, consistent with the general move by advertisers to more-targeted mailings that can be expected to achieve higher response rates. The growth in Internet use by nonprofit agencies, discussed in detail in the preceding section on Standard Nonprofit mail has also served to reduce Nonprofit ECR volume.

4. Volume Forecast

a. Total Standard Nonprofit ECR Volume

As discussed in the section on Standard Nonprofit, the forecast of Standard Nonprofit ECR mail is made by combining econometric factors with a share trend factor that accounts for shifts from Nonprofit ECR to Nonprofit.

Table 14A shows that the Base Year volume of Standard Nonprofit ECR mail is 3,198.508 pieces. The before-rates Test Year volume forecast for Standard Nonprofit ECR mail of 3,252.519 million pieces. At rates proposed by the Postal Service, the volume projected to be 3,236.397 million pieces, shown as the after-rates forecast in Table 14A.

Table 14A
Volume Forecast of Standard Nonprofit ECR Mail

	Before-Rates	After-Rates
Base Year Volume (Millions)	3,198.508	3,198.508
Non-Rate Impact	4.54%	4.54%
Postal Rate Impact	-2.72%	-3.21%
Test Year Volume (Millions)	3,252.519	3,236.397

b. Forecasts of Nonautomated Volume

The forecast for nonautomated Standard Nonprofit ECR mail, if present rates are continued, is 2,951.383 million pieces. The forecast if the recommendations of the Postal Service are adopted is 2,936.533 million pieces.

c. Forecasts of Automated Volume

The forecast for automated Standard Nonprofit ECR mail, if present rates are continued, is 301.137 million pieces. The forecast if the recommendations of the Postal Service are adopted is 299.864 million pieces.

VI. PACKAGE SERVICES MAIL

A. General Characteristics

1. Package Mail as an Inexpensive Alternative

Package Services (formerly known as Standard B) mail is a less-expensive alternative for sending eligible mail pieces weighing between 1 and 70 pounds that are not sent as Priority Mail and are not accepted under Periodicals restrictions. In general, Package Services mail tends to contain tangible objects (e.g. merchandise, household items) rather than correspondence. Package Services can also be used as a less expensive means of sending educational, cultural, and recreational material such as books, manuscripts, films, and records without regard to minimum weight restrictions. Package Services mail is subject to deferred service, with no guaranteed delivery schedule. Return and forwarding are made at an additional charge only upon request of the sender or addressee.

2. Package Services Rates and Volume

In general, Package Services mail rates are lower than First-Class, Priority and Express mail, due primarily to the fact that Package Services mail is not handled as expeditiously.

The 4 subclasses in Package Services mail are: Parcel Post, Bound Printed Matter, Media Mail, and Library Rate. Rates for the first 2 subclasses are determined by weight and distance to destination. Rates for the last 2 subclasses are determined by weight only without regard to distance.

Parcel Post rates are based on 8 distance zones with charges varying by the pound from 2 pounds or less to the 70-pound weight limit. In 1981, an intra-BMC discount per piece became effective for parcels sent and delivered within the same Bulk Mailing Center (BMC) service area. Also in 1981, a surcharge per piece was placed on

parcels sent and delivered outside the same BMC service area, if the parcels are non-machinable and must be handled manually because of excessive size, weight density, fragility or packaging. Bulk mailings of 50 pieces or more are permitted. A destination BMC rate structure was introduced in 1991 for bulk mailers, and in 1999 discounts were also introduced for bulk mailing entered at the destination SCF and DU.

Bound Printed Matter weighs between one and fifteen pounds. Content may consist of advertising, promotional, directory, or editorial material. Prior to 1999, this subclass had a maximum weight of ten pounds.

Media Mail consists largely of books, printed matter, and sound recordings. Rates are based on the weight of each addressed piece without regard to zone media. Mail can be entered as single-piece or in 1 of 2 bulk presort categories. Presort level A is for parcels sorted to the 5-digit level and reduces the current price of the first pound of a single-piece from $1.13 to $0.64. Presort level B, which is to the BMC level, reduces the current price of the first pound to $0.95. Library Rate changes are slightly lower than for Media Mail.

In Postal Year 2000, the four subclasses of Package Services mail had a combined volume of 1.11 billion pieces. Bound Printed Matter is the largest subclass by volume, (545 million pieces), followed by Parcel Post (323 million pieces), Media Mail (216 million pieces), and Library Rate (28 million pieces) in 2000.

B. Parcel Post Mail

1. Definition

Parcel Post mail is Package Services mail not eligible for lower rates under 1 of the other 3 Package Services mail categories. Packages weighing between 1 and 70 pounds and not exceeding 130 inches in length plus girth are currently accepted for Parcel Post.

2. Volume History

a. Total Parcel Post Volume

As shown in Figure 15, Parcel Post volume declined from 562 million pieces in 1970 to 207 million pieces in 1980, or by 63 percent. Volume continued to decline in the 1980s, falling to 121 million pieces in 1989. By 1994, however, volume had increased to 259 million pieces, more than double the 1989 volume. Parcel post volume has continued to increase over the last five years, reaching a 326 million piece peak in 1999, but dropping off in 2000 to 323 million pieces.

b. Category Volumes

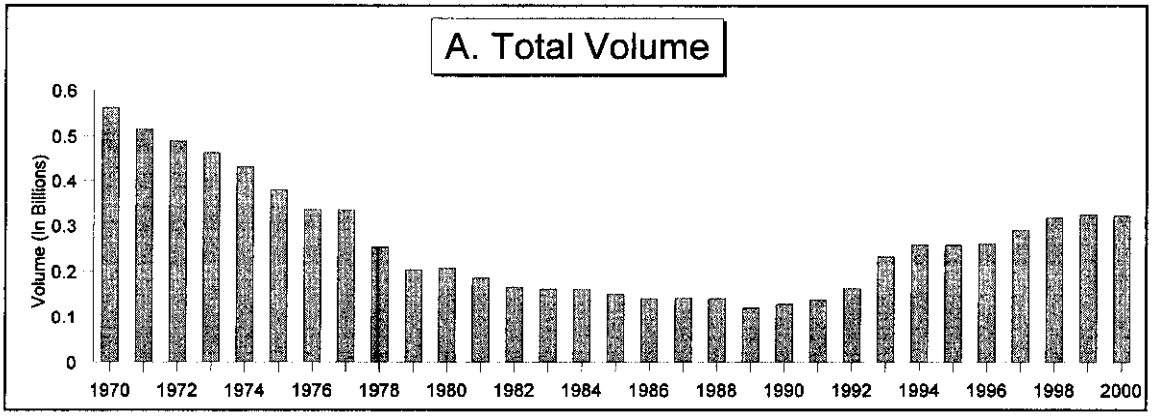
Chart I shows volumes of destination entry and non-destination entry Parcel Post from 1998 to 2000.

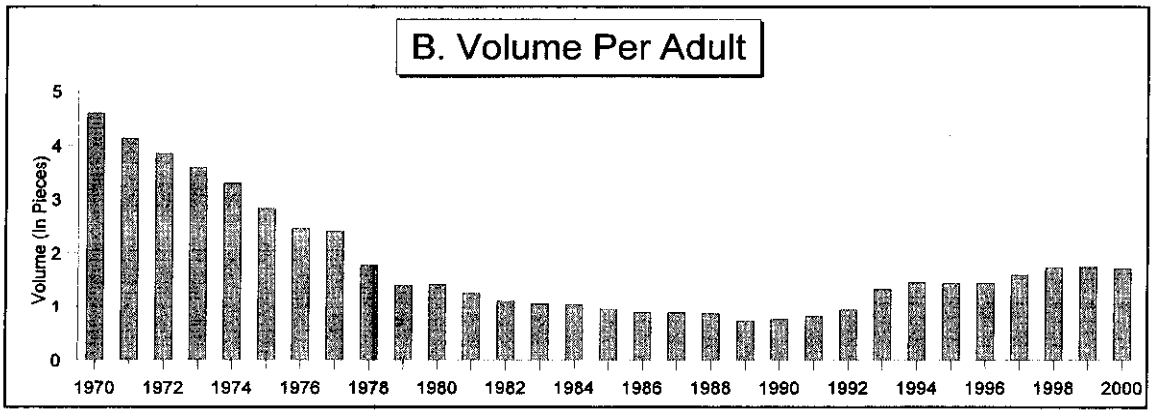
Chart I
Parcel Post Category Volumes

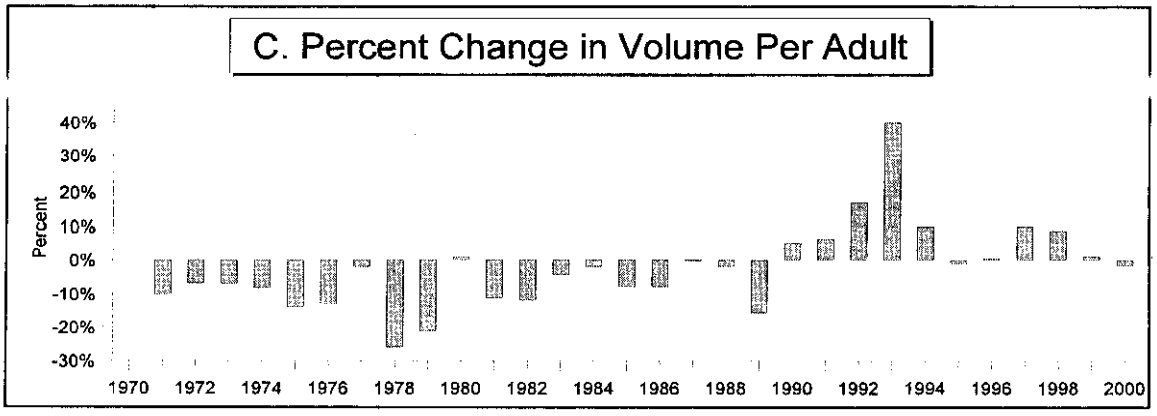
	Destination Entry		Non-Destination Entry	
Year	Volume	Percentage	Volume	Percentage
1988	0.000	0.0%	141.975	100.0%
1989	0.000	0.0%	120.859	100.0%
1990	0.000	0.0%	128.700	100.0%
1991	4.983	3.6%	133.474	96.4%
1992	22.447	13.7%	141.756	86.3%
1993	101.252	43.5%	131.594	56.5%
1994	119.737	46.2%	139.235	53.8%
1995	133.844	51.7%	125.001	48.3%
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1997	184.818	63.4%	106.832	36.6%
1998	213.048	66.6%	106.943	33.4%
1999	227.895	69.9%	98.126	30.1%
2000	242.474	75.1%	80.599	24.9%

Figure 15

Standard Parcel Post







3. Factors Affecting Volume

Table 15 indicates that total Parcel Post volume increased by 32.2 percent over the 5 year period ending in 2001Q3. The present section discusses the factors that have influenced Parcel Post volume during this period.

a. Own-Price

The estimated own-price elasticity of Parcel Post volume is -1.194. As shown in Table 15, the real price of Parcel Post increased 0.9 percent. Applying the estimated long-run price elasticity to this change in real price leads to a volume decline of 1.11 percent.

b. Priority Mail Price

The estimated elasticity of Parcel Post volume with respect to the Priority Mail price is 0.467. The real price of Priority Mail has fallen by 1.5 percent. Applying the estimated long-run elasticity of Parcel Post volume with respect to the Priority Mail price to this change in price leads to a decline in volume of 0.74 percent.

c. UPS Price

The volume of Parcel Post is also influenced by UPS prices, an important competitor. The estimated cross-price elasticity of Parcel Post volume with respect to UPS price is 1.385. Applying this elasticity to the 22.6 percent real increase in UPS prices over the past 5 years leads to a 32.69 percent increase in Parcel Post volume.

d. Retail Sales

Parcel Post volume is found to be related to the level of retail sales per adult, a reflection of the fact that much of the volume of this subclass consists of shipments of merchandise from businesses to households. The elasticity of Parcel Post volume with respect to real retail sales per adult is 0.428. Over the recent 5 year period, real retail

sales per adult increased 16.7 percent. This increase, after applying the elasticity of 0.428, is estimated to have contributed a 6.82 percent increase in Parcel Post volume.

Table 15

CONTRIBUTIONS TO CHANGE IN
PARCEL POST VOLUME
FOR THE 5 YEARs ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own Price	0.9%	-1.194	-1.11%
Priority Mail Price	-1.5%	0.467	-0.74%
UPS Price	22.6%	1.385	32.69%
Retail Sales	16.7%	0.428	6.82%
Priority Mail Delivery Confirmation	171.8%	-0.087	-8.30%
Adult Population	4.5%	1	4.51%
Other Factors			-0.87%
Total Change in Volume			32.19%

e. Delivery Confirmation

The Postal Service started delivery confirmation services for Priority Mail in March of 1999. This added feature makes Priority Mail a more attractive alternative and, holding other factors constant, would be expected to cause some mailers to shift from Parcel Post to Priority Mail. To account for this shift, a delivery confirmation 0-1 variable was included in the Parcel Post equation. Table 15 shows that an 8.30 percent decline in Parcel Post volume is attributed to the introduction of Priority Mail delivery confirmation.

f. Adult Population

Increases in adult population were responsible for a 4.50 percent increase in Parcel Post volume over the past 5 years.

g. Other Factors

Table 15 shows that in addition to the effects of variables considered above, other factors were responsible for a 0.87 percent decrease in the volume of Parcel Post mail from 1996 to 2001. This shows that the econometric factors largely explain the parcel post volume change over the past 5 years. Nonetheless, Parcel Post volume has been subject to a number of positive and negative influences during this time.

i. Competition from Other Package Delivery Firms

In past years, competition from other package delivery firms has been a major reason for declines in Parcel Post volume. The principle competitor has been UPS, but other firms have entered the package delivery market. The impact of competition with UPS on Parcel Post volume is econometrically measured by including the UPS price in the Parcel Post demand equation. However, another factor explaining Parcel Post volume is non-price competition with UPS and other package delivery firms. Non-price competition can include differences in technology, provision of tracking, and number of attempts at delivery. These differences are not necessarily reflected in price and, therefore, not included as an econometric factor to explain Parcel Post volume. Participants in the small package delivery industry have taken a variety of steps to become more competitive. Federal Express has purchased Caliper Corporation and has been expanding in the ground parcel market. FedEx Ground is the former RPS brand name. FedEx launched a residential ground delivery service called FedEx Home which may take market share from UPS and Parcel Post. Commercial Appeal, 2001, in wysiwyg://157http://cnniw.yellb.

UPS has attached a residential surcharge to its rates and has ceded much of the business-to-households (B2C) and household-to-household (C2C) market to other market participants, especially the Postal Service. However, in March, 2001 UPS purchased Mail Boxes Etc. from US Office Products. American Shipper feels that the additional 4,300 pick up and drop off locations are in prime proximity to Small Office/Home Office (SOHO) shippers. "UPS Mailboxes Etc. will very likely change the way packages are delivered and picked up, particularly to and from SOHO and residential addresses. It is also likely that the shipping cost to these consignees will be modified and UPS will make changes to its business-to-residence service offerings -- and the pricing of these services." American Shipper (April, 2001). The Postal Service has embarked on a program to increase customer service, especially through the use of its OTIS tracking system.

Parcel Post volume is influenced by the trend in package shipments. In 2000, Federal Express, UPS and Parcel Post combined accounted for over 90 percent of the domestic package market. The pattern of shipments of these 3 carriers over time should provide a reasonable appraisal of the entire domestic package market in the United States. Between 1981 and 2000, domestic package shipments for UPS, Federal Express and the Postal Service increased from 1.6 million to 7.8 million pieces. These shipments include ground, 3-day, 2-day and overnight delivery for all three carriers. Colography Group (2001) and FedEx annual reports.

Between 1992 and 1998, ground parcel shipments did not increase appreciably. Total ground parcel package shipments increased from just under 3 billion to 3.2 billion pieces, an increase of just under 8 percent. However, since 1998, ground parcel shipments have soared to over 5 billion, an increase since 1998 of over 50 percent. This is probably due to the growth of Internet commerce, which will be discussed later.

Over the same period, UPS has remained dominant in the ground parcel market, although its market share has declined somewhat, falling from 86.2 to 79.2 percent of the market. RPS and the Postal Service were able to expand their market shares, climbing from a combined 10.1 percent to 17.2 percent of the market.

ii. Just-in-Time Production Methods

The spread of just-in-time (JIT) production methods means that companies require smaller inventories, with more frequent shipments of raw materials and intermediate goods. This in turn can affect the business demand for package delivery since a portion of these shipments may best be accomplished through small parcel service either on the ground or in the air. One study found that many companies are becoming dependent on air express shipments for materials that were formerly inventoried. Marilyn M. Helms "A Structure Conduct Performance Analysis of the Expedited Small Package Industry," Transportation Quarterly (January 1989). In addition, the growth of JIT methods places an increased demand on carriers to guarantee delivery. This does not necessarily mean faster delivery, but rather assured delivery. JIT methods require that raw materials arrive at the plant close to the moment of production. Production is scheduled in advance, so planners know how much of what items are needed when. JIT can be accommodated through ground truck service that guarantees delivery. James Cooke argues that time-definite freight makes sense in many instances. James Cooke "Do You Really Need It Overnight?" Traffic Management (December 1991).

A survey conducted by Northeastern University Professors Millen and Lieb of Traffic Management readers in 1990 found that 70 percent of the respondents had or planned to implement JIT programs. Over one fourth of the responding companies had fully operational programs at the time of the survey. "Why U.S. Companies Are Embracing JIT," Traffic Management (November 1990). Another survey, by the National Association of Purchasing Management, indicated that as many as 26 percent

of respondents purchased materials "hand to mouth" in January 1995, compared to 4 percent in February 1970. Donald Allen, "Change in Inventory Management and the Business Cycle," Review of the Federal Reserve Bank of St. Louis (July/August 1995). One analyst, John Schulz, predicted that more than half of the inbound transportation deliveries by the year 2000 would be done on a JIT basis. John D. Schulz. "LaLonde: Technology Helps JIT, Direct Shipments Soar," Traffic World (April 15, 1996).

iii. Growth of Mail Order

The growth of mail-order sales over time has had an effect on small package delivery volumes. Catalog purchases, direct mail to lists, telephone sales and other forms of direct marketing have grown, which has increased the demand for package delivery. This growth in mail order has undoubtedly had an impact throughout the package delivery industry.

Sales from catalogs have increased substantially. According to The Direct Marketing Association, the percentage of the population who ordered by mail or phone has increased from 45 percent in 1985 to 67 percent in 1998. Catalog Age found that the percent of customers who made at least one catalog purchase in the past year rose 7.1% from 2 years ago. Sherry Chinger, "Catalog Age's Exclusive Consumer Shopping Survey: Part 1," Catalog Age (August 1, 2000).

iv. Internet and E-Retail

Growth in the Internet provides an additional avenue through which goods can be purchased and represents an additional source of parcel volume, regardless of whether these parcels are shipped through the Postal Service, UPS, or by other means. The Internet economy now directly supports 2.476 million workers, according to Barua and Whinston - - ". . . more than the insurance, communications and public utilities industries and twice as many as the airline, chemical and allied products, legal and real estate industries." US Department of Commerce, p. 1 (2000). The Internet economy

was a $523.9 billion business in 1999. The authors estimate that Internet related revenues could top $850 billion in 2000. Anitesh Barua and Andrew Whinston, *Measuring the Internet Economy*, University of Texas at Austin, Center for Research in Electronic Commerce (June 6, 2000).

Barua and Whinston distinguish between two types of dot.com companies: digital.com's and physical.com's.

> "Digital dot com's are Internet based companies such as Yahoo, Ebay and America Online, whose products and services are purely digital in nature, and which are delivered directly over the Internet. By contrast, the physical dot coms sell physical products (e.g. books, CD's jewelry, toys) that are shipped to consumers." p. 38 (2000)

This distinction is helpful in understanding how the Internet can generate parcel demand. Parcel deliveries are generated for the most part by physical .com companies, not digital .coms. Within the set of physical .com companies, are those that sell directly to consumers. These B2C physical.com companies comprise the e-retail segment of the internet economy. Most shipments in this category are parcel delivery to consumers.

The Department of Commerce has begun to track e-retail sales. The definition of e-retail that is used includes both traditional bricks and mortar retailers who have set up an electronic outlet (sometimes called clicks and mortar) and Internet "pure plays" that sell directly to consumers. The e-retail estimate does not include sales of services such as travel, entertainment, or stock transactions. U.S. Department of Commerce News, Bureau of the Census (August 30, 2001).

Since e-retail is so new, only 6 data points have been collected by the Census Bureau. These are shown in Chart J. As can be seen in the chart, e-retail volume has increased fairly steadily during the 6 quarters reported. As a percent of total retail sales, e-commerce rose to 0.77% in 200Q1 from 0.67% in 1999Q3. The percentage increased to 1.09% in 2000Q4 and stood at 1.04% in 2001Q1.

Chart J. Estimated U.S. Total Retail Sales and E-Commerce
(Millions of Dollars)

Quarter	Total Retail Sales	E-Retail	E-Retail as % of Total Sales
1999 4th	$ 785,869	$ 5,266	0.67%
2000 1st	$ 714,425	$ 5,526	0.77%
2000 2nd	$ 777,819	$ 5,982	0.77%
2000 3rd	$ 772,796	$ 6,898	0.89%
2000 4th	$ 817,715	$ 8,881	1.09%
2001 1st	$ 728,662	$ 7,592	1.04%

Source: U.S. Department of Commerce News,
Bureau of Census (August 30,2001)

Notwithstanding a shakeout in Internet stocks, analysts have predicted continued growth of e-commerce. Gartner Group, Inc. has predicted that e-retail revenues will grow to $142 billion by 2004, at an annual growth rate of 53 percent. Sean Callahan, "E-tail Survivors Stand to Thrive -- Gartner Predicts 53% of Annual Revenue Growth," The DMA Interactive (July 2000). International Data Corporation predicts that $1.6 trillion will be spent on e-commerce in 2003.

v. TV Shopping Networks

The emergence of home shopping, both through television and the Internet, has

home shopping through television, perhaps attributable to the Internet and iTV becoming more established means of shopping at home. The percentage of the population viewing these programs has declined from 15.6 to 13.8 percent of the population between 1991 and 1998. Over this same period, those buying items from this medium have decreased from 3.7 percent of the population to 2.6 percent.

vi. Zoneskipping

Zoneskipping is the consolidation of multiple small-parcel shipments into a truckload shipment that is hauled across several shipping zones, then turned over to a parcel delivery company (UPS, or a regional delivery company) for final delivery. Advantages of zoneskipping are that it saves money, and provides for faster, more reliable delivery. Several days can be cut off the delivery time, suggesting that in some cases zoneskipping can be a viable alternative to air freight.

4. Volume Forecast

a. Total Parcel Post

A single demand equation is estimated for total Parcel Post volume. Separate volume forecasts are made, however, for 5 categories of Parcel Post – inter-BMC, intra-BMC, destination BMC (DBMC), destination SCF (DSCF), and destination delivery unit (DDU). Taken together, the first 2 of these categories – inter-BMC and intra-BMC – are referred to as non-destination entry parcel post, while the latter 3 categories – DBMC, DSCF, and DDU – are referred to as destination entry parcel post.

Chart I shows that the volumes of the destination entry and non-destination entry Parcel Post have experienced different growth patterns historically. These differences are captured within the forecast model through a series of share equations associated with each of the 5 categories of Parcel Post. These share equations are discussed in the Testimony of Thomas Thress, USPS-T-8.

The Base Year volume of Parcel Post is 339.014 million pieces. Adding in the impact of changes in real rates between the Base Year and the Test Year yields a before-rates forecast for total Parcel Post volume of 405.634 million pieces.

Table 15A
Volume Forecast of Parcel Post

	Before-Rates	After-Rates
Base Year Volume (Millions)	339.014	339.014
Non-Rate Impact	14.96%	14.96%
Postal Rate Impact	4.08%	-4.67%
Test Year Volume (Millions)	405.634	371.533

The after-rates volume forecast uses the same Base Volume and same non-rate impacts as used in the before-rates volume forecast. The postal rate impact differs and reflects the rates proposed by the Postal Service for Parcel Post and Priority Mail in this case. Combining the non-rate and postal rate impacts yields an after-rates Test Year volume forecast of 371.533 million pieces.

b. Volume Forecasts for Destination Entry Parcel Post

Destination entry parcel post consists of three categories of parcel post – DBMC, DSCF, and DDU. The Base Year volume of DBMC Parcel Post is 181.856 million pieces. The forecast of DBMC Parcel Post includes the same factors as total Parcel Post. Two differences exist between this forecast and the total Parcel Post forecast. First, the rate impact is measured specifically with respect to the price of DBMC Parcel Post mail, and second, the DBMC Parcel Post forecast includes a share equation that reflects expected changes in the share of Parcel Post that will be sent via each of the 5 categories forecasted between the Base and Test Years. These factors combine to yield a before-rates forecast for DBMC Parcel Post volume of 220.682 million pieces and an after-rates forecast for DBMC Parcel Post volume of 201.075 million pieces.

The Base Year volume of DSCF Parcel Post is 5.501 million pieces. Taking account of changes in the price of DSCF Parcel Post between the Base and Test Year

as well as the expected changes in the share of Parcel Post that will be sent as DSCF Parcel Post between the Base and Test Years, the before-rates forecast for DSCF Parcel Post volume is 9.525 million pieces with an after-rates forecast of 9.264 million pieces.

The Base Year volume of DDU Parcel Post is 64.240 million pieces. Taking account of changes in the price of DDU Parcel Post between the Base and Test Year as well as the expected changes in the share of Parcel Post that will be sent as DDU Parcel Post between the Base and Test Years, the before-rates forecast for DDU Parcel Post volume is 105.929 million pieces with an after-rates forecast of 104.345 million pieces.

c. Volume Forecasts for Non-Destination Entry Parcel Post

Non-destination entry parcel post consists of two categories of parcel post – inter-BMC and intra-BMC. The Base Year volume of inter-BMC Parcel Post is 51.755 million pieces. Taking account of changes in the price of inter-BMC Parcel Post between the Base and Test Year as well as the expected changes in the share of Parcel Post that will be sent as inter-BMC Parcel Post between the Base and Test Years, the before-rates forecast for inter-BMC Parcel Post volume is 42.557 million pieces with an after-rates forecast of 34.918 million pieces.

The Base Year volume of intra-BMC Parcel Post is 35.662 million pieces. Taking account of changes in the price of intra-BMC Parcel Post between the Base and Test Year as well as the expected changes in the share of Parcel Post that will be sent as intra-BMC Parcel Post, the before-rates forecast for intra-BMC Parcel Post volume is 26.941 million pieces with an after-rates forecast of 21.930 million pieces.

C. Bound Printed Matter

1. Definition

Bound printed matter is advertising, promotional, directory or editorial material which weighs between 1 and 10 pounds and is permanently bound. The category was formerly called catalogs. As in the case of Parcel Post, rates are determined by weight and zone. Bulk mailings have been available since 1964 and accounted for over 90 percent of the volume of Bound Printed Matter volume in 1996. The pieces sent in a bulk mailing must be identical except with special authorization. They must be permit imprinted and or meter stamped and presorted according to ZIP Code.

2. Volume History

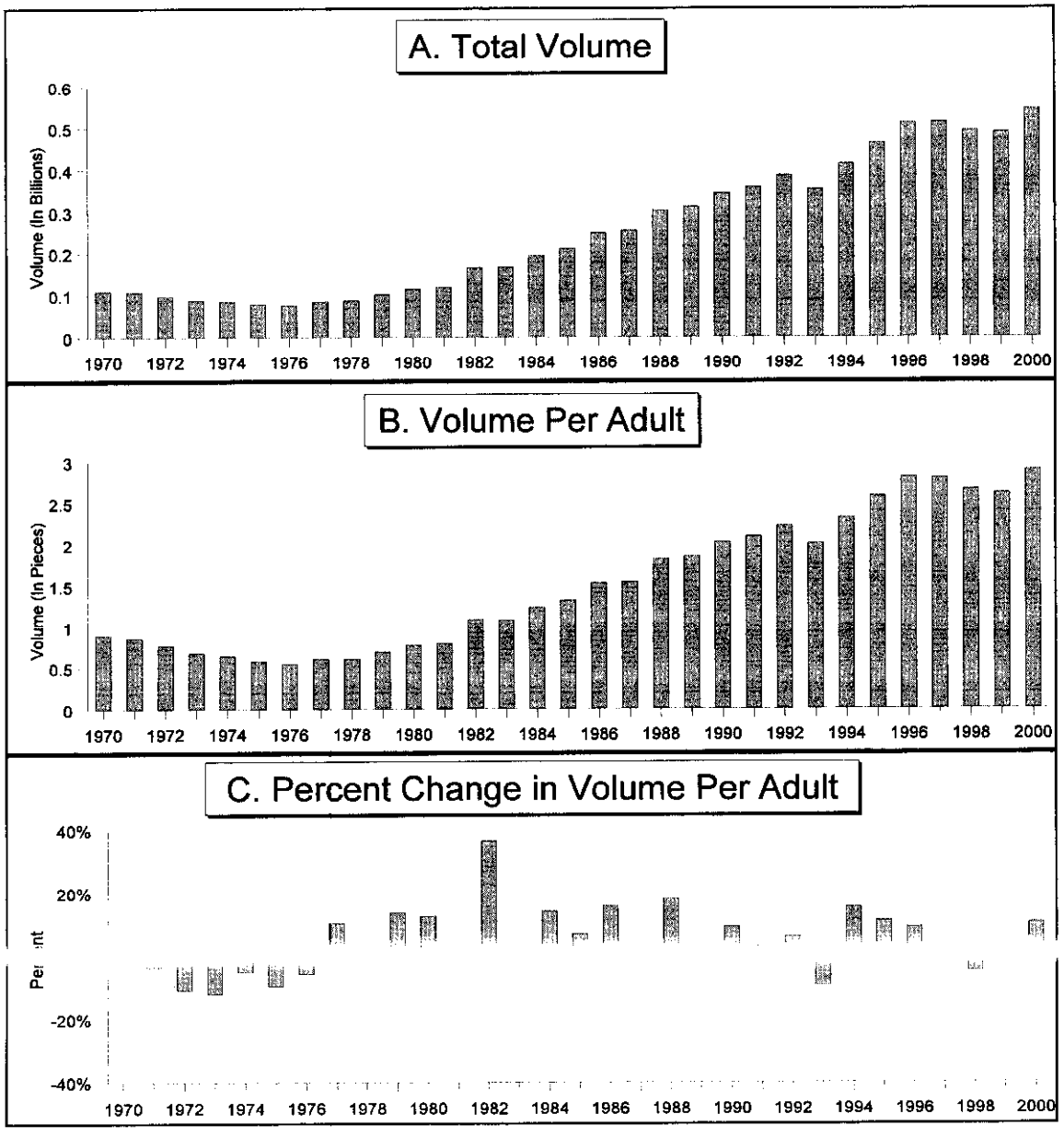
Bound printed matter is the largest subclass of Package Services Mail. After declining in the early 1970s, Bound Printed Matter volume experienced rapid growth, increasing from less than 0.6 pieces per adult in 1976 to 2.9 pieces per adult in 2000. The 2000 level is somewhat above the peak of 2.8 pieces per adult in 1996. Much of this long-term growth in Bound Printed Matter volume is due to the mail order boom and the expansion of the catalog industry. The bottom part of Figure 16 shows that double digit percentage increases in volume per adult are not uncommon for this subclass, having occurred as recently as 1994 and 1995. Overall volume has increased by 6.7 percent over the 1996 to 2000 period, reaching a volume of 545 million pieces in 2000.

3. Factors Affecting Volume

a. Own-Price

Table 16 shows that the real price of Bound Printed Matter decreased 5.5 percent over the 5 years ending in 2001Q3. The econometrically estimated long-run own-price elasticity for Bound Printed Matter is -0.231. Applying this elasticity to the 5.5 percent decrease in real price yields a volume increase of 1.30 percent.

Figure 16
Bound Printed Matter



b. Consumption

Consumption spending growth is estimated to have increased Bound Printed Matter volume by 13.43 percent. This is due to an increase in consumption spending of 18.4 percent over the last 5 years combined with an estimated elasticity of 0.743, as shown in Table 16.

c. Effect Since 1998Q1

A downward shift in volume beginning in 1998Q1 contributed a 12.15 percent decrease in the volume of Bound Printed Matter.

d. Adult Population

Growth in the adult population is estimated to have contributed 4.50 percent to the volume of Bound Printed Matter.

e. Other Factors

Table 16 shows that in addition to the variables described above, other factors were responsible for a 7.46 percent increase in Bound Printed Matter volume over the 5 year period. Much of this increase is explained econometrically through the inclusion of a market penetration Z-variable. One of the major components of Bound Printed Matter is catalogs weighing between one and ten pounds. Saccomano reports that 95 percent of the catalog distribution business is handled through the Postal Service in various mail classes. Saccomano, "Expanding Mail-Order Delivery Business Creates Opportunity for Carriers, Post Office," Traffic World, pp.43-44 (August 1995). However, she notes that catalog companies are also using zoneskipping to reduce distribution costs. Truckers and small parcel couriers consolidate catalogs into full truckloads and then transport them to the bulk mail center closest to the point of final delivery. The Postal Service then does the final distribution. "The Giant Shippers," Traffic

Management (October 1995).

Table 16

CONTRIBUTIONS TO CHANGE IN
BOUND PRINTED MATTER VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own price	-5.5%	-0.231	1.30%
Consumption	18.4%	0.743	13.43%
Effect Since 1998Q1			-12.15%
Adult Population	4.5%	1	4.50%
Other Factors			7.46%
Total Change in Volume			13.33%

The growth in catalog sales mentioned earlier is indicative of growth in the volume of catalog deliveries and is favorable to Bound Printed Matter. Another consideration affecting the volume of Bound Printed Matter is the number of pages in a catalog. From 1988 to 1997, catalogs in excess of 64 pages fell from 36.6 percent of the total to 16.5 percent. Smaller catalogs have gone from 32.5 percent of the total in [illegible] smaller, more specialized catalogs targeted to a particular group of consumers. Compiled from Direct Marketing Association, *Statistical Fact Book* (1988, 1999). As catalogs shift to lighter weights, they may be sent as Standard Mail.

4. Volume Forecast

Table 16A presents the volume forecasts of Bound Printed Matter. The Base Year volume is 565.197 million pieces. Non-rate factors are projected to increase volume by 8.19 percent between the Base Year and the Test Year. In the before-rates forecast, the decline in the real price of Bound Printed Matter takes away 2.72 percent from volume, yielding a Test Year before-rates forecast of 594.824 million pieces. In the after-rates forecast, the proposed increase in Bound Printed Matter price reduces volume by 3.75 percent, yielding a Test Year after-rates forecast of 588.557 million pieces.

Table 16A
Volume Forecast of Bound Printed Matter

	Before-Rates	After-Rates
Base Year Volume (Millions)	565.197	565.197
Non-Rate Impact	8.19%	8.19%
Postal Rate Impact	-2.72%	-3.75%
Test Year Volume (Millions)	594.824	588.557

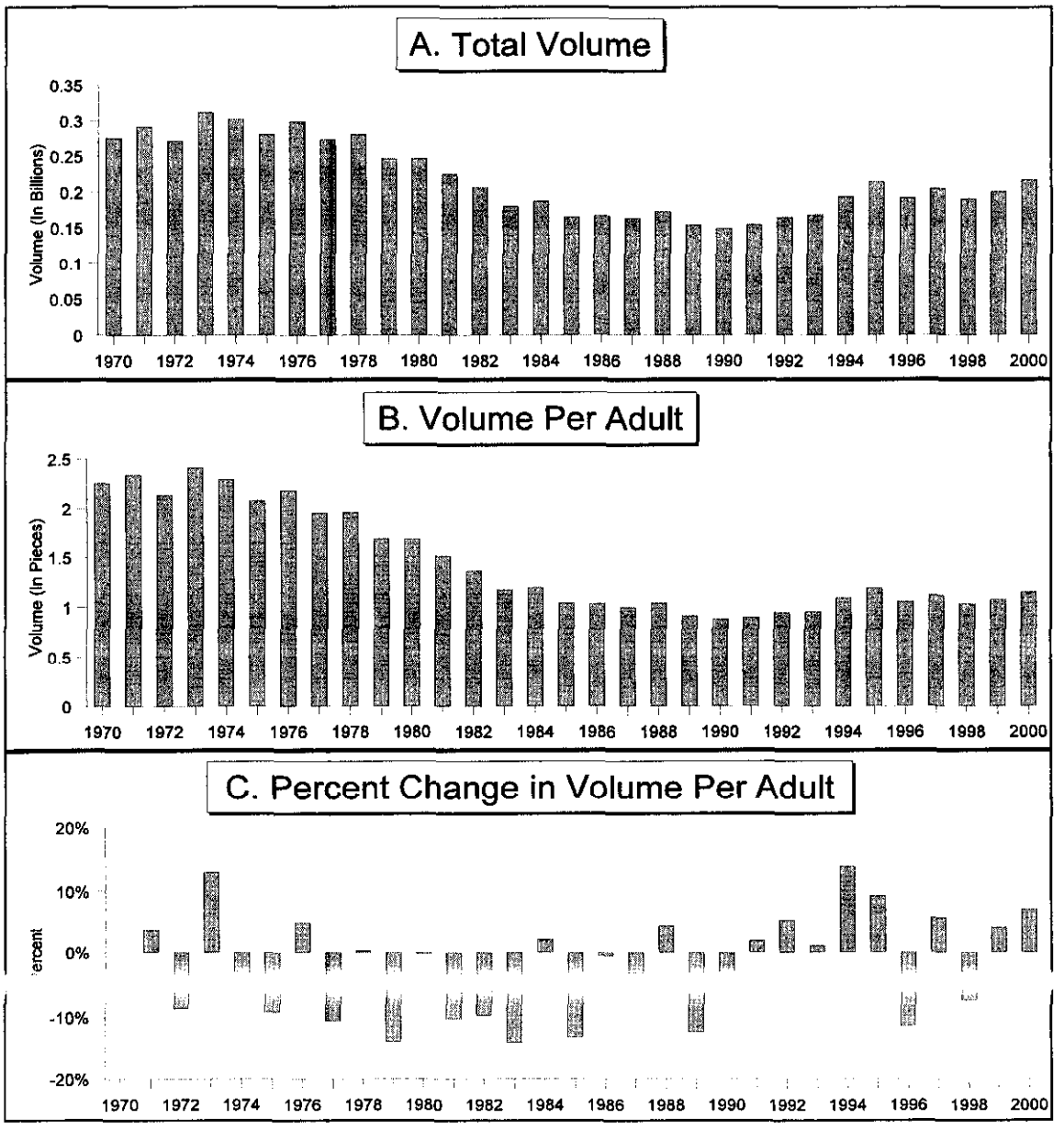
D. Media Mail

1. Definition

Media Mail (formerly Special Rate Mail) includes books, literary manuscripts, compact discs and cassette tapes, small films, and educational materials such as charts and mathematical tables. Book clubs, music clubs, and book publishers account for 95 percent of the Media Mail volume. Media Mail is not zoned, but postage varies by weight. Two presort rates are available.

Figure 17

Media Mail



2. Volume Changes

As shown in Figure 17, the volume of Media Mail declined between the mid-1970s and the early 1990s, but has recovered slightly in the mid-1990s. Volume fell from more than 2 pieces per adult in the early 1970s to less than 1 piece per adult in 1990. Since then, volume has increased to 1.1 pieces per adult in 2000.

3. Factors Affecting Volume

a. Prices

The real price of Media Mail decreased by 15.4 percent during the 5 years ending in 2001Q3, as shown in Table 18. With an estimated long-run own-price elasticity of -0.144, the price decrease is estimated to have caused Media Mail volume to increase 2.39 percent over the period.

b. Retail Sales

The elasticity of Media Mail volume with respect to retail sales per adult is estimated to be 0.902. Consequently, the 18.7 percent increase in retail sales per adult over the past five years is estimated to have contributed 16.73 percent to Media Mail volume.

c. Effect Since 1998Q1

A downward shift in volume beginning in 1998Q1 is estimated to have contributed to an 11.33 percent decrease in the volume of Media mail over the 5 years.

d. Effect Since 2001Q1

Another downward shift beginning in 2001Q1 is estimated to have contributed to an 18.66 percent decrease in the volume of Media Mail.

Table 17

CONTRIBUTIONS TO CHANGE IN
MEDIA MAIL VOLUME
FOR THE FIVE YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own price	-15.4%	-0.144	2.39%
Retail Sales	18.7%	0.902	16.73%
1998Q1Shift			-11.33%
2001Q1Shift			-18.66%
Adult Population	4.5%	1	4.50%
Other Factors			-4.67%
Total Change in Volume			-14.15%

e. Adult Population

Change in the adult population have is estimated to have contributed 4.50 percent to the growth in Package Services Media Mail.

f. Other Factors

Other factors are estimated to have reduced volume by 4.67 percent over the 5 years. Many of the same factors affecting e-retail sales and the growth of the Internet can be expected to affect Media mail. Unlike parcel deliveries, which stand to gain from the growth of e-commerce, the Internet poses competition for portions of Media mail. Music CD's, movies and other audio and video media are beginning to be delivered to consumers on line. A study conducted by Jupiter Media Metrix found that the number of home users of standalone media players increased 33.2 percent from 31.3 million in

January of 2000 to 41.7 million in January of 2001. Micheal Pastore, "Markets for Streaming, Compressed Audio Players Expanding," http://cyberatlas.internet.org (2001). A standalone media player is software that plays digital audio or video. The survey found that 51.1 percent of U.S. home Internet users used such players. The market for compressed audio players has also increased. International Data Corporation has predicted that compressed audio player shipments will grow to 18 million in 2005 from 2.8 million in 2000. Pastore, p. 3 (2001).

4. Volume Forecast

Table 17A presents the before- and after-rates Test Year volume forecasts for Package Services Media Mail. The before-rates forecast is 159.100 million pieces in the Test Year. The after-rates forecast, using rates proposed by the Postal Service, is 158.641 million pieces.

Table 17A
Volume Forecast of Media Mail

	Before-Rates	After-Rates
Base Year Volume (Millions)	171.296	171.296
Non-Rate Impact	-6.42%	-6.42%
Postal Rate Impact	-0.74%	-1.03%
Test Year Volume (Millions)	159.100	158.641

F. Library Rate

1. Definition

Schools, colleges, universities, public libraries, museums, herbariums, and nonprofit organizations are eligible to send Package Services mail at a preferred rate known as Package Services Library Rate. No permit is required as would be the case for other preferred rate categories such as Periodicals and Standard A Nonprofit mail.

It is required only that the address or return address be that of an eligible institution and that the label "Library Rate" appear conspicuously on both sides of the package.

One of the uses of Library Rate is for publishers and distributors to send books to schools, colleges, universities, and public libraries. Another use is for inter-library loan materials. As in the case of Media Mail, rates are based on weight but not distance.

2. Volume History

The top panel of Figure 18 shows annual total volume for Package Services Library Rate. Total volume increased from 26.9 million pieces in 1970 to 72.0 million pieces in 1978. Since then, volume has generally declined and by 2000 had fallen to 28 million pieces, about equal to its 1970 level. Volume per adult, however, in 2000 (0.15 pieces) is much lower than in 1970 (0.22 pieces) owing to increases in population.

The bottom panel of Figure 18 shows that declines in volume per adult are more common than increases. The large percentage increase in 1977 was associated with a rule change that allowed publishers to send materials to schools and libraries at the Library Rate. In 1994, that rule was essentially repealed and access to Library Rates was limited, explaining part of the large volume decline in 1995.

3. Factors Affecting Volume

Table 18 shows that the volume of Library Rate mail declined 12.23 percent over the past 5 years, ending in 2001Q3.

a. Price

The real price of Library Rate mail declined 2.1 percent. Applying the estimated elasticity of -0.144 to this percentage price decrease yields a volume increase of 0.04 percent.

Figure 18

Library Rate

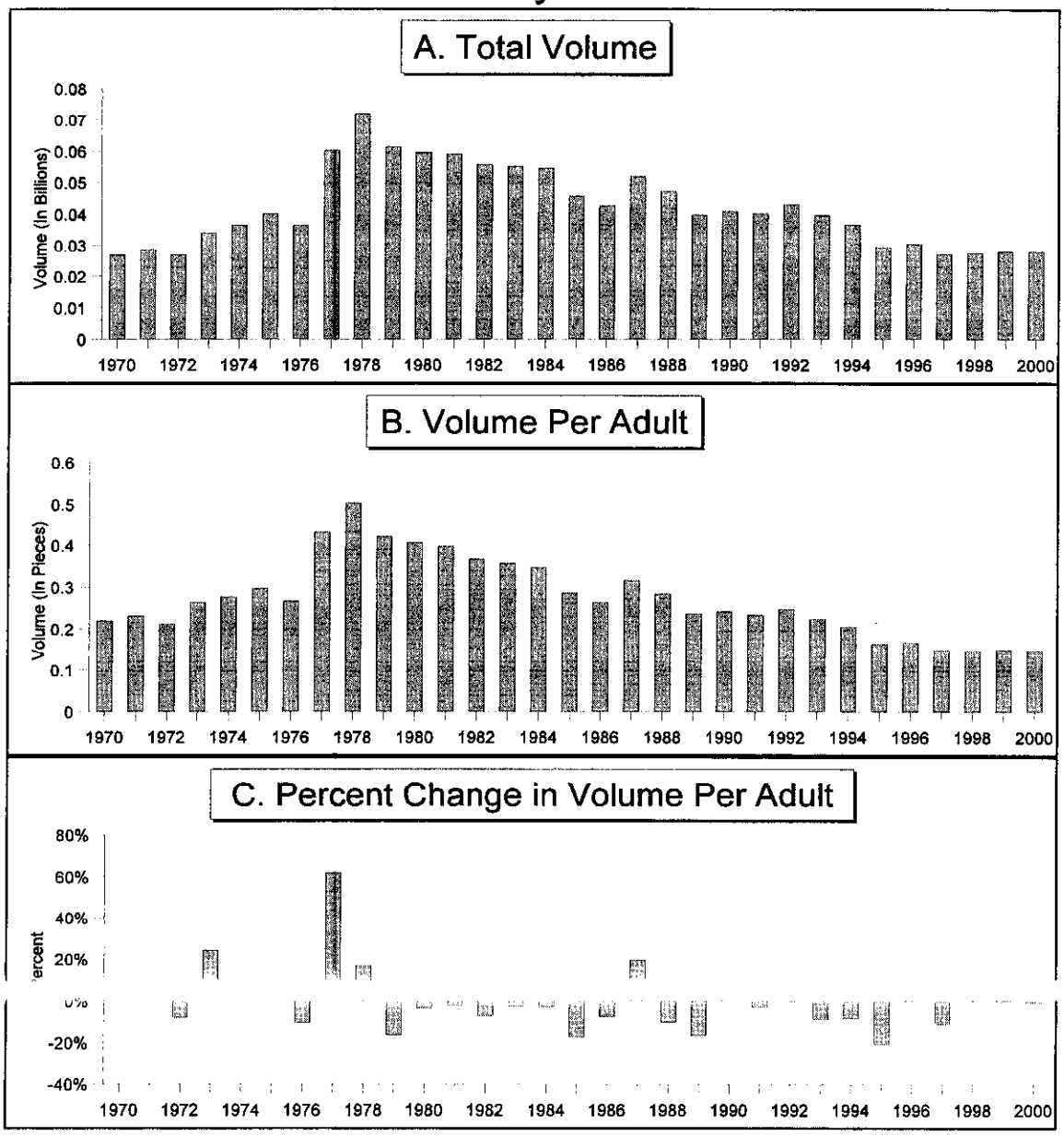


Table 18

CONTRIBUTIONS TO CHANGE IN
LIBRARY RATE VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own Price	-2.1%	-0.144	0.04%
Retail Sales	18.7%	0.902	16.74%
1998Q1Shift			-11.33%
2001Q1Shift			-18.66%
Adult Population	4.5%	1	4.50%
Other Factors			-0.26%
Total Change in Volume			-12.23%

b. Retail Sales

Growth of retail sales of 18.7 percent, when combined with its elasticity of 0.902, indicates that retail sales growth contributed 16.74 percent to the volume of Library Rate mail.

c. Effect Since 1998Q1

A downward shift beginning in 1998Q1 is estimated to have contributed to an 11.33 percent decline in the volume of Library Rate mail.

d. Effect Since 2001Q1

Another downward shift in 2001Q1 is estimated to have contributed to an 18.66 percent decline in the volume of Library Rate mail over the past five years, as indicated

in Table 18.

e. Adult Population

Growth in adult population contributed 4.50 percent to the growth in Library Rate mail.

f. Other Factors

In addition to the effect of the variables discussed above, other factors were responsible for a -0.26 percent decline in Library Rate mail volume over the 5 years Therefore, most of the change in volume is accounted for by the factors discussed in Table 18. In addition, there may be some further downward pressure on volumes due to the increased use of the Internet as a source of reference and other materials for libraries.

4. Volume Forecast

The Base Year volume of Library rate mail is 26.199 million pieces, as shown in Table 18A. Projecting the impact of changes in non-rate variables and the change in the real price of Library rate mail between the Base Year and the Test Year yields a before-rates forecast of 27.111 million pieces. Table 19A also shows the after-rates forecast, which uses rates proposed by the Postal Service, adjusted for the change in the price level between the Base Year and the Test Year. The after-rates forecast is 27.047 million pieces.

Table 18A
Volume Forecast of Package Services Library Rate Mail

	Before-Rates	After-Rates
Base Year Volume (Millions)	26.199	26.199
Non-Rate Impact	3.64%	3.64%
Postal Rate Impact	-0.15%	-0.38%
Test Year Volume (Millions)	27.111	27.047

VII. POSTAL PENALTY AND FREE-FOR-THE-BLIND MAIL

A. Postal Penalty

1. Definition

Penalty mail consists of official mail sent by U.S. Government agencies relating solely to the business of the U.S. Government. Penalty mail is allowed to be sent without prepayment of postage. The government agencies subsequently reimburse the Postal Service for the Penalty mail that is sent. Postal penalty mail is penalty mail sent specifically by the Postal Service itself.

2. Volume History

As shown in Figure 19, Postal Penalty mail volume declined from 1991 to 1996 and since then has remained fairly constant. Volume per adult in 2000 was 1.9 pieces, as compared with 3.6 pieces per adult in 1991.

3. Factors Affecting Volume

Table 19 shows that during the 5-year period ending in 2001Q3, the volume of penalty mail increased by 7.21 percent.

a. Adult Population

As shown in Table 19, adult population is estimated to have contributed 4.50 percent to volume.

b. Other Factors

Table 19 shows that beyond the impact of adult population, other factors contributed to a 2.59 percent increase in the volume of Postal Penalty mail. Postal employees and officials have been continuing to increase the use of postal penalty mail in their routine correspondence.

Figure 19

Postal Penalty Mail

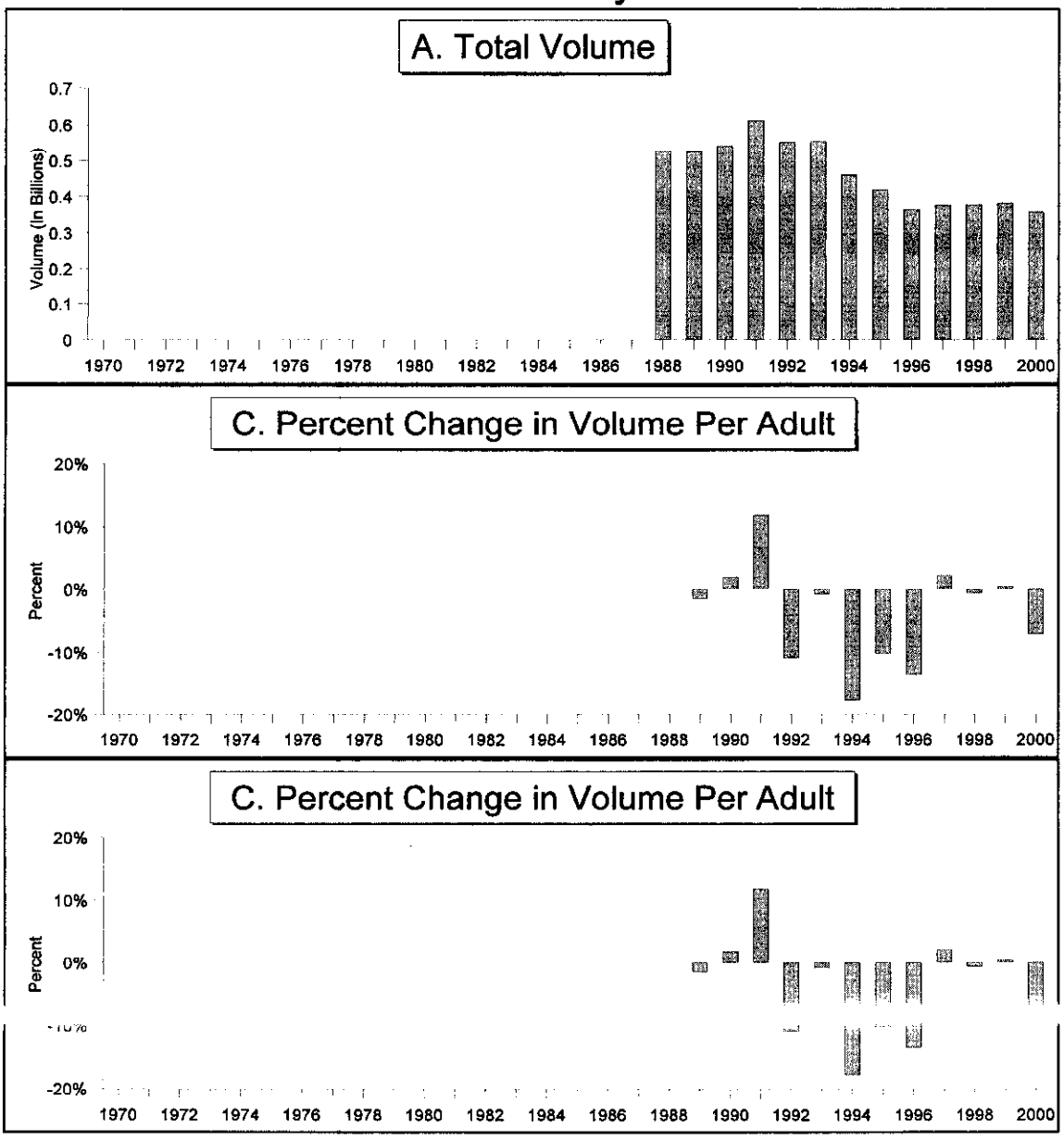


Table 19

CONTRIBUTIONS TO CHANGE IN
POSTAL PENALTY VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change in Variable	Elasticity	Estimated Effect of Variable on Volume
Adult Population	4.5%	1.000	4.50%
Other Factors			2.59%
Total Change in Volume			7.21%

4. Volume Forecast

Since there is no rate for Postal Penalty mail to which volume can respond, the before-rates forecast and the after-rates forecast for Postal Penalty mail are identical. Projecting the influence of population and an econometrically estimated trend from the Base Year to the Test Year gives a forecast for Postal Penalty mail for both before- and after-rates in the Test Year of 353.484 million pieces.

Table 19A
Volume Forecast of Postal Penalty Mail

	Before-Rates	After-Rates
Base Year Volume (Millions)	382.264	382.264
Non-Rate Impact	-7.53%	-7.53%
Postal Rate Impact	0.00%	0.00%
Test Year Volume (Millions)	353.484	353.484

B. Free-for-the-Blind

1. Definition

Free-for-the-Blind mail includes materials and devices mailed for or by those unable to read conventionally. No postage is charged for authorized mailings of these items. Customers who are eligible to mail this category must be on record at their local post office.

2. Volume History

As shown in Figure 20, Free-for-the-Blind volume is somewhat erratic, but has generally grown over time. Volume in 1981 appears to be abnormally high, but overall volume in the 1990s is higher than in earlier years. On a per-adult basis, volume nearly doubled from 1989 to 1993, where it remained at approximately 0.30 pieces per adult until declining substantially in 2000 to increased from 0.16 pieces in 1989 to 0.30 pieces in 1993. Since that time volume per adult has been fairly stable, though it declined to 0.26 pieces in 2000.

3. Factors Affecting Volume

Table 20 shows that during the 5-year period ending in 2001Q3, the volume of Free-for-the-Blind mail decreased by 9.23 percent.

a. Adult Population

Adult population is estimated to have added 4.50 percent to the volume of Free-for-the-Blind mail.

b. Other Factors

Other factors are estimated to have negatively impacted Free-for-the-Blind volume by 13.13 percent. A consideration acting to reduce the use of Free-for-the-Blind mail is increased number and availability of adaptive technologies that enable

Figure 20
Free-for-the-Blind

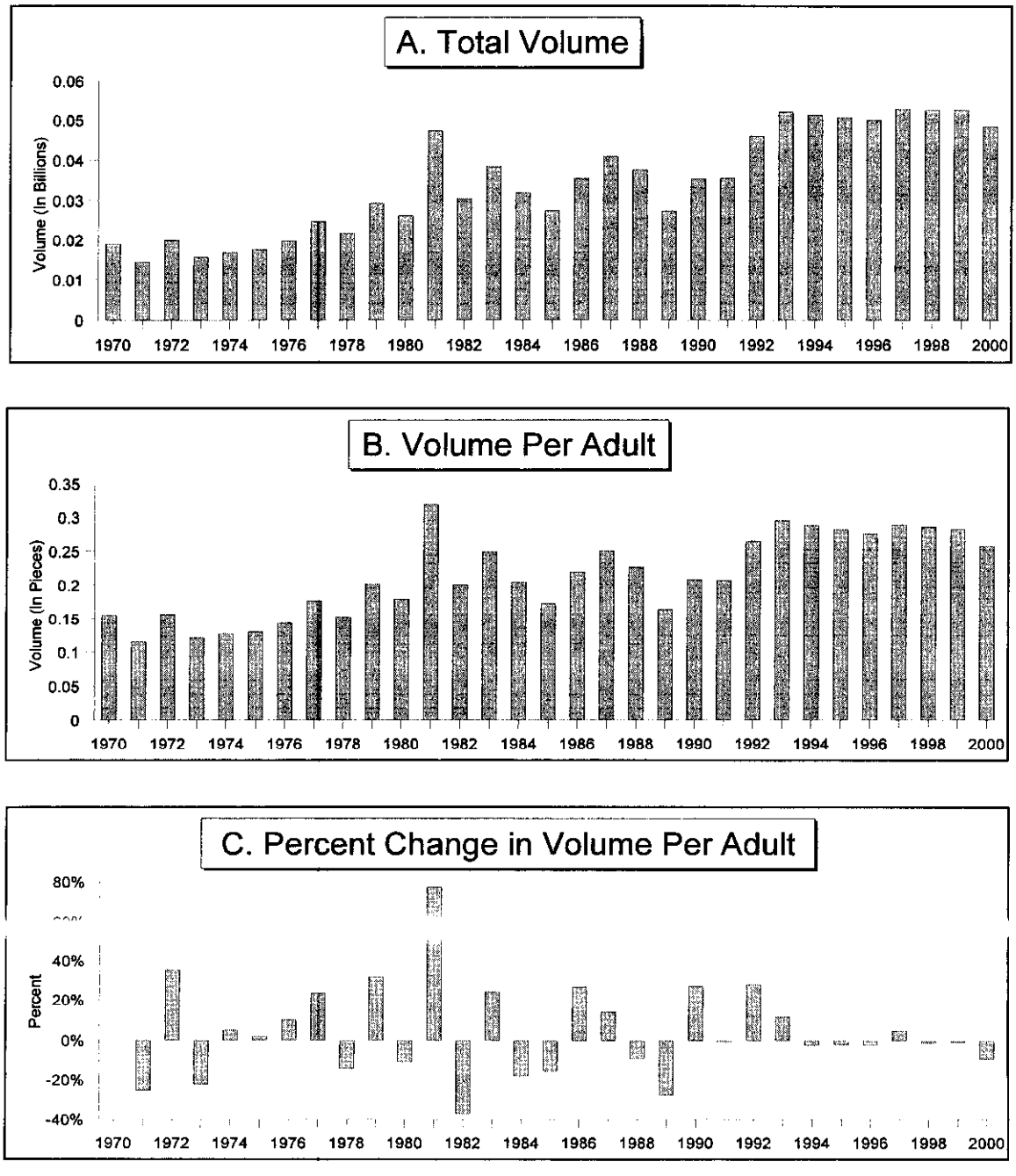


Table 20

CONTRIBUTIONS TO CHANGE IN
FREE-FOR-THE-BLIND VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Adult Population	4.5%	1	4.49%
Other Factors			-13.13%
Total Change in Volume			-9.23%

writing and correspondence via electronic and Internet based services and products for the blind.

4. Volume Forecast

Since there is no rate for Free-for-the-Blind mail to which volume can respond, the before-rates forecast and the after-rates forecast for Free-for-the-Blind mail are identical. Projecting the influence of population and an econometrically estimated trend from the Base Year to the Test Year gives a forecast for Free-for-the-Blind mail for both before- and after-rates in the Test Year of 46.859 million pieces.

Table 20A
Volume Forecast of Free-for-the-Blind Mail

	Before-Rates	After-Rates
Base Year Volume (Millions)	43.027	43.027
Non-Rate Impact	8.91%	8.91%
Postal Rate Impact	0.00%	0.00%
Test Year Volume (Millions)	46.859	46.859

VIII. SPECIAL SERVICES

A. General Characteristics

Seven special services are included in this section. They are Registry service, Insured mail, Certified mail, Collect-on-Delivery service, Return Receipts, Postal Money Orders, and Delivery Confirmation. Registry service, Insured mail, Certified mail and Return Receipts are used to provide added security, to protect the value of the mail, and to verify that the mail piece is sent through the Postal Service. Collect-on-Delivery service is used as a method of payment for mail pieces delivered by the Postal Service. Money Orders are considered a non-mail service, as Money Orders can be purchased from any post office to be used for payment of sums of money, travelers' checks or bank checks, and need not be used in conjunction with mail. Delivery confirmation is a service for Priority Mail introduced in 1999.

In Postal Year 2000, there were 13.2 million Registered mail pieces, 57.7 million Insured mail pieces, 269.1 million pieces of Certified mail, 4.3 million Collect-on-Delivery pieces, 233.4 million Return Receipts and 231.1 million Money Orders. The total volume of special services was 808.8 million transactions in 2000, or about 4.29 transactions per adult.

B. Registry

1. Definition

[illegible] for valuable mail and payment for damaged or lost mail. According to the *Domestic Mail Manual*, "it is the most secure service that the USPS offers." *Domestic Mail Manual*, S911.1.1, p. S-17. Registry involves a series of receipts as the piece of mail travels from sender to recipient. Registered mail must be prepaid at First-Class mail rates, and cannot include business reply mail.

2. Volume History

Figure 21 shows that the volume of registry transactions has declined from 48.0 million pieces in 1970 to 13.2 million pieces in 2000. Volume per adult has shown an even greater decline, falling more than 80 percent. Volume per adult has declined in each of the last twelve years.

3. Factors Affecting Volume

Table 21 shows that during the 5-year period ending in 2001Q3, the volume of Registry mail decreased by 32.39 percent.

a. Price

The real price of Registry mail increased 17.1 percent. It is estimated that the own-price elasticity of Registry mail is -0.133. Applying this elasticity to the percent increase in real price produces a decrease in volume of -2.03 percent.

b. First-Class Letters Volume

Because Registry is a special service for senders of First-Class mail, there is a direct relationship between First-Class volume and the use of the Registry service. The volume of First-Class letters increased by 2.1 percent. With an elasticity of 0.820, the estimated effect of the change in First-Class volume on the use of registry service is a 1.76 percent increase. Note that although there is no measured direct impact of income on the volume of Registry mail, income changes affect the volume of First-Class

c. MC96-3 Rule Changes

The MC96-3 reclassification of special services contributed a 5.03 percent decline in Registry volume.

Figure 21
Registry

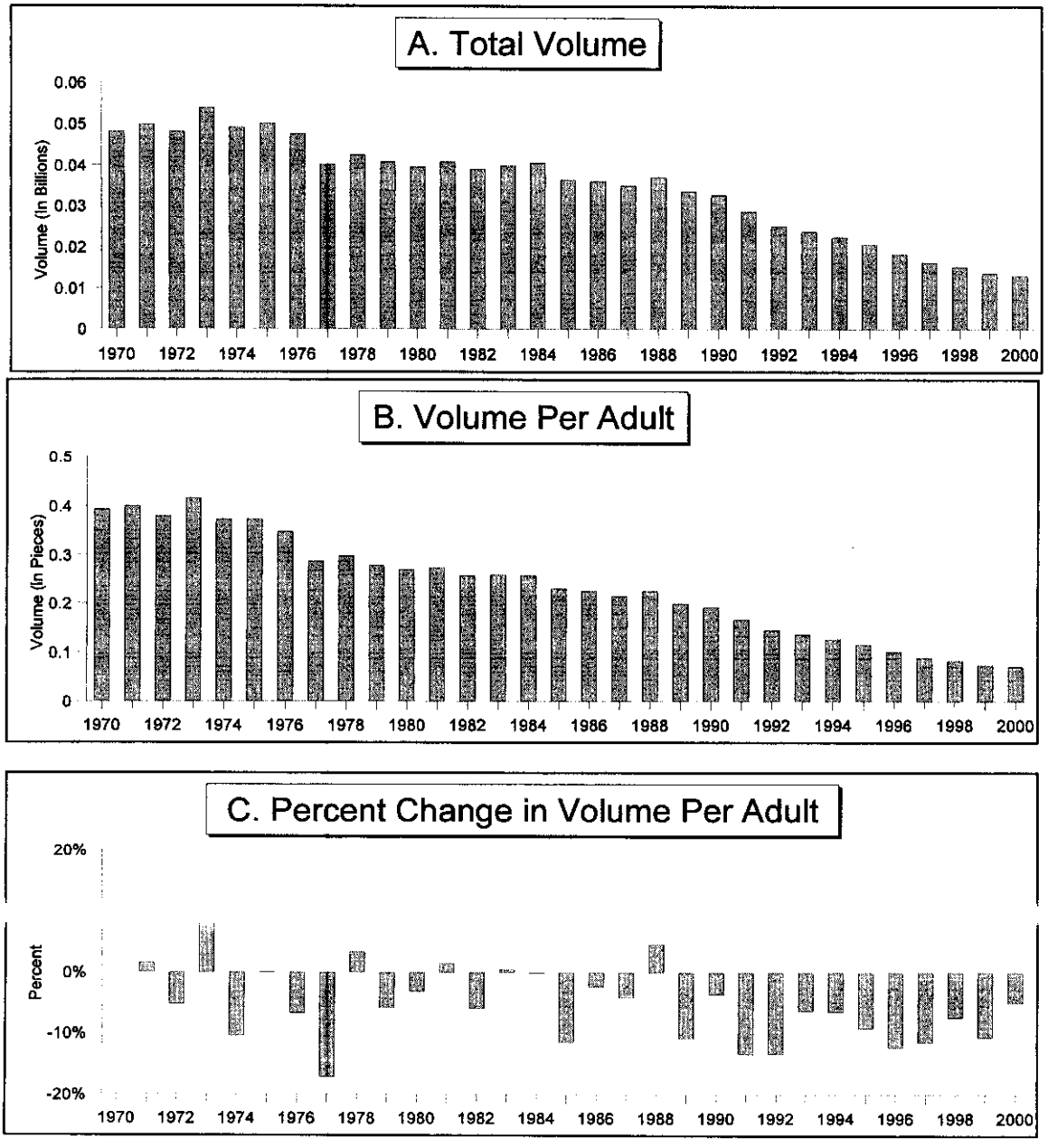


Table 21

CONTRIBUTIONS TO CHANGE IN
REGISTRY VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own-price	17.1%	-0.133	-2.03%
First-Class Letters Volume	2.1%	0.820	1.76%
MC96-3 Rule Changes			-5.03%
Adult Population	4.5%	1	4.50%
Other Factors			-31.66%
Total Change in Volume			-32.39%

d. Adult Population

Adult population growth is estimated to have added 4.50 percent to the volume of Registry mail.

e. Other Factors

Other factors contributed a 31.66 percent decrease in registered mail volume. In conjunction with its security features, Registry combines the services of Certified and Insurance of mail by offering both a record of the mailing and insurance coverage of up to $25,000. Though these features have served the growing security needs of mailers, there has been a long-term decline in Registry usage which is explained econometrically by a time-trend term. This negative trend may be due in part to the

increased provision of insurance by credit card companies. Merchandise is frequently insured at the time of purchase, making registered mail unnecessary. Another factor contributing to the decline in Registry mail is that many private delivery companies, especially overnight delivery firms, include insurance in the price of delivery. Mailers who wish to insure time-sensitive items can use a private delivery company.

The decline of Registry contrasts with increases in Insurance of mail. Registry has not been favored by the positive influence of increases in Parcel Post, which Insurance is often used for, nor by the increase in allowed amount of Insurance of mail.

4. Volume Forecast

Multiplying Base Year Registry volume by the non-rate and postal rate impacts yields a before-rates Test Year forecast of 10.515 million, as shown in Table 21A. The after-rates projection, which includes the impact of the proposed increase in Registry mail rate, is 10.331 million.

Table 21A
Volume Forecast for Registry

	Before-Rates	After-Rates
Base Year Volume (Millions)	12.337	12.337
Non-Rate Impact	-14.66%	-14.66%
Postal Rate Impact	-0.13%	-1.87%
Test Year Volume (Millions)	10.515	10.331

C. Insurance

1. Definition

Insurance provides reimbursement for loss or damages. Insurance may not be purchased for unusually fragile or ill-prepared articles. Even though no record of insured mail is kept at the post office of mailing, the sender is provided a mailing receipt. For

mail insured for more than $50, a delivery record is kept at the addressee post office. Insured mail is handled in transit as ordinary mail. As a result of the MC96-3 case, the maximum level of insurance was increased from $600 to $5,000.

2. Volume History

Figure 22 shows that the volume of insured transactions fell from 112.4 million in 1970to 28.8 million in 1995. Volume has doubled since then, rising to 57.7 million transactions in 2000. Volume per adult increased more than 15 percent in each of the last 4 years, reaching 0.31 pieces in 2000. Still, this represents more than a 70 percent decline since 1970.

3. Factors Affecting Volume

Table 22 shows that during the 5-year period ending in 2001Q3, the volume of Insurance mail increased by 120.39 percent.

a. Price

Table 22 shows that the real own-price of mail insurance increased 7.3 percent. Applying an estimated price elasticity of -0.110 to this decline in price yields a decrease in volume of 0.77 percent due to this factor.

b. Income

A 1 percent increase in long-run income per adult is estimated to increase Insurance volume by 0.355 percent. Therefore, the 10.2 percent increase in long-run income per adult contributed 3.52 percent to the Insurance volume.

Figure 22

Insurance

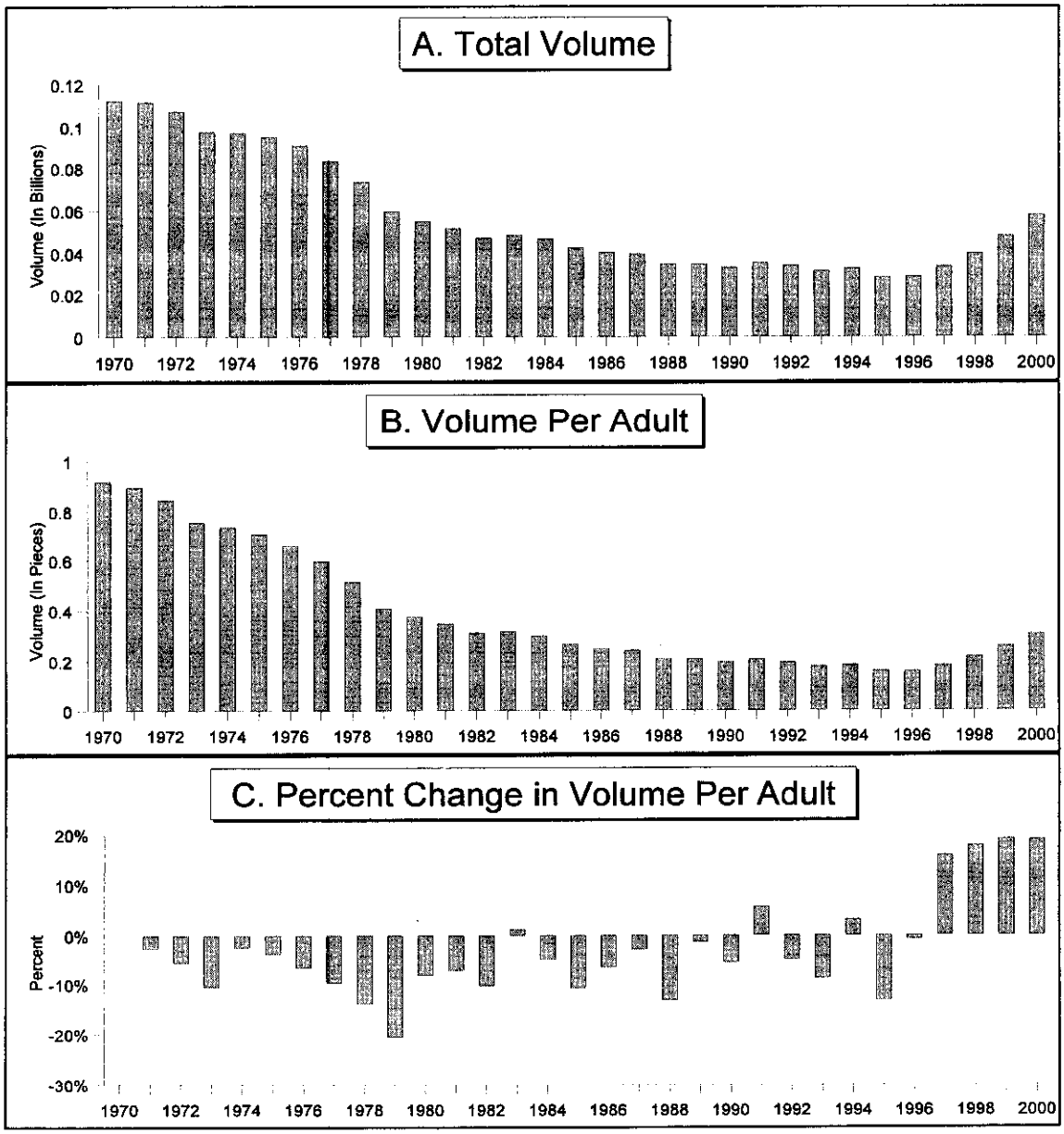


Table 22

CONTRIBUTIONS TO CHANGE IN
INSURANCE MAIL VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own price	7.3%	-0.110	-0.77%
Long-run Income	10.2%	0.355	3.52%
Parcel Post Volume	28.9%	0.371	9.14%
Adult Population	4.5%	1	4.50%
Other Factors			144.40%
Total Change in Volume			120.39%

c. Parcel Post Volume

Insurance is often purchased on Parcel Post mailings. Therefore, changes in Parcel Post volume can be expected to affect Insurance volume. It is estimated that the 28.9 percent increase in Parcel Post volume contributed 9.14 percent to Insurance of mail, as shown in Table 22.

d. Adult Population

Adult population growth is estimated to have added 4.50 percent to the

insurance volume.

e. Other Factors

Other factors were responsible for an 144.397 percent increase in Insurance volume, primarily explained econometrically by a market penetration Z-variable, which captures the increase in Insurance volume over the past 5 years. The MC96-3 increase in the maximum insurance coverage from $600 to $5,000 favored the growth in Insurance volume. Another consideration favoring growth in Insurance volume is the growth in online auction houses such as EBay. Online auction activity often results in private individuals sending valuable goods through the mail to other individuals, making postal insurance a particularly attractive service.

4. Volume Forecast

The recent increase in Insurance volume is reflected in the Base Year volume of 61.882 million, as shown in Table 22A. Non-rate factors (including the change in the volume of Parcel Post) are projected to increase Insurance volume by 2.97 percent between the Base Year and the Test Year. The postal rate impact increases volume by an additional 0.70 percent, yielding a Test Year before-rates forecast of 64.165 million.

Table 22A shows that the non-rate impact is different in the after-rates scenario, because it includes the impact of the decrease in Parcel Post volume resulting from the proposed increase in Parcel Post price. Thus, after-rates, non-rate factors increase insurance volume by 2.97 percent between the Base Year and the Test Year. The proposed increase in insurance rates reduces volume by 3.01 percent. Combining these impacts results in a Test Year after-rates volume forecast of 61.800 million.

Table 22A
Volume Forecast of Insurance

	Before-Rates	After-Rates
Base Year Volume (Millions)	61.882	61.882
Non-Rate Impact	2.97%	2.97%
Postal Rate Impact	0.70%	-3.01%
Test Year Volume (Millions)	64.165	61.800

D. Certified Mail

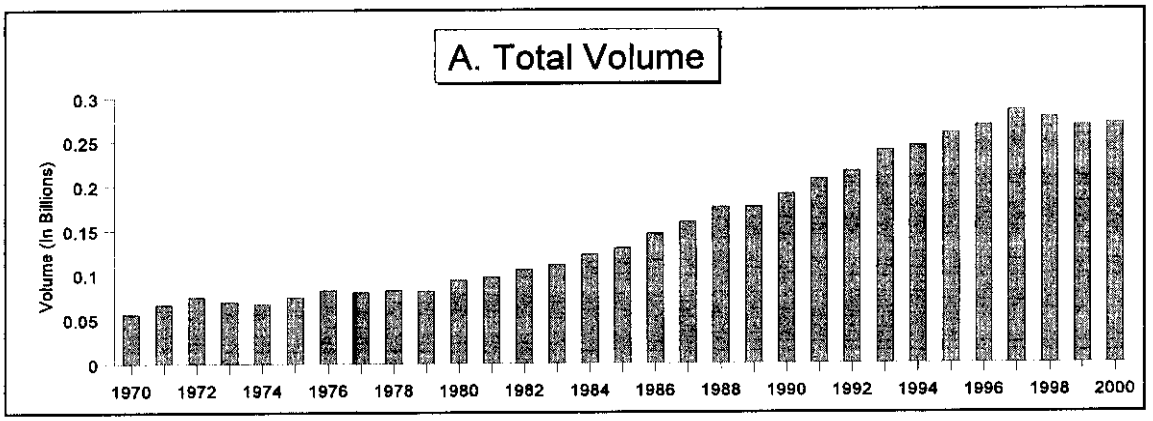
1. Definition

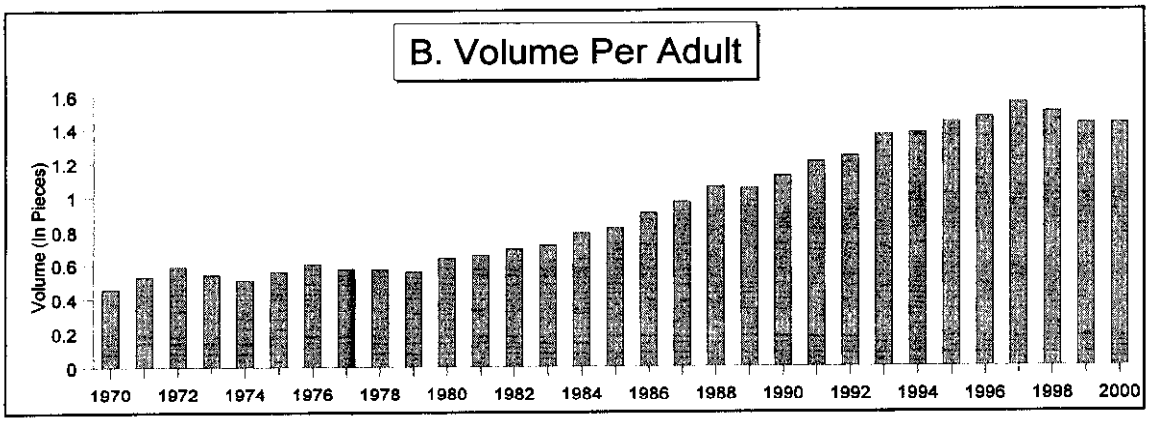
Certified mail is a less expensive substitute for "no value" registered First-Class mail. No insurance coverage is offered with this service, and certification is available only for First-Class mail. Certified mail provides the mailer with a mailing receipt, and a record of delivery is maintained at the delivery office. The service may also be used in conjunction with restricted delivery and return receipt services to provide both enhanced control of delivery and proof of delivery.

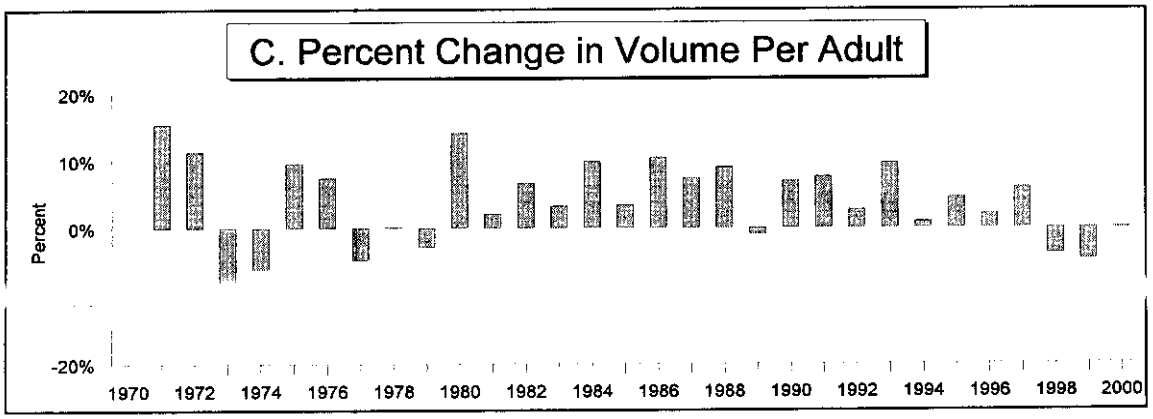
2. Volume History

In contrast to Registered and Insured mail, Certified mail volume has increased over the past 30 years, rising from 56.0 million transactions in 1970 to 269.1 million transactions in 2000. Volume per adult has more than tripled during this time period, although as Figure 23 shows, Certified volume per adult has been relatively constant over the past few years.

Figure 23
Certified Mail







3. Factors Affecting Volume

Table 23 shows that during the 5-year period ending in 2001Q3, the volume of Certified mail increased by 4.80 percent.

a. Price

Table 23 shows that the real price of certified mail increased 19.4 percent and this price increase is responsible for an estimated 3.11 percent decline in volume, obtained after applying the estimated own-price elasticity of -0.176.

b. First-Class Letters Volume

Because the Certified mail service is used with First-Class mail, the volume of First-Class mail is directly related to the volume of Certified mail. The change in the amount of First-Class mail sent over the 5 years is 1.8 percent. With an elasticity of 0.856, the calculated effect of the increase in the volume of First-Class mail on Certified mail is 1.54 percent.

c. Delivery Confirmation

As part of the R2000-1 rate case, a delivery-confirmation service was introduced for Priority mail. This acted to reduce the use of Certified mail by 11.01, since Priority Mail with delivery confirmation acts as a substitute for Certified First-Class letter mail.

d. Adult Population

The increase in adult population over the 5 years is estimated to have added 4.50 percent to the use of Certified mail.

e. Other Factors

Other factors contributed to an increase in the use of certified mail by 14.54 percent. In general, there has been a long-term growth in the use of Certified mail, as reflected in the positive time trend. Certified mail is less expensive than insured mail, and when the maximum value of the insurance was rather low, mailers may have felt

that the additional charge for postal insurance was not a particularly valuable option.

Table 23

CONTRIBUTIONS TO CHANGE IN
CERTIFIED MAIL VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own price	19.4%	-0.176	-3.11%
First-Class Letters Volume	1.8%	0.856	1.54%
Dummy for Delivery Confirmation			-11.01%
Adult Population	4.5%	1	4.50%
Other Factors			14.54%
Total Change in Volume			4.80%

4. Volume Forecast

Table 23A presents the before- and after-rates forecasts for Certified mail. In the before-rates case, non-rate factors add 7.41 percent to volume while the change in the real price of Certified mail subtracts 4.94 percent to volume, yielding a Test Year forecast of 283.708 million pieces. Table 23A also shows that the proposed rate increase for Certified mail is projected to reduce volume by 6.38 percent between the Base Year and the Test Year, resulting in an after-rates forecast of 279.412 million.

Table 23A
Volume Forecast of Certified Mail

	Before-Rates	After-Rates
Base Year Volume (Millions)	277.856	277.856
Non-Rate Impact	7.41%	7.41%
Postal Rate Impact	-4.94%	-6.38%
Test Year Volume (Millions)	283.708	279.412

E. Collect-on-Delivery

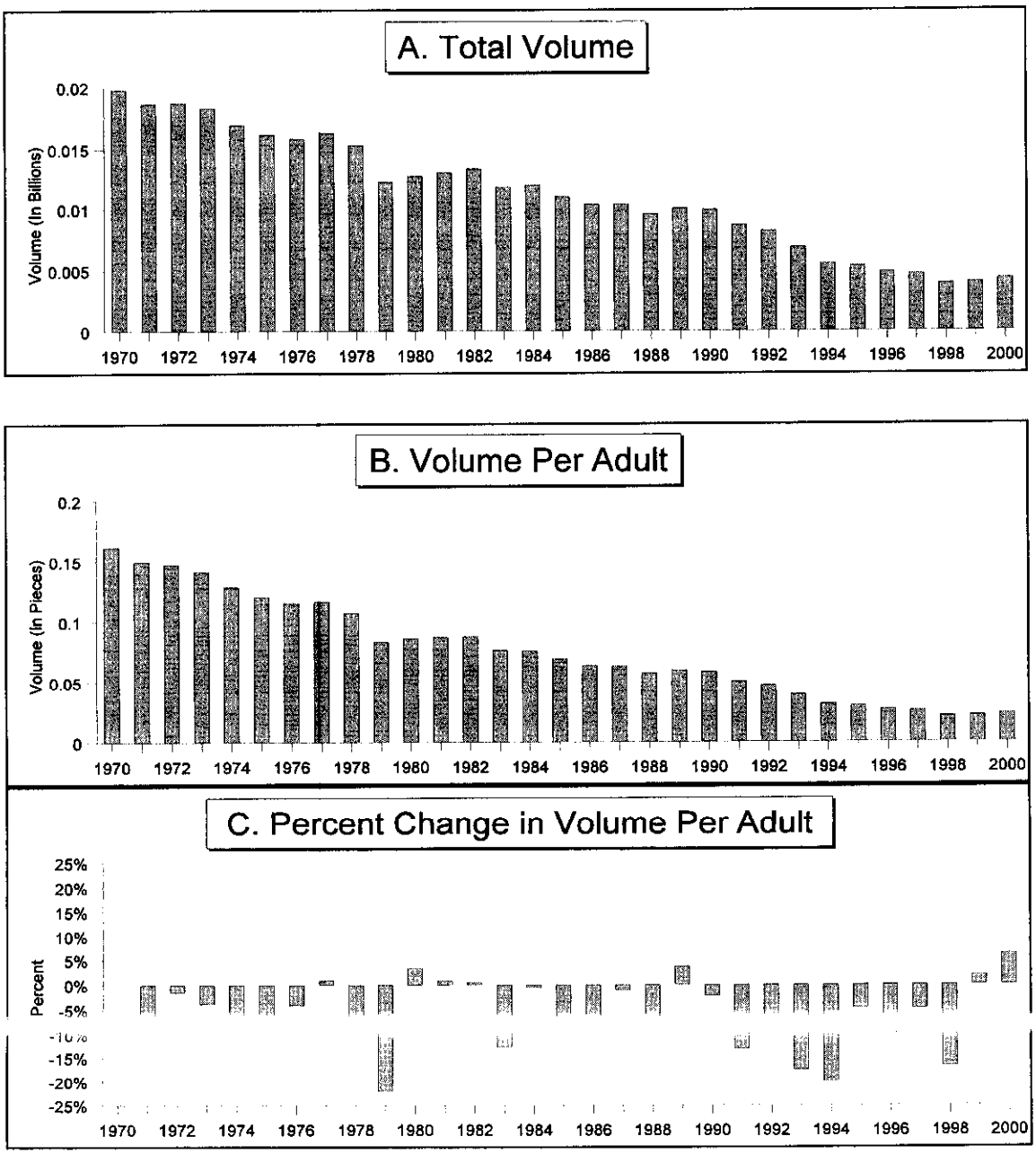
1. Definition

Collect-on-delivery (COD) is used primarily by businesses mailing to individuals. The remainder of any payment due for an article and the cost of postage is paid at the time of delivery, and the amount collected is returned to the mailer by a postal money order or personal check. This service provides the mailer with a mailing receipt, and the destination post office keeps a delivery record. The current maximum COD payment is $600. This service may be used with Express Mail, First-Class Mail, Priority Mail and Standard Mail.

2. Volume History

As Figure 24 shows, COD volume has experienced a long-term decline, falling from 19.8 million transactions in 1970 to 4.3 million transactions in 2000. On a per adult basis, volume in 2000 was only 0.023 pieces, representing a decline of more than 80 percent from its level in 1970. COD volume per adult declined in every year from 1990 to 1998. However, volume has increased in the last two years, the first increase since 1989 and only the second increase since 1983.

Figure 24
Collect-On-Delivery



3. Factors Affecting Volume

Table 24 shows that during the 5-year period ending in 2001Q3, the volume of collect-on-delivery mail decreased by 28.54 percent.

a. Price

The real price of COD increased 10.6 percent over the past five years. It is estimated that the long-run own-price elasticity of COD volume is -0.533. Applying this elasticity to the price increase yields a -6.21 percent decline in volume due to this factor.

b. Adult Population

Increases in adult population added 4.50 percent to the volume of COD transactions over the past five years.

c. Other Factors

Table 24 shows that other factors were responsible for a 27.08 percent decrease in COD volume. The negative trend of COD mail volume may be due in part to the increased use of credit cards to pay for mail-order merchandise. Credit card payments are more convenient for mail order merchants since the payment is secured through the credit card company, not the Postal Service. At the same time, many mail-order purchases are paid for through direct billing of a buyer's telephone number, or through the Internet, further reducing the demand for collect-on-delivery services. Additionally, new Internet features that allow users to view COD information online may have contributed to the general decline in COD use. These features allow customers to verify that a package was received by viewing the recipient's handwritten signature on the Web.

Table 24

CONTRIBUTIONS TO CHANGE IN
COLLECT-ON-DELIVERY MAIL VOLUME
FOR THE 5 YEARS ENDING IN 2001Q3

Variable	Percent Change In Variable	Elasticity	Estimated Effect of Variable on Volume
Own price	10.6%	-0.533	-6.21%
Adult Population	4.5%	1	4.50%
Other Factors			-27.08%
Total Change in Volume			-28.54%

4. Volume Forecast

As shown in Table 24A, the long-term decline in COD volume is projected to continue in the future, with non-rate factors reducing volume by 11.71 percent between the Base Year and the Test Year. Including the projected impact of changes in real postal rates over this time period yields a Test Year before-rates forecast of 3.100 million. Since no change is proposed in COD rates, the after-rates forecast is also 3.100 million.

Table 24A
Volume Forecast for Collect-on-Delivery

	Before-Rates	**After-Rates**
Base Year Volume (Millions)	3.564	3.564
Non-Rate Impact	-11.71%	-11.71%
Postal Rate Impact	-1.47%	-1.47%
Test Year Volume (Millions)	3.100	3.100

F. Return Receipts

1. Definition

This service provides the mailer with the date of actual delivery and the addressee's actual mailing address. This service is available only for Express Mail and mail sent as certified, collect on delivery (COD), insured for more than $50, or registered mail. Upon delivery, a return receipt is mailed to the sender.

2. Volume History

Figure 25 presents the volume of return receipts from 1993 to 2000. Pronounced increases in volume in 1995 and 1997 are clearly shown. Volume fell in 1998 and 1999, but rose again in 2000 to about 1.2 pieces per adult.

3. Factors Affecting Volume

Table 25 shows that during the 5-year period ending in 2001Q3, the volume of return receipts increased by 7.24 percent.

a. Own-Price

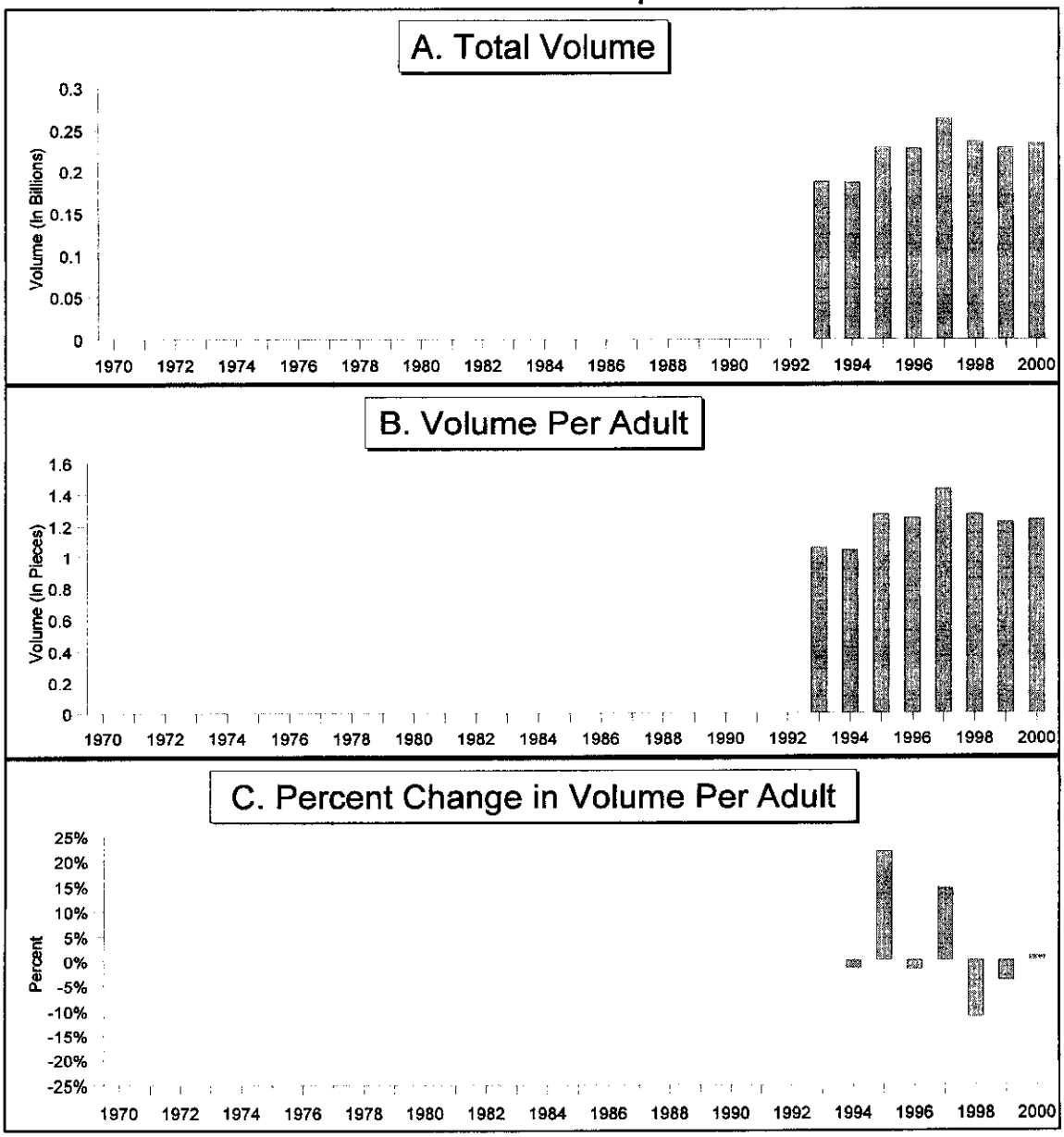
Over the past 5 years, the own-price of return receipts increased 5.6 percent, after adjusting for inflation. Applying an estimated own-price elasticity of -0.290 to this increase in price yields a 1.54 percent decline in volume as shown in Table 25.

b. Certified Mail Volume

Because return receipts are usually purchased in conjunction with certified mail, the change in the volume of Certified mail has a direct impact on the volume of return receipts. Over the past 5 years, certified mail volume has increased by 0.6 percent. The estimated elasticity of the volume of Return Receipts with respect to the volume of certified mail is 0.660. Therefore, the calculated impact of certified mail on return receipts is a 0.29 percent rise in volume.

Figure 25

Return Receipts



FORECAST ERROR ANALYSIS
Stamped Cards

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				0.102297
1997	0.333160	0.289944	-0.155198	-0.262103
1998	0.108197	-0.316345	0.044548	-0.072120
1999	0.109898	-0.144604	0.138657	0.002430
2000	-0.449426	-0.237849	-0.104267	-0.233357
2001	0.034840	0.223959	0.794071	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				-0.364400
1998	-0.224963	-0.606289	0.199746	0.189963
1999	0.001701	0.171742	0.094109	0.074550
2000	-0.559324	-0.093245	-0.242924	-0.235787
2001	0.484267	0.461808	0.898338	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	-0.248977
1998Q1	1998Q4	-0.110381
1998Q2	1999Q1	-0.053715
1998Q3	1999Q2	0.140793
1998Q4	1999Q3	0.114384
1999Q1	1999Q4	0.085526
1999Q2	2000Q1	-0.054731
1999Q3	2000Q2	-0.120977
1999Q4	2000Q3	-0.205236
2000Q1	2000Q4	-0.282820
2000Q2	2001Q1	-0.021922
2000Q3	2001Q2	0.116841
2000Q4	2001Q3	0.402156

Mean of the 4 Quarter Averages: -0.018389

Five Year Mechanical Net Trend
1996q3 to 2001q3: 0.988625

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Private First-Class Cards

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				0.030377
1997	0.058170	-0.005325	0.014579	-0.016095
1998	0.017139	0.060340	0.060927	0.078829
1999	0.000297	-0.009320	-0.045143	-0.044454
2000	-0.020573	-0.060497	0.091244	-0.011489
2001	0.006635	-0.030158	-0.018910	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				-0.046471
1998	-0.041031	0.065865	0.046048	0.094923
1999	-0.016852	-0.069660	-0.106070	-0.123283
2000	-0.020860	-0.051177	0.136386	0.032965
2001	0.027208	0.030339	-0.110153	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	0.006053
1998Q1	1998Q4	0.041401
1998Q2	1999Q1	0.047446
1998Q3	1999Q2	0.013615
1998Q4	1999Q3	-0.024415
1999Q1	1999Q4	-0.078966
1999Q2	2000Q1	-0.079968
1999Q3	2000Q2	-0.075347
1999Q4	2000Q3	-0.014733
2000Q1	2000Q4	0.024329
2000Q2	2001Q1	0.036346
2000Q3	2001Q2	0.056725
2000Q4	2001Q3	-0.004910

Mean of the 4 Quarter Averages: -0.004033

Five Year Mechanical Net Trend
1996q3 to 2001q3: 0.998379

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Single-Piece First-Class Cards

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				-0.089160
1997	0.046935	-0.005842	0.024849	-0.047573
1998	0.005930	0.073062	0.038778	0.146827
1999	-0.078324	-0.078880	-0.027312	-0.075293
2000	0.048946	0.027355	0.053496	0.008223
2001	0.000827	0.016734	-0.055018	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				0.041588
1998	-0.041005	0.078904	0.013930	0.194400
1999	-0.084254	-0.151943	-0.066091	-0.222120
2000	0.127271	0.106236	0.080808	0.083516
2001	-0.048119	-0.010622	-0.108514	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	0.023354
1998Q1	1998Q4	0.061557
1998Q2	1999Q1	0.050745
1998Q3	1999Q2	-0.006967
1998Q4	1999Q3	-0.026972
1999Q1	1999Q4	-0.131102
1999Q2	2000Q1	-0.078221
1999Q3	2000Q2	-0.013676
1999Q4	2000Q3	0.023049
2000Q1	2000Q4	0.099458
2000Q2	2001Q1	0.055610
2000Q3	2001Q2	0.026396
2000Q4	2001Q3	-0.020935

Mean of the 4 Quarter Averages: 0.004792

Five Year Mechanical Net Trend
1996q3 to 2001q3: 0.973750

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Workshared First-Class Cards

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				-0.098676
1997	0.095941	0.007396	0.026987	0.045865
1998	-0.098052	0.071580	0.079882	0.168697
1999	0.020853	-0.109220	-0.169462	-0.126993
2000	-0.041286	-0.079248	0.216468	0.068943
2001	-0.011731	0.012200	-0.160530	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				0.144541
1998	-0.193993	0.064183	0.052895	0.122832
1999	0.118905	-0.180800	-0.249344	-0.295690
2000	-0.062139	0.029972	0.385930	0.195936
2001	0.029555	0.091448	-0.376998	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	0.016906
1998Q1	1998Q4	0.011479
1998Q2	1999Q1	0.089704
1998Q3	1999Q2	0.028458
1998Q4	1999Q3	-0.047102
1999Q1	1999Q4	-0.151732
1999Q2	2000Q1	-0.196993
1999Q3	2000Q2	-0.144300
1999Q4	2000Q3	0.014518
2000Q1	2000Q4	0.137425
2000Q2	2001Q1	0.160348
2000Q3	2001Q2	0.175717
2000Q4	2001Q3	-0.015015

Mean of the 4 Quarter Averages: 0.006109

Five Year Mechanical Net Trend
1996q3 to 2001q3: 1.022425

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Periodical Within County Mail

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				0.055770
1997	0.046181	0.007719	-0.015654	0.032360
1998	-0.005475	-0.009492	0.041790	-0.024933
1999	-0.015042	0.033243	-0.054911	0.033595
2000	0.010239	-0.080650	0.037517	0.017803
2001	-0.020117	0.012084	0.029003	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				-0.023410
1998	-0.051657	-0.017210	0.057444	-0.057293
1999	-0.009567	0.042734	-0.096702	0.058527
2000	0.025281	-0.113693	0.092429	-0.015792
2001	-0.030356	0.092734	-0.008514	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	-0.008708
1998Q1	1998Q4	-0.017179
1998Q2	1999Q1	-0.006656
1998Q3	1999Q2	0.008330
1998Q4	1999Q3	-0.030207
1999Q1	1999Q4	-0.001252
1999Q2	2000Q1	0.007460
1999Q3	2000Q2	-0.031697
1999Q4	2000Q3	0.015586
2000Q1	2000Q4	-0.002994
2000Q2	2001Q1	-0.016903
2000Q3	2001Q2	0.034754
2000Q4	2001Q3	0.009518

Mean of the 4 Quarter Averages: -0.003073

Five Year Mechanical Net Trend
1996q3 to 2001q3: -0.157321

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Periodical Nonprofit & Classroom Mail

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				-0.028251
1997	0.047677	0.030247	-0.046075	-0.046126
1998	0.044618	-0.057258	0.031065	-0.022356
1999	0.008698	-0.030755	-0.029744	0.004989
2000	-0.012966	0.039711	-0.016046	0.029370
2001	-0.038646	-0.024337	0.010638	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				-0.017874
1998	-0.003059	-0.087505	0.077140	0.023770
1999	-0.035920	0.026503	-0.060808	0.027345
2000	-0.021663	0.070466	0.013698	0.024381
2001	-0.025680	-0.064048	0.026684	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	-0.007825
1998Q1	1998Q4	0.002587
1998Q2	1999Q1	-0.005629
1998Q3	1999Q2	0.022873
1998Q4	1999Q3	-0.011614
1999Q1	1999Q4	-0.010720
1999Q2	2000Q1	-0.007156
1999Q3	2000Q2	0.003835
1999Q4	2000Q3	0.022461
2000Q1	2000Q4	0.021720
2000Q2	2001Q1	0.020716
2000Q3	2001Q2	-0.012912
2000Q4	2001Q3	-0.009666

Mean of the 4 Quarter Averages: 0.002205

Five Year Mechanical Net Trend
1996q3 to 2001q3: 0.996761

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Periodical Nonprofit Mail

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				-0.081821
1997	-0.045585	-0.010236	-0.030190	0.006937
1998	-0.018865	-0.101147	0.028452	0.065117
1999	-0.022202	0.053692	-0.065786	0.042434
2000	-0.046527	0.055528	0.025116	0.067983
2001	0.016401	-0.044454	0.000258	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				0.088759
1998	0.026721	-0.090910	0.058642	0.058179
1999	-0.003337	0.154838	-0.094237	-0.022683
2000	-0.024325	0.001836	0.090902	0.025549
2001	0.062928	-0.099982	-0.024859	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	0.020803
1998Q1	1998Q4	0.013158
1998Q2	1999Q1	0.005643
1998Q3	1999Q2	0.067080
1998Q4	1999Q3	0.028861
1999Q1	1999Q4	0.008645
1999Q2	2000Q1	0.003398
1999Q3	2000Q2	-0.034852
1999Q4	2000Q3	0.011433
2000Q1	2000Q4	0.023491
2000Q2	2001Q1	0.045304
2000Q3	2001Q2	0.019849
2000Q4	2001Q3	-0.009091

Mean of the 4 Quarter Averages: 0.015671

Five Year Mechanical Net Trend
1996q3 to 2001q3: 0.996368

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Periodical Classroom Mail

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				-0.170100
1997	-0.029489	-0.026275	-0.052020	0.396288
1998	-0.055083	-0.061269	0.107497	0.084391
1999	-0.018447	-0.003957	-0.125076	0.204827
2000	0.067134	-0.017409	0.130009	0.262686
2001	0.021383	-0.030279	0.018076	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				0.566389
1998	-0.025594	-0.034994	0.159517	-0.311697
1999	0.036636	0.057312	-0.232573	0.120436
2000	0.085581	-0.013452	0.255084	0.057855
2001	-0.045752	-0.012870	-0.111933	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	0.166330
1998Q1	1998Q4	-0.053242
1998Q2	1999Q1	-0.037684
1998Q3	1999Q2	-0.014608
1998Q4	1999Q3	-0.112630
1999Q1	1999Q4	-0.004547
1999Q2	2000Q1	0.007689
1999Q3	2000Q2	-0.010002
1999Q4	2000Q3	0.111912
2000Q1	2000Q4	0.096268
2000Q2	2001Q1	0.063435
2000Q3	2001Q2	0.063580
2000Q4	2001Q3	-0.028174

Mean of the 4 Quarter Averages: 0.019102

Five Year Mechanical Net Trend
1996q3 to 2001q3: 1.013859

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Periodical Regular Rate

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				-0.004807
1997	0.037922	0.015874	0.009441	0.007340
1998	-0.001348	-0.002091	0.003798	-0.003800
1999	0.007481	-0.013461	0.021108	-0.005459
2000	-0.019694	0.021590	-0.026989	-0.008751
2001	0.017970	0.001627	-0.020088	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				0.012146
1998	-0.039270	-0.017964	-0.005643	-0.011139
1999	0.008830	-0.011390	0.017310	-0.001659
2000	-0.027176	0.035071	-0.048097	-0.003292
2001	0.037665	-0.019963	0.006901	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	-0.012683
1998Q1	1998Q4	-0.018504
1998Q2	1999Q1	-0.006479
1998Q3	1999Q2	-0.004836
1998Q4	1999Q3	0.000902
1999Q1	1999Q4	0.003272
1999Q2	2000Q1	-0.005729
1999Q3	2000Q2	0.005887
1999Q4	2000Q3	-0.010465
2000Q1	2000Q4	-0.010873
2000Q2	2001Q1	0.005337
2000Q3	2001Q2	-0.008422
2000Q4	2001Q3	0.005328

Mean of the 4 Quarter Averages: -0.004405

Five Year Mechanical Net Trend
1996q3 to 2001q3: 0.997471

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Standard Regular Rate

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				0.000765
1997	-0.003136	0.008841	-0.017492	0.010890
1998	-0.009487	0.004627	0.000976	0.022720
1999	0.008740	-0.009926	-0.017469	-0.010505
2000	0.005495	0.002083	-0.003812	-0.016477
2001	0.004011	-0.000271	0.015761	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				0.010125
1998	-0.006349	-0.004214	0.018467	0.011830
1999	0.018227	-0.013653	-0.018445	-0.033226
2000	-0.003245	0.011110	0.013658	-0.005971
2001	-0.001484	-0.002355	0.019572	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	0.004507
1998Q1	1998Q4	0.004933
1998Q2	1999Q1	0.011077
1998Q3	1999Q2	0.008718
1998Q4	1999Q3	-0.000510
1999Q1	1999Q4	-0.011774
1999Q2	2000Q1	-0.017142
1999Q3	2000Q2	-0.010951
1999Q4	2000Q3	-0.002926
2000Q1	2000Q4	0.003888
2000Q2	2001Q1	0.004328
2000Q3	2001Q2	0.000962
2000Q4	2001Q3	0.002441

Mean of the 4 Quarter Averages: -0.000188

Five Year Mechanical Net Trend
1996q3 to 2001q3: 0.999657

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Standard Enhanced Carrier Route

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				-0.012816
1997	-0.019982	0.007293	-0.000831	-0.007200
1998	-0.007843	-0.000516	0.003125	0.026512
1999	-0.006256	0.004836	-0.012801	0.002813
2000	0.025129	-0.013885	0.022094	-0.007746
2001	-0.006596	-0.015852	0.004060	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				0.005616
1998	0.012139	-0.007808	0.003956	0.033712
1999	0.001588	0.005352	-0.015927	-0.023699
2000	0.031385	-0.018722	0.034896	-0.010560
2001	-0.031725	-0.001967	-0.018035	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	0.003476
1998Q1	1998Q4	0.010500
1998Q2	1999Q1	0.007862
1998Q3	1999Q2	0.011152
1998Q4	1999Q3	0.006181
1999Q1	1999Q4	-0.008172
1999Q2	2000Q1	-0.000722
1999Q3	2000Q2	-0.006741
1999Q4	2000Q3	0.005965
2000Q1	2000Q4	0.009250
2000Q2	2001Q1	-0.006528
2000Q3	2001Q2	-0.002339
2000Q4	2001Q3	-0.015572

Mean of the 4 Quarter Averages: 0.001101

Five Year Mechanical Net Trend
1996q3 to 2001q3: 0.999637

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Standard Bulk Nonprofit

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				0.012452
1997	-0.002168	-0.000190	0.017398	0.010665
1998	-0.020752	0.008785	-0.003526	0.003550
1999	0.006564	0.003630	0.007178	-0.007568
2000	0.008373	0.003593	-0.000911	0.007221
2001	0.032865	-0.014453	-0.039685	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				-0.001787
1998	-0.018583	0.008975	-0.020925	-0.007116
1999	0.027306	-0.005155	0.010704	-0.011118
2000	0.001819	-0.000038	-0.008089	0.014759
2001	0.024492	-0.018045	-0.038774	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	-0.008080
1998Q1	1998Q4	-0.009412
1998Q2	1999Q1	0.002060
1998Q3	1999Q2	-0.001472
1998Q4	1999Q3	0.006435
1999Q1	1999Q4	0.005434
1999Q2	2000Q1	-0.000937
1999Q3	2000Q2	0.000342
1999Q4	2000Q3	-0.004356
2000Q1	2000Q4	0.002120
2000Q2	2001Q1	0.007788
2000Q3	2001Q2	0.003287
2000Q4	2001Q3	-0.004385

Mean of the 4 Quarter Averages: -0.000090

Five Year Mechanical Net Trend
1996q3 to 2001q3: 1.001492

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Standard Nonprofit

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				-0.080011
1997	-0.003005	0.049459	0.052279	0.051066
1998	0.056694	0.010208	-0.028544	0.041142
1999	-0.004749	0.002718	0.037490	-0.030995
2000	0.063542	-0.012907	-0.019890	0.011671
2001	-0.026974	-0.018336	-0.025278	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				0.131077
1998	0.059698	-0.039251	-0.080823	-0.009923
1999	-0.061442	-0.007490	0.066034	-0.072137
2000	0.068291	-0.015625	-0.057380	0.042666
2001	-0.090516	-0.005429	-0.005388	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	0.017675
1998Q1	1998Q4	-0.017575
1998Q2	1999Q1	-0.047860
1998Q3	1999Q2	-0.039920
1998Q4	1999Q3	-0.003205
1999Q1	1999Q4	-0.018759
1999Q2	2000Q1	0.013674
1999Q3	2000Q2	0.011641
1999Q4	2000Q3	-0.019213
2000Q1	2000Q4	0.009488
2000Q2	2001Q1	-0.030214
2000Q3	2001Q2	-0.027665
2000Q4	2001Q3	-0.014667

Mean of the 4 Quarter Averages: -0.012815

Five Year Mechanical Net Trend
1996q3 to 2001q3: 1.005272

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Standard Nonprofit ECR

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				-0.052415
1997	0.091875	-0.118067	-0.015267	-0.091099
1998	-0.281160	-0.031885	-0.070265	0.005869
1999	0.160371	-0.053439	-0.028145	0.044023
2000	-0.282198	0.050046	-0.021851	0.004436
2001	0.212972	-0.025424	-0.052550	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				-0.038684
1998	-0.373035	0.086182	-0.054996	0.096968
1999	0.461531	-0.021555	0.042119	0.038154
2000	-0.462570	0.103486	0.006294	-0.039587
2001	0.495170	-0.078470	-0.030699	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	-0.095134
1998Q1	1998Q4	-0.061221
1998Q2	1999Q1	0.147421
1998Q3	1999Q2	0.120487
1998Q4	1999Q3	0.144766
1999Q1	1999Q4	0.130062
1999Q2	2000Q1	-0.100963
1999Q3	2000Q2	-0.069703
1999Q4	2000Q3	-0.078659
2000Q1	2000Q4	-0.098094
2000Q2	2001Q1	0.141341
2000Q3	2001Q2	0.095852
2000Q4	2001Q3	0.086604

Mean of the 4 Quarter Averages: 0.027905

Five Year Mechanical Net Trend
1996q3 to 2001q3: 0.979831

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Parcel Post

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				0.015441
1997	0.004672	0.013650	-0.060617	0.000000
1998	0.022692	-0.022692	0.013262	0.042558
1999	0.066771	-0.005812	-0.017301	0.035334
2000	0.039440	-0.019801	0.010401	-0.048260
2001	-0.065775	0.036030	0.021281	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				-0.015441
1998	0.018020	-0.036342	0.073879	0.042558
1999	0.044078	0.016881	-0.030563	-0.007224
2000	-0.027330	-0.013989	0.027702	-0.083594
2001	-0.105215	0.055831	0.010880	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	0.010029
1998Q1	1998Q4	0.024529
1998Q2	1999Q1	0.031043
1998Q3	1999Q2	0.044349
1998Q4	1999Q3	0.018238
1999Q1	1999Q4	0.005793
1999Q2	2000Q1	-0.012059
1999Q3	2000Q2	-0.019777
1999Q4	2000Q3	-0.005210
2000Q1	2000Q4	-0.024303
2000Q2	2001Q1	-0.043774
2000Q3	2001Q2	-0.026319
2000Q4	2001Q3	-0.030524

Mean of the 4 Quarter Averages: -0.002153

Five Year Mechanical Net Trend
1996q3 to 2001q3: 0.998635

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Non-Destination Entry Parcel Post

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				-0.140690
1997	-0.065329	0.011164	0.015371	0.095578
1998	0.070999	0.041491	0.101412	0.016328
1999	0.042337	0.137238	0.010242	0.031029
2000	0.091035	-0.109631	-0.056000	-0.202315
2001	-0.252556	0.176791	0.451623	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				0.236268
1998	0.136327	0.030327	0.086041	-0.079250
1999	-0.028662	0.095746	-0.091170	0.014701
2000	0.048698	-0.246869	-0.066242	-0.233344
2001	-0.343591	0.286423	0.507624	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	0.122241
1998Q1	1998Q4	0.043361
1998Q2	1999Q1	0.002114
1998Q3	1999Q2	0.018469
1998Q4	1999Q3	-0.025834
1999Q1	1999Q4	-0.002346
1999Q2	2000Q1	0.016994
1999Q3	2000Q2	-0.068660
1999Q4	2000Q3	-0.062428
2000Q1	2000Q4	-0.124439
2000Q2	2001Q1	-0.222512
2000Q3	2001Q2	-0.089189
2000Q4	2001Q3	0.054278

Mean of the 4 Quarter Averages: -0.025996

Five Year Mechanical Net Trend
1996q3 to 2001q3: 0.933046

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Destination Entry Parcel Post

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				-0.032624
1997	0.032901	0.094092	-0.095658	0.031060
1998	-0.025807	-0.089377	0.042199	0.238626
1999	0.022184	-0.057543	-0.077845	0.008164
2000	-0.112193	0.005682	0.022523	-0.008334
2001	-0.096511	-0.093740	-0.181713	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				0.063684
1998	-0.058708	-0.183468	0.137857	0.207566
1999	0.047991	0.031834	-0.120044	-0.230462
2000	-0.134377	0.063225	0.100368	-0.016498
2001	0.015681	-0.099422	-0.204236	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	-0.010159
1998Q1	1998Q4	0.025812
1998Q2	1999Q1	0.052486
1998Q3	1999Q2	0.106312
1998Q4	1999Q3	0.041837
1999Q1	1999Q4	-0.067670
1999Q2	2000Q1	-0.113262
1999Q3	2000Q2	-0.105414
1999Q4	2000Q3	-0.050312
2000Q1	2000Q4	0.003179
2000Q2	2001Q1	0.040694
2000Q3	2001Q2	0.000032
2000Q4	2001Q3	-0.076119

Mean of the 4 Quarter Averages: -0.011737

Five Year Mechanical Net Trend
1996q3 to 2001q3: 1.032623

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Bound Printed Matter

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				0.047426
1997	0.151668	-0.170946	-0.045374	-0.022523
1998	0.042501	0.102871	-0.088930	0.003829
1999	-0.043148	0.009452	-0.090392	-0.082240
2000	-0.058962	0.055385	0.029112	-0.011550
2001	0.013161	0.057687	0.061133	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				-0.069950
1998	-0.109168	0.273817	-0.043555	0.026353
1999	-0.085649	-0.093419	-0.001372	-0.086069
2000	-0.015814	0.045934	0.119414	0.070690
2001	0.072124	0.002301	0.032021	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	0.012786
1998Q1	1998Q4	0.036862
1998Q2	1999Q1	0.042741
1998Q3	1999Q2	-0.049068
1998Q4	1999Q3	-0.038522
1999Q1	1999Q4	-0.066627
1999Q2	2000Q1	-0.049169
1999Q3	2000Q2	-0.014330
1999Q4	2000Q3	0.015866
2000Q1	2000Q4	0.055056
2000Q2	2001Q1	0.077040
2000Q3	2001Q2	0.066132
2000Q4	2001Q3	0.044284

Mean of the 4 Quarter Averages: 0.010235

Five Year Mechanical Net Trend
1996q3 to 2001q3: 0.994199

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Media & Library Rate Mail

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				-0.043174
1997	0.015810	-0.025160	-0.010395	0.006770
1998	0.048316	-0.053252	-0.016639	0.095129
1999	-0.010348	0.057156	-0.038113	-0.013137
2000	-0.020763	-0.027531	-0.025085	0.004269
2001	-0.029135	-0.085410	0.114545	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				0.049944
1998	0.032507	-0.028093	-0.006244	0.088359
1999	-0.058665	0.110408	-0.021474	-0.108265
2000	-0.010414	-0.084687	0.013028	0.017405
2001	-0.008373	-0.057879	0.139630	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	0.012028
1998Q1	1998Q4	0.021632
1998Q2	1999Q1	-0.001161
1998Q3	1999Q2	0.033464
1998Q4	1999Q3	0.029657
1999Q1	1999Q4	-0.019499
1999Q2	2000Q1	-0.007436
1999Q3	2000Q2	-0.056210
1999Q4	2000Q3	-0.047585
2000Q1	2000Q4	-0.016167
2000Q2	2001Q1	-0.015657
2000Q3	2001Q2	-0.008954
2000Q4	2001Q3	0.022696

Mean of the 4 Quarter Averages: -0.004092

Five Year Mechanical Net Trend
1996q3 to 2001q3: 0.995023

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Media Mail

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				-0.256553
1997	0.035890	-0.058690	0.072701	0.081836
1998	0.023886	-0.037357	-0.025802	0.141199
1999	-0.061511	0.132103	-0.029985	-0.111062
2000	-0.006610	-0.084700	0.032626	0.016938
2001	-0.056226	-0.097589	0.131580	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				0.338389
1998	-0.012003	0.021533	-0.098503	0.059363
1999	-0.085397	0.169460	-0.004183	-0.252280
2000	0.054901	-0.216803	0.062611	0.128020
2001	-0.051616	-0.012889	0.098954	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	0.062354
1998Q1	1998Q4	-0.007403
1998Q2	1999Q1	-0.025751
1998Q3	1999Q2	0.011231
1998Q4	1999Q3	0.034811
1999Q1	1999Q4	-0.043100
1999Q2	2000Q1	-0.008025
1999Q3	2000Q2	-0.104591
1999Q4	2000Q3	-0.087893
2000Q1	2000Q4	0.007182
2000Q2	2001Q1	-0.019447
2000Q3	2001Q2	0.031532
2000Q4	2001Q3	0.040617

Mean of the 4 Quarter Averages: -0.008345

Five Year Mechanical Net Trend
1996q3 to 2001q3: 1.006332

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Library Rate

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				0.076730
1997	-0.053794	-0.220364	-0.306644	0.153599
1998	0.070199	0.039731	0.105354	0.316943
1999	-0.059532	-0.043819	0.016537	-0.004429
2000	-0.066664	-0.083167	-0.139540	0.095729
2001	0.291497	0.216995	0.170293	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				0.076869
1998	0.123993	0.260115	0.411998	0.163344
1999	-0.129731	-0.083550	-0.088816	-0.321372
2000	-0.007132	-0.039348	-0.156077	0.100158
2001	0.358161	0.300162	0.309833	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	0.218244
1998Q1	1998Q4	0.239862
1998Q2	1999Q1	0.176431
1998Q3	1999Q2	0.090515
1998Q4	1999Q3	-0.034688
1999Q1	1999Q4	-0.155867
1999Q2	2000Q1	-0.125218
1999Q3	2000Q2	-0.114167
1999Q4	2000Q3	-0.130982
2000Q1	2000Q4	-0.025600
2000Q2	2001Q1	0.065723
2000Q3	2001Q2	0.150601
2000Q4	2001Q3	0.267078

Mean of the 4 Quarter Averages: 0.047841

Five Year Mechanical Net Trend
1996q3 to 2001q3: 1.014642

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Mailgrams

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				-0.067196
1997	0.373923	0.287444	-0.494453	-0.014446
1998	0.128433	-0.094744	-0.028536	0.134436
1999	0.234491	-0.218219	0.099584	0.054013
2000	-0.029633	-0.384446	0.236102	0.199082
2001	0.166669	-0.103468	-0.069581	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				0.052750
1998	-0.245490	-0.382188	0.465917	0.148882
1999	0.106058	-0.123476	0.128120	-0.080423
2000	-0.264123	-0.166227	0.136516	0.145068
2001	0.196302	0.280978	-0.305683	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	-0.027253
1998Q1	1998Q4	-0.003220
1998Q2	1999Q1	0.084667
1998Q3	1999Q2	0.149345
1998Q4	1999Q3	0.064896
1999Q1	1999Q4	0.007570
1999Q2	2000Q1	-0.084976
1999Q3	2000Q2	-0.095663
1999Q4	2000Q3	-0.093564
2000Q1	2000Q4	-0.037191
2000Q2	2001Q1	0.077916
2000Q3	2001Q2	0.189717
2000Q4	2001Q3	0.079166

Mean of the 4 Quarter Averages: 0.023955

Five Year Mechanical Net Trend
1996q3 to 2001q3: 1.125854

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Postal Penalty Mail

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				-0.138858
1997	-0.129945	0.118493	0.046087	-0.009507
1998	-0.057981	-0.001440	0.035570	-0.012184
1999	0.069140	-0.001686	0.000542	-0.000728
2000	-0.064331	-0.071066	0.013114	0.095745
2001	0.089333	0.020049	0.166996	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				0.129351
1998	0.071964	-0.119934	-0.010516	-0.002677
1999	0.127121	-0.000246	-0.035028	0.011456
2000	-0.133470	-0.069380	0.012572	0.096474
2001	0.153664	0.091115	0.153882	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	0.017716
1998Q1	1998Q4	-0.015291
1998Q2	1999Q1	-0.001501
1998Q3	1999Q2	0.028421
1998Q4	1999Q3	0.022293
1999Q1	1999Q4	0.025826
1999Q2	2000Q1	-0.039322
1999Q3	2000Q2	-0.056606
1999Q4	2000Q3	-0.044706
2000Q1	2000Q4	-0.023451
2000Q2	2001Q1	0.048332
2000Q3	2001Q2	0.088456
2000Q4	2001Q3	0.123784

Mean of the 4 Quarter Averages: 0.013381

Five Year Mechanical Net Trend
1996q3 to 2001q3: 1.058860

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Free-for-the-Blind-and-Handicapped Mail

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				0.169109
1997	-0.042579	0.044214	0.041362	0.165017
1998	0.034017	0.020979	-0.043984	0.027135
1999	-0.085660	0.152745	-0.069103	-0.073505
2000	-0.057610	-0.109238	-0.205236	-0.332546
2001	-0.205652	-0.258821	-0.236020	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				-0.004092
1998	0.076596	-0.023235	-0.085347	-0.137661
1999	-0.119677	0.131766	-0.025119	-0.100641
2000	0.028050	-0.261983	-0.136193	-0.259041
2001	-0.148042	-0.149583	-0.030784	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	-0.009019
1998Q1	1998Q4	-0.042467
1998Q2	1999Q1	-0.091535
1998Q3	1999Q2	-0.052785
1998Q4	1999Q3	-0.037728
1999Q1	1999Q4	-0.028418
1999Q2	2000Q1	0.008514
1999Q3	2000Q2	-0.089923
1999Q4	2000Q3	-0.117676
2000Q1	2000Q4	-0.157277
2000Q2	2001Q1	-0.201300
2000Q3	2001Q2	-0.173200
2000Q4	2001Q3	-0.146863

Mean of the 4 Quarter Averages: -0.087667

Five Year Mechanical Net Trend
1996q3 to 2001q3: 0.947237

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Registered Mail

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				0.106103
1997	0.044172	-0.034457	-0.074586	-0.008632
1998	0.017086	-0.027092	0.098783	-0.056733
1999	0.026897	0.021622	-0.087386	-0.052710
2000	0.063930	-0.017497	-0.010567	0.033572
2001	-0.056752	0.020532	0.033444	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				-0.114734
1998	-0.027086	0.007364	0.173368	-0.048102
1999	0.009812	0.048715	-0.186169	0.004023
2000	0.037032	-0.039119	0.076819	0.086282
2001	-0.120682	0.038028	0.044011	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	0.009728
1998Q1	1998Q4	0.026386
1998Q2	1999Q1	0.035611
1998Q3	1999Q2	0.045948
1998Q4	1999Q3	-0.043936
1999Q1	1999Q4	-0.030905
1999Q2	2000Q1	-0.024100
1999Q3	2000Q2	-0.046058
1999Q4	2000Q3	0.019689
2000Q1	2000Q4	0.040254
2000Q2	2001Q1	0.000825
2000Q3	2001Q2	0.020112
2000Q4	2001Q3	0.011910

Mean of the 4 Quarter Averages: 0.005036

Five Year Mechanical Net Trend
1996q3 to 2001q3: 1.008092

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Insured Mail

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				0.027105
1997	0.109528	0.026175	0.092858	0.000000
1998	-0.128749	0.065556	0.109498	0.024967
1999	-0.080746	0.029237	0.008587	-0.065477
2000	-0.017237	0.066183	-0.029061	-0.044584
2001	0.001337	0.013924	-0.013918	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				-0.027105
1998	-0.238276	0.039380	0.016640	0.024967
1999	0.048003	-0.036318	-0.100911	-0.090444
2000	0.063509	0.036946	0.037648	0.020893
2001	0.018574	-0.052259	0.015143	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	-0.052340
1998Q1	1998Q4	-0.039322
1998Q2	1999Q1	0.032247
1998Q3	1999Q2	0.013323
1998Q4	1999Q3	-0.016065
1999Q1	1999Q4	-0.044918
1999Q2	2000Q1	-0.041041
1999Q3	2000Q2	-0.022725
1999Q4	2000Q3	-0.006909
2000Q1	2000Q4	0.020925
2000Q2	2001Q1	0.009691
2000Q3	2001Q2	-0.012610
2000Q4	2001Q3	0.000588

Mean of the 4 Quarter Averages: -0.012243

Five Year Mechanical Net Trend
1996q3 to 2001q3: 1.007376

Net Trend used in Forecast 1.000000

Appendix Table 30

FORECAST ERROR ANALYSIS
Certified Mail

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				0.120129
1997	0.065792	0.071329	-0.020225	0.078317
1998	-0.003242	-0.013399	0.010651	-0.036277
1999	-0.092648	-0.024434	-0.007255	-0.029588
2000	0.045013	-0.025046	-0.038333	0.014410
2001	-0.003702	0.039766	0.001108	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				-0.041812
1998	-0.069033	-0.084727	0.030876	-0.114594
1999	-0.089406	-0.011035	-0.017906	0.006690
2000	0.137661	-0.000612	-0.031078	0.043998
2001	-0.048715	0.064812	0.039441	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	-0.041174
1998Q1	1998Q4	-0.059370
1998Q2	1999Q1	-0.064463
1998Q3	1999Q2	-0.046040
1998Q4	1999Q3	-0.058235
1999Q1	1999Q4	-0.027914
1999Q2	2000Q1	0.028852
1999Q3	2000Q2	0.031458
1999Q4	2000Q3	0.028165
2000Q1	2000Q4	0.037492
2000Q2	2001Q1	-0.009102
2000Q3	2001Q2	0.007254
2000Q4	2001Q3	0.024884

Mean of the 4 Quarter Averages: -0.011399

Five Year Mechanical Net Trend
1996q3 to 2001q3: 0.995840

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Collect-on-Delivery

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				0.003434
1997	-0.085486	0.032668	-0.026738	-0.006506
1998	-0.010461	-0.066316	-0.028298	-0.207402
1999	0.323671	-0.138991	-0.013613	-0.177327
2000	-0.016332	0.065521	0.097686	0.150278
2001	-0.196684	-0.110554	-0.116902	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				-0.009940
1998	0.075027	-0.098984	0.000440	-0.200896
1999	0.334133	-0.072675	0.014684	0.030075
2000	-0.340003	0.204513	0.111299	0.327605
2001	-0.180352	-0.176075	-0.216588	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	-0.008364
1998Q1	1998Q4	-0.056103
1998Q2	1999Q1	0.008673
1998Q3	1999Q2	0.015250
1998Q4	1999Q3	0.018811
1999Q1	1999Q4	0.076554
1999Q2	2000Q1	-0.091980
1999Q3	2000Q2	-0.022683
1999Q4	2000Q3	0.001471
2000Q1	2000Q4	0.075853
2000Q2	2001Q1	0.115766
2000Q3	2001Q2	0.020619
2000Q4	2001Q3	-0.061353

Mean of the 4 Quarter Averages: 0.007117

Five Year Mechanical Net Trend
1996q3 to 2001q3: 1.003612

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Return Receipts

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				0.019583
1997	0.088816	0.149556	0.007431	0.021456
1998	-0.070457	-0.046125	0.007970	-0.018906
1999	-0.009921	-0.127053	0.017518	0.016184
2000	0.045968	-0.039795	0.033095	0.007352
2001	0.015789	-0.023382	0.030753	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				0.001874
1998	-0.159273	-0.195681	0.000539	-0.040363
1999	0.060536	-0.080927	0.009547	0.035090
2000	0.055889	0.087258	0.015577	-0.008632
2001	-0.030178	0.016413	-0.002342	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	-0.088135
1998Q1	1998Q4	-0.098694
1998Q2	1999Q1	-0.043742
1998Q3	1999Q2	-0.015054
1998Q4	1999Q3	-0.012802
1999Q1	1999Q4	0.006061
1999Q2	2000Q1	0.004900
1999Q3	2000Q2	0.046946
1999Q4	2000Q3	0.048453
2000Q1	2000Q4	0.037473
2000Q2	2001Q1	0.015956
2000Q3	2001Q2	-0.001755
2000Q4	2001Q3	-0.006235

Mean of the 4 Quarter Averages: -0.008202

Five Year Mechanical Net Trend
1996q3 to 2001q3: 1.014274

Net Trend used in Forecast 1.000000

FORECAST ERROR ANALYSIS
Money Orders

From Forecast Using Base Year Ending 1996Q3
R2001-1 Forecast Specifications

Forecast Errors

Calculated as the log of the actual volume minus the log of the forecasted volume

Year	Fall	Winter	Spring	Summer
1996				0.142923
1997	0.022887	-0.006199	0.019768	-0.010217
1998	-0.016959	-0.034867	-0.015625	-0.014806
1999	0.011349	-0.021179	0.028224	0.003337
2000	0.037288	0.019655	-0.012818	-0.056452
2001	-0.029582	0.008956	-0.000502	

SPLY Differences of Forecast Errors

Year	Fall	Winter	Spring	Summer
1997				-0.153140
1998	-0.039846	-0.028668	-0.035393	-0.004589
1999	0.028309	0.013689	0.043849	0.018143
2000	0.025939	0.040834	-0.041041	-0.059789
2001	-0.066870	-0.010700	0.012316	

Four Quarter Average of SPLY Differences

Begin	End	4-Qtr Average
1997Q4	1998Q3	-0.064262
1998Q1	1998Q4	-0.027124
1998Q2	1999Q1	-0.010085
1998Q3	1999Q2	0.000504
1998Q4	1999Q3	0.020314
1999Q1	1999Q4	0.025997
1999Q2	2000Q1	0.025405
1999Q3	2000Q2	0.032191
1999Q4	2000Q3	0.010969
2000Q1	2000Q4	-0.008514
2000Q2	2001Q1	-0.031717
2000Q3	2001Q2	-0.044600
2000Q4	2001Q3	-0.031261

Mean of the 4 Quarter Averages: -0.007860

Five Year Mechanical Net Trend
1996q3 to 2001q3: 0.994323

Net Trend used in Forecast 1.000000