

Electronic Attachment to Postal Service Response to MPA/USPS-T2-3.b

Formulas for Total Factor Productivity, Labor Productivity, Postal Inflation, and the Aggregate Labor Price Index

Total Factor Productivity (TFP) is a function of workload, the quantity of capital input, the quantity of labor input, the quantity of materials input, the value of capital input, the value of labor input, and the value of materials input. We will use the following notation in describing the TFP formula.

W	Workload
K	The quantity of capital input
L	The quantity of labor input
M	The quantity of materials input
V _K	The value of capital input
V _L	The value of labor input
V _M	The value of materials input
R	The quantity of resource usage
T	The TFP index

The methods used to calculate the quantity of capital input and the value of capital input can be found in the section titled “Methods for Computing Capital Input.” The methods used to calculate the quantity of labor input and the value of labor input can be found in the section titled “Methods for Computing Labor Input,” The methods used to calculate the quantity of materials input and the value of materials input can be found in the section titled “Methods for Computing Materials Input.” The methods used to calculate workload can be found in the section titled “Methods for Computing Workload.”

A preliminary step in computing TFP is to compute the quantity of resource usage. The quantity of resource usage is computed from the following Tornqvist index formula.

$$\ln\left(\frac{R_t}{R_{t-1}}\right) = .5 \cdot \left[\frac{V_{K,t}}{V_{K,t} + V_{L,t} + V_{M,t}} + \frac{V_{K,t-1}}{V_{K,t-1} + V_{L,t-1} + V_{M,t-1}} \right] \cdot \ln\left(\frac{K_t}{K_{t-1}}\right) \\ + .5 \cdot \left[\frac{V_{L,t}}{V_{K,t} + V_{L,t} + V_{M,t}} + \frac{V_{L,t-1}}{V_{K,t-1} + V_{L,t-1} + V_{M,t-1}} \right] \cdot \ln\left(\frac{L_t}{L_{t-1}}\right) \\ + .5 \cdot \left[\frac{V_{M,t}}{V_{K,t} + V_{L,t} + V_{M,t}} + \frac{V_{M,t-1}}{V_{K,t-1} + V_{L,t-1} + V_{M,t-1}} \right] \cdot \ln\left(\frac{M_t}{M_{t-1}}\right)$$

The operator “ln” represents the natural logarithm. The subscript t represents the current time period (either a quarter or fiscal year) and t-1 represents the same period of the previous year (either the same quarter of the previous year or the previous fiscal year). Since R is an index, it is set to a base value in the base year and then all other values of R are computed using this recursive formula.

TFP is the ratio of workload to the quantity of resource usage.

$$T_t = \frac{W_t}{R_t}$$

Labor productivity is the ratio of workload to the quantity of labor input. Using LP to represent labor productivity, the formula is as follows.

$$LP_t = \frac{W_t}{L_t}$$

Postal inflation is the ratio of the value of resource usage to workload. Using PI to denote postal inflation, the formula for postal inflation is as follows.

$$PI_t = \frac{V_{K,t} + V_{L,t} + V_{M,t}}{W_t}$$

The methods used to compute the aggregate price of labor are described in the section “Methods for Calculating Labor Input.”

Methods for Calculating Capital Input

In our TFP accounting framework, we distinguish two types of capital input: owned and rented. Within owned capital input, we further distinguish land, buildings, vehicles, mechanized handling equipment, automated handling equipment, customer service equipment, and postal support equipment. Within rented capital, we distinguish buildings and postal support equipment. (Since most rented equipment expense is related to data processing and communications, we assign all rented equipment expense to postal support equipment.) We use the term “asset class” to distinguish the different types of capital input.

Owned Capital Input

Quantity of Owned Capital Input for Each Asset Class

The quantity of owned capital input for each asset class is based on the stock of owned capital. The stock of capital represents the plant and equipment in service. We use a perpetual inventory equation to construct quarterly capital stocks for the seven asset classes of owned capital. This equation has the mathematical form:

$$K_t = (1 - \delta^{\mathcal{Q}}) \cdot K_{t-1} + I_t + T_t \cdot \left(\frac{K_0}{B_0} \right)$$

where the variable K_t represents the quantity of capital stock at the end of a quarter t , I_t represents the quantity of new investment during the quarter, δ^Q is a quarterly replacement rate,¹ T_t represents the book value of asset transfers, B_0 represents the beginning-of-year (gross) book value for the asset class, and K_0 represents the beginning-of-year quantity of capital stock.² This equation is recursive, with the stock quantity at the end of any quarter generated from the stock quantity at the end of the previous quarter.³

In Fiscal Year 2003, the capital stock quantities were developed for Postal Fiscal Quarters. The first three Postal Fiscal Quarters were made up of three Accounting Periods, while the fourth was made up of four Accounting Periods. The capital stock quantities at the end of the fourth Postal Fiscal Quarter were used as the starting points to generate the capital stock quantities in FY 2004.

Up until FY 2004, the primary data source for developing the quantity of investment was the National Consolidated Trial Balance (NCTB) asset accounts. The NCTB had sub-account detail that is necessary to implement the perpetual inventory equation. Beginning in March of 2004, the Postal Service changed the procedures for recording property acquisition, and the NCTB started to phase out its sub-account detail. As the NCTB sub-account detail is phased out, we use JV Summaries to obtain the necessary detail for our calculations. Also under the new NCTB format, transfers are not distinguished from retirements, so we must drop that term from the perpetual inventory equation.⁴

During each quarter of the year, we use the asset accounts to determine the dollar value of plant and equipment put into service (i.e. the value of investment). The asset accounts distinguish most of the asset classes that we work with, but automated handling equipment and mechanized handling equipment are not distinguished. Instead, they are combined into the category mail processing equipment. The following table shows the accounts for each asset class or category.

¹ Since the replacement rate is constant, the rate of economic depreciation (which is part of the implicit rental price equation) equals the value of the replacement rate.

² The book value of asset transfers is converted to a quantity based on an assumption that the quantity-book value relationship for transfers is the same for the total capital stock at the beginning of the year. A sufficient condition for this to be true is if the age distribution of the transfers was the same as the age distribution of the capital stock.

³ The entire history of capital stocks were constructed using 1962 as the starting period, constructing starting values for that year and applying investment for the subsequent years to the recursive equation.

⁴ The transfer of assets was infrequent, and therefore the omission of this term will not materially affect our results.

Account	Asset Class or Category
17111	Land
17121	Buildings
15301	
17201	Mail Processing Equipment
17202	
17301	Vehicles
17401	Customer Service Equipment
17501	Postal Support Equipment

Within each of these accounts, we added the following NCTB sub-accounts to calculate the value of investment:

Sub-account	NCTB Sub-account Caption
060	Capitalization of Research and Engineering Projects
061	Additions, Transferred from Construction in Progress and to Plant in Service
062	Additions, Purchased/Depreciation Accrual

Buildings investment also includes the 044 sub-account, inventory adjustment. The book value of asset transfers was obtained by summing the following NCTB sub-accounts:

Sub-account	NCTB Sub-account Caption
063	Transfers from Other Postal Service Locations
064	Transfers to Other Postal Service Locations
065	Transfers to Government Agencies
066	Transfers from Government Agencies

Finally, the sub-account 001 was used to obtain the beginning-of-year book value.

Under the JV Summary approach, we use JV numbers 732.0 (Additions) and 732.3 (Adjustments) to construct the value of investment.

We next allocate the value of investment for mail processing equipment between mechanized handling equipment and automated handling equipment. Prior to FY 2004, we used data from the Personal Property Asset Master to make this allocation. The Personal Property Asset Master contained records on each item of Postal Service property. This information included property code number, book value before depreciation, and service life. Using the property code numbers, we assigned bar code readers, bar code sorters, optical character readers, and remote imaging systems to the automated handling equipment category. All other mail processing equipment property code numbers were assigned to the mechanized handling equipment category. Using the book value of newly purchased mail processing equipment, we constructed shares for mechanized handling equipment and automated handling equipment, and applied these

shares to the value of investment for mail processing equipment.⁵ Beginning in 2004, the Personal Property Asset Master was also phased out and replaced by the Property and Equipment Account System (PEAS), from which we now obtain the necessary cost data on automated and mechanized handling equipment.

The PEAS information was provided to us at the end of 2004 and monthly thereafter. During the year, we use the automated and mechanized handling equipment shares from the previous year to allocate the value of investment for mail processing equipment. Once all the data for the year become available to us, we re-compute the investment for the year using the current shares, rather than the previous year's shares. This means that the final results for a year are based on the actual purchases for the year, while the preliminary results are based on the previous year's shares. (In the past, this approximation has had no impact on the TFP results.)

The next step is to derive the quantity of investment from the value of investment, using a price index. We construct a quarterly investment price index for each of the seven asset classes using a variety of published price indexes. The methods used to construct the investment price indexes are described in Appendix A1.

The annual replacement rates that we use in the perpetual inventory equation have been fixed since the beginning of our TFP work for all but the postal support equipment category. The rates were initially determined from an analysis of the service lives used by the Postal Service for different assets and on a review of the economic literature. The replacement rate for postal support equipment was adjusted in 2005. The following table shows the resulting replacement rates for the seven asset classes. The first column shows the annual replacement rates. Since the capital model is quarterly, we must convert the annual replacement rates to quarterly replacement rates. Furthermore, the Postal Fiscal Quarters in 2003 differed in length from the calendar quarters. The second column shows the replacement rates for the Postal Fiscal Quarters, while the third column shows the replacement rates for the calendar quarters.

⁵ Because the totals in the Personal Property Asset Master do not exactly match the NCTB totals, we construct shares from the Personal Property Asset Master, rather than using its book value totals.

Asset Class	Annual Replacement Rate	Replacement Rate for Postal Fiscal Quarters	Replacement Rate for Calendar Quarters
Land	0.00%	0.00%	0.00%
Buildings	2.33%	0.54% Quarters 1-3 0.72% Quarter 4	0.59%
Vehicles	22.22%	5.64% Quarters 1-3 7.44 Quarter 4	6.09%
Customer Service Equipment	10.71%	2.58% Quarters 1-3 3.53% Quarter 4	2.79%
Postal Support Equipment (prior to 2005)	11.54%	2.79% Quarters 1-3 3.70% Quarter 4	3.02%
Postal Support Equipment (2005 on)	30.00%	N/A	8.53%
Mechanized Processing Equipment	8.33%	1.99% Quarters 1-3 2.64% Quarter 4	2.15%
Automated Processing Equipment	8.33%	1.99% Quarters 1-3 2.64% Quarter 4	2.15%

The final step is to relate the quantity of capital stock to the quantity of capital input. We use the standard convention that the quantity of capital stock at the end of a quarter generates the quantity of capital input (or, in other words, provides the capital services) in the subsequent quarter. Thus the quantity of capital input in a given quarter is related to the quantity of capital stock at the end of the previous quarter. For 2003, this relationship provides initial estimates of capital input by Postal Fiscal Quarter. To provide calendar quarter quantities for GFY 2003, we must spread the quantities of capital input for the Postal Fiscal Quarters to the calendar quarters. The following table shows how Postal Fiscal Quarters are spread to calendar quarters in a Government Fiscal Year.

Mapping of Capital Input Quantities from Postal Fiscal Quarter to GFY Calendar Quarter	
GFY Calendar Quarter	Postal Fiscal Quarter
Quarter 1	$(\text{Quarter 1} + (1/12) \cdot \text{Quarter 2}) \cdot (365/364)$
Quarter 2	$((11/12) \cdot \text{Quarter 2} + (2/12) \cdot \text{Quarter 3}) \cdot (365/364)$
Quarter 3	$((10/12) \cdot \text{Quarter 3} + (3/16) \cdot \text{Quarter 4}) \cdot (365/364)$
Quarter 4	$(13/16) \cdot \text{Quarter 4} \cdot (365/364)$

The Postal Fiscal Quarter capital input quantities are all multiplied by the ratio (365/364) in recognition of the fact that the four Postal Fiscal Quarters had 364 days while the

Government Fiscal Year had 365 days.⁶ To get the annual quantity of capital input for a government fiscal year we sum the quantities for the four calendar quarters.

Value of Owned Capital Input for Each Asset Class

The same economic model that is used to compute the quantity of capital input provides the quarterly value of owned capital input. We first compute an annualized “implicit rental value” for each of the seven asset classes. This implicit rental value applies an annualized shadow price to the quantity of capital stock for each asset class. The formula for the implicit rental price is:

$$w_t = [r_t + a_t \cdot \delta^a - (a_t - 1)] \cdot p_{t-1} \cdot K_{t-1}$$

where w is the implicit rental price of capital, r is the opportunity cost of capital, δ^a is the (annual) depreciation rate, p is the price index of investment, K is the capital stock quantity, and a is a projected annualized rate of investment price inflation. The projected annualized rate of investment price inflation is given by the formula:

$$a = \exp \left[\frac{\ln \left(\frac{p_t}{p_{t-n}} \right)}{\left(\frac{n}{4} \right)} \right]$$

where n is the lag length in quarters. For land the lag length is 40 quarters (10 years), while for the other asset classes the lag length is 20 quarters (5 years). In effect the projection for land is based on a ten-year trailing moving average of annual investment price increases. For the other asset classes a five-year trailing moving average is used. We use Moody’s composite of average yields on AAA corporate bonds to represent r .⁷

Once the annualized implicit rental value for a quarter is computed, we convert it to a value of capital input for the quarter. For the Postal Fiscal Quarters of 2003, we multiply the annualized value by 3/13 in the first three quarters and by 4/13 in the fourth quarter. We then spread the Postal Fiscal Quarter values of capital input to calendar quarter using the formula described in the previous section. From 2004 forward, we compute the values of capital input for the calendar quarter by dividing the annualized implicit rental values by four. The value of capital input for the fiscal year is obtained by adding the values of capital input for the four calendar quarters.

Rented Capital Input

⁶ This adjustment was done in previous Government Fiscal Years when generating the Fiscal Year capital input from the capital input for the four Postal Fiscal Quarters. As of 2004, the Government Fiscal Year and the Postal Fiscal Year coincide and we now refer to the Fiscal Year (FY).

⁷ This rate was chosen by comparing alternative published interest rates with the hurdle rates used in capital planning at the time that the TFP methods were developed.

We calculate two classes of rented capital input: buildings and postal support equipment. We sum the following NCTB accounts to get the value of rented buildings:

Account	NCTB Account Caption
54101000	Building Rent – Lease/Rental Payments – Recurring
54103000	Building Rent – GSA Reimbursements
54105000	Building Rent – Other Government Agencies Buildings
54121000	Building Rent – Temporary Space Payments
54121603	Rents – Nonrecurring – Private Lessors
54127000	Building Rent – Nonrecurring – Rental Allowances – Postmaster
54129000	Building Rent – Nonrecurring – Out/Subleasing Program – Brokers Fees
54133000	Building Rent – Nonrecurring – Building Occupancy Real Estate Taxes
54133100	Plant and Equipment – National Tax Appeal
54150000	Other – Executory Expense – Capital Leases

The quantity index of rented buildings is obtained by dividing the value of rented buildings by the CPI for rent (CUUR0000SEHA). This CPI is reported monthly; we obtain the quarterly and annual prices by averaging the monthly values.

We sum the following NCTB accounts to get the value of rented postal support equipment:

Account	NCTB Account Caption
54401000	Automatic Data Processing Equipment
54401588	ADP Equipment Rental – PO
54401613	ADP Equipment Rental – VMF
54402000	Communications – Value Added Network
54403000	Communications – Data Network – Commercial
54404000	Communications – Voice – Commercial
54405000	ADP – GSA Rental Equipment
54406000	Telecommunications Equipment
54406617	Telecommunications Equipment Rental
54406998	Telecom Equipment – Impac Exp Reall
54407000	PSDS Equipment
54411000	Equipment Rental – Other
54411572	Equipment Rental – Other (Field)
54411573	Equipment Rental – VMF
54411998	Equipment Rental – Other – Impac Card

The quantity index of rented postal support equipment is obtained by dividing the value of rented postal support equipment by the price of owned capital input for postal support equipment. This price is constructed by dividing the value of owned capital input by the quantity of owned capital input.

Aggregation

Aggregation to total capital input is done in two steps. The first step is to aggregate owned and rented buildings to total buildings input, and owned and rented postal support equipment to total postal support equipment input. These aggregations use the chain-weighted Tornqvist quantity index. Then land, total buildings, vehicles, customer service equipment, total postal support equipment, mechanized handling equipment, and automated handling equipment are aggregated together, using the SPLY-weighted Tornqvist index.

Methods for Calculating Labor Input

In calculating labor input, we distinguish the following eleven Postal Service occupations:

Postmasters
Supervisors
Clerks
Mailhandlers
City Delivery Carriers
Vehicle Service Drivers
Rural Carriers
Building Services Personnel
Vehicle Maintenance Personnel
Professional, Administrative, and Technical Personnel
Other Personnel

For clerks, mailhandlers, city delivery carriers, vehicle service drivers, rural carriers, building services personnel, and vehicle maintenance personnel, we further distinguish full-time career employees, part-time career employees, and casual (non-career) employees.⁸ Thus we use a total of 25 labor groups in our labor input calculations. For each of these 25 labor groups, we calculate the value and hours of labor input. We also calculate a composition index to reflect changes in the experience level for most of the career-employee labor groups.

Data Sources

We use four primary data sources to construct labor input: the National Consolidated Trial Balance (NCTB), the National Workhour Reporting System (NWRs), the National Payroll Hours Summary Report (NPHSR), and the Active Employee Reference File (AERF). The NCTB and NWRs are monthly reports, while the NPHSR and AERF are based on pay periods.

⁸ The casual category also includes transitional employees.

The NCTB provides information on labor compensation, NWRS on employee workhours, and the NPHSR information on both labor compensation and workhours. The AERF is a snapshot of the Postal Service workforce at a particular point in time. It contains records for each Postal Service career employee, with numerous data fields including current concerning wage rate and the length of time since initial federal government employment (which we define to be years of experience).

Value of Labor Input

Our total value of labor input calculation is controlled to labor expenses reported in the NCTB. Appendix B1 shows the NCTB accounts that make up the total value of labor input.

Next, the total value of labor input is distributed to the 25 labor groups. We use the NPHSR Cost of Salaries and Benefits detail by occupation and employee status to distribute the total value of labor input to the 25 labor groups.

Because the NPHSR data are reported on a pay-period rather than a monthly basis, the NPHSR Cost of Salaries and Benefits must first be distributed across months. The distribution method is the same as that used to distribute NPHSR workhours, which is described below. When computing the value of labor input for a quarter or for the Fiscal Year, the distribution mechanism effectively assigns the full amount for those pay periods that lie entirely within the quarter or year and distributes those pay periods that overlap quarters or years. As the period under analysis becomes longer and longer, possible errors resulting from the allocation mechanism become less significant. Because the calculation based on the NPHSR Cost of Salaries and Benefits does not exactly equal to the NCTB value of labor input, we use the NPHSR Cost of Salaries and Benefits as a distribution key applied to the NCTB value of labor input.

Hours Worked

The total number of hours worked by each of the 25 labor groups is based on data published in the NPHSR and the NWRS. The NPHSR publishes total workhours (line 10) by pay period for each of the 25 labor groups. The NWRS publishes total workhours by month but does not report workhours by occupation and employee status.

Our control total for monthly workhours is taken from the NWRS. We obtain first-round estimates of workhours for each of the 25 labor groups by allocating the pay-period NPHSR workhours to months. For each pay period, we first determine the number of weekdays, Saturdays, Sundays, and holidays that lie in each month. We then obtain weighting factors for weekdays, Saturdays, Sundays, and holidays from the Postal Service roll-forward model. Appendix B2 shows the weighting factors used for 2007 through 2008. These weighting factors effectively convert Saturdays, Sundays, and holidays into weekday equivalents, based on the number of hours that are typically worked on these types of days. By applying the weighting factors to the number of

weekdays, Saturdays, Sundays, and holidays falling in each month, we obtain a distribution key for the workhours in the pay period. For example, pay period 10 of FY 2008 contains one Saturday, one Sunday, and three weekdays in April, while in May it has one Saturday, one Sunday, and seven weekdays. Appendix B2 indicates that Saturdays and Sundays are given a weight of zero for Postmasters. Thus in pay period 10, FY 2008, the Postmasters labor group has three effective workdays in April and seven effective workdays in May. Consequently, we allocate 30% of the pay-period Postmaster workhours to April and 70% to May. Since other occupations have different weighting factors, the distribution of pay period 10, FY 2008 workhours for those occupations would differ.

Once the first-round workhour estimates are calculated for each labor group, these workhours are then prorated such that their total equals the NWRS workhour total.

Composition of Labor Input

Using data from the AERF, a labor composition index is computed for most career-employee labor groups. The composition index represents changes in the experience mix over time of employees within the labor group.⁹ Since records for casual employees are not included in the AERF, we are not able to compute a composition index for the seven casual-employee labor groups. We instead assume that the experience mix of casual employees remains unchanged over time.¹⁰

The labor composition indexes for career-employee labor groups are computed monthly,¹¹ and the quarterly and annual labor composition indexes are averages of the appropriate monthly values. Based on the length of time since initial federal government employment as reported in the AERF, we group employees into seven different levels of experience: up to five years, 6-10 years, 11-15 years, 16-20 years, 21-25 years, 26-30 years, and over 30 years.¹² We then tabulate the number of employees in each experience level by labor group. We also use the wage rate information published in the AERF to compute total wages and salaries in each experience level and labor group. The composition index for a labor group is a Tornqvist quantity index of the employees in each experience level, weighted by the total wages and salaries in each level. For 2003, we compute month-over-month chain-weighted Tornqvist indexes to get the initial levels of the labor-group composition indexes. Beginning in 2004, we use SPLY-weighted Tornqvist indexes to compute the composition index levels.

⁹ The composition index is computed because hours worked information is not available by level of experience. Were such information available, we would have made a finer distinction among labor groups by further dividing each of the career-employee labor groups into different experience levels.

¹⁰ Since employees with five or less years of experience are assigned to the same experience cell, it is likely that almost all casual employees would fall into that cell, and that the casual-employee experience mix would not change materially over time.

¹¹ The monthly snapshot is taken from the last pay period occurring in the month.

¹² Due to the fact that the numbers of part-time Vehicle Service Drivers and part-time Vehicle Maintenance Personnel are relatively small, we treated these two groups differently. For part-time Vehicle Service Drivers, we combined all employees with sixteen or more years of service into one cell. For part-time Vehicle Maintenance Personnel, we assume that the experience mix remains constant.

Aggregate Quantity and Price of Labor Input

To create the aggregate quantity index of labor input, the first step is to compute a quantity index of labor input for each of the 25 labor groups. This is achieved by multiplying the number of hours worked by the composition index¹³. The next step is to compute a quantity index of labor input for each of the seven occupations having full-time, part-time, and casual workers. The quantity index of labor input for these occupations is a Tornqvist index of the full-time, part-time, and casual quantity indexes, with the values of labor input used as weights. Finally, the aggregate quantity of labor input is a Tornqvist index of the eleven occupational labor quantity indexes, with value of labor input weights. For 2003, the monthly and quarterly quantity indexes are computed using period-over-period chain-weighted Tornqvist indexes. Beginning in 2004, SPLY-weighted Tornqvist indexes are used. Annual Tornqvist quantity indexes are computed using (annual) chain-weights.

The aggregate price index of labor input is computed by dividing the total value of labor input by the aggregate quantity index of labor input.

Methods for Calculating Materials Input

Our calculation of materials input begins with distinguishing 30 materials input categories. The 30 categories are:

Relocation Costs
Transportation of Household Effects
Uniforms and Work Clothes
Travel
Supplies
Contractual Building Services
Professional Services
Contractual Computer Services
Miscellaneous Services and Freight Costs for Supplies
Vehicle Supplies
Air Transportation Domestic Network
Air Transportation International Linehaul
Air Transportation Domestic Contract
Highway Transportation
Rail Transportation
Water Transportation
Oil

¹³ For casual-employee labor groups and part-time Vehicle Maintenance Personnel, the composition index is set equal to one.

Gas
Other Fuel
Electricity
Water and Sewer
Telephone
Research and Development
Expensed Building Improvements
Vehicle Maintenance
Maintenance
Miscellaneous Judgments
Miscellaneous
Vehicle Rents
International Terminal Settlements

We first compute the value of input for each of these categories based on information reported in the National Consolidated Trial Balance (NCTB). Appendix C1 shows the mapping between the NCTB accounts and the 30 categories of materials input.¹⁴ We next construct price and quantity indexes for each input category. Except for international terminal settlements, we first construct a price index and then derive the quantity index from the value and price. For international terminal settlements, we first construct a quantity index and then derive the price index from the value and quantity. The construction of each of these indexes is explained in detail below.

Prices Derived from BLS and BEA

Most of the price indexes used come from the Bureau of Labor Statistics (BLS) or the Bureau of Economic Analysis (BEA). We use BLS Producer Price Indexes for Industries, Producer Price Indexes for Commodities, Consumer Price Indexes for All Urban Consumers, Consumer Price Indexes for Urban Wage Earners and Clerical Workers, and an Import/Export Price Index. We also use BEA price indexes that come from the National Income and Product Accounts (NIPA). Appendix C2 shows the BLS and BEA price indexes that are used. The BLS price indexes are listed by variable name, while the BEA price indexes are identified by the table and line number of the NIPA accounts in which they appear. The BLS price indexes are reported monthly while the BEA price indexes are reported quarterly. We compute quarterly price indexes from the BLS price indexes by averaging the monthly values for the months in the quarter.

Materials Prices Averaging Two BLS Prices

Price indexes for five materials categories are calculated based on an average of two BLS price indexes. These categories are as follows: 1) relocation costs, 2) travel, 3) vehicle supplies, 4) vehicle maintenance, and 5) telephone. To compute the monthly price

¹⁴ Prior to FY 2010, the international terminal settlements category was divided into two categories, international terminal dues and international terminal charges. After a consolidation of accounts in FY 2010, the NCTB no longer distinguished between terminal dues and terminal charges.

indexes for each of these categories, we simply compute the month-over-month percentage changes for each BLS price index, average the percentage changes, and apply the average to the materials price level for the previous month. For example, suppose that the price index level for relocation costs is 116.4 for February 2010. Using the method described above, we compute the month-over-month percentage changes for the Scheduled Air Passenger PPI and the Other Lodging Away from Home CPI. The percentage change for the PPI is 3.61% and the percentage change for the CPI is 3.93%. We compute an average of 3.77%, apply it to the price index value for February 2010, and get 120.8 for March 2010. As with the other BLS-based materials categories, we compute quarterly price indexes by averaging the monthly index values for the months in the quarter.

Prices Derived from USPS-Specific Data

The price indexes for air transportation domestic network, air transportation domestic contract, air transportation international linehaul, and vehicle rents are either currently derived from Postal Service-specific data or they have been derived from such data in the past.

Air Transportation Domestic Network

The quarterly price index for air transportation domestic network is derived from information on transportation shipments made via FedEx and UPS¹⁵ as well as the contracts for those shipments. The FedEx and UPS contracts specify a number of billing charge types, the dates on which the charges are adjusted, and the amounts the charges are adjusted. In the FedEx contract, there are five primary billing charge types: fuel charges, non-fuel day system transport charges, non-fuel night system transport charges, handling charges, and other charges. We first construct quarterly price indexes for each FedEx billing charge type and then construct a SPLY-weighted Tornqvist price index of these five quarterly price indexes to obtain a FedEx price index. This FedEx price index serves as the overall price index for air transportation domestic network through Quarter 3 of FY 2007. In the UPS contract, there are three primary billing charge types: continental U.S. Linehaul and terminal charges, non-continental U.S. Linehaul and terminal charges, and other services. Starting in July 2007, we construct quarterly price indexes for each UPS billing charge type and then compute a SPLY-weighted Tornqvist price index of these three quarterly price indexes to obtain a UPS price index. From Quarter 4 of FY 2007 forward, the air transportation domestic network index is computed as a SPLY-weighted Tornqvist index of the FedEx price index and the UPS price index. NCTB dollars are used as weights in the Tornqvist indexes. Beginning in 2010, the NCTB no longer distinguishes between day and night system non-fuel expenses, so we treat these two categories as a single non-fuel expense category. Appendix C3 shows the current mapping of NCTB accounts to the FedEx and UPS billing charge types. Rate indexes are calculated for each billing charge type based on information contained in the

¹⁵ UPS began to provide domestic network services to the Postal Service in July 2006. We began including UPS charges and contract specifications in the calculation of the air transportation domestic network price index in July 2007 after receiving a full year of data on UPS shipments.

FedEx and UPS contracts, and the quarterly price index for air transportation domestic network is computed as a chain-lined Tornqvist index of these rate indexes.

Air Transportation Domestic Contract

Air transportation domestic contract is made up of commercial air (CAIR) contracts, intra-Alaska contracts, Alternative Mode of Transportation (AMOT) contracts, and CORE contracts. Prior to April 2009, USPS-specific data were used in the computation of this price index, as described below. In April 2009, the USPS data source changed and became unreliable for this purpose, and since then we have calculated this price index using the BLS Producer Price Index for Scheduled Freight Air Transportation – Mail (PCU4811124811122).

The following describes the computation of the air transportation domestic contract price index prior to April 2009. We first develop separate Tornqvist indexes for shipment expenses related to CAIR contracts (i.e. system expenses) and those related to intra-Alaska, Alternative Mode of Transportation (AMOT), or CORE contracts (i.e. non-system expenses). The data for CAIR come from the Network Operations Data Mart (NODM). From 2004 forward, cost and weight data for system contract shipments are divided into 25-mile increments up to 500 miles and 50-mile increments between 500 and 1,500 miles based on trip length, with a final category for any trips over 1,500 miles. These incremental cost and weight data were then summed to government quarters and used to construct a quarterly SPLY-weighted Tornqvist index for CAIR contracts. Since 2004, we have been unable to obtain detailed data on the non-system contracts, so we have been estimating the effect of these contracts on the overall price index since that time. For 2004, we assume that the price change for CAIR contracts also applies to AMOT contracts, and we assume a zero price change for Alaska and CORE contracts. An aggregate price index of air transportation domestic contract is computed as a SPLY-weighted Tornqvist index of these four price changes, with the cost weights based on NCTB expenses. From 2005 through 2007, we assume that the quantity change for CAIR applies to all other contracts, and we derive a price index based on the value growth of domestic air contract from the NCTB and the quantity growth from the Tornqvist index of CAIR cost-weight pairs. From 2008 through March 2009, the quantity index for non-system expenses is computed using the BLS PPI for Scheduled Freight Air Transportation – Mail. The quarterly price index is applied to the NCTB non-system costs to get the quantity index. We then compute an overall quantity growth rate of air transportation domestic contract as a weighted average of the system and non-system quantity growth rates, using system and non-system values from the NCTB as weights. Finally, we calculate the price index of air transportation domestic contract based on the value growth of domestic air contract from the NCTB and the quantity growth rate described above.

International Linehaul

Through FY 2009, the quarterly price index for air transportation international linehaul is based on linehaul charge rates posted in the USDOT Order. We construct a chain-

weighted Tornqvist index of priority and military ordinary mail linehaul charges for four areas: Atlantic, Latin, Pacific, and Transborder. These rates are weighted by the pounds of mail going to each area, as reported in the Outbound Mail Summary by Offload Country.¹⁶ Beginning in FY 2010, we compute the price index for international linehaul using a BLS import/export price index, because the authority of the USDOT to establish linehaul charge rates was removed by legislation.

Vehicle Rents

The quarterly price index for vehicle rents is set equal to the implicit rental price of vehicles, which is described in our methods paper on capital input.

Quantity of International Terminal Settlements

For the remaining materials input category, international terminal settlements, we first compute a quantity index and then derive the price index from the value and quantity.¹⁷ The quantity of international terminal settlements is based on the quantity of international mail sent. On an annual basis, the International Cost and Revenue Analysis (ICRA) report provides information on international mail distinguished by destination and mail subclass. International mail is sent to four destinations: Canada, Mexico, those countries within the European Posts and Telecommunications Administration that have bilateral agreements with the United States, and all other posts in the Universal Postal Union. The Postal Service consolidated international mail subclasses in May 2007. Prior to the consolidation, the ICRA distinguished international mail flow by the following mail subclasses: Surface Letter Packages, Surface Publishers, Surface ISAL, Surface CP, Air Letters & Letter Packages, Air Cards/Aero, Air IPA, Air GPM, Air Express, and Air CP. After the consolidation, the ICRA included the following mail subclasses: First-Class Mail International, GXG, Express Mail International, International Packages, IPA, ISAL, and International Direct Sacks – M-Bags. Since the MCS reclassification, the ICRA has included additional detail, including International NSA Mail data. The ICRA publishes the number of pieces and the average cost of international settlement charges for various destination-subclass groups. We construct a quantity index of international terminal settlements from the mail volume in these groups, using the SPLY-weighted Tornqvist index, with settlement costs used as weights.

Less information is available on a quarterly basis. International mail volumes are reported in the Revenue, Pieces, and Weight (RPW) report, but the breakdown by mail subclass is not as detailed, and the RPW does not report mail by destination. We estimate mail volume for each of the destination-subclass groups by developing distribution factors from the ICRA for the year. The annual ICRA settlement charge per piece data

¹⁶ Prior to the consolidation of NCTB accounts in FY 2010, the quarterly price index for international terminal charges was computed similarly based on terminal charge rates posted in the USDOT Order.

¹⁷ The methods described in this section parallel the computation of the international terminal dues price and quantity prior to FY 2010.

are also applied to each of the quarters in the year in order to aggregate the international mail volumes into an international terminal settlements quantity index.¹⁸

Annual Price Indexes

There are two approaches taken to compute an annual price index from a quarterly price index. For the categories air transportation domestic network, air transportation international linehaul, air transportation domestic contract, oil, gas, other fuels, electricity, and water and sewer, we take a weighted average of the quarterly price indexes. The weights are the relative proportions of the expenditures (i.e. values of input) in each quarter. For the other materials input categories, the annual price index is computed as a straight average of the quarterly price index values.

Aggregate Quantity of Materials Input

Finally, the quantity index of aggregate materials input is constructed from the quantity indexes we develop for the 30 materials input categories. In the quarterly and annual databases, the quantity index of aggregate materials input is computed as a SPLY-weighted Tornqvist quantity index of the quantity indexes for the 30 materials input categories.

¹⁸ If the ICRA is not yet available for the year, the ICRA for the previous year is used.

Methods for Calculating Workload

Workload is made up of three components: weighted mail volume, miscellaneous output, and delivery points. In constructing the workload index, we first compute SPLY-weighted Tornqvist quantity indexes for the two components of output: weighted mail volume and miscellaneous output. We then compute total output as a SPLY-weighted Tornqvist quantity index using the two indexes from the first step, with the weights based on the attributable costs that we impute to each. In the final step, we compute workload as a SPLY-weighted Tornqvist quantity index by combining the output index from the second step and delivery points, with the weights econometrically determined. The weights given to output and delivery points are 0.7 and 0.3, respectively.

Weighted Mail Volume

Weighted mail volume is based on the number of mail pieces reported in the Revenue, Pieces, and Weight (RPW) report. We currently use the number of pieces reported for the following mail subclasses:

First Class – Single-Piece Letters
First Class – Single-Piece Cards
First Class – Presort Letters
First Class – Presort Cards
First Class – Flats
First Class – Parcels
First Class – Outbound First Class Mail International
Standard Mail – High Density & Saturation Letters
Standard Mail – High Density & Saturation Flats & Parcels
Standard Mail – Carrier Route
Standard Mail – Letters
Standard Mail – Flats
Standard Mail – Not Flat-Machinables & Parcels
Periodicals – In-County
Periodicals – Outside County
Package Services – Single-Piece Parcel Post
Package Services – Bound Printed Matter Flats
Package Services – Bound Printed Matter Parcels
Package Services – Media & Library Mail
US Postal Service Mail
Free Mail
Express Mail
Priority Mail
Parcel Select Mail
Parcel Return Service Mail
International Expedited Services
International Priority Mail

International Priority Airmail (IPA)
International Surface Airlift (ISAL)
International Direct Sacks M-Bags (First Class)
International Negotiated Service Agreement Mail

Except for the international mail subclasses, the breakdown of mail volume that we use to compute weighted mail volume matches the breakdown used in the Cost and Revenue Analysis (CRA) report. In the past, mailgrams were also included as a separate mail class, but this class was discontinued in 2006. The international mail detail generally coincides with the detail in the International Cost and Revenue Analysis (ICRA) report. Prior to the consolidation of international mail categories in 2007, we distinguished seven international mail subclasses: Economy Letter-Post, Airmail Letter-Post and Express Mail, Economy Periodicals, Economy Parcel-Post, Airmail Parcel-Post, ISAL and International Other Mail, and IPA.

The mail volume in each domestic subclass is weighted by the apportioned costs reported in the CRA.¹⁹ Prior to 2005, apportioned cost per piece was computed by dividing the incremental cost reported in the CRA by the annual piece volume reported in the annual RPW. From 2005 forward, both incremental cost and piece volume from the CRA are used.

For international mail subclasses, the weights are derived in a similar manner using apportioned cost data reported in the ICRA. The ICRA includes both piece volumes and unit costs for mail classes corresponding to First Class Mail International, International Priority Mail, International Expedited Services, IPA, ISAL, International Direct Sacks – M-Bags, and International NSA Mail.

We next construct sub-aggregates of weighted mail volume for First Class, Standard, Periodicals, Package Services, and International Mail, using SPLY-weighted Tornqvist indexes. Finally, we construct the index of weighted mail volume using a SPLY-weighted Tornqvist index that includes these five sub-aggregate indexes along with the remaining mail classes. The mail classes used in the final aggregate index of weighted mail volume are shown in the table below.

First Class Mail
Standard Mail
Periodicals Mail
Package Services Mail
US Postal Service Mail
Free Mail
Express Mail
Priority Mail

¹⁹ Until the CRA for the current year is released, the prior year's apportioned cost per piece values are used as proxies for the current year.

Parcel Select Mail
Parcel Return Service Mail
International Mail

Miscellaneous Output

Miscellaneous output is made up of the following sixteen services:

Market Dominant Ancillary Services	Certified Mail
	Collect on Delivery
	Delivery Confirmation
	Insurance
	Registered Mail
	Return Receipts
	Stamped Envelopes & Cards
	Other Domestic Ancillary Services
	Outbound International Ancillary Services
Market Dominant Special Services	Money Orders
	Post Office Box Service
Competitive Services	Outbound International Ancillary Services
	Premium Forwarding Service
	International Money Orders & Money Transfer Service
Other Services	Military Reimbursements
	Other Miscellaneous Services

Quantity measures come directly from the RPW reports for all service categories listed above except for stamped envelopes & cards, post office box service, military reimbursements, and other miscellaneous services.

Since the RPW summary report does not display volumes for stamped envelopes & cards, the quantity index for this service category is calculated based on annual CRPW volumes. The quarterly volume is computed by multiplying revenue for the quarter by the annual ratio of CRPW volume to revenue.

The quantity index for post office box rentals is derived by dividing post office box rent revenue by a price index. Post office box rent revenue is reported in RPW reports, while the price index is based on Postal Service rate case testimony. Each change in the post office box rent price index is based on approved changes to those rates. The attributable cost for post office box rental is based on the incremental cost reported in the CRA.²⁰

We first construct a quantity index of miscellaneous services as a SPLY-weighted Tornqvist index of the market dominant and competitive service categories discussed

²⁰ The quarterly attributable cost is computed by multiplying revenue for the quarter by the annual ratio of attributable cost to revenue.

above (excluding only military reimbursements and other miscellaneous services). The weights come from the costs reported in the CRA for domestic categories and the ICRA for international categories. Because the CRA combines delivery confirmation, return receipts, and other domestic ancillary services into a single reporting category, we also combine the RPW quantities for these three categories before computing the Tornqvist index.

The quantity index for military reimbursements is obtained by dividing the value of the military mail reimbursement by the price index for international line haul air transportation, described in the section on materials input. The value of military mail reimbursements is reported in the NCTB account 53901000.

The quantity index for other miscellaneous services is obtained by dividing revenue from other miscellaneous services by the price index for Miscellaneous Services and Freight Costs for Supplies, which is described in the section on materials input. Revenue for other miscellaneous services is computed from two sources. First, various revenue accounts from the NCTB are added together. Appendix D1 shows the NCTB accounts that are included. This total is then combined with other domestic special services revenue, as reported in the RPW. Prior to 2006, we also included interest on the money order float in other miscellaneous services revenue. This information was supplied by Headquarters at the end of each fiscal year through 2005.

The aggregate quantity index of miscellaneous output is constructed as a SPLY-weighted Tornqvist index of miscellaneous services, military reimbursements, and other miscellaneous services. The weights for miscellaneous services come from the CRA and ICRA costs, while the weights for military reimbursements and other miscellaneous services come from the revenue that is mapped to them.

Delivery Points

The count of delivery points comes from the Delivery Statistics Report produced by the Postal Service Address Management System. A monthly count of delivery points is based on the Delivery Statistics Report for the last week of the month. The count is equal to the total number of city delivery points, highway contract delivery points, and rural delivery points. Quarterly and annual values are obtained by averaging the monthly values.

Appendix A1 Investment Price Indexes

Investment Price Indexes for Vehicles and Equipment: Investment price indexes for vehicles, customer service equipment, postal support equipment, mechanized handling equipment, and automated handling equipment are derived from Producer Price Indexes published by the Bureau of Labor Statistics. The price indexes for vehicles and automated handling equipment are each based on a single PPI, while the price indexes for the other equipment asset classes are based on multiple PPIs. For these other asset classes, each investment price index is based on a SPLY-weighted Tornqvist price index of its component PPIs, with the weights derived from the Personal Property Transaction File.²¹

Vehicles: The investment price index for vehicles is based on the Producer Price Index for automobile and light duty motor vehicles (NAICS industry 336110).

Automated Handling Equipment: The investment price index for automated handling equipment is based on the Producer Price Index for other computer peripheral equipment (NAICS industry 334119).

Customer Service Equipment: The investment price index for customer service equipment is based on the Producer Price Indexes in the table below. In order to obtain the weights for the PPIs, property code numbers are assigned to a group and one or more PPIs are assigned to each group. When multiple PPIs are assigned to a group, the rate of price change for the group is obtained by averaging the rates of change for the assigned PPIs.

Components of Investment Price Index for Customer Service Equipment			
Group	PPI Industry or Commodity	NAICS (N) or Commodity (C) Code	2003 Weight
A	Wood Office Furniture and Store Fixtures	(C) 1221	.0000
	Non-wood Furniture and Store Fixtures	(C) 1222	
B	Scales and Balances (Except Laboratories)	(N) 333997	.0000
C	Automatic Vending Machines	(N) 333311	1.0000
D	Other Computer Peripheral Equipment	(N) 334119	.0000

Postal Support Equipment: The investment price index for postal support equipment is based on the Producer Price Indexes in the table below. In order to obtain the weights for the PPIs, property code numbers are assigned to a group and one or more PPIs are

²¹ The methods described here are used to compute percentage changes for the current year, which are then applied to a running set of price indexes. The percentage changes are computed from a SPLY basis. Since the BLS price indexes are monthly, while our investment price indexes are quarterly, it is necessary to average the monthly BLS values over the months in the Postal Fiscal Quarter.

assigned to each group. When multiple PPIs are assigned to a group, the rate of price change for the group is obtained by averaging the rates of change for the assigned PPIs.

Components of Investment Price Index for Postal Support Equipment			
Group	PPI Industry or Commodity	NAICS (N) or Commodity (C) Code	2003 Weight
E	Wood Office Furniture and Store Fixtures	(C) 1221	.0030
	Non-wood Furniture and Store Fixtures	(C) 1222	
F	Nonferrous Metals	(C) 102	.0005
	Hardware	(C) 104	
	Fabricated Structural Metal Products	(C) 107	
	Miscellaneous Metal Products	(C) 108	
G	Industrial Truck, Tractor, Trailer, and Stacker Machines	(N) 333924	.0032
H	Machine Tools (Metal Cutting Types)	(N) 333512	.0004
I	Air and Gas Compressors	(N) 333912	.0001
J	Software Publisher Services	(N) 511210	.5991
K	Electronic Computers	(N) 334111	.3188
L	Other Office and Store Machines and Parts	(C) 119307	.0295
M	AC and Warm Air Heating/ Commercial Refrigeration Equipment	(N) 333415	.0003
N	Other Commercial and Service Industry Machinery	(N) 333319	.0040
O	Telephone Apparatus	(N) 334210	.0171
P	Radio/TV Broadcast and Wireless Communications Equipment	(N) 334220	.0229
Q	Industrial Process Control	(N) 334513	.0012

Mechanized Handling Equipment: The investment price index for mechanized handling equipment is based on the Producer Price Indexes in the table below. In order to obtain the weights for the PPIs, property code numbers are assigned to a group and one or more PPIs are assigned to each group. When multiple PPIs are assigned to a group, the rate of price change for the group is obtained by averaging the rates of change for the assigned PPIs.

Components of Investment Price Index for Mechanized Handling Equipment			
Group	PPI Industry or Commodity	NAICS (N) or Commodity (C) Code	2003 Weight
R	Office Machinery	(N) 333313	.6987
S	Conveyors and Conveying Equipment	(N) 333922	.2597
T	Industrial Truck, Tractor, Trailer, and Stacker Equipment	(N) 333924	.0416

Investment Price Indexes for Buildings and Land: The buildings price index is based on two price indexes: the Turner Construction Cost Index, published by the Turner Construction Company, and the Price Index of New One-Family Houses Sold Including Value of Lot, published by the U.S. Census Bureau. Both of these indexes are quarterly. Because the Turner Construction Cost Index represents prices as they are negotiated, we take a three-quarter moving average of the index to account for the lag between the time projects are negotiated and the time that projects are completed and put into place. This moving average approach is the process followed by the U.S. Bureau of Economic Analysis when using the Turner Construction Cost Index to develop price indexes for non-residential structures. The growth rates of the Turner Construction Cost Index and the selected Census Bureau's Price Index are averaged, and this average is used to roll the buildings investment price index forward. The buildings price index growth rate is also used to roll the land price index forward.

Appendix B1
NCTB Accounts Included in Total Value of Labor Input

Personnel Compensation

All 511xx accounts

Personnel Benefits

All 512xx accounts except:

51241	Personnel Benefits – Advanced Round Trip
51242	Personnel Benefits – En Route Travel to New Duty Station
51243	Personnel Benefits – Temporary Quarters
51244	Transportation of Household Effects
51245	Return Trips to Residence at Former Duty Station
51251	Uniform and Work Clothes Program

Excluded accounts are part of materials input.

Employee Relations

All 513xx accounts except:

51335	Fair Labor Standards Act Expense
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Excluded account is not considered a resource usage expense.

Other Operating Expenses: Miscellaneous

56641	Contribution to Civil Service Retirement Fund Deficit
56644	Contribution to Civil Service Retirement Fund Deficit – COLA - Retirees
56646	Extraordinary Annual Leave
56647	Holiday Leave Variance

Appendix B2
Weighting Factors Used to Distribute
Pay-Period Workhours Across Months
FY 2007-08

Occupation	Weekday	Saturday	Sunday	Holiday
Postmaster	1.0000	0.0000	0.0000	0.0000
Supervisor	1.0000	0.8315	0.1699	0.1699
Clerk	1.0000	0.7360	0.3160	0.3160
Mailhandlers	1.0000	0.7360	0.3160	0.3160
City Delivery Carrier	1.0000	0.9383	0.0066	0.0066
Vehicle Service Driver	1.0000	0.9383	0.0066	0.0066
Rural Carrier	1.0000	0.9383	0.0066	0.0066
Building Service	1.0000	0.7360	0.3160	0.3160
Vehicle Service	1.0000	0.7360	0.3160	0.3160
Professional, Administrative, and Technical	1.0000	0.0000	0.0000	0.0000
Other	1.0000	0.0000	0.0000	0.0000

Appendix C1
Mapping of NCTB Accounts to Materials Input Categories

Materials Input Category	NCTB Accounts
Relocation Costs	51241, 51242, 51243, 51245
Transportation of Household Effects	51244
Uniforms and Work Clothes	51251, 52941
Travel	51401, 51403, 51404, 51406, 51407, 51409, 51411, 51412, 51413, 52451, 52453, 52454, 52455, 56315, 56316
Supplies	52100, 52101, 52102, 52103, 52104, 52105, 52106, 52107, 52108, 52109, 52110, 52111, 52115, 52117, 52120, 52121, 52122, 52131, 52140, 52153, 52155, 52156, 52160, 52170, 52171, 52172, 52173, 52174, 52176, 52177, 52178, 52179, 52190, 52210, 52220, 52230, 52240, 52260, 52270, 52280, 52401, 52899, 52901, 52915, 56601, 56830, 56840
Contractual Building Services	52301, 52311, 52313, 52315
Professional Services	52321, 52322, 52323, 52324, 52325, 52326, 52327, 52328, 52331, 52339, 52342, 52344, 52357, 52359
Contractual Computer Services	52332, 52333, 52334, 52335, 52336, 52337, 52338
Miscellaneous Services and Freight Costs for Supplies	42199, 51408, 52316, 52317, 52341, 52361, 52362, 52363, 52365, 52367, 52369, 52409, 52410, 52411, 52412, 52413, 52415, 52417, 52418, 52419, 52421, 52422, 52423, 52424, 52425, 52426, 52427, 52428, 52429, 52431, 52432, 52433, 52435, 52436, 52437, 52438, 52439, 52441, 52442, 52443, 52444, 52447, 52448, 52449, 52472, 52474, 52801, 52810, 54135
Vehicle Supplies	52150, 52151
Air Transportation Domestic Network	53401, 53402, 53403, 53404, 53406, 53411, 53412, 53542, 53544, 53701, 53702, 53703, 53704, 53705, 53706, 53707, 53708, 53709, 53711, 53712, 53713, 53714, 53715, 53716, 53717, 53718, 53719, 53721, 53722, 53723, 53724, 53725, 53726, 53727, 53728, 53729, 53731, 53732, 53733, 53734, 53735, 53736, 53737, 53738, 53739, 53741, 53743
Air Transportation International Linehaul	53201, 53212, 53301, 53302, 53303

Air Transportation Domestic Contract	53501, 53503, 53509, 53511, 53513, 53515, 53519, 53521, 53523, 53529, 53543, 53551, 53552, 53553, 53554, 53561, 53562, 53563, 53564, 53565, 53566, 53567, 53568, 53581, 53583, 53585, 53588, 53591, 53593, 53595, 53599, 53903
Highway Transportation	53121, 53122, 53123, 53124, 53126, 53127, 53128, 53129, 53131, 53132, 53133, 53134, 53135, 53137, 53138, 53139, 53163, 53191, 53601, 53602, 53603, 53604, 53605, 53606, 53607, 53608, 53609, 53611, 53612, 53613, 53614, 53615, 53616, 53617, 53618, 53619, 53621, 53622, 53623, 53624, 53625, 53626, 53631, 53634, 53905
Rail Transportation	53142, 53143, 53145, 53146, 53147, 53148, 53192, 53909, 53913
Water Transportation	53183, 53184, 53281, 53282, 53283, 53284
Oil	54142
Gas	54143
Other Fuel	54144
Electricity	54151
Water and Sewer	54152, 54153
Telephone	52471, 54146, 54161, 54162, 54163, 54165, 54166, 54167, 54168, 54169
Research and Development	54242
Expensed Building Improvements	54221, 54222, 54223, 54231, 54232, 54233, 54234, 54248, 54249, 54251, 54253, 54260, 54270
Vehicle Maintenance	52462, 52463, 52951, 52955, 54543, 54545, 54546, 54547, 54913
Maintenance	54511, 54512, 54513, 54518, 54521, 54523
Miscellaneous Judgments	55101, 55103, 55105, 55107, 55212, 55213, 55215, 55216, 55311, 55321, 55323, 55324, 55325, 56619, 56661, 56662
Miscellaneous	54156, 54915, 56202, 56301, 56311, 56401, 56403, 56405, 56407, 56408, 56409, 56411, 56413, 56421, 56422, 56501, 56503, 56602, 56603, 56605, 56607, 56617, 56621, 56622, 56625, 56631, 56665, 56666, 56671, 56701, 56703, 56704, 56705, 56810, 56820, 56910, 56930, 56931, 57802
Vehicle Rents	52459, 53136
International Terminal Settlements	53226, 53227, 53228, 53261, 53262, 53263, 53264, 53268, 53269, 53271, 53285, 53286, 53298, 53299

Appendix C2 Price Indexes Used for Materials Input	
Materials Input Category	Price Index
Relocation Costs	PCU481111481111P CWUR0000SEHB02
Transportation of Household Effects	PCU484121484121P
Uniforms and Work Clothes	CUUR0000SAA
Travel	PCU481111481111P CWUR0000SEHB02
Supplies	WPUSOP2622
Contractual Building Services	PCU561720561720P
Professional Services	PCU5413--5413--
Contractual Computer Services	PCU518210518210P
Miscellaneous Services and Freight Costs for Supplies	NIPA Table 3.10.4, line 44
Vehicle Supplies	CWUR0000SETD CUUR0000SETB
International Linehaul	EIUIS231
Air Transportation Domestic Contract	PCU4811124811122
Highway Transportation	PCU484121484121P
Rail Transportation	PCU482111482111P
Water Transportation	PCU483---483---
Oil	WPU0573
Gas	CUUR0000SEHF02
Other Fuel	WPU051
Electricity	WPU0542
Water and Sewer	CUUR0000SEHG01
Telephone	PCU517110517110112 PCU51711051711022
Research and Development	PCU541330541330
Expensed Building Improvements	CWUR0000SEHP04
Vehicle Maintenance	CWUR0000SETD CUUR0000SETB
Maintenance	PCU561720561720P
Miscellaneous Judgments	NIPA Table 1.1.4, line 1
Miscellaneous	NIPA Table 3.9.4, line 16

Abbreviations

PCU	Producer Price Index – Industry
WPU	Producer Price Index – Commodity
CWUR	Consumer Price Index – Urban Wage Earners and Clerical Workers
CUUR	Consumer Price Index – All Urban Consumers
NIPA	National Income and Product Accounts

Appendix C3
Mapping of NCTB Accounts to FedEx and UPS Billing Charge Types

<u>FedEx</u>	
Billing Charge Type	NCTB Accounts
Fuel Charges	53703, 53722
Non-Fuel Transport Charges (Day & Night)	53701, 53702, 53719, 53721
Handling Charges	53704
Other Charges	53732, 53743
<u>UPS</u>	
Billing Charge Type	NCTB Accounts
Continental U.S. Linehaul	53401, 53402
Non-Continental U.S. Linehaul	53411, 53412
Other Services	53403, 53404, 53406

Appendix D1
Current NCTB Accounts Mapped to Other Miscellaneous Services Revenue

Account	Description
42101000	Packaging Products
42101093	Packaging Products
42102000	Postal Related Retail Products
42102098	Postal Related Retail Products
42105000	Drop Box Alliance Revenue
42341000	Migratory Bird Stamps
43333141	Merchandise Return Service - Permit Fees
43340000	Stamps by Phone - Handling Charges
43340137	Stamps by Phone - Handling Charges
43341155	Miscellaneous Annual Accounting Fees
43350000	Retail Services Revenue
43350108	Premium Forward Service w PM Application Fee
43350123	Lobby Services Revenue
43350159	Prem Forward Serv Priority Mail Weekly Fees
43350248	Copy Machine Revenue
43350535	Refund of Fees - Retail Services
43350548	Servicing Vendor Copy Machine Reimbursements
43350623	Refund of Premium Forwarding Service Fees
43360000	Philatelic Mail Order - Service Fee
43370129	Change of Address Information Fees
43380000	Privacy Act Copying Fees
43380127	Privacy Act Copying Fees
43381120	Correction of Mailing Lists Fees
43383000	Permit Imprint - Application Fees
43383140	Permit Imprint - Application Fees
43387000	Services for Contractors
43387147	Services for Contractors
43388000	Freedom of Information Act Fees
43388198	Freedom of Information Act Fees
43391148	Customs Fees and Storage Charges
43420241	Passport Photo Services
43420264	USPS Passport Execution Fees
44028000	Mail Recovery Center - Rev and Reimbursements
44028146	Mail Recovery Center - Revenue
44028549	Mail Recovery Center - Reimbursements
44029000	Rev-Oth Auction of Unclaimed Merchandise
44029145	Rev-Oth Auction of Unclaimed Merchandise
44030000	Miscellaneous Revenue
44030126	Miscellaneous Revenue - Other
44030262	Miscellaneous Revenue-Norman Training Center
44030624	Miscellaneous Revenue - Refund

44031000 Parking Fees
44032106 Sure Money Fees
44032646 Sure Money Fees - Refunds
44033000 Forfeited Property Revenue
44035000 US Marshal Reimbursements
44036000 Sale of Supply Center Inventories
44036149 Sale of Recyclable Products
44036156 Sale of Misc Items and Non-Capital Equip
44036157 Sale of Postal Antiques
44037122 Permit Imprint - Std Mail-Periodicals Denied
44038000 Vehicle Supplies & Services to Gov Agencies
44039000 Refunds Related to Miscellaneous Revenue
44041083 Local Commemorative Envelopes
44041524 Refund - Local Commemorative Envelopes
44042202 Address Management and Mover's Guide
44043000 Test Products
44043108 Electronic Postmark (EPM)
44043231 Other Marketing Initiatives - OLRP
44043608 Refunds - Other Marketing Initiatives
44046000 Rent Fuel Utilities Income-Private Concerns
44047000 Rent Fuel Utilities Income-US Govt Agencies
44051000 Restitution - Inspection Service Cases
42107000 Philatelic Products
42107092 Philatelic Products
43397164 SFS Philatelic Sales