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**Abstract.** The Bureau of Economic Analysis (BEA) and the Bureau of Labor Statistics (BLS) use estimates of depreciation rates for structures and equipment to construct estimates of capital stock from data on capital investments. The depreciation rates are based mainly on research by Hulten and Wykoff from the early 1980s, and may be out of date. Recent studies by Statistics Canada (2007 and 2015), using Canadian data on used asset transactions from Canada’s Annual Capital Expenditures and Repair Survey (CAPEX) of establishments, found relatively faster depreciation rates, especially for structures. A study by Bokhari and Geltner (2019) used U.S. data on used asset prices and also found faster depreciation rates for structures. To illustrate the potential effects of implementing these estimates from newer studies, we created a concordance to match Canadian to U.S. asset categories, and then re-estimated BEA capital stock measures and the BLS capital and multifactor productivity measures using depreciation rates based on the CAPEX survey. We find that using these faster depreciation rates results in substantially lower estimates of net capital stocks and higher estimates of depreciation in BEA’s accounts, and has minimal effects on growth rates of multifactor productivity (MFP) in the BLS accounts.

## I. Introduction

For both national accounts and productivity measurement, developing measures of capital stocks, capital asset depreciation, and capital services are important tasks.<sup>1</sup> In the U.S., the Bureau of Labor Statistics (BLS) develops measures of capital services for use in the construction of multifactor productivity growth (MFP) measures for major sectors and detailed industries.<sup>2</sup> The Bureau of Economic Analysis (BEA) develops estimates of economic depreciation, or consumption of fixed capital (CFC), to derive estimates of net fixed investment (gross fixed investment less CFC), business income (such as corporate profits), and net saving. Estimates of stocks of fixed assets, net of CFC, appear in BEA’s fixed assets accounts and in balance sheets for major sectors in the Integrated Macroeconomic Accounts.<sup>3</sup> BLS and BEA use similar approaches to capital measurement, building from BEA’s estimates of fixed investment, although specific assumptions differ. BEA’s capital measures and BLS’s

<sup>1</sup> Unlike countries with centralized statistical agencies, the U.S. has two different statistical agencies charged with compiling the national accounts and productivity measures. The Bureau of Economic Analysis (BEA) is responsible for the national accounts, while the Bureau of Labor Statistics is responsible for the productivity statistics.

<sup>2</sup> BLS capital services data for major sectors and NIPA-level industries can be found here: <https://www.bls.gov/mfp/mprdload.htm#Capital%20Tables>

<sup>3</sup> BEA’s fixed assets accounts can be found here at [https://www.bea.gov/iTable/index\\_FA.cfm](https://www.bea.gov/iTable/index_FA.cfm). The Integrated Macroeconomic Accounts can be found here: <https://www.bea.gov/data/special-topics/integrated-macroeconomic-accounts>

measures of MFP growth and capital services are often cited in discussions of economic growth and productivity trends. These measures are potentially sensitive to estimates of capital asset depreciation, which is difficult to measure.

This paper reviews recent research on depreciation rates and compares current BEA capital measures and BLS capital and productivity growth measures to experimental measures constructed using alternative estimates of depreciation. The depreciation rates for equipment and structures used by BEA and BLS are mostly based on earlier studies by Hulten and Wykoff (1981a and 1981b, and Wykoff and Hulten 1979). More recent studies by Statistics Canada (2007 and 2015) estimated faster depreciation rates, especially for structures. These studies use Canadian data from their “Capital Expenditures and Repair Survey” of establishments, which includes a database of used asset prices. A recent study of U.S. data by Bokhari and Geltner (2019) also found faster depreciation rates for structures. In this paper, we estimate BEA and BLS capital measures using depreciation rates derived from those currently used by Statistics Canada. Capital asset depreciation rates may differ across countries for many reasons, including differences in the mix and scale of industries within each economy. Nevertheless, the similarity of the results from Statistics Canada and Bokhari and Geltner suggests that the Statistics Canada rates may provide some useful insights for the U.S. We show these alternative estimates to illustrate how the choice of depreciation rates matters for key statistics such as MFP, net capital stocks, net investment, and for international comparisons of these statistics. Based on a review of these papers and discussions with the authors and others, we could not arrive at a clear consensus as to the most appropriate depreciation rates for the U.S, but we hope this work leads to more research on the topic.

New empirical studies of depreciation rates are particularly valuable because they make use of the limited information available on used capital asset sales to capture depreciation rates of new and potentially improved capital assets, as well as changes in depreciation of existing capital assets. True depreciation rates reflect physical deterioration and obsolescence, both of which change over time because of changes in general economic conditions, tax laws, laws affecting construction, and technological change. Depreciation rates may also change

over time as a result of changes in the nature of the capital assets and their uses in production. Capital assets have increasingly incorporated semiconductor and computer technology whose rapid improvement creates incentives for replacing even recent purchases. The “Fourth Industrial Revolution” now taking place incorporates technologies which link physical, digital, and biological realms.<sup>4</sup> Examples of such technologies include the Internet of Things (IoT), 3-D printing, robotics, virtual reality, and autonomous vehicles.<sup>5</sup> Cell phones, cameras, calculators, and GPS devices have often been replaced by smart phones; cloud computing has surpassed the use of in-house resources; and social networking has impacted communication modes. Manufacturing changes include smart factories, improved industrial robots, and more agile automated production platforms using, for example, innovations such as automated guided vehicles that can be reconfigured as production needs change, instead of fixed conveyer systems.<sup>6</sup> These changes could speed up rates of depreciation and obsolescence. Service lives of other capital assets may have increased as newer vintages are built better and retain productive value longer.<sup>7</sup> .

<sup>4</sup> “Disruptive” technologies change existing industries meaningfully; they do not just add products or slightly reduce costs. See for example Bernard Marr, “Why Everyone Must Get Ready for the 4<sup>th</sup> Industrial Revolution,” *Forbes (blog)*. <https://www.forbes.com/sites/bernardmarr/2016/04/05/why-everyone-must-get-ready-for-4th-industrial-revolution/#4816522279c9>; C. M. Christensen, M. E. Raynor, and R. McDonald, (2015) “What is Disruptive Innovation,” *Harvard Business Review*, December, 2015, pp. 44-53, <https://hbr.org/2015/12/what-is-disruptive-innovation>; and Airini Ab Rahman, Umar Zakir Abdul Hamid, and Thoo Ai Chin, “Emerging Technologies with Disruptive Effects: A Review” (PDF). *PERINTIS* eJournal, 2017, Vol 7, No. 2, pp. 111-128.

<sup>5</sup> The “Internet of Things” refers to the idea that vast numbers of devices might be connected and exchange data through the internet. To the extent vehicles, medical devices, warehouses, homes, and other physical objects are connected, greater automation of industry is possible. A formal definition of the Internet of Things as “objects that are readable, recognizable, locatable, addressable, and/or controllable via the Internet, irrespective of the communication means (such as) RFID, wireless LAN, wide- area networks, or other” and further discussion is available in P. Ravi and A. Ashokkumar, “Internet of Things: A Great Wonder,” *International Journal of Advanced Networking and Applications*, Special Issue – UGC Sponsored National Conference on Advanced Networking and Applications, pp. 113-119. <http://www.ijana.in/Special%20Issue/file25.pdf>

<sup>6</sup> Jonathon Tilley, “Automation, Robotics, and the Factory of the Future,” McKinsey and Company, September 2017. <https://www.mckinsey.com/business-functions/operations/our-insights/automation-robotics-and-the-factory-of-the-future>

<sup>7</sup> Organization for Economic Cooperation and Development, “Measuring Capital,” Second Edition, OECD Publications, 2009, p. 111-112. <http://www.oecd.org/sdd/productivity-stats/43734711.pdf>

We first review the role of depreciation rates in the estimates of BEA and BLS capital measures. The next section reviews the available studies of depreciation rates. The following sections explain how we constructed alternative depreciation rates for U.S. capital stocks based on the rates used by Statistics Canada, and summarize the revisions to the BEA and BLS capital measures that result from using these alternative rates.

## II. BLS and BEA Capital Measures and the Role of Depreciation Rates

BLS and BEA both use the Perpetual Inventory Method (PIM), also known as “vintage aggregation,” a technique widely used in statistical agencies in most OECD countries<sup>8</sup> to construct measures of capital stock for several types of capital assets. Estimates of depreciation rates play a key role in these capital measures. Under the PIM, productive capital stock at the end of a given period is a weighted sum of all past investments. The weights used reflect the efficiency of an asset as it ages.<sup>9</sup> When real investment is weighted by an integrated age/efficiency profile reflecting variation in the efficiency and retirement pattern of capital assets over time, the result is a measure of productive capital stock. Productive capital stock measures capital in “efficiency units,” and represents the amount of new investment that would be required to produce the same capital services produced by existing assets of all vintages. The age/efficiency profile can be represented as a schedule, where the values indicate the quantity of services provided by an asset of a given age relative to a similar new asset. The PIM measure of productive capital stock,  $K_t$ , can be expressed as:<sup>10</sup>

<sup>8</sup> Eurostat and Organization for Economic Cooperation and Development, “Estimating Inventory Stocks by Using the Perpetual Inventory Method,” Chapter 6.4 in *Eurostat-OECD Compilation Guide on Inventories*, September 2017, pp. 107-119. <http://ec.europa.eu/eurostat/documents/3859598/8228095/KS-GQ-17-005-EN-N.pdf/12e80726-35a3-46a9-869a-8f77ca3be742>

<sup>9</sup> A second capital concept, the wealth stock of capital, results from weighting real investment by an age/price profile reflecting variation in the new and used asset prices and retirement pattern of capital assets over time. The wealth stock of physical capital values capital stock in terms of the market price of used assets. It represents the present value of all future services embodied in existing physical capital assets.

<sup>10</sup> See “Trends in Multifactor Productivity, 1928-81: Appendix C,” Bulletin 2178, Bureau of Labor Statistics, [https://www.bls.gov/mfp/trends\\_in\\_multifactor\\_productivity.pdf](https://www.bls.gov/mfp/trends_in_multifactor_productivity.pdf), pp. 40-49; and Michael J. Harper, “Estimating Capital Inputs for Productivity Measurement: An Overview of Concepts and Methods,” Conference on Measuring Capital Stock, OECD, 1997, pp. 8-10. <https://www.oecd.org/sdd/na/2666894.pdf>

$$K_t = \sum_{t=1}^T S_{(T-t)} I_t$$

where “S” is the age-efficiency function; “I” is real investment; “t” is investment period; and “T” is total number of investment periods.

While investment data are available, information on how the efficiency of capital assets declines over time is not readily available. As a result, implementing the PIM requires some assumptions about how asset efficiency declines over time and when assets are retired. After careful consideration, BLS adopted a hyperbolic age-efficiency function.<sup>11</sup> With a concave shape, the hyperbolic age-efficiency function reflects a slower initial decline in asset efficiency and a more rapid decline as asset age increases. The hyperbolic age-efficiency function can be represented as follows:

$$S_t = (L-t) / (L - \beta t)$$

where  $S_t$  is the efficiency of an asset at age t relative to its performance when it was new; L is the asset service life; and  $\beta$  is a parameter controlling the shape of the efficiency function. When  $\beta$  is zero, an asset becomes less efficient, or depreciates, by the same amount each year. When  $\beta$  is one, the asset maintains the same level of efficiency until it reaches its service life, at which point it produces zero additional services. BLS uses a  $\beta$  value of 0.75 when estimating productive capital stocks for structures assets, and 0.50 when estimating capital stocks for

<sup>11</sup> For further discussion on the BLS choice of the hyperbolic age-efficiency function, including a comparison with the geometric age-efficiency function, see Michael J. Harper, “The Measurement of Productive Capital Stock, Capital Wealth, and Capital Services,” Working Paper 128, Bureau of Labor Statistics, June 1982, <https://www.bls.gov/osmr/research-papers/1982/pdf/ec820020.pdf>; and also U.S. Department of Labor, Bureau of Labor Statistics, *Trends in Multifactor Productivity, 1948-81, Bulletin 2178*, (Washington DC, U.S. Government Printing Office: September 1983), pp. 39-65, [https://www.bls.gov/mfp/trends\\_in\\_multifactor\\_productivity.pdf](https://www.bls.gov/mfp/trends_in_multifactor_productivity.pdf).

equipment assets.<sup>12</sup> For most capital assets, BLS uses service lives provided by BEA when implementing the PIM to calculate productive capital stocks.<sup>13</sup>

A simpler PIM formula can be described as:

$$K_{i,t} = I_t + K_{i,t-1}(1 - \delta)$$

Where  $K_{i,t}$  is capital stock for asset  $i$  in period  $t$ ;  $I_t$  is investment in period  $t$ ; and  $\delta$  is the rate of depreciation for capital asset  $i$ . BLS capital stock measures are developed using investment and depreciation data for detailed categories of capital assets. For example, BLS capital stock measures for the private business and private nonfarm business sectors include 39 types of equipment assets; 32 types of private nonresidential structures assets; 11 tenant-occupied residential structures assets; 9 owner-occupied residential structures assets; a land asset; and 3 types of intellectual property assets. Intellectual property assets include software; research and development; and entertainment, literary, and artistic originals.<sup>14</sup> BLS uses BEA's data on gross investment expenditures by asset type for private U.S. businesses. Depreciation rates for each type of capital asset are calculated using primarily BEA asset service lives and a hyperbolic age-efficiency schedule. To summarize, BLS capital stock measures are determined by the assumption of a hyperbolic age-efficiency function, service lives provided by BEA for the majority of capital assets, and BEA gross fixed investment data. The stock of capital in a given year is then modeled as the sum of past investments, net of depreciation.<sup>15</sup>

<sup>12</sup> These values are consistent with research by Hulten and Wykoff (1981a and 1981b) that modeled the functional form of used asset prices for a variety of capital assets, using an extensive database of used asset prices. This research determined that structures depreciate more slowly than equipment assets.

<sup>13</sup> See "[BEA depreciation rates](#)" and "The Measurement of Depreciation in the U.S. National Income and Product Accounts," Survey of Current Business, Bureau of Economic Analysis, July 1997 for a description of data sources and estimation methods underlying the BEA depreciation rate and service life computations.

<https://apps.bea.gov/scb/pdf/national/niparel/1997/0797fr.pdf>.

<sup>14</sup> See Table 1 in "Overview of Capital Inputs for the BLS Multifactor Productivity Measures," U.S. Department of Labor, Bureau of Labor Statistics, June 2017, for a detailed list of the capital assets included in BLS capital stock measures.

<https://www.bls.gov/mfp/mprcptl.pdf>

<sup>15</sup> See U.S. Department of Labor, Bureau of Labor Statistics, "Trends in Multifactor Productivity, 1948-81," Bulletin 2178, (Washington DC: U.S. Government Printing Office) September 1983, p. 41.

[https://www.bls.gov/mfp/trends\\_in\\_multifactor\\_productivity.pdf](https://www.bls.gov/mfp/trends_in_multifactor_productivity.pdf)



Similarly, BEA's measures of the market value of capital stock are based on accumulated fixed investment, net of depreciation. There are significant differences between the BLS and BEA methodologies. One is that BLS capital stock measures are based on a hyperbolic age-efficiency function, whereas BEA measures are constructed assuming geometric efficiency decline with age.<sup>16</sup> The second is that BLS uses the capital asset depreciation rate obtained from the BEA to identify a corresponding capital asset service life. This value is used in the BLS PIM calculations. As a result of these different functional forms, BLS and BEA estimate different service lives for some similar assets. Despite these differences, BLS and BEA use very similar depreciation rate and service life assumptions for most capital assets.

For BEA's estimates of net stocks of fixed assets and CFC, the basic equation for the PIM is:

$$K_{jt} = K_{j(t-1)} * (1 - \delta_j) + I_{jt} * (1 - \delta_j/2) - O_{jt} \quad (1)$$

where:

$K_{jt}$  = net stock for year  $t$  for type of asset type  $j$

$\delta_j$  = average rate of economic depreciation for asset type  $j$

$I_{jt}$  = investment for year  $t$  for asset type  $j$

$O_{jt}$  = other changes in volume of assets for year  $t$ , asset type  $j$

The annual change in the net stock equals the additional investment, less the additional depreciation, which BEA estimates based on assumed depreciation rates, and other volume changes (mainly damages from major disasters such as hurricanes). Depreciation,  $M_{jt}$ , is estimated as a residual. Rearranging from the expression:

$$K_{jt} = K_{j(t-1)} + I_{jt} - O_{jt} - M_{jt} \quad (2)$$

BEA's estimate of depreciation is:

<sup>16</sup> The hyperbolic function used by BLS is flatter early in the asset's life and then falls sharply as the asset approaches its end of life. For further discussion of BLS capital measurement methods, see Appendix C in U.S. Department of Labor, Bureau of Labor Statistics, *Trends in Multifactor Productivity, 1948-81, Bulletin 2178*, (Washington DC, U.S. Government Printing Office: September 1983), pp. 39-65, [https://www.bls.gov/mfp/trends\\_in\\_multifactor\\_productivity.pdf](https://www.bls.gov/mfp/trends_in_multifactor_productivity.pdf) and Michael J. Harper, "The Measurement of Productive Capital Stock, Capital Wealth, and Capital Services," Working Paper 128, Bureau of Labor Statistics, June 1982, <https://www.bls.gov/osmr/research-papers/1982/pdf/ec820020.pdf> .

$$M_{jt} = [K_{j(t-1)} - K_{jt}] + I_{jt} - O_{jt} \quad (3)$$

BEA has data on investment and other volume changes, but cannot directly measure net stocks and depreciation, so BEA estimates these series using the PIM and annual depreciation rates, which are based on previous studies. BEA estimates the PIM at the detailed asset type level, for about 80 different types of assets.<sup>17</sup>

Both BLS and BEA capital measures rely on BEA's estimates of fixed investment, and the definitions of investment are important for the determination of the relevant depreciation rate, especially for structures. Investment in private nonresidential structures is primarily based on value-put-in-place (VIP) data from the Census Bureau's surveys of construction spending.<sup>18</sup> The survey measures the sum of construction costs rather than the eventual selling price of the asset. The VIP measure includes the cost of new structures as well as modifications to existing structures including additions, alterations, conversions, reconstruction, renovations, and major replacements (a new roof, for example). It also includes mechanical and electrical installations, such as

<sup>17</sup> BEA's depreciation rates, and a brief overview of the studies on which they are based, can be found here: [https://apps.bea.gov/national/pdf/BEA\\_depreciation\\_rates.pdf](https://apps.bea.gov/national/pdf/BEA_depreciation_rates.pdf). BEA estimates the PIM using real (inflation-adjusted) series and then refiles to obtain current dollar net stocks and depreciation.

<sup>18</sup> The Census Bureau defines construction to include: new buildings and structures; additions, alterations, conversions, expansions, reconstruction, renovations, rehabilitations, and major replacements (such as the complete replacement of a roof or heating system); mechanical and electrical installations such as plumbing, heating, electrical work, elevators, escalators, central air-conditioning, and other similar building services; site preparation and outside construction of fixed structures or facilities such as sidewalks, highways and streets, parking lots, utility connections, outdoor lighting, railroad tracks, airfields, piers, wharves and docks, telephone lines, radio and television towers, water supply lines, sewers, water and signal towers, electric light and power distribution and transmission lines, petroleum and gas pipelines, and similar facilities that are built into or fixed to the land; installation of the following types of equipment: boilers, overhead hoists and cranes, and blast furnaces; fixed, largely site-fabricated equipment not housed in a building, primarily for petroleum refineries and chemical plants, but also including storage tanks, refrigeration systems, etc.; and cost and installation of construction materials placed inside a building and used to support production machinery; for example, concrete platforms, overhead steel girders, and pipes to carry paint, etc. from storage tanks. Exclusions from construction include: maintenance and repairs to existing structures or service facilities; cost and installation of production machinery and equipment items not specifically covered above, such as heavy industrial machinery, printing presses, stamping machines, bottling machines, and packaging machines; special purpose equipment designed to prepare the structure for a specific use, such as steam tables in restaurants, pews in churches, lockers in school buildings, beds or X-ray machines in hospitals, and display cases and shelving in stores; drilling of gas and oil wells, including construction of offshore drilling platforms; digging and shoring of mines (construction of buildings at mine sites is included); work that is an integral part of farming operations such as plowing and planting of crops; and land acquisition. For more information on the Census Bureau's construction statistics, see <https://www.census.gov/construction/c30/definitions.html>.

plumbing, heating, elevators, and central air conditioning equipment. It excludes the cost of land and the cost of routine maintenance and repairs. Depreciation rates for each of these components of structures may differ. Improvements and mechanical components may, for example, depreciate or become obsolete faster than the original “brick and mortar” building. Depreciation rates for each type of structure should reflect an aggregation of the depreciation rates of these components.<sup>19</sup>

If the depreciation rates used are slower than the true rates, then BEA estimates of net investment, net stocks of fixed assets available for production, net saving, and corporate profits will be overestimated, and CFC will be underestimated. Depreciation rates that are biased downward would lead to underestimates of depreciation for a given level of net stocks, although there is a secondary, offsetting effect of slower rates leading to higher levels of net stocks over time, and thus higher levels of depreciation. The opposite biases in estimates of net stocks and depreciation will occur if the assumed depreciation rates are faster than the true rates.

BEA depreciation rates are based on numerous studies conducted over many decades.<sup>20</sup> While BEA’s measures of net stocks, net investment, and CFC are widely cited, economists have expressed concerns about slowdowns in net investment.<sup>21</sup> A recent study used BEA’s fixed assets accounts to estimate trends in net investment and stocks of infrastructure assets.<sup>22</sup> Following the 2008 financial crisis, the Data Gaps Initiative, led by

<sup>19</sup> For private equipment, BEA’s estimates are prepared using the “commodity-flow method.” This method begins with a value of domestic output (manufacturers’ shipments) based on data from the five-year Economic Census and the Annual Surveys of Manufacturers (ASM). Next, the domestic supply of each commodity—the amount available for domestic consumption—is estimated by adding imports and subtracting exports, both based on the Census Bureau’s international trade data. The domestic supply is then allocated among domestic purchasers—business, government, and consumers—based on Economic Census data.

<sup>20</sup> The concepts, methods, and empirical studies underlying BEA depreciation rates are described in Barbara M. Fraumeni, “The Measurement of Depreciation in the U.S. National Income and Product Accounts,” *Survey of Current Business* 77 (July 1997), pp. 7–23; U.S. Department of Commerce, Bureau of Economic Analysis, *Fixed Assets and Consumer Durable Goods in the United States, 1925-97*. Washington, DC: U.S. Government Printing Office, September, 2003, pp. M-6 – M-8 and M-29 – M-33. In addition, a current summary of BEA depreciation rates, “BEA Depreciation Estimates,” is available online at [https://apps.bea.gov/national/pdf/BEA\\_depreciation\\_rates.pdf](https://apps.bea.gov/national/pdf/BEA_depreciation_rates.pdf).

<sup>21</sup> See, for example, Richard Peach and Charles Steindel, “Low Productivity Growth: The Capital Formation Link,” in Liberty Street Economics Blog, New York Federal Reserve, June 26, 2017. <http://libertystreeteconomics.newyorkfed.org/2017/06/low-productivity-growth-the-capital-formation-link.html>.

<sup>22</sup> See Bennett, Kornfeld, Sichel, and Wasshausen (2020). <http://www.nber.org/papers/w27446>

the International Monetary Fund, has encouraged the development of sectoral accounts such as the Integrated Macroeconomic Accounts, which present national balance sheets – including stocks of fixed assets – for key economic sectors. Possible biases in depreciation rates are also a concern in the context of the recent recession and the slowdown in measured productivity growth.

The BLS measures of capital services, productive capital stocks, rates of return on capital assets, and MFP also depend on estimates of depreciation rates, which as noted above are generally similar to BEA's depreciation rates and are mostly based on the same set of studies.<sup>23</sup> In the BLS estimates, capital services are considered to be proportional to the productive capital stock. BLS productive capital stocks, constructed for various types of capital assets, are aggregated by asset type, using implicit rental prices as weights. Implicit rental prices are calculated by assuming that the purchase price of a capital asset is equal to the discounted stream of services (and implicitly, the rents) that the asset provides. The capital input of an asset is then defined as the rental price multiplied by the asset's productive capital stock. In the absence of empirical data on capital rental prices, Christensen and Jorgenson (1969) modeled price and quantity components of capital services by capital compensation which is equal to rental price multiplied by the productive capital stock:

$$Y_t = \sum_j c_{jt} k_{jt} \quad (4)$$

where  $Y_t$  is total capital income in year  $t$ ,  $c_{jt}$  is the rental price of capital,  $k_{jt}$  is productive capital stock,  $j$  represents the  $j^{\text{th}}$  asset and  $t$  represents the year  $t$ .

The rental price, in a simplified equation that disregards inflation and taxes, may be given by:

<sup>23</sup> BLS obtains depreciation rates for most capital assets from BEA. These depreciation rates are then translated into slightly different depreciation rates and related service lives than those which result from the BEA geometric age/efficiency pattern, as a consequence of BLS's use of a hyperbolic age-efficiency function rather than a geometric age/efficiency function.

$$c_t = (p_{t-1}r_t + p_{t-1}\delta_t) \quad (5)$$

where  $p_t$  is the deflator for new capital goods,  $r_t$  is the nominal rate of return, and  $\delta_t$  is the average rate of economic depreciation.<sup>24</sup> The rate of return  $r_t$  is a percentage rate of return that represents how many dollars of income are generated per \$100 of physical capital assets. The rental price measures the opportunity cost a business incurs by investing in physical capital and reflects the value the business could have earned by loaning its financial resources in the debt market rather than investing in physical capital and is positively related to rates of return and depreciation.

The effect of underestimated depreciation rates on capital services and MFP is complicated. Rates of return depend on the ratio of net capital income and the net capital stock, which is also affected by depreciation rates. One might expect that an underestimate of depreciation rates would lead to an overestimate of the available stock of capital, and thus an overestimate of capital services and an underestimate of MFP. But the full impact of biased depreciation rates can be more limited, depending on other assumptions. According to the BLS capital calculations described in equations (4) and (5), incorrectly slow depreciation rates lead to decreases in rates of return, because the ratio of capital income to net stock decreases with higher stock levels. Thus, underestimated depreciation rates can result in underestimated rental prices and capital services. This effect can offset the overestimate of the stock of capital, reducing the net effect of biased depreciation rates. In this paper, we rely on the standard BLS calculations to estimate the impacts of changes in assumed depreciation rates.

### **III. Overview of research on depreciation patterns**

Depreciation plays an important role in economic statistics, but it is difficult to estimate, and different studies produce different estimates. The estimates of depreciation rates for structures and equipment used by BEA and BLS are primarily derived by Fraumeni (1997), based on path-breaking studies of used asset transactions

<sup>24</sup> See Robert E. Hall and Dale W. Jorgenson, "Tax Policy and Investment Behavior," *American Economic Review*, Vol. 57, June 1967, pp. 391-414.

by Wykoff and Hulten (1979) and Hulten and Wykoff (1981a and 1981b); hereafter “HW”. More recent studies by Statistics Canada (2007) and Baldwin, Liu, and Tanguay, of Statistics Canada (2015), hereafter “SC”, based on used asset transactions in Canada from 1985-2010, applied methods similar to the HW methods and obtained generally faster depreciation (higher depreciation rates), especially for structures. Many other OECD countries use depreciation rates that are faster than the U.S. rates. While these studies raise questions about the U.S. estimates, true depreciation rates may differ across countries for many reasons, so one should be cautious about applying rates from other countries to U.S. assets. But a recent study by Bokhari and Geltner (2019, “BG”), based on real estate transactions in the U.S. from 2001-2014, applied methods similar to the HW approach and also obtained faster depreciation rates for structures, similar to those found in the SC studies. This section summarizes the data and methods used by these studies and discusses some key issues based on conversations with the authors and others who use these data.

**The Hulten-Wykoff studies.** The HW studies (1979, 1981a and 1981b) estimated depreciation patterns using samples of transactions of several types of used assets at market prices. For machinery and equipment, they acquired data on machine tools, construction machinery, autos, and office equipment from a variety of sources.<sup>25</sup> For nonresidential structures, they used a sample of 8,066 observations of 22 types of buildings collected by the U.S. Treasury’s Office of Industrial Economics (OIE) in 1972.<sup>26</sup> For this sample, the owner of a building was asked when it was constructed, when the owner acquired it, and the price paid for it exclusive of the value of the land. With these data HW could determine market transaction prices by age and date of purchase.<sup>27</sup>

<sup>25</sup> Hulten and Wykoff acquired data of sales of machine tools from a private source, and data on sales of construction machinery, autos, and office equipment from several sources, including the *Forke Brothers Bluebook*, *Ward Automotive Yearbooks*, *Kelly Bluebooks*, and auction reports from the General Services Administration (HW 1981b).

<sup>26</sup> See Hulten, Charles R. and Frank C. Wykoff, “The Estimation of Economic Depreciation Using Vintage Asset Prices: An Application of the Box-Cox Power Transformation,” *Journal of Econometrics*, April 1981, Volume 15, Issue 3, pp. 382-383. <https://www.sciencedirect.com/science/article/abs/pii/0304407681901019>

<sup>27</sup> Another contribution of the Hulten and Wykoff studies was their refutation of the “lemons problem” of used asset studies. Because sellers and buyers of used assets may have asymmetric information about the quality of the asset (only sellers may know about the “lemons”), depreciation estimates based on used asset markets may suffer from bias as modeled by Akerlof

HW used these data to estimate age-price profiles for those assets that were included in the OIE sample. Their estimation methods featured two key innovations. First, they made no assumption about the form of these profiles, and instead used a highly flexible Box-Cox transformation to test whether the patterns most nearly resembled straight line, concave, or convex patterns. Second, because used asset prices reflect only surviving assets (a censored sample problem), HW weighted the used asset prices by the probability of survival before estimating the depreciation patterns. These weighted used asset prices thus reflect surviving and retired assets. The probability of survival depended upon the mean and distribution of the service lives of assets. Service lives were based on the Department of the Treasury's "Bulletin F" and the distribution of retirements followed a Winfrey distribution.<sup>28</sup>

HW found that for most assets in their samples the estimated age-price profiles were similar to a geometric (convex) form. With a geometric form, age-price profiles can be approximated using a single constant rate of depreciation, a feature that simplifies computations of net stocks. Based on their estimated age-price profiles, HW produced rigorous estimates of depreciation rates for the assets in their samples. This set of assets, which they labeled "type A assets," made up 55 percent of investment in equipment and 42 percent of investment in nonresidential structures in the National Income and Product Accounts (NIPAs) in 1977.

To produce estimates of depreciation for the NIPA assets not included in the OIE sample, HW analyzed each asset on a case by case basis. These assets were then classified as either "type B" or "type C" assets, depending on whether or not empirical evidence was available regarding the asset's depreciation pattern. The

(1970). Hulten and Wykoff made the point that most of these assets are bought and sold by professional buyers with extensive knowledge and expertise, so that problems of asymmetric information and resulting biases are likely to be minimal.

<sup>28</sup> See U.S. Treasury, Bureau of Internal Revenue. 1942. *Income Tax Depreciation and Obsolescence: Estimated Useful Lives and Depreciation Rates*. Bulletin "F" revised (January), and Winfrey, R. 1935. *Statistical analyses of industrial property retirements*. Iowa Engineering Experiment Station, Bulletin 125. Winfrey curves are widely used in depreciation studies. An L0 Winfrey curve was used to estimate the pattern of retirements about the mean for structures. The L0 curve is an asymmetrical distribution that allows for some assets to survive to very old ages. An S3 curve, a bell-shaped distribution centered around the mean, was used for metalworking and general industrial machinery.

HW rates for both type B and C assets were based on judgement more than evidence, depreciation rates for assets labeled type B were supported by data from existing empirical studies conducted by others as well and using information on the treatment of depreciation by BEA, Dale Jorgenson and Jack Faucett Associates, at the time.<sup>29</sup> For type C assets, little or no data were available and rates were developed based on inferences to similar type A category assets, where possible. HW assumed the depreciation pattern for these other assets was also geometric. To estimate depreciation patterns for the type C assets, HW used the relationship between geometric depreciation rates ( $\Delta$ ), service lives ( $T$ ), and the declining balance rate ( $DBR$ ):

$$\Delta = \frac{DBR}{T} \quad (6)$$

The value of the declining balance rate determines the “shape” of the depreciation pattern – the extent to which asset values fall more rapidly early in the lifecycle. Higher values of the  $DBR$  imply higher reductions in asset value earlier in the service life and more convex (such as geometric) depreciation profiles. For the assets for which data were available, HW estimated  $DBR$  values of 1.6 for equipment and 0.91 for nonresidential structures. These estimates contrast with a  $DBR$  of 2 (double-declining balance), a rate often assumed by accountants in order to allow taxpayers to write off more depreciation expenses in the earlier years of asset ownership; use of a double-declining balance rate for accounting purposes typically does not portray an accurate picture of observed depreciation. HW then estimated geometric depreciation rates for type C assets by dividing these  $DBR$ s by the existing estimates of service lives.

In 1996, BEA released updated estimates of depreciation rates based largely on the HW studies, although the original HW rates were modified somewhat to reflect service lives that were used by BEA at the time. These updated depreciation estimates replaced previous estimates that were generally based on straight line

<sup>29</sup> Wykoff, Frank C. and Charles R. Hulten, “Tax and Economic Depreciation of Machinery and Equipment: A Theoretical and Empirical Appraisal. Phase II Report, Economic Depreciation of the U.S. Capital Stock: A First Step,” U.S Treasury Department, Office of Tax Analysis, Washington D.C., July 26, 1979, p. 32.



depreciation, using available service lives, and Winfrey retirement patterns (see Fraumeni, 1997). For structures, the updated depreciation rates based on the HW studies were slower than the previous estimates, and led to lower estimates of depreciation and higher estimates of net capital stocks. With few exceptions, BEA continues to use these same rates for estimates of CFC and net stocks of nonresidential structures and equipment.<sup>30</sup>

**Statistics Canada.** The HW studies became a “gold standard” in the depreciation literature and later studies used a similar methodology to estimate depreciation. The SC studies (Statistics Canada, 2007 and Baldwin, Liu, and Tanguay, 2015), like the HW studies, estimated depreciation patterns using samples of used asset transactions. The SC and HW studies both employed flexible specifications to test the shape of age-price pattern (straight line, concave, convex, etc.), made adjustments to address the censoring problem of retirements and discards, and estimated values of structures net of land values.

The data used for the SC studies are based on a single survey, the Annual Capital and Repair Expenditures Survey. The survey provides detailed information on asset type, gross book value, sale price, and age of each asset that is sold or discarded. The gross book value includes the original investment value plus the capitalized improvements over the life of the asset. Investment deflators were used to express all data in constant prices. The data in the 2007 SC study covers the period from 1985 to 2001 (30,350 observations and 43 assets), and the data in the 2015 SC study extends the sample to cover the period from 2002 to 2010 (an additional 22,129 observations on 32 assets). Thus, the SC studies cover a more recent period and use larger samples of a wider

<sup>30</sup> See BEA Depreciation Rates and Fraumeni (1997) for more details. BEA’s estimates of depreciation for computers and peripheral equipment are based on Oliner (1993). The service life for nuclear fuel was obtained from Professor Madeline Feltus of the Pennsylvania State University. Beginning with 1992, light trucks were assigned a service life of 17 years based on data from private sources, while other trucks, buses, and truck trailers are assigned separate service lives that varied by industry. The derivation of stocks of autos is based on a method that does not require an explicit service-life assumption. In 2003 the service lives of aircraft for several industries for 1960 forward was raised from 20 to 25 years. The service life for railroad equipment and structures is derived from reports of individual railroads submitted to the Interstate Commerce Commission. For communication, electric light and power, gas, and petroleum pipelines structures, the service lives are derived by comparing book value data provided by regulatory agencies with perpetual inventory estimates calculated using alternative service lives. For petroleum and natural gas exploration, shafts, and wells, the lives are based on data from the Census Bureau’s annual surveys of oil and gas for 1979–1982.

range of assets than the HW studies. Unlike the HW data, the SC data also include data on the value of improvements, instead of only the original asset price, and also include data on the ages of discarded assets.

The SC studies edited their survey data to screen and adjust observations that seemed aberrant and unrealistic. Some sale prices close to zero were classified as discards.<sup>31</sup> Some long-lived assets that sold close to their original purchase price were excluded from the sample.<sup>32</sup> When reported asset durations were concentrated on rounded values like 5, 10, and 20 years, the authors employed a correction to apply a distribution to the rounded values. The estimates were limited to those assets where resale markets were reasonably active.

The key variable in the SC studies is the ratio between the asset price when sold (SV) and its gross book value (GBV):  $P = SV/GBV$ , expressed in constant prices. Using this ratio and the age of the asset when sold, the studies estimated an age-price function which can be converted to a depreciation profile. The SC studies jointly estimated asset survival and decline in value and the discard function using a flexible Weibull distribution, controlling for price changes and other factors. They confirmed that the depreciation profiles generated by these econometric techniques produced convex age-price curves, consistent with geometric depreciation. The SC studies also confirmed that the estimated depreciation rates changed little over the years in the sample.

A novel feature of the SC studies was their comparison of these rates (“ex post rates”) and the anticipated length of service life reported by survey respondents for initial investments (“ex ante rates”). The SC studies used these service lives and the DBRs obtained from their econometric analysis of depreciation to estimate alternative depreciation rates. The two sets of depreciation rates were generally very similar.

For many assets, especially structures, the SC studies estimate faster depreciation than do the HW studies. The HW studies estimate 2-3 percent annual depreciation rates for buildings generally whereas the SC studies estimate 6-8 percent. The DBRs from the SC studies were generally 2 or higher, in contrast to the DBRs in

<sup>31</sup> Baldwin, John, Huju Liu and Marc Tanguay, “An Update on Depreciation Rates for the Canadian Productivity Accounts,” *The Canadian Productivity Review*, Catalogue no. 15-206-X, January 26, 2015, p. 19.

<sup>32</sup> *Ibid*, p. 44.

the HW studies, which were below 2; higher DBRs imply more rapid depreciation earlier in an assets' life. The SC studies, like the HW studies, used the available DBRs and data on service lives to estimate depreciation rates for some remaining assets. In its *Measuring Capital* (OECD, 2009) manual, the OECD concluded: "This underlines the need for comprehensive and regular studies on depreciation patterns, lest there be a danger of ending up with biased values for depreciation and capital inputs."<sup>33</sup>

**Studies from other countries.** The Economic and Social Research Institute, Cabinet Office, Government of Japan, initiated the Survey on Capital Expenditures and Disposals (CED) in 2006.<sup>34</sup> The CED consists of three questionnaires focused on capital and repair expenditures, financial leases, and disposals. The CED has a detailed classification for more than 600 types of assets. In the disposal survey of the CED, assets are classified into four broad asset groups: buildings and accompanying equipment, machinery and equipment, transportation equipment, and other equipment. For each of these four asset groups, fifteen observations of disposed assets, randomly selected by corporations, are reported, yielding a total of sixty observations of disposed assets covering all four asset groups if a firm fully responds. From these survey data, Japan's Economic and Social Research Institute estimates depreciation rates and average service lives. In general, depreciation rates are found to be similar to the rates estimated by Statistics Canada, and are considerably faster than those used in the U.S.<sup>35</sup>

Statistics Netherlands has estimated depreciation rates and service lives based on direct capital stock observations. In a study by van Rooijen-Horsten et al. (2008), the capital stock survey data were supplemented with discard data collected from an annual Survey on Discards, conducted for all enterprises in the manufacturing industry with 100 or more employees, and with annual Investment Survey data on additions to the capital stock in

<sup>33</sup> Organization for Economic Cooperation and Development, "Measuring Capital," OECD Publications, 2009, p. 100. <http://www.oecd.org/sdd/productivity-stats/43734711.pdf>

<sup>34</sup> Organization for Economic Cooperation and Development, "Measurement of Depreciation Rates Based on Disposal Asset Data in Japan," Statistics Directorate, Committee on Statistics, Working Paper WPNA(2008)9, 2008. [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?doclanguage=en&cote=std/cstat/wpna\(2008\)9](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?doclanguage=en&cote=std/cstat/wpna(2008)9)

<sup>35</sup> Nomura and Suga (2018) report that "Japan's rates of geometric depreciation estimated in this study are broadly similar to the estimates at Statistics Canada (Baldwin, Liu, and Tanguay, 2015), but considerably higher than those used in the U.S."

manufacturing industry enterprises with 20 or more employees. Combining data from the capital stock survey, discard survey, and investment surveys, the authors present estimated service lives for six asset categories – Industrial Buildings, Civil Engineering Works, External Transport Equipment, Machinery and Equipment and Internal Means of Transport, Computers, and Other Tangible Fixed Assets – by manufacturing industry. Based on the estimated depreciation rates and service lives, the study’s authors concluded that the discard survey may have missed a substantial portion of discards, and that care needed to be taken in identifying reliable results. They also found the service life of an asset varied substantially depending on the manufacturing industry using the asset. Industry specific service lives are developed by type of capital asset for NACE 2-digit level industries. Because they assume different functional forms of depreciation, it is not easy to compare their overall rates of depreciation with U.S rates.

A 2016 OECD/Eurostat study reported on depreciation rate assumptions used by several national statistical agencies to estimate net stocks of structures. Canada, Japan, and the Netherlands and about two dozen other countries responded to the survey. Consistent with the studies discussed above, the study found that the U.S. uses slower depreciation rates than do most OECD countries.<sup>36</sup>

**Bokhari and Geltner.** There are valid concerns about applying depreciation rates from another country to the U.S. estimates because true depreciation rates may vary across countries for many reasons. Differences in the mix and scale of industries, relative prices of capital and labor, capital utilization, economic and financial conditions affecting investment, tax policies, and climate across countries may impact capital asset depreciation rates. The variation in depreciation rates for structures in particular may reflect differences in building standards

<sup>36</sup> Eurostat and Organization for Economic Cooperation and Development, *Eurostat-OECD Survey of National Practices in Estimating Net Stocks of Structures*, 2016, pp. 11-12. <http://ec.europa.eu/eurostat/documents/24987/4253483/Eurostat-OECD-survey-of-national-practices-estimating-net-stocks-structures.pdf>

and land use regulations.<sup>37</sup> But a study by Bokhari and Geltner (2019) applied the HW methodology to a large sample of over 100,000 commercial real estate transactions in the U.S. from 2001-2014, and also found faster depreciation rates, consistent with the SC studies.

The BG study used three data sets. The first data set, from Real Capital Analytics (RCA), consisted of transaction prices and other data from commercial and apartment property transactions, making it possible to estimate a property value/age profile. The RCA data did not include information on investment in improvements, which BEA and BLS also capitalize.<sup>38</sup> The other two data sets in the BG study measured investment in improvements. Data from the National Council of Real Estate Investment Fiduciaries (NCREIF) included over 15,000 properties (apartments, office, retail, and warehouses), with detailed information on rents and operating expenses, and separately identified capital improvement expenditures or “capex.” As the authors state: “The capex data reflect only routine capital improvements and upkeep of the type that almost all commercial building owners must undertake on a regular basis (roof replacement, painting, carpeting, new appliances, new HVAC systems, landscaping, tenant custom fit-outs, etc.”<sup>39</sup>) Thus the data omitted major renovations and may understate total investment in improvements. Data from Green Street Advisors (GSA) provided information on

<sup>37</sup> See for example Jiro Yoshida (2020) “The Economic Depreciation of Real Estate: Cross-Sectional Variations and Their Return Implications,” *Pacific-Basin Finance Journal*, Volume 61.

<https://www.sciencedirect.com/science/article/pii/S0927538X18304505>

and Nolan Gray, “Why is Japanese Zoning More Liberal than US Zoning?” *Market Urbanism*, March 19, 2019.

<https://marketurbanism.com/2019/03/19/why-is-japanese-zoning-more-liberal-than-us-zoning/>

<sup>38</sup> Investment in structures by private business includes improvements (additions, alterations, and major structural replacements) to nonresidential and residential buildings. For additional information, see U.S. Department of Commerce, Bureau of Economic Analysis, “Concepts and Methods of the U.S. National Income and Product Accounts,” December, 2020. See Chapter 6, Private Fixed Investment, pp. 6-3 – 6-6.

<sup>39</sup>In the NCREIF data, the distinction between “operating expenses” (not in capital improvement expenditures or capex) and routine “capital improvement expenditures” (included in capex) is that the latter is for items that last longer than 1 year. This definition is similar to the definitions used in national accounts. The NCREIF properties are professional appraised, enabling the authors to quantify capital improvement expenditures as a fraction of property value.

capital improvement expenditures for 1,299 REIT-owned apartment properties and were used to corroborate the findings of the NCREIF data.<sup>40</sup>

The BG study defined “gross depreciation” as the sum of “net depreciation” (the depreciation of the original structure) plus “capex,” i.e. capital improvement expenditures. Bokhari and Geltner illustrate the significance of this definition using the following example: “....suppose a property with a 10-year-old building has market value of \$100, and an otherwise identical 11-year-old property has market value of \$97 as of the same time. Now suppose that during the previous year the owner of the 11- year-old building put \$1 of capital improvement into the building, increasing its market value to \$98. (This \$1 of capex would have to some extent mitigated the wear and tear and the functional obsolescence of the building.)”<sup>41</sup> “.... our estimated value/age profile based on our transaction price data would show 11-year-old properties selling for only 2 percent less than 10-year old properties, even though the total capital consumption occurring between age 10 and 11 is 3 percent of the property value.” As the authors state, this example “illustrates why we need to separately estimate the cost of capital improvements and add that cost to the net depreciation that we observe in our empirically estimated value/age profile, in order to quantify total capital consumption.”<sup>42</sup>

To estimate net depreciation using the RCA data, they used methods generally similar to the HW study. They regressed the log of the expected price (the actual price times the survival probability) on age dummy variables, location characteristics, and a set of year dummy variables to control for factors such as changes in land and construction prices). The coefficients of the age dummy variables provided a nonparametric estimate of a depreciation pattern that is close to geometric for nonresidential and apartment buildings. The authors also

<sup>40</sup> The BG study used the GSA data as a check on the NCREIF data and found that routine capex in the two data sets were similar. The authors found that, for over 700 properties in the GSA sample held at least 16 years, REITs performed major renovations (not included in routine capex) that amounted to 37 percent of the value of the routine capex over the period.

<sup>41</sup> Bokhari, Sheharyar and David Geltner, (2019) “Commercial Buildings, Capital Consumption, and the United States National Accounts,” *The Review of Income and Wealth*, Series 65, Number 3, Sept. 2019, p. 572.

<sup>42</sup> Ibid.

removed the effects of land values from their estimated depreciation rates, based on their estimates of the share of land in the total property value. Their estimated net depreciation rates were 3.1 percent for nonresidential structures and 3.9 percent for apartment structures, higher than the HW estimates.<sup>43</sup>

The BG study then used the NCREIF data to estimate patterns of capital improvement expenditures by age. They regressed annualized capital improvement expenditures as a share of the market value of the building on age, age squared, and several controls for building characteristics. They found that capital improvement expenditures as a fraction of property value tended to increase over much of the lifespan of the property (and they may be underestimating capital improvement expenditures). The gross depreciation rate was estimated as the sum of net depreciation rate plus the estimated capex rate. For a 25-year old building, their estimate of gross depreciation was 6.61 percent for nonresidential buildings (3.14 percent net depreciation plus 3.47 percent for capex) and 7.30 percent for apartments (3.94 percent net depreciation plus 3.36 percent for capex). These gross rates of depreciation are close to those in the SC studies and faster than those in the HW studies.

**Summary.** The SC and BG studies used the Hulten-Wyckoff methods for different samples of used asset transactions and obtained conflicting results compared to HW, especially for structures. The authors of the HW, SC, and BG studies as well as other experts and several users of BEA and BLS data were gracious with their time in responding to concerns we raised regarding the differences in depreciation rates from these various studies. We could not precisely quantify the reasons for the different findings and we were unable to reach a consensus as to which estimates are most appropriate. Some authors expressed concerns about using depreciation rates from other countries because true depreciation rates may differ across countries for many reasons.

All were sympathetic to efforts to update research on the depreciation rates currently used by BEA and BLS. Many also recommended proceeding cautiously in updating these rates, given the numerous challenges in estimating depreciation. Some recommended that BEA and BLS begin a new program of studies to develop

<sup>43</sup> Ibid, p. 581.

updated rates, using the Hulten-Wyckoff methods and new data. While we welcome new studies to estimate depreciation, appropriate data sets of used asset transactions are difficult to obtain, and the “best” estimates of depreciation rates will always be difficult to identify, in part because most nonresidential assets are thinly traded and so it is difficult to “benchmark” estimates of the existing stock of assets at market prices.

One of the key issues in these studies is the role of data on improvements. Since the BEA estimates of fixed investment in structures include spending on improvements as well as the original structure, depreciation rates for the capital stock also reflect depreciation of these improvements. The BG and SC studies include data on improvements, while the HW studies do not. The BG study finds that improvements (“capex”) make up a substantial share of investment in structures.

As the BG study points out, the omission of data on improvements may bias downward the estimate of cumulative investment in a structure, and, given initial and subsequent sale prices of the building, may bias downward the estimate of total depreciation. In the HW studies, the effect of (unmeasured) improvements would still be reflected in the resale price of the building, but the total investment in the building prior to resale, and perhaps total depreciation, may be understated. In addition, improvements such as wiring, heating and cooling, and renovations may experience depreciation and obsolescence at a faster rate than the original structure. On the other hand, questions could be raised about whether the data on improvements in the SC and BG studies truly measures investment that should be capitalized and depreciated. This is an important point, as a major challenge for the measurement of fixed investment is the accurate distinction between “improvements” which should be capitalized and “maintenance and repairs” which should not. Indeed, it may be difficult to differentiate between these two types of expenditures in the data. Still another question is whether the respondents to the Census Bureau’s construction statistics, the basis for BEAs estimates of investment, fully and accurately report these improvements, although the Census Bureau questionnaires clearly request this data.



Other considerations include a range of issues about the methods and conclusions of these studies. For the SC studies, questions were raised about the econometric specifications, the price measures used, and reporting problems with their survey data, such as a tendency to report asset ages and service lives as round numbers or as numbers consistent with, say, tax rules rather than with actual observation. The authors of the SC studies did not share these concerns, and instead raised questions about some details of the HW studies. For example, they questioned whether or not the HW studies relied on building prices that included land values, resulting in unrealistically low estimated declining balance rates in the HW studies. The building price data used in the HW study was obtained from U.S. Treasury, Office of Industrial Economics surveys of building values, conducted in 1972 and 1973.<sup>44</sup> These surveys asked building owners to provide “cost or other tax basis of property (*less land*),” among other items.<sup>45</sup> To the extent that building owners responding to these surveys complied with this direction, the building price data used by HW does exclude the value of land. One difficulty in comparing across studies is that depreciation rates are not necessarily stable over time. For example, when fiber optics were adopted for communication networks, copper wire telephone networks were replaced en masse. That causes “sudden obsolescence,” that is, faster depreciation for a brief time.

#### **IV. Experimental Use of Canadian Service Life Survey Data in U.S. Capital Accounts**

Now, we consider the potential impact of using the depreciation rates from Statistics Canada on several key BEA and BLS capital measures, making the assumption that the fixed assets and economic and technological

<sup>44</sup> The U.S. Treasury, Office of Industrial Economics, conducted three mail surveys in 1972 and 1973 to test whether or not the depreciation periods being used by owners of buildings were shorter than the guideline depreciation periods in force. Survey results were published in *Business Building Statistics: a Study of Physical and Economic Characteristics of the 1969 Stock of Non- Residential Non-Farm Business Buildings and Depreciation Practices of Building Owners*. An online pdf of this study is available. <https://babel.hathitrust.org/cgi/pt?id=mdp.39015051123365&view=1up&seq=2>

<sup>45</sup> U.S. Treasury, Office of Industrial Economics, “*Business Building Statistics: a Study of Physical and Economic Characteristics of the 1969 Stock of Non- Residential Non-Farm Business Buildings and Depreciation Practices of Building Owners*,” August 1975, p. 4. <https://babel.hathitrust.org/cgi/pt?id=mdp.39015051123365&view=1up&seq=2>

trends are broadly similar in the U.S. and Canadian economies. We must also set aside the possibility that asset service lives in a given country may be influenced by country-specific factors, as mentioned above, including variations in capital utilization, relative prices of capital and labor, economic and financial conditions affecting investment decisions, and climate.<sup>46</sup> The secondary market for productive assets may also differ between countries in ways that are not obvious. These factors could all lead to different sale and discard prices in the two countries and different efficiency curves and depreciation rates. At the same time, the similarity of results from the SC studies and the recent BG study, based on U.S. data, suggest that the SC rates may be relevant for the U.S. Our goal is to describe the potential impact of using the SC or BG rates in BEA and BLS capital measures and for cross-national comparisons of these outcomes, and to encourage further research on depreciation rates.

We first developed a concordance between the asset classification systems of the two countries. Statistics Canada uses an asset classification system with more detailed asset categories than that of the U.S. While a few asset categories appear to be direct matches, other categories in the Canadian system consist of more detailed assets. The concordance between U.S. and Canadian productive assets was created by Bob Kornfeld of BEA and Susan Powers of BLS. Details on its development are presented in Appendix A. Overall, we found the concordance to provide a reasonable scaffold on which to develop useful proposed depreciation rates for this analysis.

Using the asset category concordance, we conducted a series of experiments with different sets of service lives, described in Table 1. For our initial “Set 1” experiment, we estimated new depreciation rates for 38 of the 39 U.S. equipment categories, all 32 private nonresidential structures categories, and 9 of the 11 tenant-occupied residential structures categories.<sup>47</sup> Where a U.S. asset category was matched to multiple more detailed SC assets,

<sup>46</sup> Organization for Economic Cooperation and Development, “Measuring Capital,” OECD Publications, 2009, p. 110. <http://www.oecd.org/sdd/productivity-stats/43734711.pdf>

<sup>47</sup> One equipment category, nuclear fuel (asset 31), uses a depreciation rate based on recent U.S. data and so this rate was not revised. Owner-occupied residential capital asset rates also are unrevised because BLS obtains the related capital stock estimates directly from BEA and does not use the perpetual inventory method to develop capital stock measures for these

an overall depreciation rate was developed as a weighted average of the SC depreciation rates, where the weights used are the shares of 2007 U.S. fixed investment in the more detailed assets. These revised depreciation rates reflect the SC depreciation rates and declining balance rates, and make up the first of the two sets of revised rates used in our capital simulations.

Experiment Name	Description	Timing of New Service Life Implementation
Set 1	The Set 1 experiment uses the concordance of U.S. and Canadian asset categories and Statistics Canada depreciation rates to calculate a geometric depreciation rate for each U.S. asset class. For the BLS, this depreciation rate is matched to the corresponding hyperbolic depreciation rate and service life value.	The "Historical" trial experiment implements the Set 1 service lives beginning with data in 1901 and continues for all subsequent years. The "Recent" trial experiment uses existing BLS service lives from 1901 through 1984 and then switches to the Set 1 service lives beginning in 1985. Set 1 lives are only implemented for new investment assets that are purchased in 1985 and subsequent years. Investments before 1985 continue to be depreciated with existing BLS depreciation rates.
Set 2	The Set 2 experiment uses the concordance of U.S. and Canadian asset categories to calculate new declining balance rates (DBRs) for each U.S. asset category based on Statistics Canada DBR values. The DBR is then divided by the BEA asset service life to obtain a geometric depreciation rate for each asset category. For the BLS, this depreciation rate is matched to the corresponding hyperbolic depreciation rate and service life value.	The "Historical" trial experiment implements the Set 2 service lives beginning with data in 1901 and continues for all subsequent years. The "Recent" trial experiment uses existing BLS service lives from 1901 through 1984 and then switches to the Set 2 service lives beginning in 1985. Set 2 lives are only implemented for new investment assets that are purchased in 1985 and subsequent years. Investment from 1984 and earlier continue to be depreciated with existing BLS depreciation rates.
BLS-50	Decrease current BLS service lives by 50 percent, rounded down to an integer number of years. This corresponds to faster asset depreciation rates. <sup>1</sup> The BLS-50 experiment establishes an upper boundary for the BLS depreciation rates.	Adopts BLS-50 service lives for investments in 1985 or later. Earlier investments depreciate at existing BLS depreciation rates.
BLS-125	Increase current BLS service lives by 25 percent, resulting in lives that are 125 percent of the current BLS service lives, rounded up to an integer number of years. This results in slower asset depreciation rates. The BLS-125 experiment establishes a lower boundary for the BLS depreciation rates.	Adopts BLS-125 service lives for investments in 1985 or later. Earlier investments depreciate at existing BLS depreciation rates.
Set 2-75	Decrease the Set 2 service lives by 25 percent, rounded down to an integer number of years. Lower service life values correspond to faster asset depreciation rates. The Set 2-75 experiment establishes an upper boundary for the Set 2 depreciation rates.	Adopts Set2-75 service lives for investments in 1985 or later. Earlier investments depreciate at existing BLS depreciation rates.
Set 2-250	Increase the Set 2 service lives by 150 percent, resulting in lives that are 250 percent of the Set 2 service lives, rounded up to an integer number of years. This results in slower asset depreciation rates. The Set 2-250 experiment establishes a lower boundary for the Set 2 depreciation rates.	Adopts Set2-250 service lives for investments in 1985 or later. Earlier investments depreciate at existing BLS depreciation rates.

<sup>1</sup> Note that "faster depreciation" corresponds to a higher depreciation rate, while "slower depreciation" corresponds to a lower depreciation rate.

Appendix A., Table 1 summarizes the current BEA and BLS rates and our derived alternative rates from Statistics Canada for each U.S. asset category. For most categories of equipment, the rates from Statistics Canada are higher, implying a faster rate of depreciation. Only three U.S. equipment asset categories have slower revised depreciation rates than current U.S. rates: (5) internal combustion engines; (19) other electrical equipment; and (21) other trucks, buses, trailers in the transit and ground passenger transportation industry. For structures, the

structures assets. We also did not revise rates for intellectual property products on the grounds that these rates have been more recently developed. Land, inventory, and tenant and owner-occupied acquisition and disposal costs assets were also left at current BLS depreciation rates.

depreciation rates from Statistics Canada are typically faster. For many types of buildings, the current BEA/BLS depreciation rates are in the range of 2-3 percent while the alternative SC based estimates are 6-8 percent.

To obtain revised service lives from this first set of SC depreciation rates, we use the established relationship of a depreciation rate to service life and the declining balance rate (DBR). Assuming a geometric age-efficiency function, the rate of depreciation depends only on the asset service life and the profile of the rate of decline of an asset's value over time, or DBR. The DBR "is the multiple of the comparable straight-line rate used to calculate the geometric rate of depreciation,"<sup>48</sup> and determines the "shape" of the depreciation pattern – the extent to which asset values fall more rapidly early in the lifecycle.

$$\text{Depreciation Rate}_i = \frac{\text{Declining Balance Rate}_i}{\text{Service Life}_i}$$

To estimate revised Set 1 BEA service lives, the SC revised depreciation rates in Set 1 were combined with BEA declining balance rates for each U.S. asset category. For the BLS capital measure simulations, these revised BEA service lives were then adjusted to equivalent BLS hyperbolic age-efficiency function service lives. The respective depreciation rates related to the BLS service lives were also then identified.

We also used the Canadian data to estimate a second, alternative set of depreciation rates, "Set 2." Rather than using weighted averages of the Canadian depreciation rates to obtain rates for U.S. assets, we combine data on U.S. service lives with Statistics Canada's declining balance rates. This approach is an attempt to retain the value of information from historical U.S. studies of average service lives and investigate the effect of Statistics Canada's more recent findings on the pattern of depreciation over time. To do this, we again use the above relationship between a geometric depreciation rate, service life, and declining balance rate. The Statistics Canada DBR value for each U.S. asset is divided by the BEA service life for each asset to obtain a revised depreciation rate. Estimated SC DBR values for each U.S. asset category were constructed using our concordance

<sup>48</sup> See Fraumeni, Barbara, "The Measurement of Depreciation in the U.S. National Income and Product Accounts," *Survey of Current Business*, (July, 1997), p. 11

between the U.S. and Canadian capital asset classification systems. We then estimate the effect of this second set of depreciation rates on BEA and BLS capital measures and BLS MFP measures. In general, the Set 2 depreciation rates fall in between those in Set 1 and the rates currently used by BLS and BEA. Appendix B., Table 2a provides a more detailed comparison of the current and revised depreciation rates and service lives.

BLS and BEA capital stocks are not directly comparable for a number of reasons. BLS capital stocks are consistently higher than BEA's capital stocks, in part because BLS uses a hyperbolic age-efficiency function, which retains capital assets in capital stock for a relatively longer time period than the BEA's geometric depreciation function. Also, the BLS capital stocks include land and inventories, while BEA's fixed assets accounts do not. BLS also has relatively higher estimates of stocks of structures, equipment, and intellectual property products because BLS uses slower depreciation rates for some types of assets, and because BLS and BEA use different functional forms for depreciation. BEA and BLS estimate capital stocks for different purposes: BEA estimates the market or replacement value of stocks for national accounts and balance sheets, while BLS estimates the value of productive capital and its capital services.

## **V. Empirical results: BEA and BLS Experimental Capital Measures Using the Revised Service Lives**

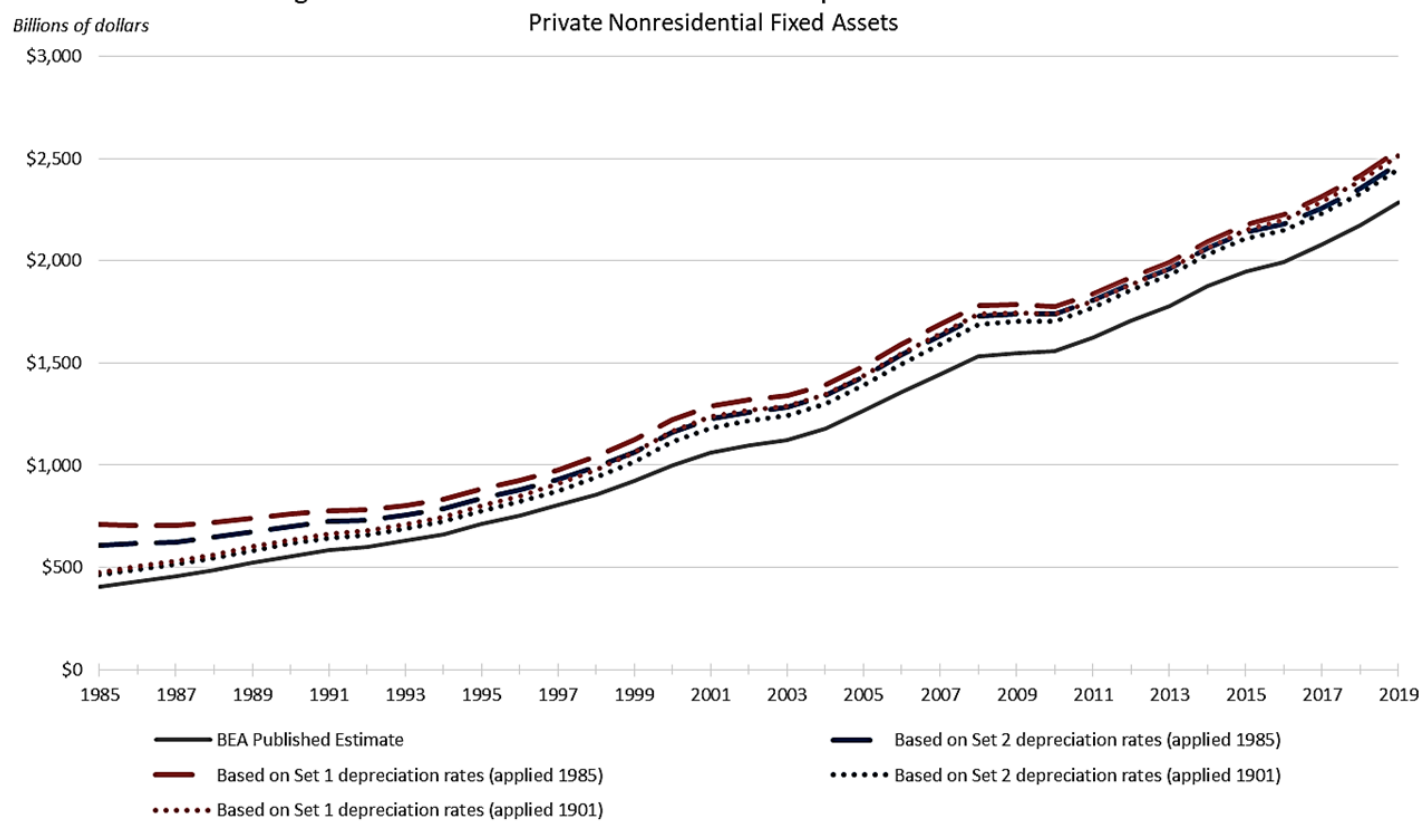
To describe the potential effect of using these alternative depreciation rates, we substituted the revised rates into the BEA and BLS PIM and rental rate calculations to estimate experimental capital stock and capital services measures. We re-estimated our capital measures using both the Set 1 and Set 2 depreciation rates and over two different timespans. In our "historical trial," we replaced existing depreciation rates with the revised rates for the entire sample period, dating back as far as 1901 for some assets. In our "recent trial," we maintained the existing depreciation rates through 1984 and introduced the revised rates for all assets beginning in 1985. The recent trial simulates changing depreciation rates by assuming that the newer SC rates are more appropriate

for later years while the current BEA/BLS rates are more appropriate for earlier years. Depreciation rates most likely change gradually over time; the two phases are merely illustrative.

### *BEA Revised Capital Measures*

The use of the faster depreciation rates from Statistics Canada results in an upward revision to estimates of CFC, relative to BEA's published estimates (Figure 1). Under the "recent trial," which implements revised rates starting in 1985, and using the revised depreciation rates from Set 1, CFC is revised upward by \$308 - \$170 billion annually for 1985-1994, \$170-\$214 billion for 1995-2004, and \$222-\$249 billion for 2005-2018. Under the more recent trial and using generally more modest depreciation rates from Set 2, CFC is revised upward by smaller but still notable amounts -- \$206-\$125 billion annually for 1985-1994, \$125-\$163 billion for 1995-2004, and \$168-\$195 billion for 2005-2019. In most years, the upward revision to CFC is larger for structures than for equipment (this detail is not shown) because differences in depreciation rates and the capital stocks are larger for structures. As a percent of the published CFC values, the upward revision to CFC declines from about 25 percent in 1994 to about 11 percent in 2019 (Set 1), and declines from about 19 percent in 1994 to 8 percent in 2018 (Set 2). Faster depreciation rates result in upward revisions to CFC that decline in percentage terms over time because the faster depreciation rates also result in downward revisions to net stocks, and these lower net stocks lead to a partly offsetting decline in estimates of CFC. The notable upward revision to depreciation in 1985 results from our somewhat abrupt introduction of new rates in that year, so a gradual transition in which rates were slowly revised upward over the course of several years prior to 1985 is probably more realistic.

Figure 1. CFC: Published BEA Estimates Compared to Revised Estimates



Under our longer historic trial, which implements revised rates starting in 1901, and using the revised Set 1 depreciation rates, the upward revisions to CFC are smaller in 1985 because the 1984 capital stock levels are lower in the historic (1901) trial than in the recent (1985) trial, reflecting the impact of additional cumulative depreciation through 1984. Over time, the impact of the historic and recent trials on CFC grows more similar because older stock largely depreciates under both trials, and so both trials measure depreciation of increasingly similar stocks of relatively younger assets. By 2018, the two trials produce roughly equal upward revisions to CFC. In the NIPAs, these upward revisions to CFC would also lead to downward revisions in corporate profits (because BEA’s featured measure of corporate profits is net of CFC) and to net saving for the corporate sector. The results are again slightly smaller but similar for the depreciation rates in our second set of rates, Set 2.

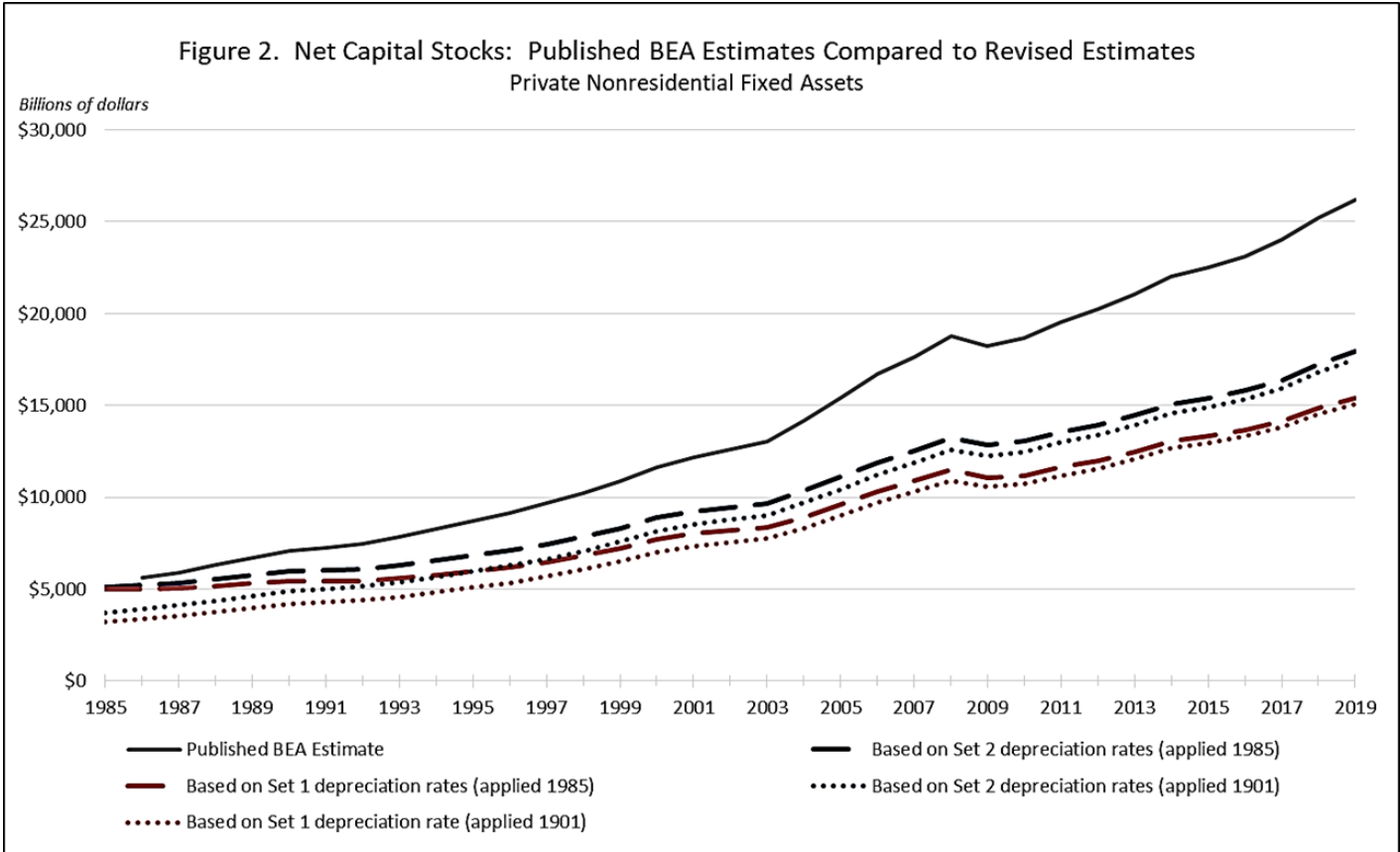
These upward revisions to CFC lead to downward revisions to net stocks (Figure 2). Under the more limited recent trial, which implements revised rates starting in 1985, and using the revised Set 1 depreciation

rates, net stocks (in current dollars) are revised downward by \$309 billion in 1985. This downward revision grows to over \$10.4 trillion in 2018—a downward revision of 39.7 percent in current dollars. The downward revision to net stocks in 2018 is about \$2.4 trillion for equipment and \$8.0 trillion for structures. Under the longer historic trial, which implements revised rates starting in 1901, and using the revised Set 1 depreciation rates, net stocks are revised downward by \$10.7 trillion in 2018. These downward revisions imply reductions in estimates of the value of fixed assets in the balance sheets of the Business Sector in the IMAs (sectoral accounts).<sup>49</sup> Using the Set 2 depreciation rates, the downward revision to net stocks in 2018 is \$8.0 trillion (30.4 percent) under the recent trial (1985 forward) and \$8.4 trillion under the historic trial (1901 forward).

These downward revisions to net stocks reflect downward revisions to several categories of equipment and structures. Under the recent trial, with revised rates starting in 1985, and within equipment, downward revisions occurred for information processing equipment such as computers, communications equipment and instruments (\$0.6 trillion), industrial equipment (\$0.9 trillion), transportation equipment (\$0.4 trillion), and all other equipment (\$0.5 trillion). Within structures, downward revisions occurred for commercial and healthcare (\$3.2 trillion), manufacturing (\$0.9 trillion), power and communication (\$1.5 trillion), mining exploration (\$0.6 trillion), and all other structures (\$1.8 trillion).

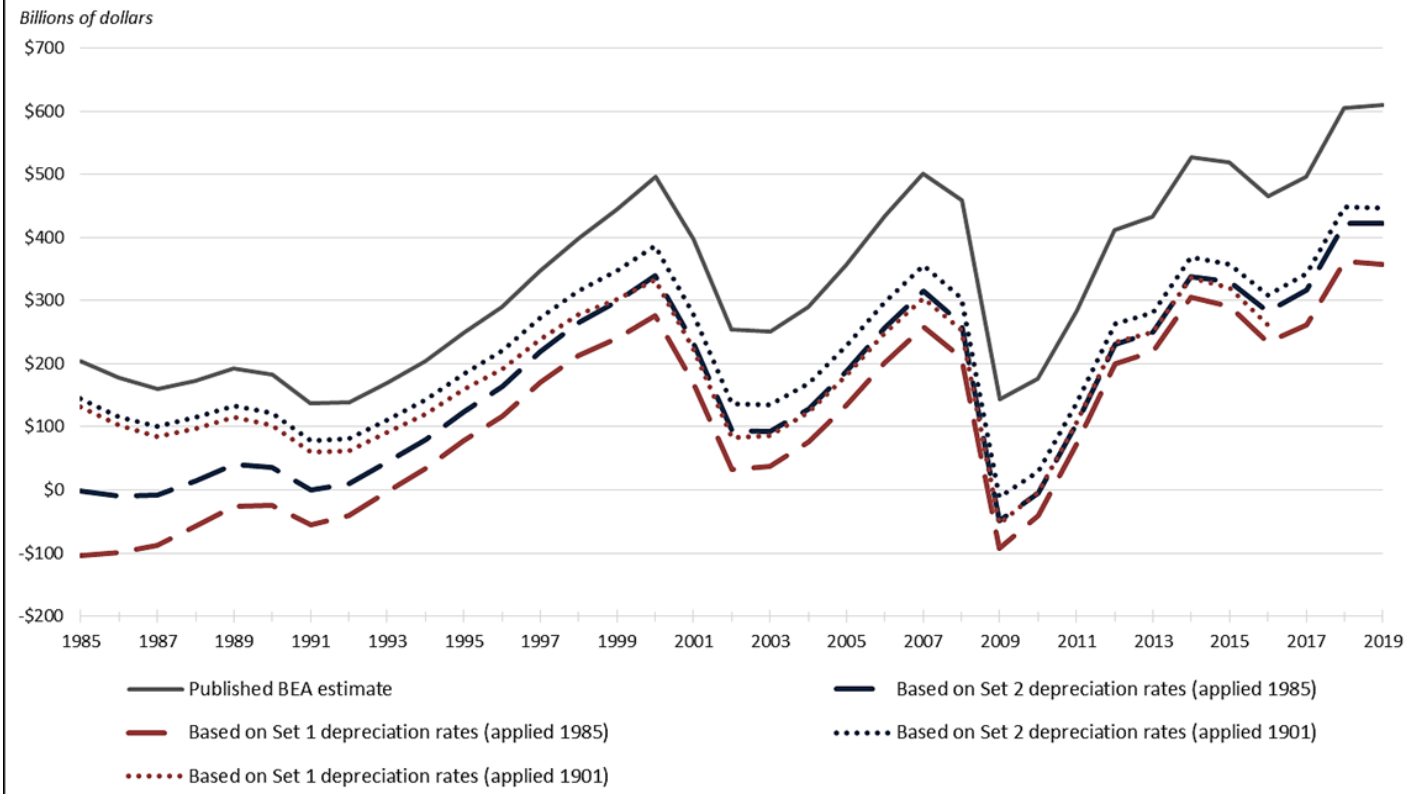
<sup>49</sup> One ongoing issue with the balance sheets in the Business Sector of the IMAs is that the estimates of total real estate assets (including structures and land) and BEA's estimates of total structures (not including land) can sometimes imply (by subtraction) unrealistic estimates of land owned by the Business Sector. The use of faster depreciation rates may reduce this problem.





Net investment is revised downward with the faster Statistics Canada depreciation rates, with the revisions equal in magnitude (but opposite in sign) to the upward revisions to CFC (Figure 3). These revisions to net investment do not shed any new light on the reasons for the timing of the productivity slowdown that began around 2004 because the revisions begin several years before the slowdown started. Nevertheless, the downward revisions to net investment and net stocks are noteworthy. The data underlying Figures 1, 2, and 3 are presented in Appendix B., Tables 3a, 3b, 4a, and 4b.

Figure 3. Net fixed investment: Published BEA Estimates Compared to Revised Estimates  
Private Nonresidential Fixed Assets



### *BLS Revised Capital Measures*

We used the revised depreciation rates to construct capital stock and capital services measures for major sectors, including the Private Business, Private Nonfarm Business, and Manufacturing Sectors; and for 60 National Income and Product Account (NIPA), roughly 3-digit level, industries. Figure 4 presents the BLS official capital stock levels, in constant 2012 dollars, for the Private Nonfarm Business Sector along with the capital stock measures constructed using the revised depreciation rates for both Set 1 and Set 2. The average annual growth rate of the BLS official capital stock measures for Private Nonfarm Business, from 1987-2018, is reduced from 1.8% to 1.6% (Set 1) and 1.7% (Set 2) when the revised depreciation rates are substituted for the current rates, in all available investment years from 1901 forward. Introducing the new rates in 1985 reduces the capital stock growth rate substantially over the 1987-2018 period, from the official value of 1.8% to 0.9% and 1.2%, for Set 1 and Set 2, respectively. This reflects the introduction of the faster depreciation rates more closely to the 1987-

2018 time period, and the inclusion of investment which until 1984 was depreciated at a slower rate. When the Statistics Canada based depreciation rates are applied beginning in 1985 for both sets of rates, the Perpetual Inventory Method is working with an identical capital stock as the original data through 1985, but after that the stock grows more slowly.

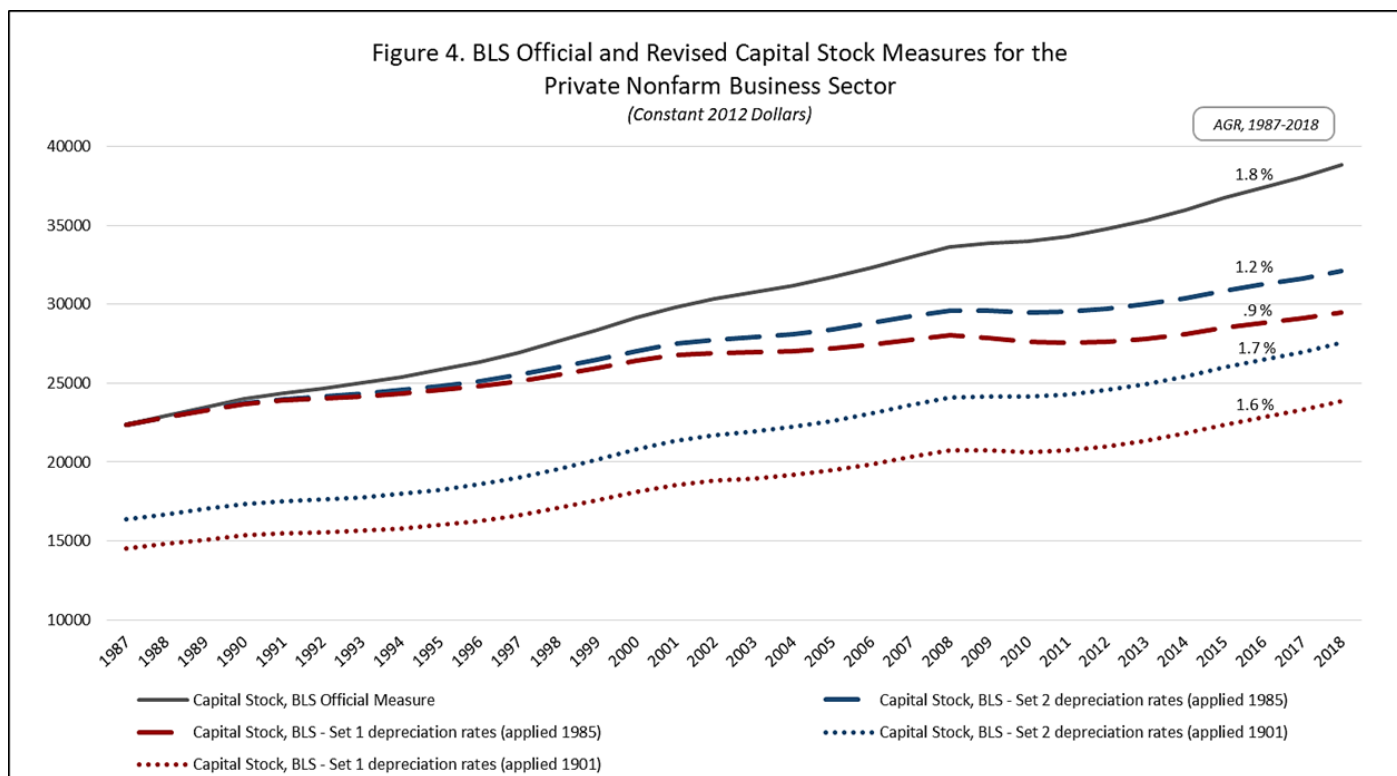
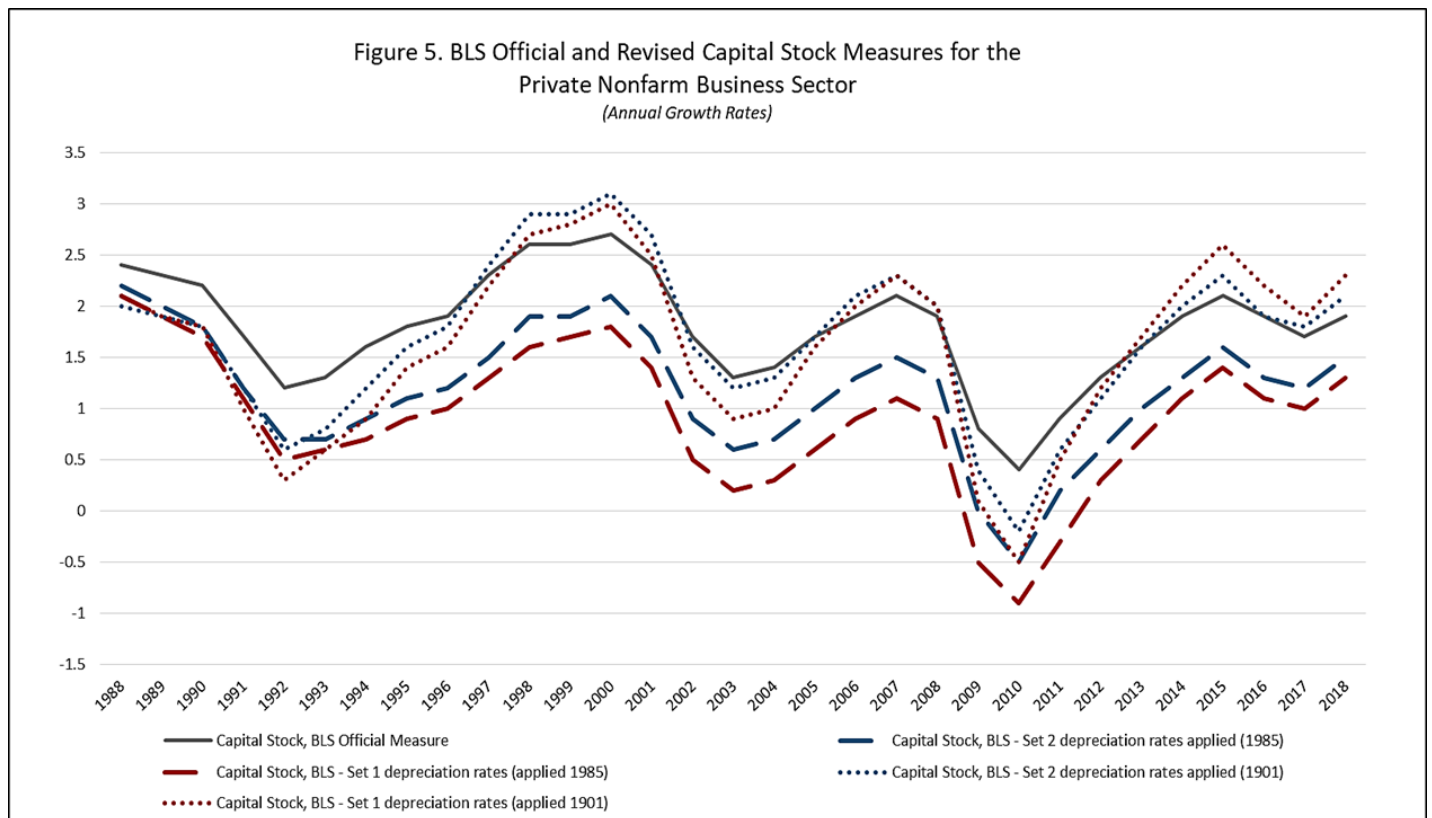


Figure 5 presents the growth rates of the BLS official capital stock for the Private Nonfarm Business Sector and the revised capital stock measures based on Statistics Canada depreciation rates applied for 1901 forward and 1985 forward, for both sets of rates. Since investment is the same for each method of estimating capital stock, the growth rate of the substantially smaller capital stock based on revised Set 1 and Set 2 Statistics Canada rates for 1901 forward exhibits far more variation than in the case of the BLS official capital stock measure, based on the current service lives, or the capital stock generated using both sets of Statistics Canada revised rates for 1985 forward. As time progresses, the capital stock created using the revised rates for 1901 forward will

approach the capital stock which uses revised rates for 1985 forward and their growth rates will also converge. The growth rates for both the first and second sets of rates, when new service lives are implemented beginning in 1985, are consistently lower than current BLS capital stock growth rates. Compared to current values, the faster depreciation of capital beginning in 1985 results in this slower net growth of the stock. The BLS current and revised capital stock growth rates for the major sector and NIPA industries are available in Appendix B., Tables 5a and 5b for selected time periods.

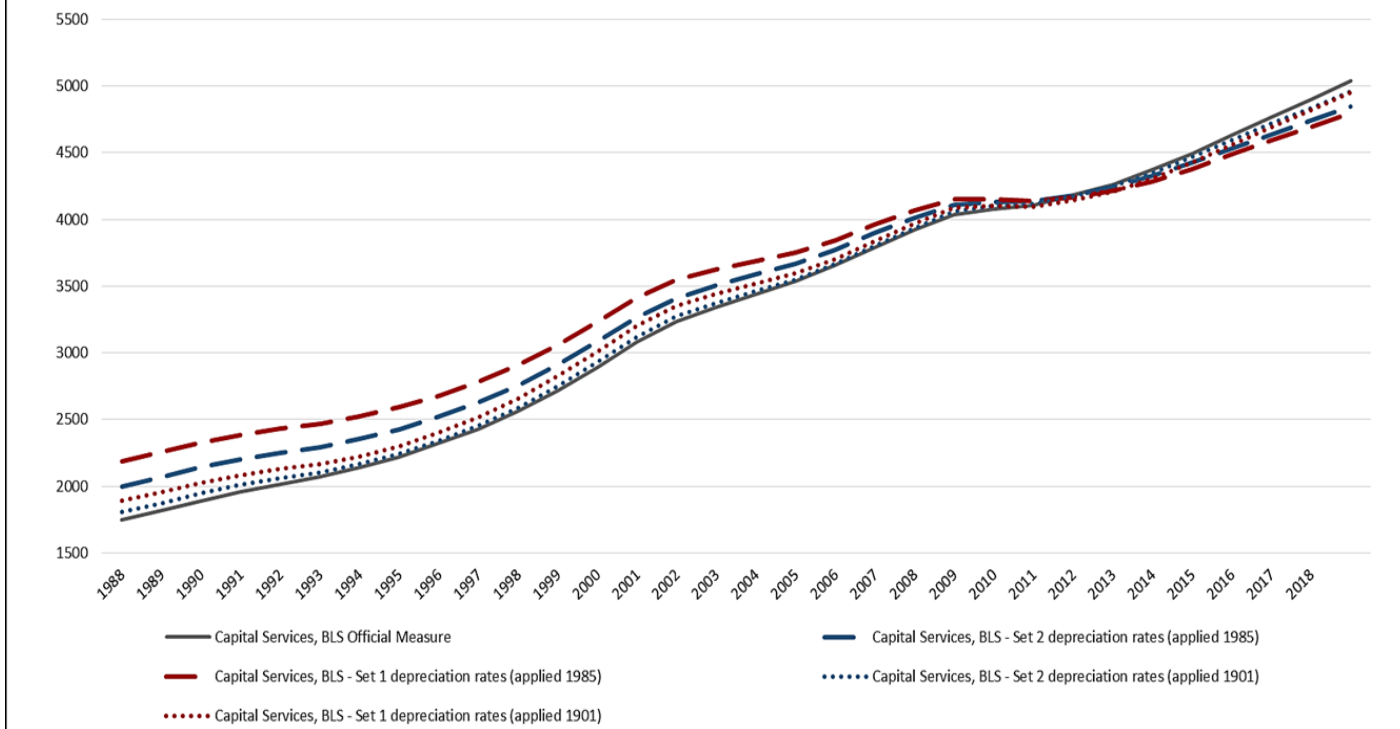


As noted above, BEA and BLS capital stock measures differ in terms of the assumptions made about asset depreciation rates and patterns of decline over time, as well as the types of assets included in each agency's measures. Comparisons between the BEA and BLS capital stock measures as a result are somewhat difficult. Regardless, we see that the use of the Statistics Canada depreciation rates results in lower stocks for both sets of estimates.

The change in service lives and depreciation rates is expected to reduce capital stocks, but the effect on capital services is less obvious. BLS measures of capital services are calculated as proportional to the capital stock, where the proportion is the rental price of the asset.<sup>50</sup> Capital services for the Private Nonfarm Business Sector under Set 1 and Set 2 scenarios are presented in Figure 6, along with the official values. All Set 1 and Set 2 simulated capital services series are greater than the official values during the first two thirds of the time series. Both the Set 1 and Set 2 capital services series — when revised service lives are implemented in 1985 — begin higher than those implemented in 1901, but also exhibit slower growth, so that they finish below the 1901 series and the BLS official series in 2018. The official value of capital services starts lower than the other two series, but surpasses the two Set 1 capital services series by 2011. The trend lines for all five series are similar though, with relatively steady growth except for a slowdown during and following the Great Recession. The BLS current and revised capital services growth rates for the major sector and NIPA industries are available in Appendix B., Tables 6a and 6b for selected time periods.

<sup>50</sup> The methods are further explained in U.S. Department of Labor, Bureau of Labor Statistics, “Trends in Multifactor Productivity, 1948-81,” Bulletin 2178, (Washington DC: U.S. Government Printing Office) September 1983, p. 40.

Figure 6. BLS Official and Revised Capital Services Measures for the Private Nonfarm Business Sector  
(Constant 2012 Dollars)

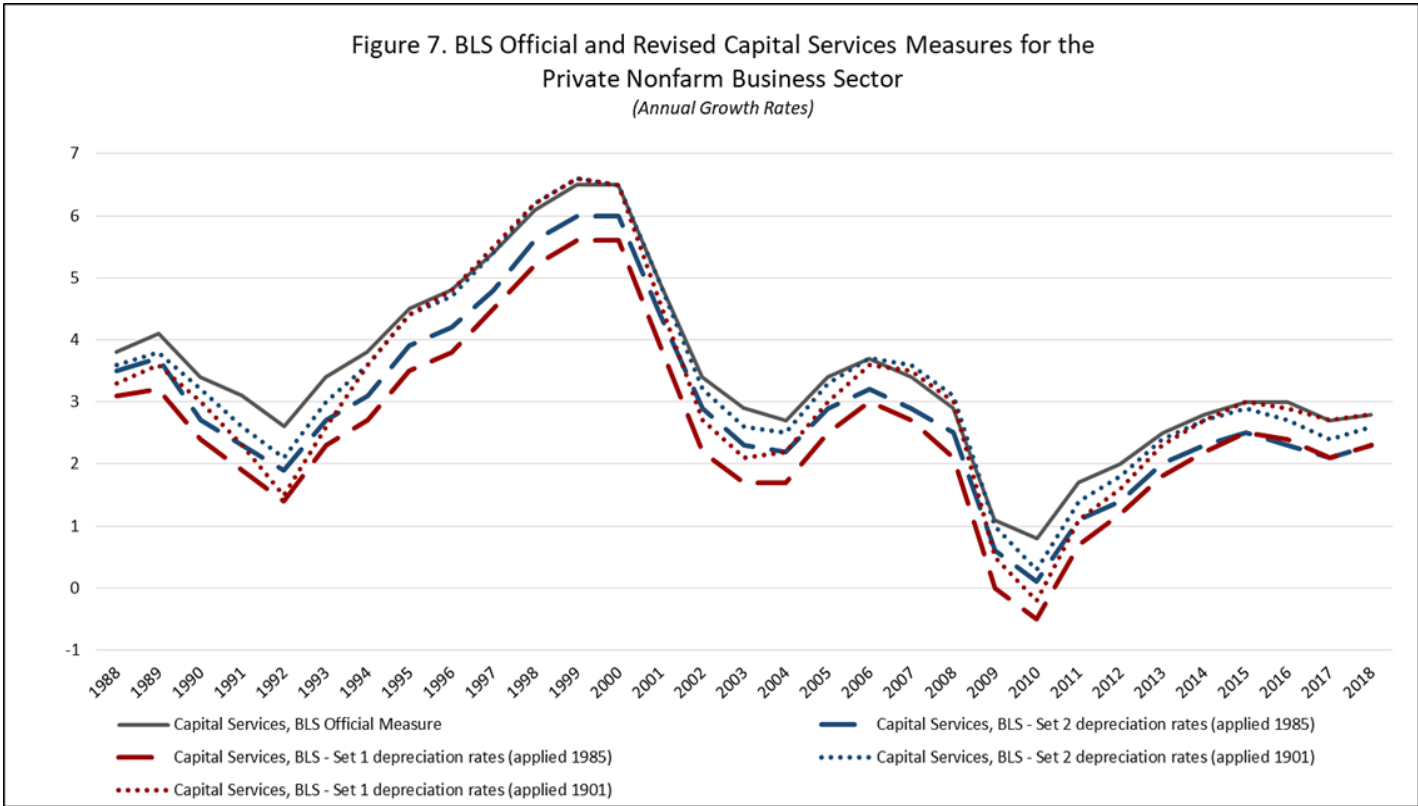


The revised, generally faster depreciation rates used in our capital services simulations had little effect on the estimates of capital services. This can be explained by the offsetting effects of faster depreciation rates on capital stock and capital services measures. Changes in depreciation rates directly affect both productive capital stock measures and rental price measures. Faster depreciation rates lead to increases in rental prices and capital services per dollar of stock, which offset the reduction in productive stocks. The net effect on capital services is small. However, rental prices also function as a means of allocating capital income among capital assets. A change in depreciation rates may result in a change in the productive capital stock measures by asset type as well. In addition, the allocation of capital income among the capital assets and therefore the aggregation of the capital assets into broader capital stock measures may be impacted.

Faster depreciation rates also have offsetting effects on rates of return and capital stocks in the corporate sector. This is because the BLS capital measurement methodology adopts BEA corporate capital income and total

capital income as given. Only BLS’s non-corporate capital income changes relative to depreciation rate and rental price fluctuations. For example, a change in depreciation rates may result in a change in the distribution of proprietors’ income to labor and capital. The impact of changes in the depreciation rates on capital services will be minimal as a result and reflect only changes in the distribution and weighting of assets as well as changes to non-corporate capital income.

Figure 7 displays capital service measure annual growth rates, for the BLS official capital service measure and the revised measures. Note that the updated capital services measures have very similar annual growth rate movements, with level shifts that remain relatively consistent among the separate series. When new service lives are applied beginning in 1985, the growth rate of capital services series of both Set 1 and Set 2 tend to be lower than those series where new service lives are applied beginning in 1901, and lower than the current BLS series.



While BLS official capital stock annual growth from 1987-2018 for the major sectors differs by less than 0.2 percentage points from that of capital stock based on Set 1 or Set 2 revised rates for 1901, the NIPA industries show a wider difference between annual growth rates for the BLS official capital stock measure and capital stock measures based on revised rates for 1901 forward. For example, NAICS 485, Transit and Ground Passenger Transportation, has capital stock using revised Set 1 rates for 1901 forward growing 1.42 percentage points faster than the BLS official capital stock for this industry. In addition, the differences between the 1987-2018 annual growth rates of the BLS official capital stock measure and capital stock measures based on revised rates for 1985 forward by NIPA industry are more pronounced than those between the BLS official capital stock measure and the 1901 forward measures. This suggests that if an update to depreciation rates is adopted, implementing the new rates for all years of investment data available may produce less substantial deviations from current BLS measures. Similar effects are observed for differences between the BLS official capital service measures and the revised capital service measures.

For the major sectors, capital stock levels and growth rates are impacted by the revised service lives, whether implemented on a historical basis or beginning in 1985. The reductions in the level of capital stock are expected given the generally downward revisions in service lives and upward adjustments in depreciation rates. On the other hand, there appears to be little difference in capital service levels and growth rates at the aggregate level, as a result of the updated depreciation rates. However, the impact on detailed NIPA industry capital stock and capital service measures appears to be larger, for many industries, and warrants additional investigation. The differences in both major sector and NIPA industry capital stock and capital services measure growth rates when constructed using the current and revised Set 1 and Set 2 depreciation rates are displayed in Appendix B., Tables 7a, 7b, 8a and 8b, for selected time periods. From Tables 7a and 7b, it is evident that the revised depreciation rates result in greater capital stock differences at the more detailed NIPA industry level than at the aggregate major sector level.



Variation across industries is summarized in Figures 8a-d and 9a-d below, illustrating how the data from Set 1 and Set 2 differ from current BLS capital stock and capital services growth rate data. Each figure presents the distribution of industry average deviations from current BLS average growth rates for the years 1988-2018. For example, the industry average deviation between the BLS and Set 1 (1901 implemented) capital stock growth rates is calculated as the average annual growth rate of capital stock for each industry under current BLS methodology less the average growth rate of capital stock for each industry using the Set 1 service lives and depreciation rate when implemented in 1901.

Figure 8a illustrates the distribution of these differences in capital stock growth rates by industry when Set 1 service lives are implemented in 1901. The modal difference is between 0 and 0.25 percentage points. About three-quarters of industries fall to the right of zero, illustrating that at the industry level, current BLS industry capital stock average growth rates are greater than the average growth rates resulting from the Set 1 service lives. Figure 8b presents this same distribution when Set 1 service lives are implemented in 1985. The currently calculated BLS average capital stock growth rate is higher in every industry compared to the average growth rates when the (typically shorter) service lives of Set 1 are implemented in 1985. Figures 8c and 8d present similar information for Set 2 service lives and depreciation rates implemented in 1901 (Figure 8c) and in 1985 (Figure 8d). When Set 2 service lives are implemented in 1901, about two-thirds of industries have average capital stock growth rates less than current BLS values. A little over one-half of industries have average capital stock growth rates within 0.25 percentage points of the current BLS values, indicating that the changes arising from Set 2 service lives are not large in general.

Figure 8a. Percentage of Differences in Capital Stock Growth Rates for 60 NIPA Industries  
 BLS Current less SC Set 1 (1901)  
 Compound Growth Rates, 1987-2018

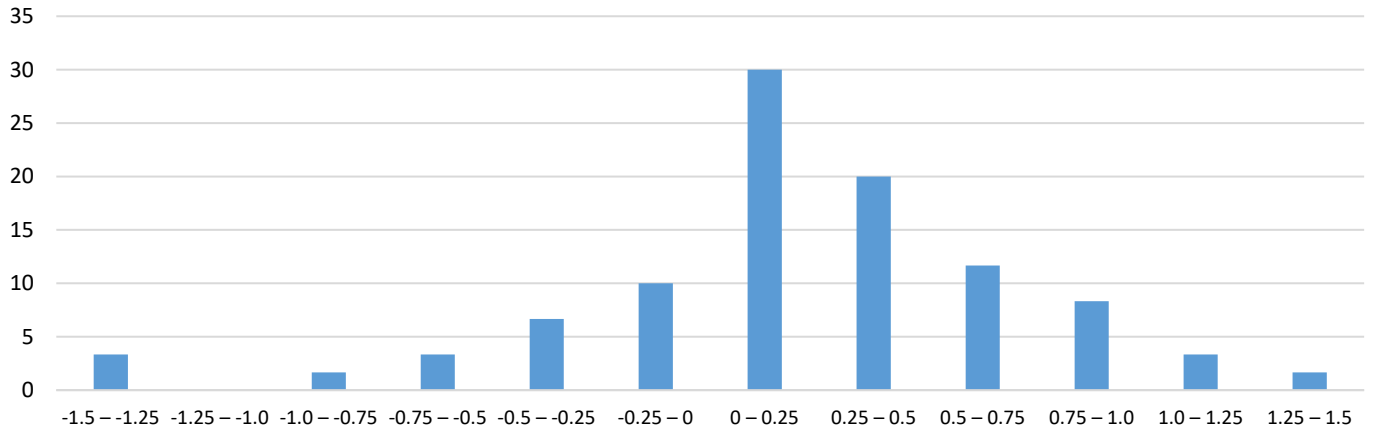
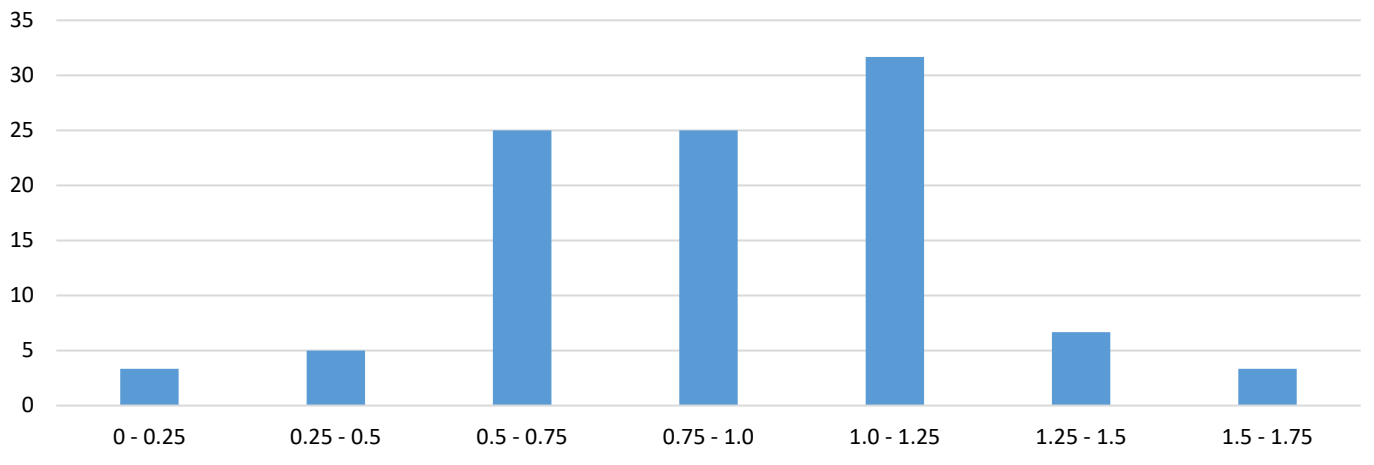
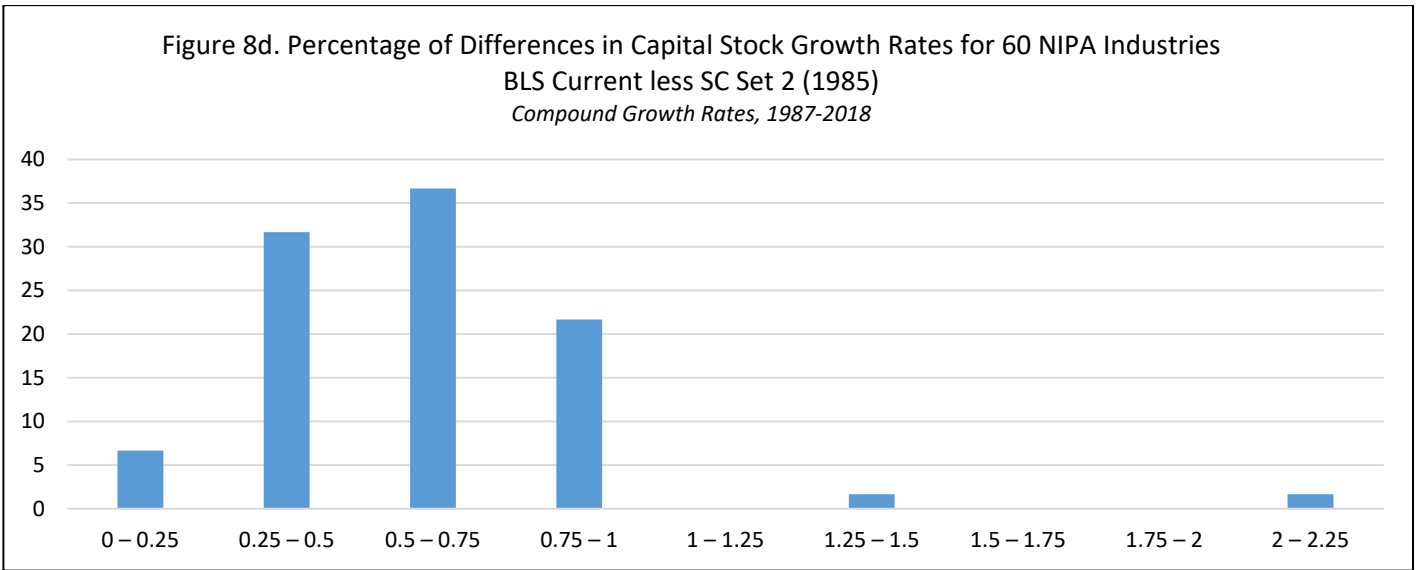
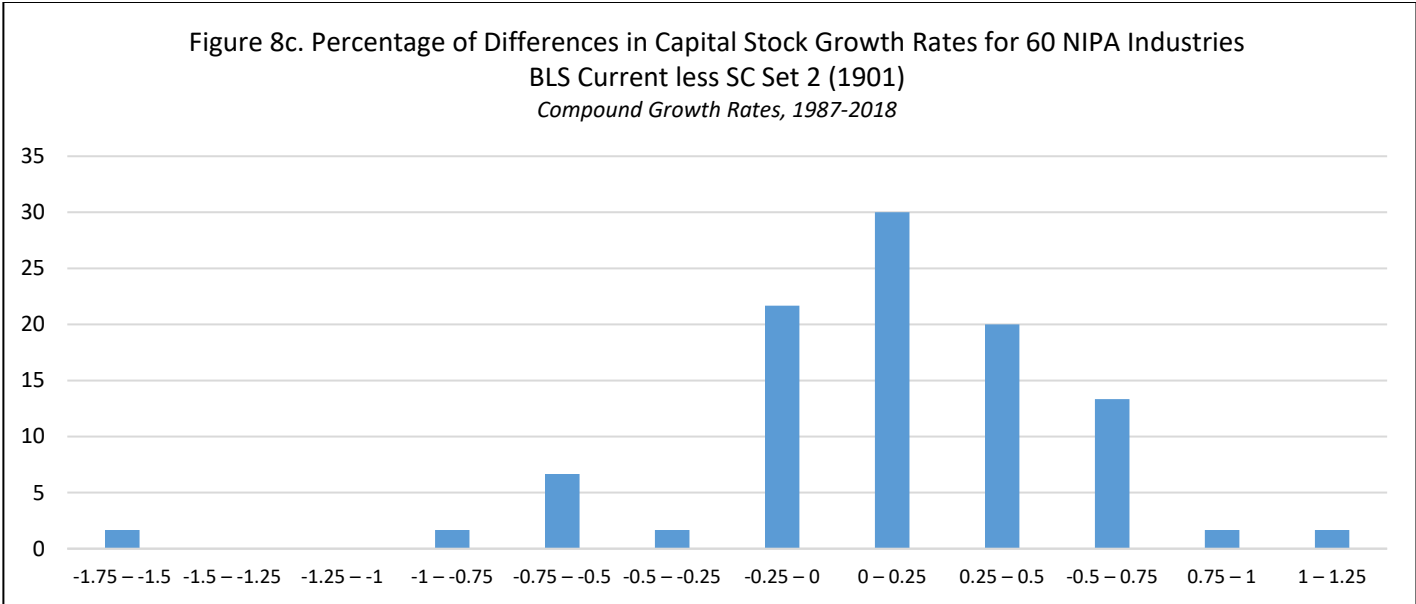


Figure 8b. Percentage of Differences in Capital Stock Growth Rates for 60 NIPA Industries  
 BLS Current less SC Set 1 (1985)  
 Compound Growth Rates, 1987-2018

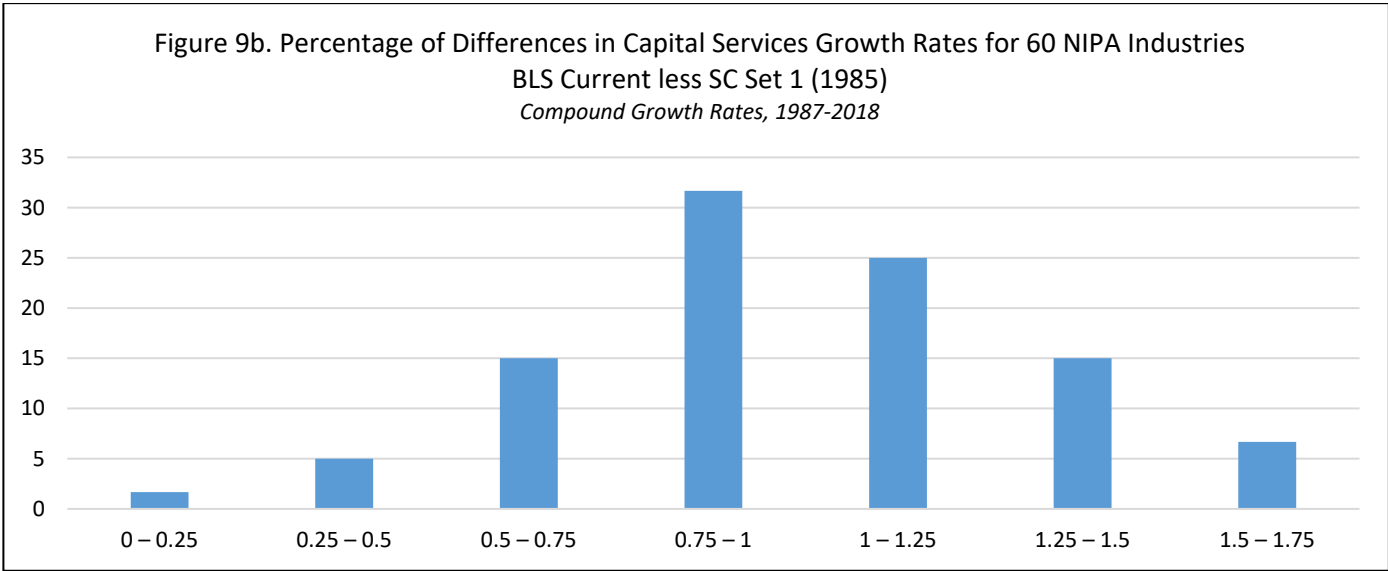
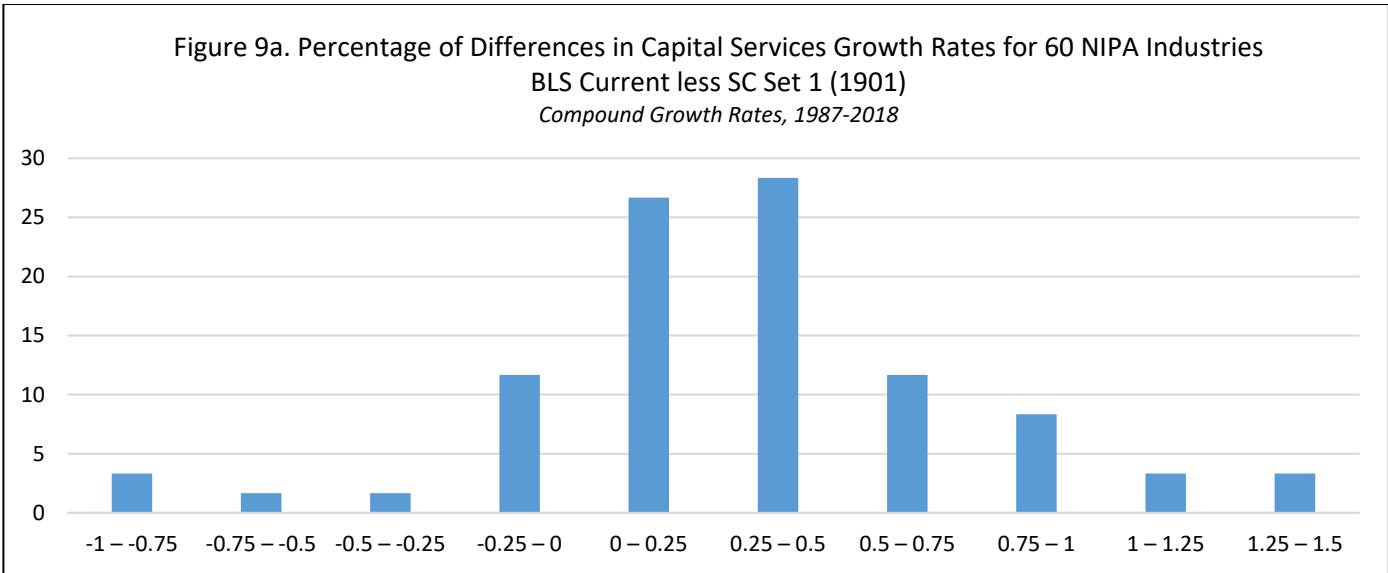




Figures 9a-d illustrate the distribution of the differences in capital services growth rates by industry.

Figure 9a shows the distribution of differences between the current BLS capital services average growth rates and the Set 1, 1901 implemented growth rates for 1987-2018. Over two-thirds of industries have deviations from the current BLS capital services growth rate of within  $\pm 0.5$ . Figure 9b presents this same distribution when Set 1 service lives are implemented in 1985 and shows that the currently calculated BLS average capital services growth rate is higher in every industry compared to the average growth rates when the generally shorter service lives of

Set 1 are implemented in 1985. Figures 9c and 9d present similar information for Set 2 service lives and depreciation rates implemented in 1901 (Figure 8c) and in 1985 (Figure 8d). When the more moderate Set 2 service lives are implemented in 1901, over three-fourths of industries have revised capital services growth rates that are within  $\pm 0.5$  of the current BLS capital services average annual growth rates, from 1987-2018. Implementing the Set 2 lives in 1985 results in capital services average annual growth rates that are up to 0.75 percentage points slower than the current BLS capital services growth rates for 80 percent of industries.



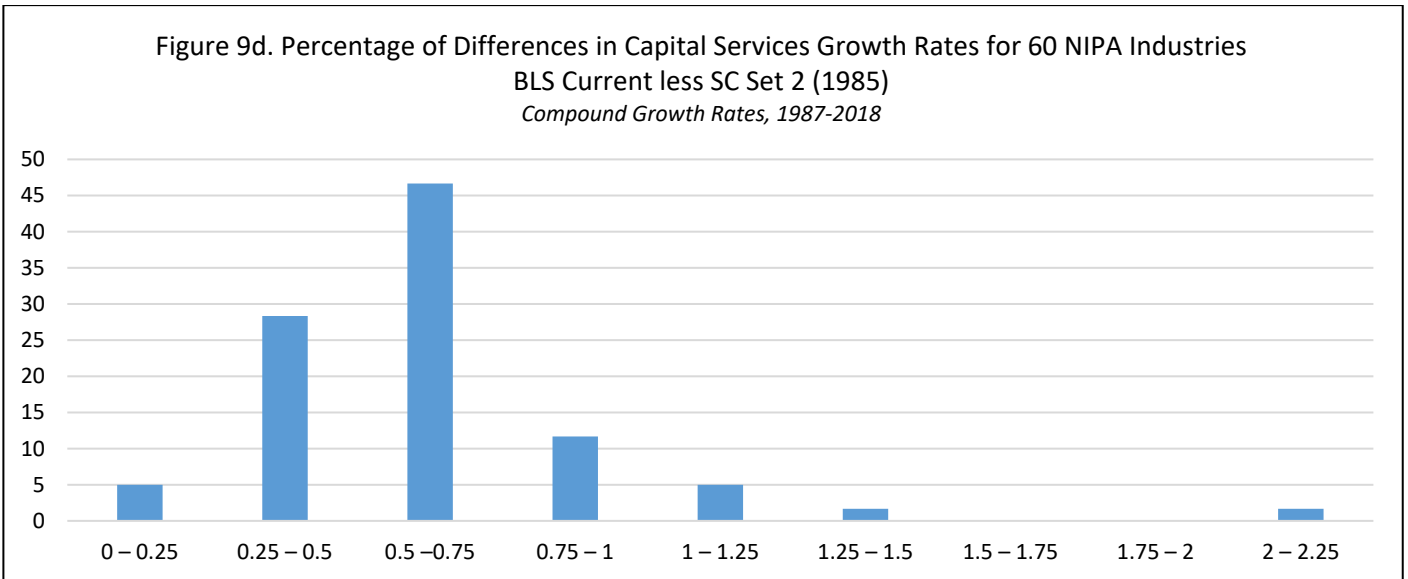
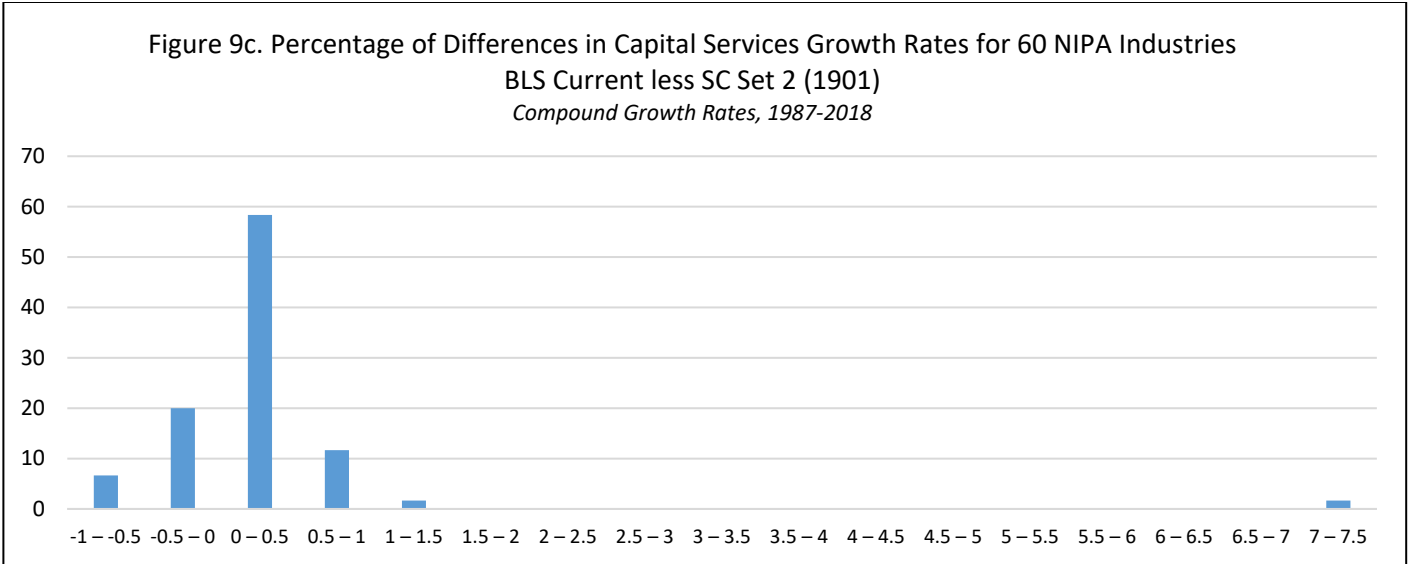
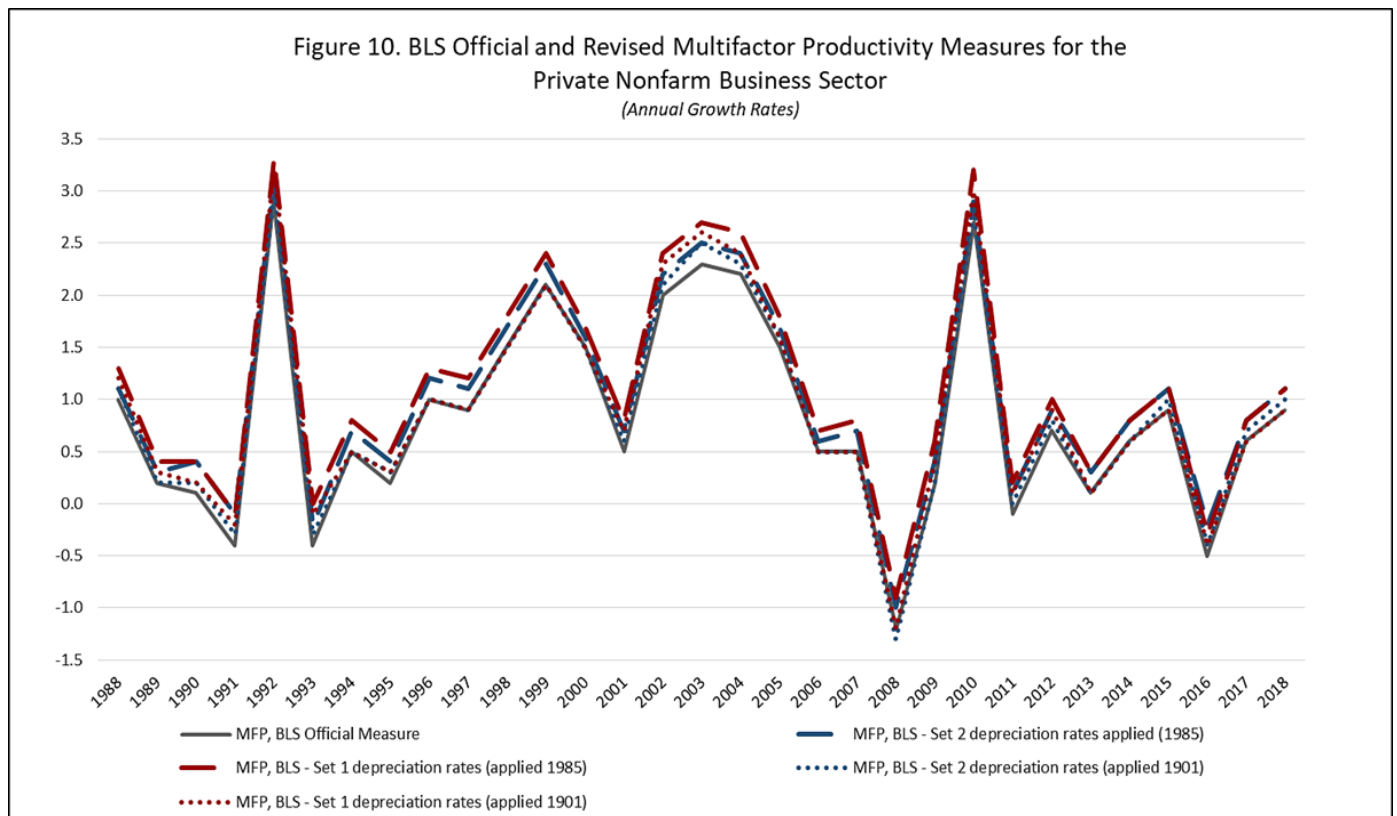


Figure 10 shows the impacts of the revised depreciation rates on BLS MFP growth estimates for the Private Nonfarm Business Sector over the 1988-2018 period. The revised MFP growth rates, based on our experimental capital service measures, are very similar. The series with Set 1 service lives implemented in 1985 results in the largest differences with the published MFP growth values. Looking at year to year differences, the published MFP series is consistently lower, by 0.3 percentage points in fifteen years, 0.4 percentage points in an additional six years, and 0.5 in one year. The other three series are closer to the published values, but are consistently smaller, usually about 0.1 or 0.2 percentage points lower. In part, the difference between the

published and experimental Set 1 MFP growth rates reflects a difference in the underlying capital stock measures. Growth rates for the capital stock derived using the Set 1 service lives beginning in 1985 also exhibit the largest deviation from published BLS capital stock growth rates (Figure 5 above.) Over time, the levels of capital stock indicated by the Set 1 and Set 2 rates, implemented either in 1901 or 1985, converge to a new, lower level (Figure 4 above.) Appendix B. Table 9 presents the MFP indexes and growth rates for the published and revised Set 1 and Set 2 MFP measures.



Figures 11a-d show the distribution of the differences between the current and revised BLS MFP growth rates for the private nonfarm business sector, from 1988 to 2018. Figure 11a shows the deviation of the revised MFP growth rates, when calculated with the Set 1 service lives implemented in 1901, from the current BLS MFP growth rates. MFP average annual growth rates for 1988-2018, based on the Set 1 (1901) revised service lives are similar to or slightly faster than the current BLS growth rates. In 23 of the 31 years, the revised MFP growth rates are within 0.2 percentage points of the current BLS MFP growth rates. Imposing the Set 1 service lives beginning

in 1985 results in revised MFP growth rates for all years that are somewhat higher than the current BLS rates. Of the 31 years in this time period, 23 have rates up to 0.35 percentage points above the current BLS MFP rates, as shown in Figure 11b. Using the more moderate Set 2 service lives beginning in 1901 results in revised MFP growth rates within 0.1 percentage point of current BLS MFP growth rates for 23 of the 31 years, as shown in Figure 11c. Implementing the Set 2 service lives in 1985 results in revised MFP average annual growth rates for 1988-2018 that are mildly faster than the current BLS MFP growth rates in each year. MFP growth rates are up to 0.25 percentage points above the current BLS MFP average annual growth rates for 28 of the 31 years.

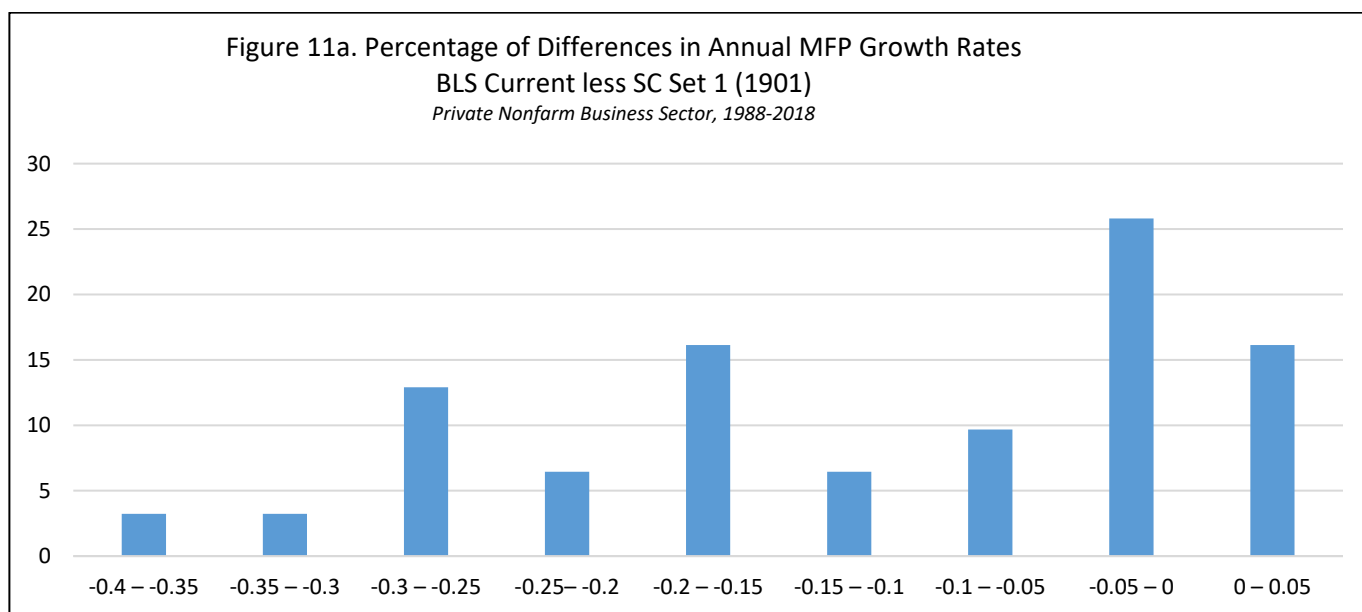


Figure 11b. Percentage of Differences in Annual MFP Growth  
 BLS Current less SC Set 1 (1985)  
 Private Nonfarm Business Sector, 1988-2018

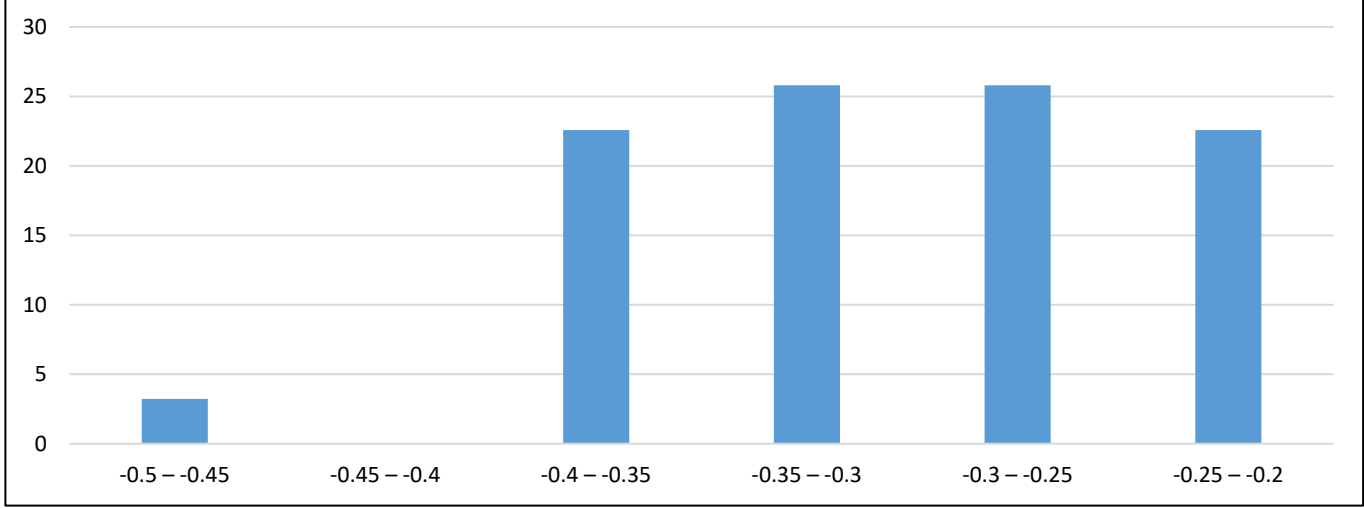


Figure 11c. Percentage of Differences in Annual MFP Growth Rates  
 BLS Current less SC Set 2 (1901)  
 Private Nonfarm Business Sector, 1988-2018

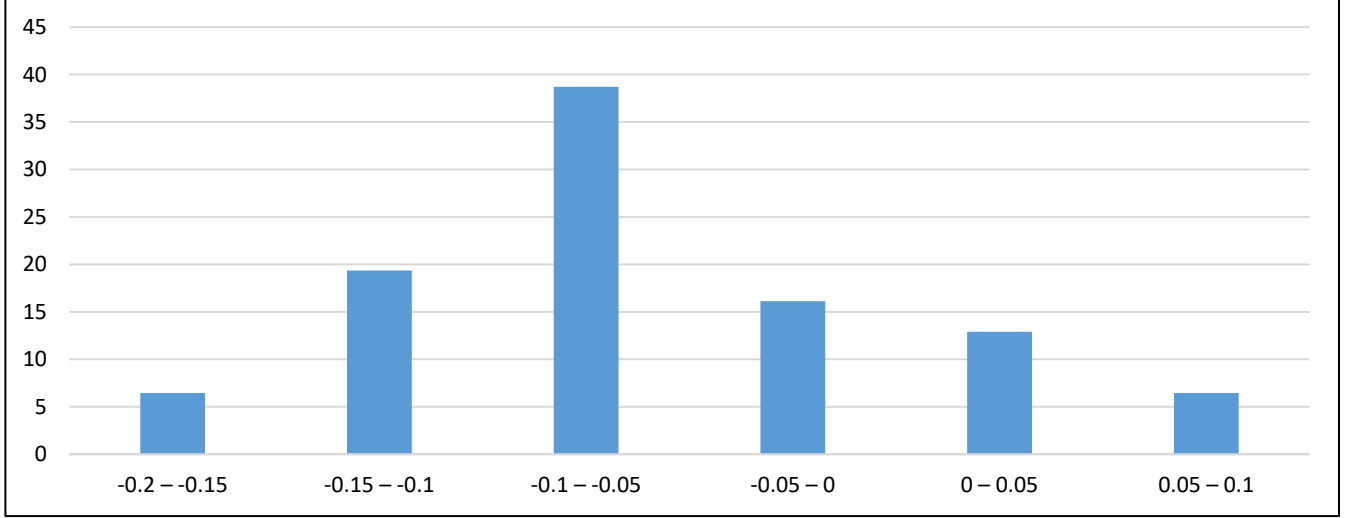
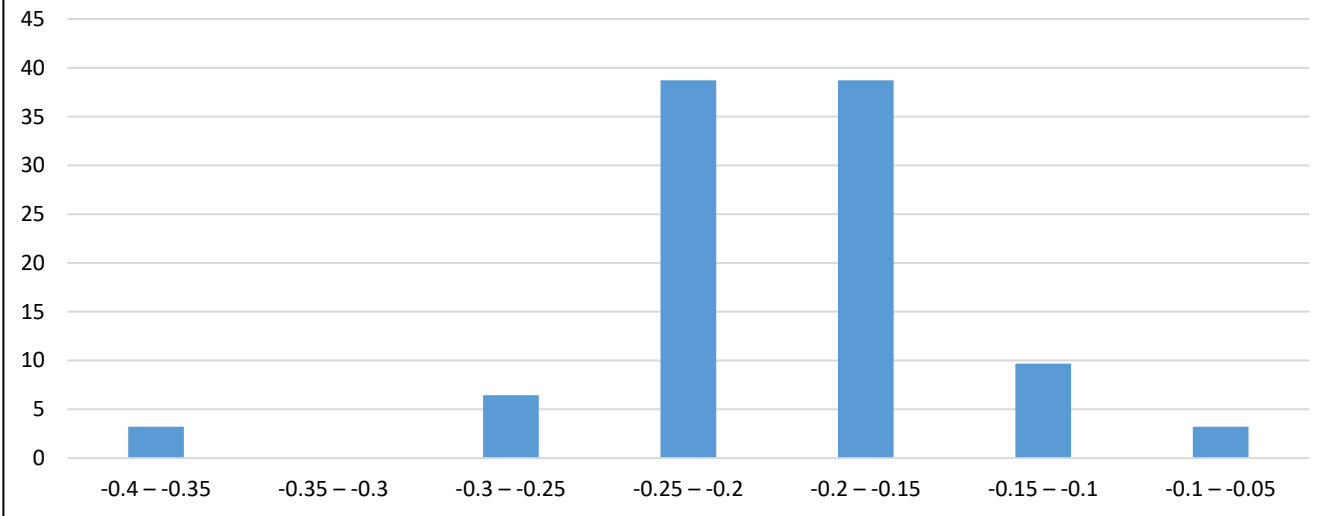




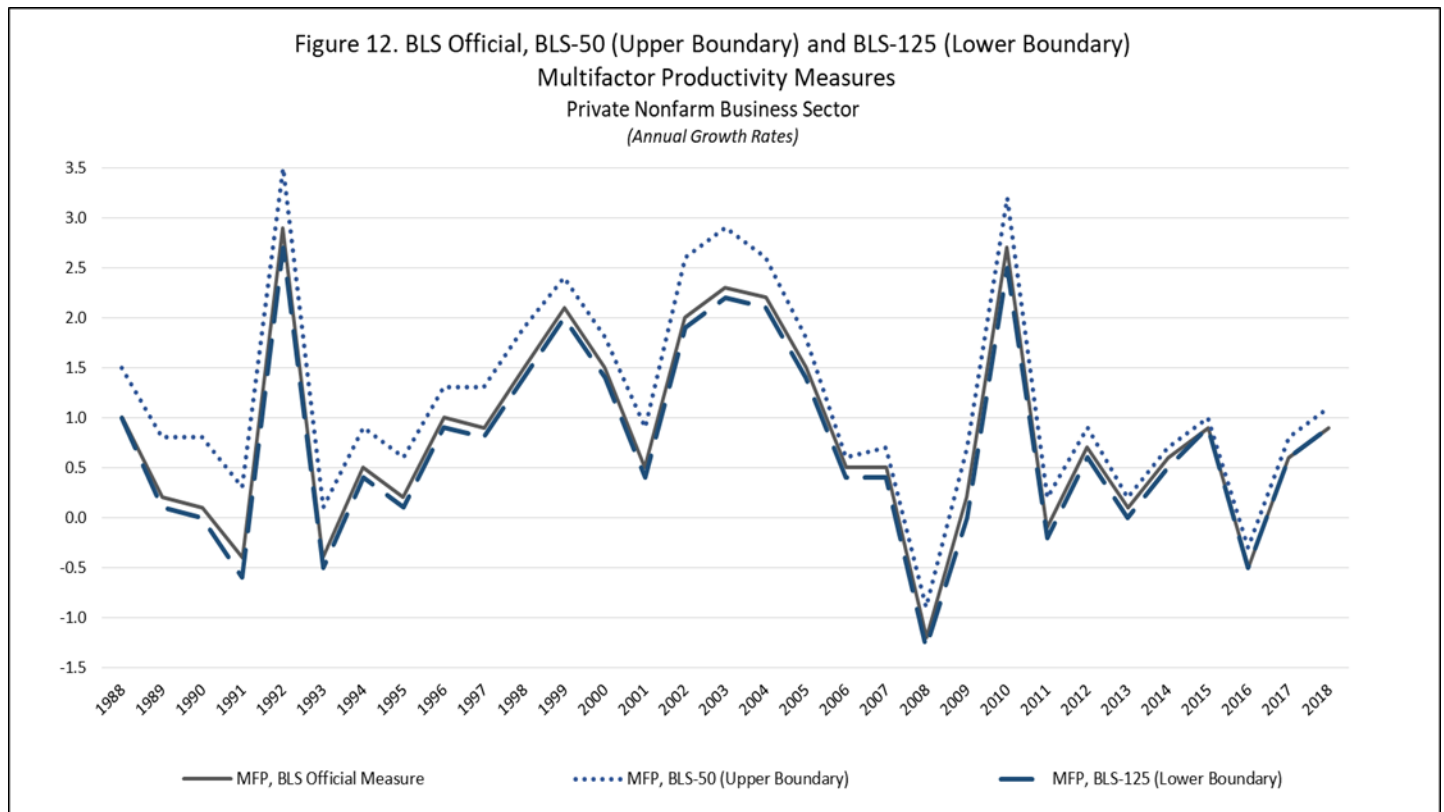
Figure 11d. Percentage of Differences in Annual MFP Growth Rates  
 BLS Current less SC Set 2 (1985)  
*Private Nonfarm Business Sector, 1988-2018*



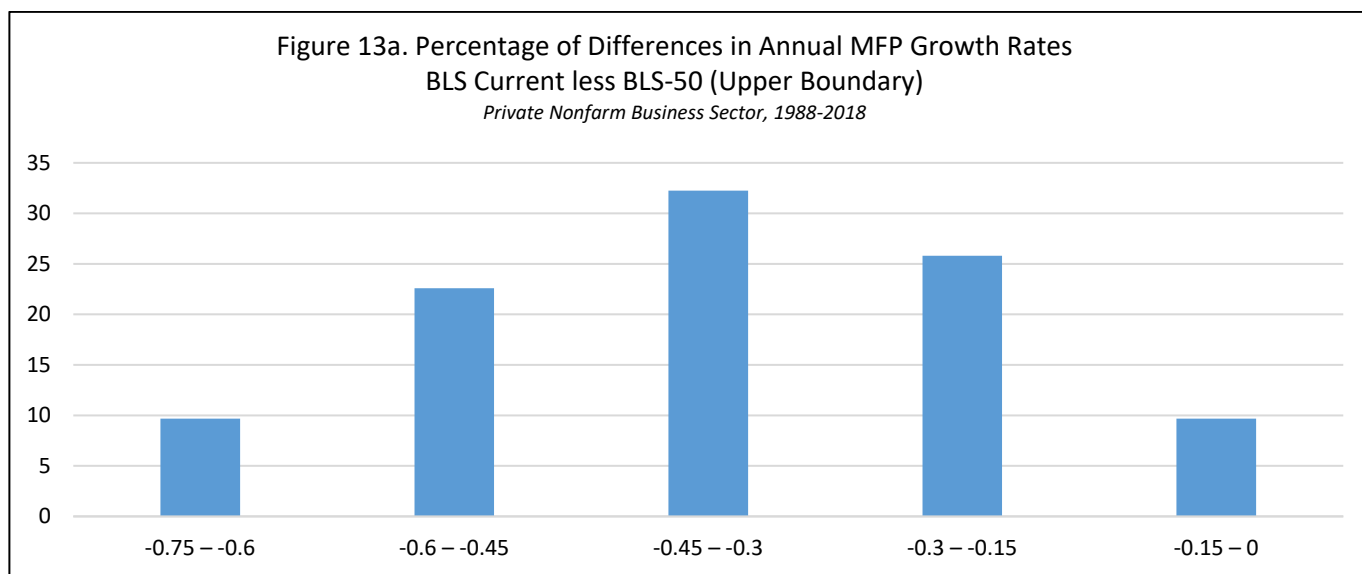
As a final test of the sensitivity of MFP growth rates to the values of asset service lives, we constructed four additional service life series. We created upper and lower boundaries based on substantial increases and decreases in current and trial asset service life series. We perform four experiments, the first with current BLS asset service lives decreased by 50 percent, establishing an upper boundary for depreciation rates, and the second with each BLS service life increased by 25 percent, establishing a lower boundary for depreciation rates (the BLS-50 and BLS-125 runs, respectively).<sup>51</sup> These two trial runs provide an indication of what happens to variables of interest (primarily MFP growth) when there is a large decrease or increase in asset service lives. The next two experiments use Set 2 asset service lives decreased by 25 percent to establish an upper boundary for the Set 2 depreciation rates and increased by 150 percent to establish a lower depreciation rate boundary. We refer to these Set 2 boundary runs, respectively, as the Set2-75 and Set2-250 boundary runs. In each of these cases, we use existing BLS asset service lives through 1984 and then implement the new service lives beginning in 1985.

<sup>51</sup> As with the Set 1 and Set 2 service life experiments, a limited number of asset service lives are not changed because BEA and BLS use more recent data to determine asset service life and depreciation rates. In addition, because BLS service lives are already relatively long, increasing them by 50% resulted in untenable values for many assets. As a result, we used a 25% increase in BLS lives for the upper bound in this simulation.

Figure 12 shows the BLS official MFP growth series and the MFP growth series computed using the BLS-50 and BLS-125 boundary runs for the Private Nonfarm Business Sector. The BLS-50 experiment produced average MFP growth since 1987 of 1.2 percent, while the BLS-125 run resulted in average MFP growth of 0.7 percent. Official BLS average MFP growth over this time period was 0.8 percent. In every year, the MFP growth rate of the BLS-50 was greater than the official MFP growth reported for that year, with the largest difference (.7 percentage points) occurring in 1990-91 and the smallest difference (.1) occurring in 2006 and 2013-15. Likewise, the BLS-125 MFP growth was the same or slightly lower than the official value in each year, with a maximum difference of .2 in 1990-91 and 2009-10 and no difference in 1988 and 2015-18. From these experiments, we see that substantial changes to the relatively lengthy current BLS service lives have minimal effects on MFP growth. Using service lives based on an extraordinary, nearly across-the-board 50 percent reduction in services lives increased average MFP growth by just 0.4 percentage points.



The distributions of the MFP growth rate differences between the current BLS MFP growth rates and MFP growth rates derived from the BLS-50 and BLS-125 runs are presented in figures 13a and 13b below, for the private nonfarm business sector over the 1988 to 2018 period. As seen in figure 13a, decreasing BLS capital asset service lives by 50 percent results in as much as a 0.75 percentage point increase in the average annual MFP growth rate. Nearly 70 percent of the MFP annual growth rates based on the shorter service lives (21 of 31 years) are less than 0.45 percentage points from the official MFP annual growth rates. Increasing BLS capital asset service lives by 25 percent results in a distribution of annual MFP growth rates ranging from nearly zero to 0.16 percentage points deviation from published BLS MFP growth rates. As shown in figure 13b, the deviation from current BLS MFP growth rates is generally less than 0.15 percentage points.



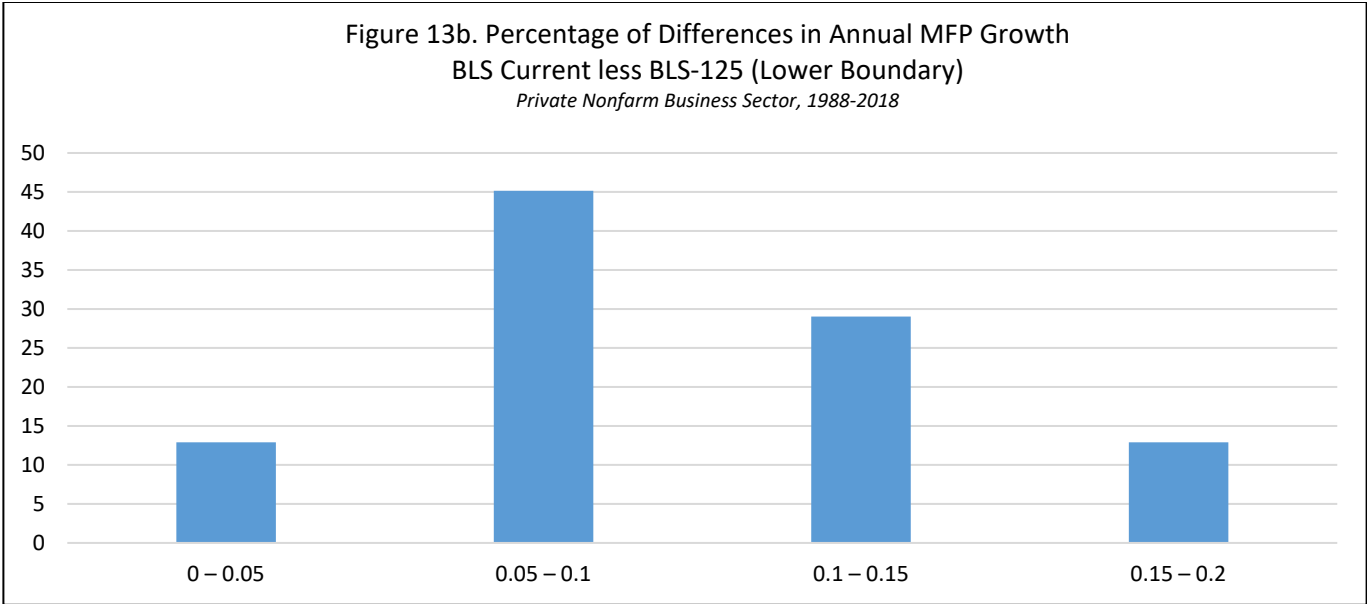
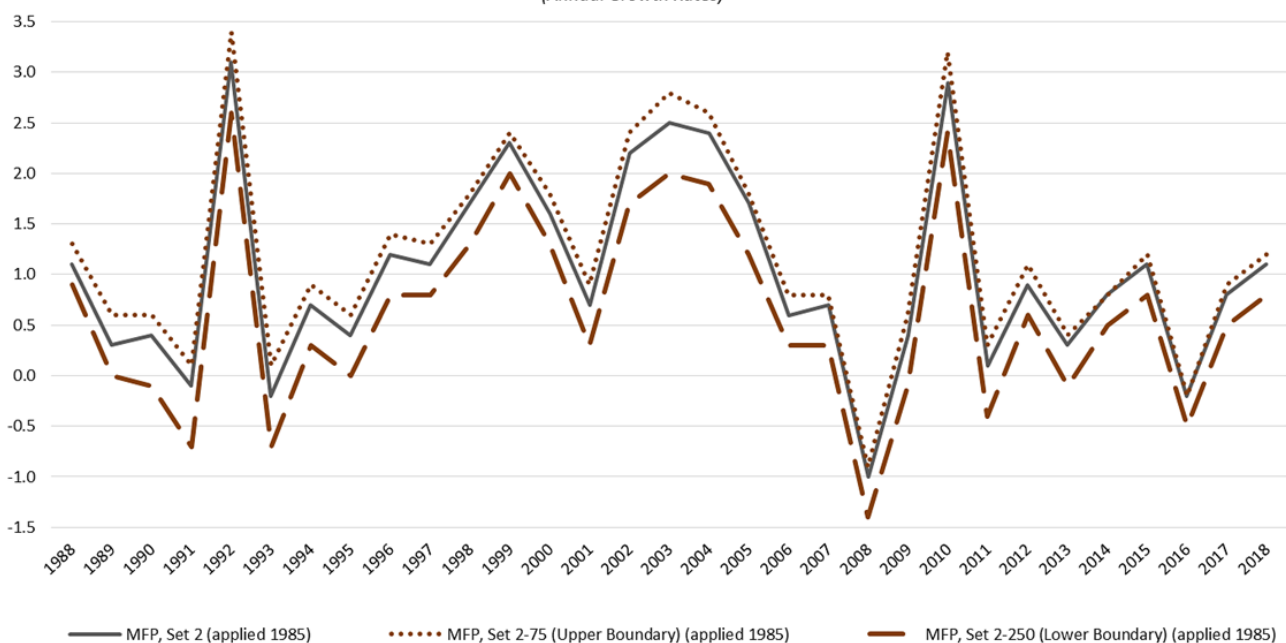


Figure 14 shows the BLS official MFP growth series and the MFP growth series computed using the Set2-75 and Set2-250 boundary runs for the Private Nonfarm Business Sector. The Set 2 boundary experiment runs produce similar results. The Set 2 asset service lives are consistently shorter than the current BLS lives. A 75 percent reduction in these lives results in an average MFP growth from 1987 through 2018 of 1.2 percent, compared to the Set 2 average of 1.0 percent. Likewise, a 250 percent increase in the Set 2 asset service lives results in an average MFP growth of 0.6 percent. These tests confirm one conclusion from this paper, that small to midsize changes in selected asset service lives will have little impact on measured MFP productivity growth over time.<sup>52</sup>

<sup>52</sup> Capital stock and services results for the boundary rate simulations are in Appendix Tables 5c, 5d, 6c, 6d, 7c, 7d, 8c, and 8d.

Figure 14. Set 2, Set 2-75 (Upper Boundary), and Set 2-250 (Lower Boundary)  
 Multifactor Productivity Measures  
 Private Nonfarm Business Sector  
 (Annual Growth Rates)



The distributions of upper and lower boundary differences from the Set 2 MFP growth rates are shown in Figures 15a and 15b below for the private nonfarm business sector over the 1988 to 2018 period. MFP annual growth rates for 1988 to 2018 increase by as much as 0.34 percentage points from the original Set 2 growth rates when we decrease the Set 2 service lives (and so increase the depreciation rates) by 25 percent. Nearly 70 percent of the Set 2 annual growth rates based on the shorter service lives (21 of 31 years) are within 0.2 percentage points from the original Set 2 annual growth rates. However, increasing the Set 2 capital asset service lives by 150 percent (slowing the depreciation rates) results in a wider distribution of deviations from the original Set 2 MFP growth rates, ranging from almost 0.2 to 0.65 percentage points. As shown in figure 15b, the majority of years (24 of 31 years, or 77 percent) have less than a 0.5 percentage point deviation from the original Set 2 MFP growth rates.

Figure 15a. Percentage of Differences in Annual MFP Growth Rates  
 Set 2 less Set2-75 (Upper Boundary)  
 Private NonFarm Business Sector, 1988-2018

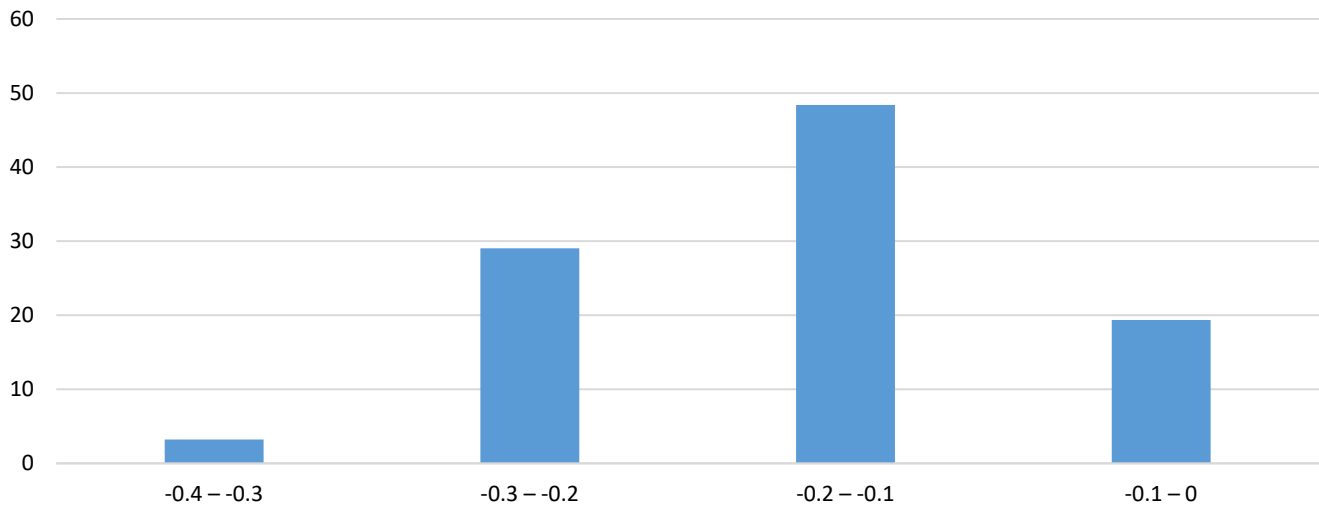
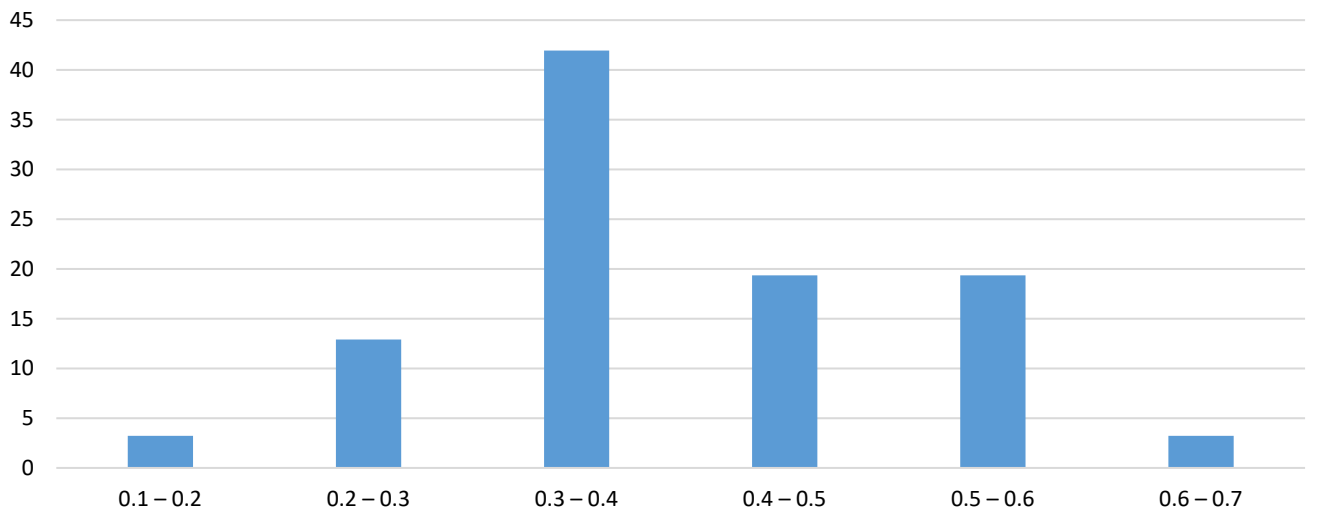


Figure 15b. Percentage of Differences in Annual MFP Growth  
 Set 2 less Set2-250 (Lower Boundary)  
 Private Nonfarm Business Sector, 1988-2018



## VI. Conclusion

In this article, we estimate experimental capital measures using alternative, typically faster, depreciation rates based on studies by Statistics Canada that principally apply the Hulten-Wyckoff methodology to more recent data from Canada's Annual Capital Expenditures Survey. The Statistics Canada results are consistent with Bokhari and Geltner (2019) who apply a similar approach to estimate depreciation rates for commercial buildings in the U.S. in recent years. Both studies find faster depreciation rates than those used by BEA and BLS, where the largest differences in rates are for structures. Using another country's depreciation rates may introduce biases because true depreciation rates can vary across countries, the similarity of findings obtained with more recent Canadian and U.S. data suggest that the Statistics Canada studies may be relevant for the U.S. In light of the faster depreciation rates supported by these and other studies, U.S. rates — based on a patchwork of vintage research — may no longer be adequately capturing the depreciation of U.S. capital assets. If so, what is the impact on U.S. capital and MFP measures?

Our results show that using the alternative depreciation rates produces substantial revisions to BEA's capital measures. When we incorporate the faster depreciation rates from 1985 forward, we find that CFC is revised upward by \$242 billion in current dollars (11 percent) in 2018, net investment is revised downward by the same amount, and net capital stocks are revised downward by \$10.4 trillion (40 percent), with a \$2.4 trillion downward revision to stocks of equipment and an \$8.0 trillion downward revision to stocks of structures.

Capital stock levels that underlie U.S. productivity data are similarly affected. Constructing estimates of BLS Private Nonfarm Business capital stock using the Statistics Canada Set 1 rates from 1901 forward results in constant 2012 dollar capital stock levels that range from 35 to 39% lower than current BLS capital stock levels, over the 1987-2018 period. Capital stock levels based on the 1985 forward use of the Statistics Canada Set 1 depreciation rates decline less precipitously, from 0.002 to 24%, as much of the value of previous capital stock remains in place. However, capital services, growth rates in capital services, and MFP growth rates for major sectors show a relatively small impact from using the Statistics Canada Set 1 revised rates, either from 1901

forward or 1985 forward. The effects on capital stocks, capital services, and MFP are larger if the faster depreciation rates are introduced in 1985 than if they are introduced in 1901. This is because the 1985 series is already at a higher level in 1985 and converges to the 1901 series as older capital is discarded.

The BEA and BLS capital measures currently use depreciation rates for equipment and structures that are mostly based on the widely respected Hulten-Wyckoff studies from the early 1980s. These depreciation rates play a key role in BEA's estimates of net capital stocks, net investment, and net saving, and BLS measures of productivity and capital services. Because the estimation of depreciation rates is difficult and requires specialized data sets of used equipment transactions, BEA and BLS have not updated these rates, although depreciation patterns change over time. Unfortunately, few resources are devoted to gauging the accuracy of these rates. As a step towards improving the accuracy of U.S. capital depreciation rates, BEA and BLS might in future consider selective revisions to depreciation rates of a subset of these asset categories of assets, depending on the prevailing assessment and availability of empirical evidence.

Accordingly, we hope this comparison encourages additional research and discussion regarding the depreciation rates and services lives of U.S. equipment and structures, used by BEA and BLS when constructing capital and related measures in the U.S. economy. Because the collection of survey data on used asset transactions can be costly, we especially encourage studies based on automated records of used asset transactions. In the meantime, users of these capital measures should be aware of the sensitivity of these measures to the choice of depreciation rates.



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## Appendices

## Appendix A. U.S. and Canadian Capital Asset Concordance

Our first step was to develop a concordance between the asset classification systems of the two countries. The concordance between U.S. and Canadian productive assets was created jointly by Bob Kornfeld of BEA and Susan Powers of BLS. Statistics Canada uses an asset classification system that features more detailed asset categories, in general, than the U.S. asset classification system. While some asset categories appear to be direct matches, other categories include more detailed assets in the Canadian system. Statistics Canada depreciation rates are generally faster than current U.S. depreciation rates, with the Canadian depreciation rate for structures assets significantly faster. Overall, we found the concordance to provide a reasonable scaffold on which to develop useful proposed depreciation rates for this analysis.

An example of a direct match between the Canadian and U.S. asset classification schemes is the BLS category *Autos (22)*, and the Canadian category *Passenger Cars (MPG336111)*. The U.S. BLS category *Autos (22)* currently has a depreciation rate of 0.2165, while the Canadian *Passenger Cars (MPG336111)* category has a somewhat faster depreciation rate of 0.299. *Medical Equipment and Related Instruments (27)* is a direct match with the Canadian category *Medical, Dental and Personal Safety Supplies, Instruments and Equipment (MPG339100)*, which has more than double the current U.S. depreciation rate, at 0.301.

In most cases, though, the asset categories are very similar but do not match exactly. We undertook a careful review to match the Canadian asset categories to the U.S. asset categories based on a detailed study of each asset description. This typically resulted in a combination of Canadian asset categories being related to a single broader U.S. asset category. For example, the U.S. asset category *Other Fabricated Metal Products (3)* corresponds to five detailed Canadian asset categories. A new depreciation rate for the broader U.S. asset

category was developed by weighting the depreciation rates for the more detailed Canadian categories using detailed nominal investment data from BEA's benchmark (Economic Census year) estimates.<sup>1</sup>

In a very few instances, to build up the underlying asset detail matches to the U.S. broader categories, a detailed Canadian asset category was assigned to multiple U.S. asset categories. For example, the BLS category *Steam Engines and Turbines (asset 4)* is matched with the Statistics Canada category *Turbines and Turbine Generator Set Units (asset MPG333601)*. The BLS category *Internal Combustion Engines (asset 5)* is also matched with *Turbines and Turbine Generator Set Units (asset MPG333601)*, as well as *Other Engine and Power Transmission Equipment (asset MPG 333609)*. This was done selectively, where the Canadian category – while not a perfect match – was the best match to detailed assets in more than one U.S. fixed investment expenditure category. In the case of *Internal Combustion Engines*, the investment weighted depreciation rate becomes 0.0929 rather than the BLS value of 0.1972. This asset is one of the few for which the service life obtained from Canadian data is greater than the current U.S. value.

The current U.S. asset classification scheme includes a few assets where the service lives depend on industry of use. For example, the U.S. classification scheme includes different depreciation rates for 22 industries under the asset category *Metal Working Machinery (11)*. These service lives range from a low of 12 years in NAICS 321, Wood Products, to a high of 28 years in NAICS 331, Primary Metal Manufacturing. *Special Industry Machinery (12)* and *General Industrial Equipment Including Materials Handling (13)* also have multiple service lives based on the industry in which the asset is used. These industry specific depreciation rates for selected asset categories were developed based on industry studies conducted during the 1970s by the former Office of Industrial Economics (OIE) of the U.S. Department of the Treasury and from industry studies conducted during the

<sup>1</sup> For example, U.S. asset (1), Household Furniture and Fixtures, was matched to three of Statistics Canada's more detailed asset categories. After matching the three detailed Statistics Canada assets to similar U.S. detailed input-output commodity items, the 2007 investment expenditure values for the three U.S. items were used to weight up the depreciation rates for the three Statistics Canada detailed assets and create an overall weighted average rate for asset (1).

1980s and 1990s by the Office of Tax Analysis (OTA) of the U.S. Department of the Treasury.<sup>2</sup> To obtain revised depreciation rates for these asset-industry breakouts beneath assets (11), (12), and (13), we first noted that each of these three assets included industry-specific depreciation rates for twenty one specific manufacturing industries and also for nonmanufacturing industries overall. For each of these three assets, we used the relationship between the depreciation rates for each specific industry and the nonmanufacturing industry category to adjust the Statistics Canada depreciation rate for the overall asset category.<sup>3</sup>

<sup>2</sup> See U.S. Department of Commerce, Bureau of Economic Analysis, [\*Fixed Assets and Consumer Durable Goods in the United States, 1925–97\*](#), (Washington, DC: U.S. Government Printing Office, September, 2003), p. M-32, footnote 69 for a further description of these industry studies.

<sup>3</sup> For example, the Wood Products industry's revised BLS depreciation rate under Asset 11, Metalworking Machinery, was calculated as the BLS current rate for Wood Products (0.1671) divided by the BLS Nonmanufacturing Industries rate for Metalworking Machinery (0.1203), resulting in a ratio of 1.38903. The calculated Set 1 depreciation rate based on Statistics Canada data for asset 11 is 0.1970. The Statistics Canada Set 1 industry specific rate for Wood Products under Metalworking Machinery is then  $1.38903 * 0.197$ , or 0.27364.

**Table 1. Concordance: BEA and BLS Capital Asset Categories with Statistics Canada Capital Asset Categories**

		BEA and BLS Major Asset Groups <i>Regular font designates detailed assets; Italics designates specified industry using the asset.</i>				Statistics Canada Major Asset Group Headings are specified in the Comments <i>Detailed assets are matched up using the BEA/BLS major asset group headings</i>			
		BEA and BLS Asset Categories				Statistics Canada Asset Categories			
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life	
	<b>Private nonresidential equipment</b>					<b>Private nonresidential equipment</b>			
1	Household furniture and fixtures (1)	0.1375	12	0.1356	15	<i>Use weighted average of Canada's depreciation rates/service lives for detailed asset lives matched to this category</i>	0.250		
2						Household furniture (MPG337102)	0.247	9.0	
3						Mattresses and foundations (MPG337901)	0.258	9.0	
4						Blinds and shades (MPG337902)	0.258	9.0	
5	<b>Other furniture (2)</b> <sup>2</sup>	0.1179	14	0.1203	17	<i>Use weighted average of Canada's depreciation rates for detailed asset lives matched to this category</i>	0.260		
6						Institutional furniture (MPG337103)	0.257	9.0	
7						Office furniture (MPG337201)	0.262	8.0	
8						Showcases, partitions, shelving, and lockers; furniture frames (MPG337202)	0.258	9.0	
9	<b>Other fabricated metal products (3)</b>	0.0917	18	0.0934	22	<i>Use weighted average of Canada's depreciation rates for detailed asset lives matched to this category</i>	0.198		
10						Light gauge metal containers, crowns and closures (MPG332401)	0.190	12.0	
11						Boilers, tanks and heavy gauge metal containers (MPG332402)	0.190	12.0	
12						Springs and wire products (MPG332600)	0.208	11.0	
13						Hand tools, blades and dies for power tools, kitchen utensils and cutlery (except precious metal) (MPG332A01)	0.209	11.0	
14						Metal valves and pipe fittings (MPG332A02)	0.209	11.0	
15	<b>Steam engines and turbines (4)</b>	0.0516	32	0.0520	39		0.086		
16						Turbines and turbine generator set units (MPG333601)	0.086	25.0	



**Table 1. Concordance: BEA and BLS Capital Asset Categories with Statistics Canada Capital Asset Categories**

		BEA and BLS Major Asset Groups <i>BEA designates major asset group; Regular font designates detailed assets; Italics designates specified industry using the asset.</i>				Statistics Canada Major Asset Group Headings are specified in the Comments <i>Detailed assets are matched up using the BEA/BLS major asset group headings</i>			
		BEA and BLS Asset Categories				Statistics Canada Asset Categories			
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life	
17	Internal combustion engines (5)	0.2063	8	0.1972	10	<i>Use weighted average of Canada's depreciation rates for detailed asset lives matched to this category</i>	0.093		
18						Turbines and turbine generator set units (MPG333601)	0.086	25.0	
19						Other engine and power transmission equipment (MPG333609)	0.110	20.0	
20	Farm tractors (6)	0.1452	9	0.1447	14		0.178		
21						Agricultural, lawn and garden machinery and equipment (MPG333101)	0.178	13.0	
22	Construction tractors (7)	0.1633	8	0.1671	12		0.172		
23						Logging, mining and construction machinery and equipment (MPG333102)	0.172	13.0	
24	Agricultural machinery except tractors (8)	0.1179	14	0.1203	17		0.178		
25						Agricultural, lawn and garden machinery and equipment (MPG333101)	0.178	13.0	
26	Construction machinery except tractors (9)	0.1550	10	0.1551	13		0.172		
27						Logging, mining and construction machinery and equipment (MPG333102)	0.172	13.0	
28	Mining and oil field machinery (10)	0.1500	11	0.1551	13		0.172		
29						Logging, mining and construction machinery and equipment (MPG333102)	0.172	13.0	
30	Metal working machinery (11) when used in the following NAICS industries:					Metalworking machinery (MPG333500)	0.197	11.0	

**Table 1. Concordance: BEA and BLS Capital Asset Categories with Statistics Canada Capital Asset Categories**

		BEA and BLS Major Asset Groups <i>Regular font designates detailed assets; Italics designates specified industry using the asset.</i>				Statistics Canada Major Asset Group Headings are specified in the Comments <i>Detailed assets are matched up using the BEA/BLS major asset group headings</i>			
		BEA and BLS Asset Categories				Statistics Canada Asset Categories			
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life	
31	<i>Durable Manufacturing</i>								
32	<i>Wood products [321]</i>	0.1633	12	0.1671	12				
33	<i>Nonmetallic minerals [ 327]</i>	0.1032	19	0.1026	20				
34	<i>Primary metal [331]</i>	0.0726	27	0.0733	28				
35	<i>Fabricated metal [ 332]</i>	0.0817	24	0.0822	25				
36	<i>Machinery [333]</i>	0.0784	25	0.0790	26				
37	<i>Computer/ electronic product [334]</i>	0.1400	14	0.1356	15				
38	<i>Electronic equipment/ appliance [335]</i>	0.1400	14	0.1356	15				
39	<i>Transportation equipment</i>								
40	<i>Motor vehicle, body, trailers and equipment parts [3361-3364]</i>	0.1400	14	0.1356	15				
41	<i>Other transportation equipment [3364-3366, 3369]</i>	0.1153	17	0.1138	18				
42	<i>Furniture and related products [337]</i>	0.1400	14	0.1356	15				
43	<i>Miscellaneous Mfg. [339]</i>								
44	<i>Medical equipment/ supplies [3391]</i>	0.1400	14	0.1356	15				
45	<i>Other miscellaneous [3399]</i>	0.1153	17	0.1138	18				
46	<i>Nondurable Manufacturing</i>								
47	<i>Food [311]</i>	0.0980	20	0.0978	21				
48	<i>Beverage and tobacco product [312]</i>	0.0933	21	0.0934	22				
49	<i>Textile mill and textile mill products [313, 314]</i>	0.1225	16	0.1203	17				
50	<i>Apparel and leather and allied products [315, 316]</i>	0.1307	15	0.1275	16				
51	<i>Paper products [322]</i>	0.1225	16	0.1203	17				
52	<i>Printing and related supported activities [323]</i>	0.1307	15	0.1275	16				

**Table 1. Concordance: BEA and BLS Capital Asset Categories with Statistics Canada Capital Asset Categories**

		<b>BEA and BLS Major Asset Groups</b> <i>Regular font designates detailed assets; Italics designates specified industry using the asset.</i>				<b>Statistics Canada Major Asset Group Headings are specified in the Comments</b> <i>Detailed assets are matched up using the BEA/BLS major asset group headings</i>			
		<b>BEA and BLS Asset Categories</b>				<b>Statistics Canada Asset Categories</b>			
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life	
53	<i>Petroleum and coal products [324]</i>	0.0891	22	0.0894	23				
54	<i>Chemical products [325]</i>	0.1225	16	0.1203	17				
55	<i>Plastic and rubber products [326]</i>	0.1400	14	0.1356	15				
56	Nonmanufacturing industries	0.1225	16	0.1203	17				
57	<b>Special industry machinery, n.e.c (12) when used in the following NAICS industries:</b>					<i>Use weighted average of Canada's depreciation rates for detailed asset lives matched to this category for Nonmanufacturing</i>  <i>Then adjust the nonmanufacturing depreciation rate for each manufacturing industry using the mean asset life for special industry machinery in each industry, as originally determined by OTA studies</i>	0.195		
58						Rubber and plastic hoses and belts (MPG326202)	0.203	11.0	
59						Commercial and service industry machinery (MPG333300)	0.265	8.0	
60						Other industry-specific machinery, not elsewhere classified (MPG333200)	0.191	11.0	
61						Other miscellaneous general-purpose machinery, not elsewhere classified (MPG333909)	0.195	11.0	
62	<i>Durable Manufacturing</i>								

**Table 1. Concordance: BEA and BLS Capital Asset Categories with Statistics Canada Capital Asset Categories**

		BEA and BLS Major Asset Groups <i>Regular font designates detailed assets; Italics designates specified industry using the asset.</i>					Statistics Canada Major Asset Group Headings are specified in the Comments <i>Detailed assets are matched up using the BEA/BLS major asset group headings</i>				
		BEA and BLS Asset Categories					Statistics Canada Asset Categories				
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life			
63	Wood products [321]	0.1375	12	0.1356	15						
64	Nonmetallic minerals [327]	0.0868	19	0.0856	24						
65	Primary metal [331]	0.0611	27	0.0619	33						
66	Fabricated metal [332]	0.0688	24	0.0683	30						
67	Machinery [333]	0.0660	25	0.0660	31						
68	Computer/ electronic product [334]	0.1179	14	0.1203	17						
69	Electronic equipment appliance [335]	0.1179	14	0.1203	17						
70	Transportation equipment										
71	Motor vehicle, body, trailers and equipment parts [3361-3364]	0.1179	14	0.1203	17						
72	Other transportation equipment [ 3364-3366, 3369]	0.0971	17	0.0978	21						
73	Furniture and related products [337]	0.1179	14	0.1203	17						
74	Miscellaneous Mfg. [339]										
75	Medical equipment/ supplies [3391]	0.1179	14	0.1203	17						
76	Other miscellaneous [3399]	0.0971	17	0.0978	21						
77	Nondurable Manufacturing										
78	Food [311]										
79	Beverage and tobacco product [312]	0.0825	20	0.0822	25						
80	Textile mill and textile mill products [313, 314]	0.0786	21	0.0790	26						
81	Apparel and leather and allied products [315, 316]	0.1031	16	0.1026	20						
82	Paper products [322]	0.1100	15	0.1079	19						
		0.1031	16	0.1026	20						

**Table 1. Concordance: BEA and BLS Capital Asset Categories with Statistics Canada Capital Asset Categories**

		BEA and BLS Major Asset Groups <i>BEA designates major asset group; Regular font designates detailed assets; Italics designates specified industry using the asset.</i>					Statistics Canada Major Asset Group Headings are specified in the Comments <i>Detailed assets are matched up using the BEA/BLS major asset group headings</i>		
		BEA and BLS Asset Categories					Statistics Canada Asset Categories		
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life	
83	<i>Printing and related supported activities [323]</i>	0.1100	15	0.1079	19				
84	<i>Petroleum and coal products [324]</i>	0.0750	22		27				
85	<i>Chemical products [325]</i>	0.1031	16	0.1026	20				
86	<i>Plastic and rubber products [326]</i>	0.1179	14	0.1203	17				
87	<i>Nonmanufacturing industries</i>	0.1031	16	0.1026	20				
88	<b>General industrial equipment incl. materials handling (13) when used in the following NAICS industries:</b>						0.182		
89						Material handling equipment (MPG333902)	0.212	10.0	
90						Industrial and commercial fans and blowers, and air purification equipment (MPG333401)	0.148	15.0	
91						Heating and cooling equipment (except household refrigerators and freezers) (MPG333402)	0.185	12.0	
92						Pumps and compressors (MPG333901)	0.131	17.0	
93						Other miscellaneous general-purpose machinery, not elsewhere classified (MPG333909)	0.195	11.0	
94	<i>Durable Manufacturing</i>								
95	<i>Wood products [321]</i>	0.1429	12	0.1447	14				
96	<i>Nonmetallic minerals [327]</i>	0.0903	19	0.0894	23				
97	<i>Primary metal [331]</i>	0.0635	27	0.0639	32				

**Table 1. Concordance: BEA and BLS Capital Asset Categories with Statistics Canada Capital Asset Categories**

		BEA and BLS Major Asset Groups <i>Regular font designates detailed assets; Italics designates specified industry using the asset.</i>				Statistics Canada Major Asset Group Headings are specified in the Comments <i>Detailed assets are matched up using the BEA/BLS major asset group headings</i>			
		BEA and BLS Asset Categories				Statistics Canada Asset Categories			
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life	
98	<i>Fabricated metal [332]</i>	0.0715	24	0.0707	29				
99	<i>Machinery [333]</i>	0.0686	25	0.0683	30				
100	<i>Computer/ electronic product [334]</i>	0.1225	14	0.1203	17				
101	<i>Electronic equipment appliance [335]</i>	0.1225	14	0.1203	17				
102	<i>Transportation equipment</i>								
103	<i>Motor vehicle, body, trailers and equipment parts [3361-3364]</i>	0.1225	14	0.1203	17				
104	<i>Other transportation equipment [3364-3366, 3369]</i>	0.1009	17	0.1026	20				
105	<i>Furniture and related products [337]</i>	0.1225	14	0.1203	17				
106	<i>Miscellaneous Mfg. [339]</i>								
107	<i>Medical equipment/ supplies [3391]</i>	0.1225	14	0.1203	17				
108	<i>Other miscellaneous [3399]</i>	0.1009	17	0.1026	20				
109	<i>Nondurable Manufacturing</i>								
110	<i>Food [311]</i>	0.0858	20	0.0856	24				
111	<i>Beverage and tobacco product [312]</i>	0.0817	21	0.0822	25				
112	<i>Textile mill and textile mill products [313, 314]</i>	0.1072	16	0.1079	19				
113	<i>Apparel and leather and allied products [315, 316]</i>	0.1143	15	0.1138	18				
114	<i>Paper products [322]</i>	0.1072	16	0.1079	19				
115	<i>Printing and related supported activities [323]</i>	0.1143	15	0.1138	18				
116	<i>Petroleum and coal products [324]</i>	0.0780	22	0.0790	26				
117	<i>Chemical products [325]</i>	0.1072	16	0.1079	19				
118	<i>Plastic and rubber products [326]</i>	0.1225	14	0.1203	17				
119	<i>Nonmanufacturing industries</i>	0.1072	16	0.1079	19				
120	<b>Office and accounting machinery (14)</b>					<b>Commercial and service industry machinery (MPG333300)</b>	0.323	8.0	
121	Years before 1978	0.2729	8		7				
122	1978 and years beyond	0.3119	7		6	Commercial and service industry machinery (MPG333300)	0.265	8.0	

Table 1. Concordance: BEA and BLS Capital Asset Categories with Statistics Canada Capital Asset Categories									
BEA and BLS Major Asset Groups		Statistics Canada Major Asset Group Headings are specified in the Comments <i>Detailed assets are matched up using the BEA/BLS major asset group headings</i>							
BEA and BLS Asset Categories		Statistics Canada Asset Categories							
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life	
123						Computers and computer peripheral equipment (MPG334102)	0.524	4.0	
126	<b>Service industry machinery (15):</b>					<b>Commercial and service industry machinery (MPG333300)</b>	0.265	8.0	
127	<i>Wholesale and retail trade [42,44-45]</i>	0.1650	10	0.1671	12				
128	<i>All other industries</i>	0.1500	11	0.1551	13				
129						Commercial and service industry machinery (MPG333300)	0.265	8.0	
130	<b>Communications equipment (16):<sup>10</sup></b>					<i>Use weighted average of Canada's depreciation rates/service lives for detailed asset lives matched to this category</i>	0.228		
131	<i>Broadcasting &amp; Communications [513]</i>	0.1500	11	0.1551	13				
132	<i>All other industries</i>	0.1100	15	0.1079	19				
133						Computers and computer peripheral equipment (MPG334102)	0.524	4.0	
134						Navigational and guidance instruments (MPG334A02) <sup>11</sup>	0.160	13.1	
135						Telephone apparatus (MPG334201)	0.262	8.0	
136						Other communications equipment (MPG334209)	0.233	9.0	
137	<b>Electrical transmission, distribution, and industrial apparatus (17)</b>	0.0500	33	0.0494	41	<i>Use weighted average of Canada's depreciation rates/service lives for detailed asset lives matched to this category</i>	0.113		
138						Power and distribution transformers; other transformers (MPG335301) <sup>14</sup>	0.111	19.0	
139						Electric motors and generators (MPG335302) <sup>13</sup>	0.131	16.0	
140						Switchgear, switchboard, relays and industrial control apparatus (MPG335303) <sup>17</sup>	0.110	19.0	
141	<b>Household appliances (18)</b>	0.1650	10	0.1671	12	<i>Use weighted average of Canada's depreciation rates for detailed asset lives matched to this category</i>	0.222		
142						Small electric appliances (MPG335201)	0.208	11.0	
143						Major appliances (MPG335202)	0.231	10.0	

**Table 1. Concordance: BEA and BLS Capital Asset Categories with Statistics Canada Capital Asset Categories**

		BEA and BLS Major Asset Groups Regular font designates detailed assets; <i>Italics designates specified industry using the asset.</i>					Statistics Canada Major Asset Group Headings are specified in the Comments <i>Detailed assets are matched up using the BEA/BLS major asset group headings</i>				
		BEA and BLS Asset Categories					Statistics Canada Asset Categories				
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life			
144	<b>Other electrical equipment (19)</b>	0.1834	9	0.1809	11		0.115				
145						Power and distribution transformers; other transformers (MPG335301)	0.111	19.0			
146						Electric motors and generators (MPG335302)	0.131	16.0			
147						Switchgear, switchboard, relays and industrial control apparatus (MPG335303) <sup>17</sup>	0.110	19.0			
148						Wiring devices (MPG335903)	0.095	23.0			
149	<b>Light trucks, incl. utility vehicles (20)</b>					<b>Light-duty trucks, vans and SUVs (MPG336112)</b>	0.235	9.0			
150	Years before 1992										
151	<i>Transit and ground passenger transportation [485] Note: 485 includes urban transit (bus, commuter rail, subway), interurban and rural bus, taxi and limo, school and employee bus, charter bus and other transit and ground passenger transportation</i>	0.1232	14	0.1203	17						
152						Light-duty trucks, vans and SUVs (MPG336112)	0.235	9.0			
153	<i>Trucking transportation [484] Note: 484 includes General Freight Trucking (Local and Long Distance) and Specialized Freight Trucking (Moving, Local, and Long Distance)</i>	0.1725	10	0.1671	12						
154						Light-duty trucks, vans and SUVs (MPG336112)	0.235	9.0			
155	<i>Other industries</i>	0.1917	9	0.1972	10						
156	1992 and later years (all industries)	0.1925	17	0.1972	10						
157	<b>Other trucks, buses, trailers (21)</b>								Use weighted average of Canada's depreciation rates for detailed asset lives matched to this category		
158	<i>Transit and ground passenger transportation [485] Note: 485 includes urban transit (bus, commuter rail, subway), interurban and rural bus, taxi and limo, school and employee bus, charter bus and other transit and ground passenger transportation</i>	0.1232	14	0.1203	17				0.103		
159						Buses (MPG336201)	0.103	22.0			
160	<i>Trucking transportation [484] Note: 484 includes General Freight Trucking (Local and Long Distance) and Specialized Freight Trucking (Moving, Local, and Long Distance)</i>	0.1725	10	0.1671	12				Use weighted average of Canada's depreciation rates/service lives for detailed asset lives matched to this category		



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BEA and BLS Major Asset Groups		Statistics Canada Major Asset Group Headings are specified in the Comments							
BEA designates major asset group; Regular font designates detailed assets; Italics designates specified industry using the asset.		Detailed assets are matched up using the BEA/BLS major asset group headings							
BEA and BLS Asset Categories									
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life	
161						Freight and utility trailers (MPG336203)	0.350	6.0	
162						Motor vehicle bodies and special purpose motor vehicles (MPG336202)	0.222	10.0	
163						Medium and heavy-duty trucks and chassis (MPG336120)	0.212	10.0	
164	<i>Other industries</i>	0.1917	9	0.1972	10	<i>Use weighted average of Canada's depreciation rates/service lives for detailed asset lives matched to this category</i>	0.240		
165						Buses (MPG336201)	0.103	22.0	
166						Medium and heavy-duty trucks and chassis (MPG336120)	0.212	10.0	
167						Freight and utility trailers (MPG336203)	0.350	6.0	
168	<b>Autos (22)</b>		n.a.	0.2165	9	<b>Passenger cars (MPG336111)</b>	0.299	7.0	
169	<b>Aircraft (23):</b>						see categories below		
170	Years before 1960: <i>Air transportation [481]; Depository credit intermediates [5221]; Activities related to credit intermediation [5223]; Rental and leasing services and lessor of intangible assets[532]</i>								
171	<i>Air transportation [481]; Depository credit intermediates [5221]; Activities related to credit intermediation [5223]; Rental and leasing services and lessor of intangible assets[532]</i>	0.1031	16	0.1026	20				
172	<i>All other industries</i>	0.1375	12	0.1356	15				
173	1960 and years beyond: <i>Air transportation [481]; Rail transportation [482]; Depository credit intermediates [5221]; Activities related to credit intermediation [5223]; Insurance agencies and brokers and related services [5243]; Funds, trusts, and other financial vehicles [525]; Rental and leasing services and lessor of intangible assets [532]; Management of companies and enterprises [5511]; Offices of other holding companies and auxiliaries [5512]</i>								
174		0.0660	25	0.0660	31	<i>Use weighted average of Canada's depreciation rates/service lives for detailed asset lives matched to this category</i>	0.138		
175						Aircraft (MPG336401)	0.138	16.0	

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		BEA and BLS Asset Categories				Statistics Canada Asset Categories			
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life	
176						Aircraft engines (MPG336402)	0.138	16.0	
177						Aircraft parts and equipment (MPG336403)	0.138	16.0	
178	<i>All other industries</i>	0.1100	15	0.1079	19				
179	<b>Ships and boats (24)</b>	0.0611	27	0.0619	33	<i>Use weighted average of Canada's depreciation rates/service lives for detailed asset lives matched to this category</i>	0.112		
180						Ships (MPG336601)	0.111	20.0	
181						Boats (MPG336602)	0.116	19.0	
182	<b>Railroad equipment (25)</b>	0.0589	28	0.0583	35		0.099		
183						Railroad rolling stocks (MPG336501)	0.099	25.0	
184	<b>Photocopying and related equipment (26)</b>	0.1800	9	0.1809	11	<i>Use weighted average of Canada's depreciation rates/service lives for detailed asset lives matched to this category</i>	0.242		
185						Office machinery and equipment (exclude telephone equipment) (8003)	0.306	6.8	
186						Optical instruments and apparatus, laboratory, scientific and material-testing equipment (include flight simulators) (9011)	0.196	10.7	
187	<b>Medical equipment &amp; related instruments (27)</b>	0.1350	12	0.1356	15	<b>Medical, dental and personal safety supplies, instruments and equipment (MPG339100)</b>	0.301	7.0	
188	<b>Electromedical instruments (28)</b>	0.1834	9	0.1809	11	<b>Measuring and control devices; electrical, medical, scientific and technical instruments (MPG334A03)</b>	0.236	9.0	
189	<b>Nonmedical instruments (29)</b>	0.1350	12	0.1356	15		0.236		

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<b>BEA and BLS Asset Categories</b>		<b>Statistics Canada Asset Categories</b>					
Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life
190					Measuring and control devices; electrical, medical, scientific and technical instruments (MPG334A03)	0.236	9.0
191		11	0.1447	14	<i>Use weighted average of Canada's depreciation rates for detailed asset lives matched to this category</i>	0.193	
192					Carpets and rugs (MPG31A003)	0.208	11.0
193					Agricultural, lawn and garden machinery and equipment (MPG333101)	0.178	13.0
194					Motor homes, travel trailers and campers (MPG336204)	0.175	12.0
195					Other transportation equipment and related parts (MPG336900)	0.175	12.0
196					Sporting and athletic goods (MPG339902)	0.209	11.0
197					Signs (MPG339905)	0.208	11.0
198	<b>Nuclear fuel (31)</b>	4	0.4158	4			4.0
199					Nuclear reactor parts and fuel elements (9093)	0.107	20.1
200					<b>Computers and computer peripheral equipment (MPG334102)</b>	0.524	4.0
201	<b>Mainframe computers (32):</b>						
202	Years before 1970	n.a.	0.2165	9			
203	1970 to 1979	n.a.	0.2686	7			
204	1980 and years beyond	n.a.	0.3520	5			
205	<b>Personal computers (33)</b>	n.a.	0.3520	5			

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		BEA and BLS Asset Categories					Statistics Canada Asset Categories				
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life			
206	<b>Direct access storage devices (34):</b>										
207	Years before 1986		n.a.	0.2398	8						
208	1986 and years beyond		n.a.	0.2165	9						
209	<b>Printers (35):</b>										
210	Years before 1976		n.a.	0.1972	10						
211	1976 to 1980		n.a.	0.2398	8						
212	1981 to 1985		n.a.	0.3049	6						
213	1986 and years beyond		n.a.	0.3520	5						
214	<b>Terminals (36):</b>										
215	Years before 1981		n.a.	0.2165	9						
216	1981 to 1985		n.a.	0.2398	8						
217	1986 and years beyond		n.a.	0.3049	6						
218	<b>Tape drives (37):</b>										
219	Years before 1981		n.a.	0.2165	9						
220	1981 and years beyond		n.a.	0.2686	7						
221	<b>Storage devices (38)</b>		n.a.	0.3520	5						
222	<b>Integrated systems (39)</b>		n.a.	0.3520	5						
223	<b>Private nonresidential structures</b>										
224	<b>Manufacturing (43)</b>	0.0314	31	0.0316	56	Industrial buildings (MPG23B001)	0.075	28.0			
225	<b>Office buildings (44)</b>	0.0247	36	0.0247	70	Office buildings (MPG23B002)	0.068	31.0			
226	<b>Commercial warehouses (45)</b>	0.0222	40	0.0223	77		0.081				
227						Other commercial buildings (MPG23B004)	0.081	27.0			

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		BEA and BLS Asset Categories					Statistics Canada Asset Categories		
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life	
228	<b>Other commercial buildings (46)</b> <i>(Note this is a residual category and may differ depending on what each country identifies separately.)</i>	0.0262	34	0.0264	66	<i>Use weighted average of Canada's depreciation rates for detailed asset lives matched to this category</i>	0.087		
229						Shopping centres, plazas, malls, stores (MPG23B003)	0.093	25.0	
230						Other commercial buildings (MPG23B004)	0.081	27.0	
231	<b>Educational buildings (47)</b>	0.0188	48	0.0187	90	<b>Schools, colleges, universities and other educational buildings (MPG23B005)</b>	0.056	39.0	
232	<b>Hospitals (48)</b>	0.0188	48	0.0187	90		0.062		
233						Hospitals, health centres, clinics, nursing homes and other health care buildings (MPG23B006)	0.062	35.0	
234	<b>Hotels and motels—Lodging (49)</b>	0.0281	32	0.0283	62		0.081		
235						Other commercial buildings (MPG23B004)	0.081	27.0	
236	<b>Amusement &amp; recreational buildings (50)</b>	0.0300	30	0.0299	59		0.081		
237						Other commercial buildings (MPG23B004)	0.081	27.0	
238	<b>Air transportation (51)</b>	0.0237	38	0.0236	73		0.102		

Table 1. Concordance: BEA and BLS Capital Asset Categories with Statistics Canada Capital Asset Categories									
BEA and BLS Major Asset Groups		Statistics Canada Major Asset Group Headings are specified in the Comments <i>Detailed assets are matched up using the BEA/BLS major asset group headings</i>							
BEA and BLS Asset Categories		Statistics Canada Asset Categories							
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life	
239						Other engineering construction (MPG23C509)	0.102	22.0	
240	<b>Other railroad structures (52)</b>	0.0176	54	0.0176	95		0.063		
241						Other transportation construction (MPG23C109)	0.063	34.0	
242	<b>Communications (53)</b>	0.0237	40	0.0236	73		0.104		
243						Communication engineering construction (MPG23C400)	0.127	20.0	
244						Other commercial buildings (MPG23B004)	0.081	27.0	
245	<b>Electric (54):</b>					Average of the categories below	0.055	40.000	
246	Years before 1946	0.0237	40	0.0236	73				
247	1946 and beyond	0.0211	45	0.0210	81				
248						Industrial buildings (MPG23B001)	0.075	28.0	
249						Electric power engineering construction (MPG23C300)	0.055	40.0	
250	<b>Gas (55)</b>	0.0237	40	0.0236	73	Average of these categories	0.074		
251						Oil and gas production facilities (MPG23C201)	0.074	30.0	
252						Other oil and gas engineering construction (MPG23C209)	0.073	31.0	
253	<b>Local transit (56)</b>	0.0237	38	0.0236	73	Average of these categories	0.092		
254						Other commercial buildings (MPG23B004)	0.081	27.0	
255						Other engineering construction (MPG23C509)	0.102	22.0	
256	<b>Petroleum pipelines (57)</b>	0.0237	40	0.0236	73	Average of these categories	0.074		

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		BEA and BLS Asset Categories					Statistics Canada Asset Categories				
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life			
257						Oil and gas production facilities (MPG23C201)	0.074	30.0			
258						Other oil and gas engineering construction	0.073	31.0			
259	<b>Farm (58)</b>	0.0239	38	0.0240	72		0.089				
260						Industrial buildings (MPG23B001)	0.075	28.0			
261						Other engineering construction (MPG23C509)	0.102	22.0			
262	<b>Mining Structures: Petroleum and natural gas (59):</b>					Average of categories below	0.117				
263	Years before 1973	0.0563	16	0.0558	33						
264	1973 and beyond	0.0751	12	0.0744	25						
265						Oil and gas production facilities (MPG23C201)	0.074	30.0			
266						Mining engineering construction (MPG23C504)	0.159	14.0			
267	<b>Other Mining (60)</b>	0.0450	20	0.0455	40		0.159	14.0			
268						Mining engineering construction (MPG23C504)	0.159	14.0			
269	<b>Medical building (61)</b>	0.0247	36	0.0247	70	<b>Hospitals, health centres, clinics, nursing homes and other health care buildings (MPG23B006)</b>	0.062	35.0			
270	<b>Railroad replacement track (62)</b>	0.0249	38	0.0251	69		0.063				
271						Other transportation construction (MPG23C109)	0.063	34.0			
272	<b>Wind and Solar Energy (63)</b>	0.0303	30	0.0304	58		0.065				
273						Industrial buildings (MPG23B001)	0.075	28.0			
274						Electric power engineering construction (MPG23C300)	0.055	40.0			
275	<b>Tenant-occ. manufactured homes (64)</b>	0.0455	20	0.0933	20	Other commercial buildings (MPG23B004)	0.081	27.0			
276	<b>Tenant-occupied, 1-4 units, new (65)</b>	0.0114	80	0.0213	80	Other commercial buildings (MPG23B004)	0.081	27.0			
277	<b>Tenant-occupied, 1-4 units, additions and alterations (66)</b>	0.0227	40	0.0455	40	Other commercial buildings (MPG23B004)	0.081	27.0			
278	<b>Tenant-occupied, 1-4 units, major replacements (67)</b>	0.0364	25	0.0744	25	Other commercial buildings (MPG23B004)	0.081	27.0			
279	<b>Tenant-occupied, 5+ units, new (68)</b>	0.0140	65	0.0268	65	Other commercial buildings (MPG23B004)	0.081	27.0			
280	<b>Tenant-occupied, 5+ units, additions and alterations (69)</b>	0.0284	32	0.0576	32	Other commercial buildings (MPG23B004)	0.081	27.0			

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		BEA and BLS Major Asset Groups <i>Bold designates major asset group; Regular font designates detailed assets; Italics designates specified industry using the asset.</i>				Statistics Canada Major Asset Group Headings are specified in the Comments <i>Detailed assets are matched up using the BEA/BLS major asset group headings</i>			
		BEA and BLS Asset Categories				Statistics Canada Asset Categories			
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life	
281	Tenant-occupied, 5+ units, major replacements (70)	0.0455	20	0.0933	20	Other commercial buildings (MPG23B004)	0.081	27.0	
282	Tenant-occupied, 1-4 units, equipment (71)	0.1500	11	0.1418	13	Other commercial buildings (MPG23B004)	0.081	27.0	
283	Tenant-occupied, 5+ units, equipment (72)	0.1500	11	0.1418	13	Other commercial buildings (MPG23B004)	0.081	27.0	
284	Tenant-occupied, other residential structures (73)	0.0227	40	0.0455	40	Other commercial buildings (MPG23B004)	0.081	27.0	
285	Owner-occupied, 1-4 units, new (74)	0.0114	80	0.0213	80				
286	Owner-occupied, 1-4 units, additions and alterations (75)	0.0227	40	0.0455	40				
287	Owner-occupied, 1-4 units, major replacements (76)	0.0364	25	0.0744	25				
288	Owner-occupied, 5+ units, new (77)	0.0140	65	0.0268	65				
289	Owner-occupied, 5+ units, additions and alterations (78)	0.0284	32	0.0576	32				
290	Owner-occupied, 5+ units, major replacements (79)	0.0455	20	0.0933	20				
291	Owner-occupied, mobile homes (80)	0.0455	20	0.0455	40				
292	Land (81)			na	na				
293	Special Care (82)	0.0188	48	0.0187	90	Hospitals, health centres, clinics, nursing homes and other health care buildings (MPG23B006)	0.062	35.0	
294	Multimerchandise shopping (83)	0.0262	34	0.0260	66	Shopping centres, plazas, malls, stores (MPG23B003)	0.093	25.0	
295	Food and beverage establishments (84)	0.0262	34	0.0260	66	Other commercial buildings (MPG23B004)	0.081		
296							0.081	27.0	
297	Religious buildings (85)	0.0188	48	0.0187	90		0.055		
298						Churches and other religious buildings (1203)	0.055	39.5	
299	Mobile offices (86)	0.0556	16	0.0558	33		0.062		
300						Other institutional buildings (MPG23B007)	0.062	35.0	
301	Other transportation (87)	0.0237	38	0.0236	73		0.080		



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		BEA and BLS Asset Categories				Statistics Canada Asset Categories			
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life	
302						Marine engineering construction (MPG23C501)	0.080	28.0	
303	<b>Other land transportation (88)</b>	0.0237	38	0.0236	73	<b>Other transportation construction (MPG23C109)</b>	0.063	34.0	
304	<b>Water Supply (89)</b> <i>(not clear if this is private or government)</i>	0.0225	40	0.0226	76	<b>Waterworks engineering construction (MPG23C502)</b>	0.057	39.0	
305	<b>Sewage and Waste Disposal (90)</b> <i>(not clear if this is private or government)</i>	0.0225	40	0.0226	76	<b>Sewage engineering construction (MPG23C503)</b>	0.062	36.0	
306	<b>Materials inventory, Manufacturing industries Total inventory, Nonmanufacturing industries (91)</b>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>				
307	<b>Work-in-process inventory, manufacturing industries (92)</b>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>				
308	<b>Finished goods inventory, manufacturing industries (93)</b>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>				
309	<b>Public Safety (94)</b>					<b>Other institutional buildings (MPG23B007)</b>	0.062	35.0	
310	<b>Highway and Conservation and Development (95)</b> <i>(not clear if this is private or government)</i>	0.0225	40	0.0226	76		0.101		
311						Highway, roads, streets, bridges and overpasses (MPG23C101)	0.101	23.0	
312	<b>Tenant-occupied, acquisition costs (96)</b>		<i>n.a.</i>	0.1418	13				
313	<b>Tenant-occupied, disposal costs (97)</b>		<i>n.a.</i>	0.1418	13				
314	<b>Owner-occupied, acquisition costs (98)</b>		<i>n.a.</i>	0.1418	13				
315	<b>Owner-occupied, disposal costs (99)</b>		<i>n.a.</i>	0.1418	13				
316	<b>Government nonresidential equipment</b>					<b>Government nonresidential equipment</b>			
317	<b>Federal</b>								
318	<b>National Defense</b>								
319	<b>Aircraft</b>								
320	<b>Airframes</b>								
321	Bombers	0.0660	25						
322	F-14 type	0.0868	19						
323	Attack, F-15 and F-16 types	0.0825	20						
324	F-18 type	0.1100	15						

**Table 1. Concordance: BEA and BLS Capital Asset Categories with Statistics Canada Capital Asset Categories**

		BEA and BLS Major Asset Groups <i>Regular font designates detailed assets; Italics designates specified industry using the asset.</i>					Statistics Canada Major Asset Group Headings are specified in the Comments <i>Detailed assets are matched up using the BEA/BLS major asset group headings</i>			
		BEA and BLS Asset Categories					Statistics Canada Asset Categories			
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life		
325	Electronic warfare	0.0717	23							
326	Cargo and trainers	0.0660	25							
327	Helicopters	0.0825	20							
328	Engines	0.2750	6							
329	Other:									
330	Years before 1982	0.1179	14							
331	1982 and later years	0.1650	10							
332	Missiles:									
333	Strategic		20							
334	Tactical		15							
335	Torpedoes		15							
336	Fire control equipment		10							
337	Space programs		20							
338	Ships:									
339	Surface Ships	0.0550	30							
340	Submarines	0.0660	25							
341	Government furnished equipment:									
342	Electrical	0.1834	9							
343	Propulsion	0.0825	20							
344	Hull, mechanical	0.0660	25							
345	Ordnance	0.1650	10							
346	Other	0.1650	10							
347	Vehicles:									
348	Tanks, armored personnel carriers, and other combat vehicles	0.0825	20							
349	Noncombat vehicles:									
350	Trucks	0.2875	6							

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		<b>BEA and BLS Asset Categories</b>				<b>Statistics Canada Asset Categories</b>			
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life	
351	Autos								
352	Other	0.2465	7						
353	Electronic equipment:								
354	Computers and peripheral equipment								
355	Electronic countermeasures	0.2357	7						
356	Other	0.1650	10						
357	Other equipment:								
358	Medical	0.1834	9						
359	Construction	0.1550	10						
360	Industrial	0.0917	18						
361	Ammunition plant	0.0868	19						
362	Atomic energy	0.1375	12						
363	Weapons and fire control	0.1375	12						
364	General	0.1650	10						
365	Other	0.1375	12						
366	Nondefense:								
367	General government:								
368	Computers and peripheral equipment								
369	Aerospace equipment	0.1100	15						
370	Vehicles	0.4533	5						
371	Other	0.1650	10						
372	Enterprises:								
373	US Postal Service:								
374	Computers and peripheral equipment								
375	Vehicles	0.3238	7						
376	Other	0.1100	15						

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		BEA and BLS Asset Categories					Statistics Canada Asset Categories			
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life		
377	Tennessee Valley Power Authority	0.0500	33							
378	Bonneville Power Authority	0.0500	33							
379	Other	0.0660	25							
380	<b>State and Local</b>									
381	Power tools, lawn and garden equipment	0.1650	10							
382	Miscellaneous metal products	0.0917	18							
383	Agricultural machinery and equipment	0.1833	9							
384	Construction machinery and equipment	0.1650	10							
385	Metalworking machinery and equipment	0.1031	16							
386	General purpose machinery and equipment	0.1500	11							
387	Special industry machinery and equipment	0.1500	11							
388	Integrating and measuring instruments	0.1375	12							
389	Motors, generators, motor generator sets	0.0516	32							
390	Switchgear and switchboard equipment	0.0500	33							
391	Electronic components and accessories	0.1833	9							
392	Miscellaneous electrical machinery	0.1375	22							
393	Calculating and accounting machines	0.2357	7							
394	Typewriters	0.2357	7							
395	Computers and peripheral equipment									
396	Machine shop products	0.2063	8							
397	Wood commercial furniture	0.1179	14							
398	Metal commercial furniture	0.1179	14							
399	Household appliances	0.1500	11							
400	Home electronic equipment	0.1500	11							
401	Motor vehicles	0.1650	10							
402	Motorcycles	0.1650	10							

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		BEA and BLS Asset Categories					Statistics Canada Asset Categories				
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life			
403	Aircraft	0.1100	15								
404	Railroad equipment	0.0590	28								
405	Sporting and athletic goods	0.1650	10								
406	Photographic and photocopying equipment	0.1650	10								
407	Mobile classrooms, mobile offices, etc	0.1650	10								
408	Musical instruments	0.1834	9								
409	Other equipment	0.1375	12								
410	<b>Government nonresidential structures</b>					<b>Government nonresidential structures</b>					
411	<b>Federal, State, and local:</b>										
412	Buildings:										
413	Industrial	0.0285	32								
414	Educational	0.0182	50								
415	Hospital	0.0182	50								
416	Other	0.0182	50								
417						Armouries, barracks, drill halls and other military type structures (1214)	0.690	31.5			
418						Other institutional and governmental construction (1299)	0.073	29.6			
419	Nonbuildings:										
420	Highways and streets	0.0202	45								
421	Conservation and development	0.0152	60								
422	Sewer systems	0.0152	60								
423	Water systems	0.0152	60								
424	Military facilities	0.0182	50								
425	Other	0.0152	60								
426	<b>Private Intellectual Property Products</b>					<b>Private Intellectual Property Products</b>					
427	<b>Software, pre-packaged (40)</b>	0.5500	3	0.5500	3	<b>General purpose software (MPS511200)</b>	0.550	3.0			
428	<b>Software, custom (41)</b>	0.3300	5	0.3300	5	<b>Custom software design and development services (MPS541501)</b>	0.330	5.0			

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BEA and BLS Asset Categories									
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	Statistics Canada Asset Depreciation Rate	Statistics Canada Mean Asset Service Life	
429	<b>Software, own-account (42)</b>	0.3300	5	0.3300	5	Own-account software design and development services (IMS541502)	0.330	5.0	
430	<b>Research and Development -R&amp;D (100)</b> <i>Research and Development is a composite of 15 BEA R&amp;D asset types: rd11, rd12, rd21, rd22, rd23, rd24, rd25, rd31, rd32, rd33, rd34, rd35, rd40, rd41, rd42, rd43, rd44, rd45, rd46, rd47, rd48, rd49, rd50, rd51, rd52, rd53, rd54, rd55, rd56, rd57, rd58, rd59, rd60, rd61, rd62, rd63, rd64, rd65, rd66, rd67, rd68, rd69, rd70, rd71, rd72, rd73, rd74, rd75, rd76, rd77, rd78, rd79, rd80. See below for descriptions of detailed R&amp;D assets</i>	n.a.	n.a.	n.a.	n.a.				
431						Research and development services (MPS541701)	0.275	6.0	
432						Own account research and development services (except software development) (IMS541702)	0.275	6.0	
433	Pharmaceutical and medicine manufacturing R&D (201) {rd11}	0.1000	n.a.	0.1000	21				
434	Chemical manufacturing, excluding pharmaceutical and medicine R&D (202) {rd12}	0.1600	n.a.	0.1600	13				
435	Computers and peripheral equipment manufacturing R&D (203) {rd21}	0.4000	n.a.	0.4000	4				
436	Communications equipment R&D (204) {rd22}	0.2700	n.a.	0.2700	7				
437	Semiconductor and other electronic component manufacturing R&D (205) {rd23}	0.2500	n.a.	0.2500	7				
438	Navigation, measuring, electromedical, and control instruments manufacturing R&D (206) {rd24}	0.2900	n.a.	0.2900	6				
439	Other computer and electronic product manufacturing, nec R&D (207) {rd25}	0.4000	n.a.	0.4000	4				
440	Motor vehicles, bodies, and trailers, and part manufacturing R&D (208) {rd31}	0.3100	n.a.	0.3100	6				
441	Aerospace products and parts manufacturing R&D (209) {rd32}	0.2200	n.a.	0.2200	9				
442	Other manufacturing R&D (210) {rdom}	0.1600	n.a.	0.1600	13				
443	Scientific research and development services R&D (211) {rd70}	0.1600	n.a.	0.1600	13				
444	Software publishers R&D (212) {rd40}	0.2200	n.a.	0.2200	9				
445	Financial and real estate services R&D (213) {rd50}	0.1600	n.a.	0.1600	13				
446	Computer systems design and related services R&D (214) {rd60}	0.3600	n.a.	0.3600	5				
447	All other nonmanufacturing, nec R&D (215) {rd80}	0.1600	n.a.	0.1600	13				

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		BEA and BLS Asset Categories				Statistics Canada Asset Categories			
	Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life	
448	<b>Universities and Colleges (NPISH) R&amp;D (216) {rd91}</b>	0.1600	n.a.	0.1600	13				
449	<b>Other nonprofit institutions (NPISH) R&amp;D (217) {rd92}</b>	0.1600	n.a.	0.1600	13				
450	<b>Entertainment, Literary, and Artistic Originals (101)</b> <i>Entertainment, Literary, and Artistic Originals are a composite of 9 BEA asset types: ae10, ae201, ae22, ae30, ae41, ae42, ae44, ae52, and ae53. See below for descriptions of the detailed assets.</i>	n.a.	n.a.	n.a.	n.a.				
451	Theatrical movies (218) {ae10}	0.0930	n.a.	0.0930	22				
452	Long-lived television programs	0.1680		0.1680	12				
453	Fiction (long-lived television programs) (219) {ae21}	0.1680	n.a.	0.1680	12				
454	Nonfiction including animated TV (long-lived television) (220) {ae22}	0.1680	n.a.	0.1680	12				
455	Books (221) {ae30}	0.1210	n.a.	0.1210	17				
456	Music	0.2670							
457	Recorded music (222) {ae41}	n.a.	n.a.	0.2670	7				
458	Nonrecorded music (223) {ae42}	n.a.	n.a.	0.2670	7				
459	Other	0.1090							
460	Theatrical plays (224) {ae51}		n.a.	0.1090	19				
461	Greeting cards (225) {ae52}		n.a.	0.1090	19				
462	Stock photos (226) {ae53}		n.a.	0.1090	19				
463	<b>Government Intellectual Property Products</b>					<b>Government Intellectual Property Products</b>			
464	<b>Software:</b>								
465	<b>Pre-Packaged</b>	0.5500	3						
466	<b>Custom</b>	0.3300	5						
467	<b>Own-Account</b>	0.3300	5						
468	<b>Federal, National defense R&amp;D:</b>								
469	<b>Extramural</b>	0.1977	na						
470	<b>Intramural</b>	0.1600	na						
471	<b>Federal, Nondefense R&amp;D:</b>								
472	<b>NASA</b>	0.0723	na						
473	<b>Health</b>	0.0904	na						
474	<b>Energy</b>	0.0935	na						
475	<b>Transportation</b>	0.1600	na						
476	<b>Other</b>	0.1600	na						
477	<b>State and Local R&amp;D</b>	0.1600	na						

**Table 1. Concordance: BEA and BLS Capital Asset Categories with Statistics Canada Capital Asset Categories**

BEA and BLS Major Asset Groups		Statistics Canada Major Asset Group Headings are specified in the Comments <i>Detailed assets are matched up using the BEA/BLS major asset group headings</i>				
<b>Bold designates major asset group; Regular font designates detailed assets; Italics designates specified industry using the asset.</b>						
BEA and BLS Asset Categories						
Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate
						StatCanada Mean Asset Service Life
<sup>1</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-16						
<sup>2</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-16						
<sup>3</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-16						
<sup>4</sup> See BEA Handbook Chapter 6 Table 6B General Industrial. Category 17, includes PPI for scale and balance equipment. Note BEA investment underlying detail spreadsheet includes "industrial robots, attachments & parts" under NIPA investment category 33399A, Scales, Balances and Miscellaneous General Purpose Machinery.						
<sup>5</sup> See BEA Handbook Chapter 6 Table 6B General Industrial. Category 17, includes PPI for scale and balance equipment. Note BEA investment underlying detail spreadsheet includes "industrial robots, attachments & parts" under NIPA investment category 33399A, Scales, Balances and Miscellaneous General Purpose Machinery.						
<sup>6</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-16 line 15.						
<sup>7</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-14 line 11. Listed under "Industrial Equipment."						
<sup>8</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-16 line 15. Listed under "Industrial Equipment."						
<sup>9</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-16 line 15. Listed under "Industrial Equipment."						
<sup>10</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-13 line 5.						
<sup>11</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-13 line 5.						
<sup>12</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-13 line 5.						
<sup>13</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-16 line 16.						
<sup>14</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-16 line 16.						
<sup>15</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-16 line 16.						



**Table 1. Concordance: BEA and BLS Capital Asset Categories with Statistics Canada Capital Asset Categories**

<b>BEA and BLS Major Asset Groups</b> <i>Regular font designates detailed assets; Italics designates specified industry using the asset.</i>		<b>Statistics Canada Major Asset Group Headings are specified in the Comments</b> <i>Detailed assets are matched up using the BEA/BLS major asset group headings</i>					
<b>BEA and BLS Asset Categories</b>		<b>Statistics Canada Asset Categories</b>					
Type of Asset	BEA Asset Depreciation Rate	BEA Mean Asset Service Life	BLS Asset Depreciation Rate	BLS Mean Asset Service Life	Type of Asset	StatCanada Asset Depreciation Rate	StatCanada Mean Asset Service Life
<sup>16</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-16 line 16.							
<sup>17</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-16 line 16.							
<sup>18</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-16 line 16.							
<sup>19</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-16 line 16.							
<sup>20</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-16 line 16.							
<sup>21</sup> See BEA Table 2.1, Fixed Assets, footnote 2.							
<sup>22</sup> See BEA Table 2.1, Fixed Assets, footnote 2.							
<sup>23</sup> See BEA Table 2.1 Fixed Assets, footnote 6 re include dormitories in "Other Residential Structures."							
<sup>24</sup> See BEA Table 2.1 Fixed Assets, footnote 6 re include dormitories in "Other Residential Structures."							
<sup>25</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-15 line 32.							
<sup>26</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-15 line 32.							
<sup>27</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-15 line 32.							
<sup>28</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-15 line 32.							
<sup>29</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-15 line 32.							
<sup>30</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-15 line 32.							
<sup>31</sup> See BEA Handbook Chapter 6 Table 6B General Industrial p. 6-15 line 32.							
<sup>32</sup> See BEA Fixed Asset table 2.1, footnote 2, which indicates bus or truck garages are included in transportation.							

## Appendix B. Empirical Results

Table 2a. Comparison of U.S. Current and Revised Depreciation Rates and Related Service Lives

U.S. Asset Category	Current Rates				Set 1 Rates				Set 2 Rates			
	BEA		BLS		BEA		BLS		BEA		BLS	
	Depreciation Rate	Service Life Using Geometric Age-Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age-Efficiency Function	Depreciation Rate	Service Life Using Geometric Age-Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age-Efficiency Function	Depreciation Rate	Service Life Using Geometric Age-Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age-Efficiency Function
<b>PRIVATE NONRESIDENTIAL EQUIPMENT</b>												
Household furniture and fixtures (1)	0.1375	12	0.1356	15	0.2502	7	0.2502	8	0.1876	12	0.1809	11
Other furniture (2)	0.1179	14	0.1203	17	0.2596	6	0.2596	7	0.1581	14	0.1551	13
Other fabricated metal products (3)	0.0917	18	0.0934	22	0.1975	8	0.1975	10	0.1271	18	0.1275	16
Steam engines and turbines (4)	0.0516	32	0.0520	39	0.0860	19	0.0860	24	0.0672	32	0.0683	30
Internal combustion engines (5)	0.2063	8	0.1972	10	0.0929	18	0.0929	22	0.2705	8	0.2686	7
Farm tractors (6)	0.1452	9	0.1447	14	0.1780	7	0.1780	11	0.2571	9	0.2686	7
Construction tractors (7)	0.1633	8	0.1671	12	0.1720	8	0.1720	12	0.2795	8	0.2686	7
Agricultural machinery except tractors (8)	0.1179	14	0.1203	17	0.1780	9	0.1780	11	0.1653	14	0.1671	12
Construction machinery except tractors (9)	0.1550	10	0.1551	13	0.1720	9	0.1720	12	0.2236	10	0.2165	9
Mining and oil field machinery (10)	0.1500	11	0.1551	13	0.1720	10	0.1720	12	0.2033	11	0.1972	10
Metal working machinery (11)												
Durable Manufacturing												
Wood products [321]	0.1633	12	0.1671	12	0.2626	7	0.2736	7	0.1806	12	0.1809	11
Nonmetallic minerals [327]	0.1032	19	0.1026	20	0.1660	12	0.1680	12	0.1141	19	0.1138	18
Primary metal [331]	0.0726	27	0.0733	28	0.1168	17	0.1200	17	0.0803	27	0.0790	26
Fabricated metal [332]	0.0817	24	0.0822	25	0.1314	15	0.1346	15	0.0903	24	0.0894	23
Machinery [333]	0.0784	25	0.0790	26	0.1261	16	0.1294	16	0.0867	25	0.0856	24
Computer/electronic product [334]	0.1400	14	0.1356	15	0.2251	9	0.2221	9	0.1548	14	0.1551	13
Electronic equipment/appliance [335]	0.1400	14	0.1356	15	0.2251	9	0.2221	9	0.1548	14	0.1551	13
Transportation equipment					0.0000	0						
Motor vehicle, body, trailers and equipment parts [3361-3364]	0.1400	14	0.1356	15	0.2251	9	0.2221	9	0.1548	14	0.1551	13
Other transportation equipment [3364-3366, 3369]	0.1153	17	0.1138	18	0.1854	11	0.1864	11	0.1275	17	0.1275	16
Furniture and related products [337]	0.1400	14	0.1356	15	0.2251	9	0.2221	9	0.1548	14	0.1551	13
Miscellaneous Mfg. [339]					0.0000	0						
Medical equipment/supplies [3391]	0.1400	14	0.1356	15	0.2251	9	0.2221	9	0.1548	14	0.1551	13
Other miscellaneous [3399]	0.1153	17	0.1138	18	0.1854	11	0.1864	11	0.1275	17	0.1275	16
Nondurable Manufacturing					0.0000	0						
Food [311]	0.0980	20	0.0978	21	0.1576	12	0.1602	13	0.1084	20	0.1079	19
Beverage and tobacco product [312]	0.0933	21	0.0934	22	0.1500	13	0.1529	13	0.1032	21	0.1026	20
Textile mill and textile mill products [313, 314]	0.1225	16	0.1203	17	0.1970	10	0.1970	10	0.1354	16	0.1356	15
Apparel and leather and allied products [315, 316]	0.1307	15	0.1275	16	0.2102	9	0.2088	9	0.1445	15	0.1447	14
Paper products [322]	0.1225	16	0.1203	17	0.1970	10	0.1970	10	0.1354	16	0.1356	15
Printing and related supported activities [323]	0.1307	15	0.1275	16	0.2102	9	0.2088	9	0.1445	15	0.1447	14
Petroleum and coal products [324]	0.0891	22	0.0894	23	0.1433	14	0.1464	14	0.0985	22	0.0978	21
Chemical products [325]	0.1225	16	0.1203	17	0.1970	10	0.1970	10	0.1354	16	0.1356	15
Plastic and rubber products [326]	0.1400	14	0.1356	15	0.2251	9	0.2221	9	0.1548	14	0.1551	13
Nonmanufacturing industries	0.1225	16	0.1203	17	0.1970	10	0.1970	10	0.1354	16	0.1356	15
<b>Special industry machinery, n.e.c. (12)</b>												
Durable Manufacturing												
Wood products [321]	0.1633	12	0.1356	15	0.2602	6	0.2579	7	0.1774	12	0.1809	11
Nonmetallic minerals [327]	0.0868	19	0.0856	24	0.1643	10	0.1628	12	0.1120	19	0.1138	18
Primary metal [331]	0.0611	27	0.0619	33	0.1156	14	0.1177	17	0.0788	27	0.0790	26
Fabricated metal [332]	0.0688	24	0.0683	30	0.1302	13	0.1299	16	0.0887	24	0.0894	23
Machinery [333]	0.0660	25	0.0660	31	0.1249	13	0.1255	16	0.0851	25	0.0856	24
Computer/electronic product [334]	0.1179	14	0.1203	17	0.2231	7	0.2288	8	0.1520	14	0.1551	13
Electronic equipment appliance [335]	0.1179	14	0.1203	17	0.2231	7	0.2288	8	0.1520	14	0.1551	13
Transportation equipment												
Motor vehicle, body, trailers and equipment parts [3361-3364]	0.1179	14	0.1203	17	0.2231	7	0.2288	8	0.1520	14	0.1551	13
Other transportation equipment [3364-3366, 3369]	0.0971	17	0.0978	21	0.1837	9	0.1860	11	0.1252	17	0.1275	16
Furniture and related products [337]	0.1179	14	0.1203	17	0.2231	7	0.2288	8	0.1520	14	0.1551	13

Table 2a. Comparison of U.S. Current and Revised Depreciation Rates and Related Service Lives

U.S. Asset Category	Current Rates				Set 1 Rates				Set 2 Rates			
	BEA		BLS		BEA		BLS		BEA		BLS	
	Depreciation Rate	Service Life Using Geometric Age-Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age-Efficiency Function	Depreciation Rate	Service Life <sup>1</sup> Using Geometric Age-Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age-Efficiency Function	Depreciation Rate	Service Life <sup>1</sup> Using Geometric Age-Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age-Efficiency Function
Miscellaneous Mfg. [339]												
Medical equipment/ supplies [3391]	0.1179	14	0.1203	17	0.2231	7	0.2288	8	0.1520	14	0.1551	13
Other miscellaneous [3399]	0.0971	17	0.0978	21	0.1837	9	0.1860	11	0.1252	17	0.1275	16
Nondurable Manufacturing												
Food [311]	0.0825	20	0.0822	25	0.1561	11	0.1563	13	0.1064	20	0.1079	19
Beverage and tobacco product [312]	0.0786	21	0.0790	26	0.1487	11	0.1502	13	0.1014	21	0.1026	20
Textile mill and textile mill products [313, 314]	0.1031	16	0.1026	19	0.1951	8	0.1951	10	0.1330	16	0.1356	15
Apparel and leather and allied products [315, 316]	0.1100	15	0.1079	20	0.2082	8	0.2052	10	0.1419	15	0.1447	14
Paper products [322]	0.1031	16	0.1026	20	0.1951	8	0.1951	10	0.1330	16	0.1356	15
Printing and related supported activities [323]	0.1100	15	0.1079	19	0.2082	8	0.2052	10	0.1419	15	0.1447	14
Petroleum and coal products [324]	0.0750	22	0.0760	27	0.1419	12	0.1445	14	0.0968	22	0.0978	21
Chemical products [325]	0.1031	16	0.1026	20	0.1951	8	0.1951	10	0.1330	16	0.1356	15
Plastic and rubber products [326]	0.1179	14	0.1203	17	0.2231	7	0.2288	8	0.1520	14	0.1551	13
Nonmanufacturing industries	0.1031	16	0.1026	20	0.1951	9	0.1951	10	0.1330	16	0.1356	15
<b>General industrial equipment incl. materials handling (13)</b>												
Durable Manufacturing												
Wood products [321]	0.1429	12	0.1447	14	0.2419	7	0.2434	8	0.1803	12	0.1809	11
Nonmetallic minerals [327]	0.0903	19	0.0894	23	0.1529	11	0.1504	13	0.1139	19	0.1138	18
Primary metal [331]	0.0635	27	0.0639	32	0.1075	16	0.1075	19	0.0801	27	0.0822	25
Fabricated metal [332]	0.0715	24	0.0707	29	0.1211	14	0.1189	17	0.0902	24	0.0894	23
Machinery [333]	0.0686	25	0.0683	30	0.1161	15	0.1149	18	0.0866	25	0.0856	24
Computer/ electronic product [334]	0.1225	14	0.1203	17	0.2074	8	0.2024	10	0.1546	14	0.1551	13
Electronic equipment appliance [335]	0.1225	14	0.1203	17	0.2074	8	0.2024	10	0.1546	14	0.1551	13
Transportation equipment												
Motor vehicle, body, trailers and equipment parts [3361-3364]	0.1225	14	0.1203	17	0.2074	8	0.2024	10	0.1546	14	0.1551	13
Other transportation equipment [3364-3366, 3369]	0.1009	17	0.1026	20	0.1708	10	0.1726	12	0.1273	17	0.1275	16
Furniture and related products [337]	0.1225	14	0.1203	17	0.2074	8	0.2024	10	0.1546	14	0.1551	13
Miscellaneous Mfg. [339]												
Medical equipment/ supplies [3391]	0.1225	14	0.1203	17	0.2074	8	0.2024	10	0.1546	14	0.1551	13
Other miscellaneous [3399]	0.1009	17	0.1026	20	0.1708	10	0.1726	12	0.1273	17	0.1275	16
Nondurable Manufacturing												
Food [311]	0.0858	20	0.0856	24	0.1453	12	0.1440	14	0.1082	20	0.1079	19
Beverage and tobacco product [312]	0.0817	21	0.0822	25	0.1383	12	0.1383	15	0.1030	21	0.1026	20
Textile mill and textile mill products [313, 314]	0.1072	16	0.1079	19	0.1815	9	0.1815	11	0.1353	16	0.1356	15
Apparel and leather and allied products [315, 316]	0.1143	15	0.1138	18	0.1935	9	0.1914	10	0.1443	15	0.1447	14
Paper products [322]	0.1072	16	0.1079	19	0.1815	9	0.1815	11	0.1353	16	0.1356	15
Printing and related supported activities [323]	0.1143	15	0.1138	18	0.1935	9	0.1914	10	0.1443	15	0.1447	14
Petroleum and coal products [324]	0.0780	22	0.0790	26	0.1321	13	0.1329	15	0.0984	22	0.0978	21
Chemical products [325]	0.1072	16	0.1079	19	0.1815	9	0.1815	11	0.1353	16	0.1356	15
Plastic and rubber products [326]	0.1225	14	0.1203	17	0.2074	8	0.2024	10	0.1546	14	0.1551	13
Nonmanufacturing industries	0.1072	16	0.1079	19	0.1815	9	0.1815	11	0.1353	16	0.1356	15
<b>Office and accounting machinery (14)</b>												
Years before 1978	0.2729	8	0.2686	7	0.3227	7	0.3227	6	0.2643	8	0.2686	7
1978 and years beyond	0.3119	7	0.3049	6					0.3021	7	0.3049	6
<b>Service industry machinery (15)</b>												
Wholesale and retail trade [42,44-45]	0.1650	10	0.1671	12	0.2650	6	0.2650	7	0.2120	10	0.2165	9
All other industries	0.1500	11	0.1551	13					0.1927	11	0.1972	10
<b>Communications equipment (16)</b>												
Broadcasting & Communications [513]	0.1500	11	0.1551	13	0.2280	7	0.2280	9	0.1906	11	0.1972	10

Table 2a. Comparison of U.S. Current and Revised Depreciation Rates and Related Service Lives

U.S. Asset Category	Current Rates				Set 1 Rates				Set 2 Rates			
	BEA		BLS		BEA		BLS		BEA		BLS	
	Depreciation Rate	Service Life Using Geometric Age-Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age-Efficiency Function	Depreciation Rate	Service Life <sup>1</sup> Using Geometric Age-Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age-Efficiency Function	Depreciation Rate	Service Life <sup>1</sup> Using Geometric Age-Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age-Efficiency Function
All other industries	0.1100	15	0.1079	19					0.1398	15	0.1356	15
Electrical transmission, distribution, and industrial apparatus (17)	0.0500	33	0.0494	41	0.1133	15	0.1133	18	0.0635	33	0.0639	32
Household appliances (18)	0.1650	10	0.1671	12	0.2220	7	0.2220	9	0.2301	10	0.2398	8
Other electrical equipment (19)	0.1834	9	0.1809	11	0.1148	14	0.1148	18	0.2333	9	0.2398	8
Light trucks, incl. utility vehicles (20)												
Transit and ground passenger transportation [485]	0.1232	14	0.1203	17	0.2350	7	0.2350	8	0.1511	14	0.1551	13
Trucking transportation [484]	0.1725	10	0.1671	12					0.2115	10	0.2165	9
Other industries	0.1917	9	0.1972	10					0.2350	9	0.2398	8
Other trucks, buses, trailers (21)												
Transit and ground passenger transportation [485]	0.1232	14	0.1203	17	0.1030	17	0.1030	20	0.1619	14	0.1671	12
Trucking transportation [484]	0.1725	10	0.1671	12	0.2523	7	0.2523	8	0.2128	10	0.2165	9
Other industries	0.1917	9	0.1972	10	0.2395	7	0.2395	8	0.2368	9	0.2398	8
Autos (22)		n.a.	0.2165	9	0.2990	n.a.	0.2990	6	0.2326	9	0.2398	8
Aircraft (23)												
Years before 1960:												
Air transportation [481]; Depository credit intermediates [5221]; Activities related to credit intermediation [5223]; Rental and leasing services and lessor of intangible assets[532]	0.1031	16	0.1026	20	0.1380	12	0.1380	15		16	0.1356	15
All other industries	0.1375	12	0.1356	15					0.1840	12	0.1809	11
1960 and years beyond:												
Air transportation [481]; Rail transportation [482]; Depository credit intermediates [5221]; Activities related to credit intermediation [5223]; Insurance agencies and brokers and related services [5243]; Funds, trusts, and other financial vehicles [525]; Rental and leasing services and lessor of intangible assets [532]; Management of companies and enterprises [5511]; Offices of other holding companies and auxiliaries [5512]	0.0660	25	0.0660	31					0.0883	25	0.0894	23
All other industries	0.1100	15	0.1079	19					0.1472	15	0.1447	14
Ships and boats (24)	0.0611	27	0.0619	33	0.1120	15	0.1120	18	0.0821	27	0.0822	25
Railroad equipment (25)	0.0589	28	0.0583	35	0.0990	17	0.0990	21	0.0884	28	0.0894	23
Photocopying and related equipment (26)	0.1800	9	0.1809	11	0.2416	7	0.2416	8	0.2323	9	0.2398	8
Medical equipment & related instruments (27)	0.1350	12	0.1356	15	0.3010	5	0.3010	6	0.1756	12	0.1809	11
Electromedical instruments (28)	0.1834	9	0.1809	11	0.2360	7	0.2360	8	0.2360	9	0.2398	8
Nonmedical instruments (29)	0.1350	12	0.1356	15	0.2360	7	0.2360	8	0.1770	12	0.1809	11
Other Nonresidential Equipment (30)	0.1473	11	0.1447	14	0.1932	8	0.1932	10	0.2077	11	0.1972	10
Nuclear Fuel (31)	0.4158	4	0.4158	4	Not Revised				Not Revised			
Mainframe computers (32)												
Years before 1970		n.a.	0.2165	9					0.2329	9	0.2398	8
1970 to 1979		n.a.	0.2686	7	0.5240	n.a.	0.5240	3	0.2994	7	0.3049	6
1980 and years beyond		n.a.	0.3520	5					0.4192	5	0.4158	4
1985 forward, selected runs:									0.4192	5	0.4158	4
Personal computers (33)		n.a.	0.3520	5	0.5240	n.a.	0.5240	3	0.4192	5	0.4158	4
Direct access storage devices (34)												
Years before 1986		n.a.	0.2398	8	0.5240	n.a.	0.5240	3	0.2620	8	0.2686	7

Table 2a. Comparison of U.S. Current and Revised Depreciation Rates and Related Service Lives

U.S. Asset Category	Current Rates				Set 1 Rates				Set 2 Rates			
	BEA		BLS		BEA		BLS		BEA		BLS	
	Depreciation Rate	Service Life Using Geometric Age-Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age-Efficiency Function	Depreciation Rate	Service Life <sup>1</sup> Using Geometric Age-Efficiency Function	Depreciation Rate	Service Life <sup>1</sup> Using Hyperbolic Age-Efficiency Function	Depreciation Rate	Service Life <sup>1</sup> Using Geometric Age-Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age-Efficiency Function
1986 and years beyond		n.a.	0.2165	9					0.2329	9	0.2398	8
<b>Printers (35)</b>												
Years before 1976		n.a.	0.1972	10					0.2096	10	0.2165	9
1976 to 1980		n.a.	0.2398	8	0.5240	n.a.	0.5240	3	0.2620	8	0.2686	7
1981 to 1985		n.a.	0.3049	6					0.3493	6	0.3520	5
1986 and years beyond		n.a.	0.3520	5					0.4192	5	0.4158	4
<b>Terminals (36)</b>												
Years before 1981		n.a.	0.2165	9					0.2329	9	0.2398	8
1981 to 1985		n.a.	0.2398	8	0.5240	n.a.	0.5240	3	0.2620	8	0.2686	7
1986 and years beyond		n.a.	0.3049	6					0.3493	6	0.3520	5
<b>Tape drives (37)</b>												
Years before 1981		n.a.	0.2165	9					0.2329	9	0.2398	8
1981 and years beyond		n.a.	0.2686	7					0.2994	7	0.3049	6
<b>Storage devices (38)</b>												
1981 to 1985		n.a.	0.3520	5	0.5240	n.a.	0.5240	3	0.4192	5	0.4158	4
1986 and years beyond		n.a.	0.3520	5	0.5240	n.a.	0.5240	3	0.4192	5	0.4158	4
<b>Integrated systems (39)</b>												
<b>PRIVATE NONRESIDENTIAL STRUCTURES</b>												
<b>Manufacturing (43)</b>	0.0314	31	0.0316	56	0.0750	13	0.0750	25	0.0677	31	0.0688	27
<b>Office buildings (44)</b>	0.0247	36	0.0247	70	0.0680	13	0.0680	27	0.0586	36	0.0576	32
<b>Commercial warehouses (45)</b>	0.0222	40	0.0223	77	0.0810	11	0.0810	23	0.0547	40	0.0541	34
<b>Other commercial buildings (46)</b>	0.0262	34	0.0264	66	0.0870	10	0.0870	21	0.0664	34	0.0662	28
<b>Educational buildings (47)</b>	0.0188	48	0.0187	90	0.0560	16	0.0560	33	0.0455	48	0.0455	40
<b>Hospitals (48)</b>	0.0188	48	0.0187	90	0.0620	15	0.0620	30	0.0452	48	0.0455	40
<b>Hotels and motels—Lodging (49)</b>	0.0281	32	0.0283	62	0.0810	11	0.0810	23	0.0683	32	0.0688	27
<b>Amusement &amp; recreational buildings (50)</b>	0.0300	30	0.0299	59	0.0810	11	0.0810	23	0.0729	30	0.0715	26
<b>Air transportation (51)</b>	0.0237	38	0.0236	73	0.1020	9	0.1020	18	0.0591	38	0.0596	31
<b>Other railroad structures (52)</b>	0.0176	54	0.0176	95	0.0630	15	0.0630	29	0.0397	54	0.0401	45
<b>Communications (53)</b>	0.0237	40	0.0236	73	0.1040	9	0.1040	18	0.0591	40	0.0596	31
<b>Electric (54)</b>												
Years before 1946	0.0237	40	0.0236	73	0.055	17	0.0550	33	0.0538	40	0.0541	34
1946 and beyond	0.0211	45	0.0210	81					0.0478	45	0.0480	38
<b>Gas (55)</b>	0.0237	40	0.0236	73	0.0735	13	0.0735	25	0.0560	40	0.0558	33
<b>Local transit (56)</b>	0.0237	38	0.0236	73	0.0915	10	0.0915	20	0.0583	38	0.0576	32
<b>Petroleum pipelines (57)</b>	0.0237	40	0.0236	73	0.0735	13	0.0735	25	0.0560	40	0.0558	33
<b>Farm (58)</b>	0.0239	38	0.0240	72	0.0885	10	0.0885	21	0.0572	38	0.0576	32
<b>Mining Structures: Petroleum and natural gas (59)</b>												
Years before 1973	0.0563	16	0.0558	33	0.1165	8	0.1165	16	0.1389	16	0.1418	13
1973 and beyond	0.0751	12	0.0744	25					0.1853	12	0.1809	10
<b>Other Mining (60)</b>	0.0450	20	0.0455	40	0.1590	6	0.1590	12	0.1113	20	0.1095	17
<b>Medical building (61)</b>	0.0249	36	0.0247	70	0.0620	14	0.0620	30	0.0603	36	0.0596	31
<b>Railroad replacement track (62)</b>	0.0249	38	0.0251	69	0.0630	15	0.0630	29	0.0564	38	0.0558	33
<b>Wind and Solar Energy (63)</b>	0.0303	30	0.0304	58	0.0650	14	0.0650	29	0.0717	30	0.0715	26
<b>Tenant-occ. manufactured homes (64)</b>	0.0455	20	0.0933	20	0.0810	11	0.0810	23	0.1094	20	0.1095	17
<b>Tenant-occupied, 1-4 units, new (65)</b>	0.0114	80	0.0213	80	0.0810	11	0.0810	23	0.0273	80	0.0273	64
<b>Tenant-occupied, 1-4 units, additions and alterations (66)</b>	0.0227	40	0.0455	40	0.0810	11	0.0810	23	0.0547	40	0.0541	34
<b>Tenant-occupied, 1-4 units, major replacements (67)</b>	0.0364	25	0.0744	25	0.0810	11	0.0810	23	0.0875	25	0.0888	21
<b>Tenant-occupied, 5+ units, new (68)</b>	0.0140	65	0.0268	65	0.0810	11	0.0810	23	0.0336	65	0.0336	53
<b>Tenant-occupied, 5+ units, additions and alterations (69)</b>	0.0284	32	0.0576	32	0.0810	11	0.0810	23	0.0683	32	0.0688	27
<b>Tenant-occupied, 5+ units, major replacements (70)</b>	0.0455	20	0.0933	20	0.0810	11	0.0810	23	0.1094	20	0.1095	17
<b>Tenant-occupied, 1-4 units, equipment (71)</b>	0.1500	11	0.1418	13	0.0810	20	0.0810	23	0.1988	11	0.1989	9
<b>Tenant-occupied, 5+ units, equipment (72)</b>	0.1500	11	0.1418	13	0.0810	20	0.0810	23	0.1988	11	0.1989	9
<b>Tenant-occupied, other residential structures (73)</b>	0.0227	40	0.0455	40	0.0810	11	0.0810	23	0.0547	40	0.0541	34
<b>Owner-occupied, 1-4 units, new (74)</b>	0.0114	80	0.0213	80			Not Revised				Not Revised	
<b>Owner-occupied, 1-4 units, additions and alterations (75)</b>	0.0227	40	0.0455	40			Not Revised				Not Revised	

Table 2a. Comparison of U.S. Current and Revised Depreciation Rates and Related Service Lives

U.S. Asset Category	Current Rates						Set 1 Rates						Set 2 Rates					
	BEA			BLS			BEA			BLS			BEA			BLS		
	Depreciation Rate	Service Life Using Geometric Age-Efficiency Function	Service Life Using Hyperbolic Age-Efficiency Function	Depreciation Rate	Service Life Using Geometric Age-Efficiency Function	Service Life Using Hyperbolic Age-Efficiency Function	Depreciation Rate	Service Life Using Geometric Age-Efficiency Function	Service Life Using Hyperbolic Age-Efficiency Function	Depreciation Rate	Service Life Using Geometric Age-Efficiency Function	Service Life Using Hyperbolic Age-Efficiency Function	Depreciation Rate	Service Life Using Geometric Age-Efficiency Function	Service Life Using Hyperbolic Age-Efficiency Function			
Owner-occupied, 1-4 units, major replacements (76)	0.0364	25	25	0.0744	25	na	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised			
Owner-occupied, 5+ units, new (77)	0.0140	65	65	0.0268	65	na	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised			
Owner-occupied, 5+ units, additions and alterations (78)	0.0284	32	32	0.0576	32	na	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised			
Owner-occupied, 5+ units, major replacements (79)	0.0455	20	20	0.0933	20	na	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised			
Owner-occupied, mobile homes (80)	0.0455	20	40	0.0455	40	na	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised			
Land (81)				na	na	na	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised			
Special Care (82)	0.0188	48	90	0.0187	90	na	0.0620	15	0.0620	30	0.0452	48	0.0455	40	0.0455			
Multimerchandise shopping (83)	0.0262	34	66	0.0260	66	na	0.0930	10	0.0930	20	0.0684	34	0.0688	27	0.0688			
Food and beverage establishments (84)	0.0262	34	66	0.0260	66	na	0.0810	11	0.0810	23	0.0643	34	0.0639	29	0.0639			
Religious buildings (85)	0.0188	48	90	0.0187	90	na	0.0550	16	0.0550	33	0.0453	48	0.0455	40	0.0455			
Mobile offices (86)	0.0556	16	33	0.0558	33	na	0.0620	14	0.0620	30	0.1356	16	0.1322	14	0.1322			
Other transportation (87)	0.0237	38	73	0.0236	73	na	0.0800	11	0.0800	23	0.0589	38	0.0596	31	0.0596			
Other land transportation (88)	0.0237	38	73	0.0236	73	na	0.0630	14	0.0630	29	0.0564	38	0.0558	33	0.0558			
Water Supply (89)	0.0225	40	76	0.0226	76	na	0.0570	16	0.0570	32	0.0556	40	0.0558	33	0.0558			
Sewage and Waste Disposal (90)	0.0225	40	76	0.0226	76	na	0.0620	15	0.0620	30	0.0558	40	0.0558	33	0.0558			
Materials inventory, Manufacturing industries	na	na	na	na	na	na	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised			
Total inventory, Nonmanufacturing industries (91)	na	na	na	na	na	na	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised			
Work-in-process inventory, manufacturing industries (92)	na	na	na	na	na	na	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised			
Finished goods inventory, manufacturing industries (93)	na	na	na	na	na	na	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised	Not Revised			
Public Safety (94)	0.0237	38	73	0.0236	73	na	0.0620	15	0.0620	30	0.0571	38	0.0576	32	0.0576			
Highway and Conservation and Development (95)	0.0225	40	76	0.0226	76	na	0.1010	9	0.1010	18	0.0581	40	0.0576	32	0.0576			
Tenant-occupied, acquisition costs (96)		n.a.	13	0.1418	13	na	no change	no change	no change	13	no change	no change	no change	13	no change			
Tenant-occupied, disposal costs (97)		n.a.	13	0.1418	13	na	no change	no change	no change	13	no change	no change	no change	13	no change			
Owner-occupied, acquisition costs (98)		n.a.	13	0.1418	13	na	no change	no change	no change	13	no change	no change	no change	13	no change			
Owner-occupied, disposal costs (99)		n.a.	13	0.1418	13	na	no change	no change	no change	13	no change	no change	no change	13	no change			

**Broad Asset Categories Remaining At Current Values**

Government nonresidential equipment	Not Revised					
Government nonresidential structures	Not Revised					
Private Intellectual Property Products	Not Revised					
Government Intellectual Property Products	Not Revised					

<sup>1</sup> BEA service lives are estimated using the relationship: L = DBR/d where L = service life, DBR = declining balance rate, and d = depreciation rate. BEA current declining balance rates and the Statistics Canada revised depreciation rates are used to compute implied BEA service life values. Note that BEA does not use service lives in its estimates that are based on geometric depreciation.

<sup>2</sup> See "BEA Depreciation Estimates" for a detailed asset descriptions and related depreciation rate and service lives for these broad asset categories. [https://apps.bea.gov/national/pdf/BEA\\_depreciation\\_rates.pdf](https://apps.bea.gov/national/pdf/BEA_depreciation_rates.pdf)

Table 2b. BLS Current, BLS-125 (Lower Boundary), and BLS-50 (Upper Boundary) Depreciation Rates and Related Service Lives

U.S. Asset Category	BLS Current Rates		BLS Lower Bound Rates <sup>1</sup>		BLS Upper Bound Rates <sup>2</sup>	
	BLS		BLS		BLS	
	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function
<b>PRIVATE NONRESIDENTIAL EQUIPMENT</b>						
Household furniture and fixtures (1)	0.1356	15	0.1079	19	0.2686	7
Other furniture (2)	0.1203	17	0.0934	22	0.2398	8
Other fabricated metal products (3)	0.0934	22	0.0733	28	0.1809	11
Steam engines and turbines (4)	0.0520	39	0.0409	49	0.1079	19
Internal combustion engines (5)	0.1972	10	0.1551	13	0.3520	5
Farm tractors (6)	0.1447	14	0.1138	18	0.2686	7
Construction tractors (7)	0.1671	12	0.1356	15	0.3049	6
Agricultural machinery except tractors (8)	0.1203	17	0.0934	22	0.2398	8
Construction machinery except tractors (9)	0.1551	13	0.1203	17	0.3049	6
Mining and oil field machinery (10)	0.1551	13	0.1203	17	0.3049	6
Metal working machinery (11)						
Durable Manufacturing						
Wood products [321]	0.1671	12	0.1356	15	0.3049	6
Nonmetallic minerals [ 327]	0.1026	20	0.0822	25	0.1972	10
Primary metal [331]	0.0733	28	0.0583	35	0.1447	14
Fabricated metal [ 332]	0.0822	25	0.0639	32	0.1671	12
Machinery [333]	0.0790	26	0.0619	33	0.1551	13
Computer/ electronic product [334]	0.1356	15	0.1079	19	0.2686	7
Electronic equipment/ appliance [335]	0.1356	15	0.1079	19	0.2686	7
Transportation equipment						
Motor vehicle, body, trailers and equipment parts [3361-3364]	0.1356	15	0.1079	19	0.2686	7
Other transportation equipment [3364-3366, 3369]	0.1138	18	0.0894	23	0.2165	9
Furniture and related products [337]	0.1356	15	0.1079	19	0.2686	7
Miscellaneous Mfg. [339]						
Medical equipment/ supplies [3391]	0.1356	15	0.1079	19	0.2686	7
Other miscellaneous [3399]	0.1138	18	0.0894	23	0.2165	9
Nondurable Manufacturing						
Food [311]	0.0978	21	0.0760	27	0.1972	10
Beverage and tobacco product [312]	0.0934	22	0.0733	28	0.1809	11



**Table 2b. BLS Current, BLS-125 (Lower Boundary), and BLS-50 (Upper Boundary) Depreciation Rates and Related Service Lives**

U.S. Asset Category	BLS Current Rates		BLS Lower Bound Rates <sup>1</sup>		BLS Upper Bound Rates <sup>2</sup>	
	BLS		BLS		BLS	
	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function
Textile mill and textile mill products [313, 314]	0.1203	17	0.0934	22	0.2398	8
Apparel and leather and allied products [315, 316]	0.1275	16	0.1026	20	0.2398	8
Paper products [322]	0.1203	17	0.0934	22	0.2398	8
Printing and related supported activities [323]	0.1275	16	0.1026	20	0.2398	8
Petroleum and coal products [324]	0.0894	23	0.0707	29	0.1809	11
Chemical products [325]	0.1203	17	0.0934	22	0.2398	8
Plastic and rubber products [326]	0.1356	15	0.1079	19	0.2686	7
Nonmanufacturing industries	0.1203	17	0.0934	22	0.2398	8
<b>Special industry machinery, n.e.c (12)</b>						
Durable Manufacturing						
Wood products [321]	0.1356	15	0.1079	19	0.2686	7
Nonmetallic minerals [327]	0.0856	24	0.0683	30	0.1671	12
Primary metal [331]	0.0619	33	0.0481	42	0.1275	16
Fabricated metal [332]	0.0683	30	0.0535	38	0.1356	15
Machinery [333]	0.0660	31	0.0520	39	0.1356	15
Computer/ electronic product [334]	0.1203	17	0.0934	22	0.2398	8
Electronic equipment appliance [335]	0.1203	17	0.0934	22	0.2398	8
Transportation equipment						
Motor vehicle, body, trailers and equipment parts [3361-3364]	0.1203	17	0.0934	22	0.2398	8
Other transportation equipment [ 3364-3366, 3369]	0.0978	21	0.0760	27	0.1972	10
Furniture and related products [337]	0.1203	17	0.0934	22	0.2398	8
Miscellaneous Mfg. [339]						
Medical equipment/ supplies [3391]	0.1203	17	0.0934	22	0.2398	8
Other miscellaneous [3399]	0.0978	21	0.0760	27	0.1972	10
Nondurable Manufacturing						
Food [311]	0.0822	25	0.0639	32	0.1671	12
Beverage and tobacco product [312]	0.0790	26	0.0619	33	0.1551	13
Textile mill and textile mill products [313, 314]	0.1026	20	0.0822	25	0.1972	10
Apparel and leather and allied products [315, 316]	0.1079	19	0.0856	24	0.2165	9
Paper products [322]	0.1026	20	0.0822	25	0.1972	10
Printing and related supported activities [323]	0.1079	19	0.0856	24	0.2165	9

**Table 2b. BLS Current, BLS-125 (Lower Boundary), and BLS-50 (Upper Boundary) Depreciation Rates and Related Service Lives**

U.S. Asset Category	BLS Current Rates		BLS Lower Bound Rates <sup>1</sup>		BLS Upper Bound Rates <sup>2</sup>	
	BLS		BLS		BLS	
	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function
Petroleum and coal products [324]		27	0.0600	34	0.1551	13
Chemical products [325]	0.1026	20	0.0822	25	0.1972	10
Plastic and rubber products [326]	0.1203	17	0.0934	22	0.2398	8
Nonmanufacturing industries	0.1026	20	0.0822	25	0.1972	10
<b>General industrial equipment incl. materials handling (13)</b>						
Durable Manufacturing						
Wood products [321]	0.1447	14	0.1138	18	0.2686	7
Nonmetallic minerals [327]	0.0894	23	0.0707	29	0.1809	11
Primary metal [331]	0.0639	32	0.0507	40	0.1275	16
Fabricated metal [332]	0.0707	29	0.0550	37	0.1447	14
Machinery [333]	0.0683	30	0.0535	38	0.1356	15
Computer/ electronic product [334]	0.1203	17	0.0934	22	0.2398	8
Electronic equipment appliance [335]	0.1203	17	0.0934	22	0.2398	8
Transportation equipment						
Motor vehicle, body, trailers and equipment parts [3361-3364]	0.1203	17	0.0934	22	0.2398	8
Other transportation equipment [3364-3366, 3369]	0.1026	20	0.0822	25	0.1972	10
Furniture and related products [337]	0.1203	17	0.0934	22	0.2398	8
Miscellaneous Mfg. [339]						
Medical equipment/ supplies [3391]	0.1203	17	0.0934	22	0.2398	8
Other miscellaneous [3399]	0.1026	20	0.0822	25	0.1972	10
Nondurable Manufacturing						
Food [311]	0.0856	24	0.0683	30	0.1671	12
Beverage and tobacco product [312]	0.0822	25	0.0639	32	0.1671	12
Textile mill and textile mill products [313, 314]	0.1079	19	0.0856	24	0.2165	9
Apparel and leather and allied products [315, 316]	0.1138	18	0.0894	23	0.2165	9
Paper products [322]	0.1079	19	0.0856	24	0.2165	9
Printing and related supported activities [323]	0.1138	18	0.0894	23	0.2165	9

Table 2b. BLS Current, BLS-125 (Lower Boundary), and BLS-50 (Upper Boundary) Depreciation Rates and Related Service Lives

U.S. Asset Category	BLS Current Rates		BLS Lower Bound Rates <sup>1</sup>		BLS Upper Bound Rates <sup>2</sup>	
	BLS		BLS		BLS	
	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function
<i>Petroleum and coal products [324]</i>	0.0790	26	0.0619	33	0.1551	13
<i>Chemical products [325]</i>	0.1079	19	0.0856	24	0.2165	9
<i>Plastic and rubber products [326]</i>	0.1203	17	0.0934	22	0.2398	8
<i>Nonmanufacturing industries</i>	0.1079	19	0.0856	24	0.2165	9
<b>Office and accounting machinery (14)</b>						
Years before 1978	0.2686	7	0.2686	7	0.2686	7
1978 to 1984	0.3049	6	0.3049	6	0.3049	6
1985 and years beyond	0.3049	6	0.2398	8	0.5063	3
<b>Service industry machinery (15)</b>						
<i>Wholesale and retail trade [42, 44-45]</i>	0.1671	12	0.1356	15	0.3049	6
<i>All other industries</i>	0.1551	13	0.1203	17	0.3049	6
<b>Communications equipment (16)</b>						
<i>Broadcasting &amp; Communications [513]</i>	0.1551	13	0.1203	17	0.3049	6
<i>All other industries</i>	0.1079	19	0.0856	24	0.2165	9
<b>Electrical transmission, distribution, and industrial apparatus (17)</b>	0.0494	41	0.0384	52	0.1026	20
<b>Household appliances (18)</b>	0.1671	12	0.1356	15	0.3049	6
<b>Other electrical equipment (19)</b>	0.1809	11	0.1447	14	0.3520	5
<b>Light trucks, incl. utility vehicles (20)</b>						
<i>Transit and ground passenger transportation [485]</i>	0.1203	17	0.0934	22	0.2398	8
<i>Trucking transportation [484]</i>	0.1671	12	0.1356	15	0.3049	6
<i>Other industries</i>	0.1972	10	0.1551	13	0.352	5
<b>Other trucks, buses, trailers (21)</b>						
<i>Transit and ground passenger transportation [485]</i>	0.1203	17	0.0934	22	0.2398	8
<i>Trucking transportation [484]</i>	0.1671	12	0.1356	15	0.3049	6
<i>Other industries</i>	0.1972	10	0.1551	13	0.3520	5
<b>Autos (22)</b>	0.2165	9	0.1671	12	0.4158	4

**Table 2b. BLS Current, BLS-125 (Lower Boundary), and BLS-50 (Upper Boundary) Depreciation Rates and Related Service Lives**

U.S. Asset Category	BLS Current Rates <sup>1</sup>		BLS Lower Bound Rates <sup>1</sup>		BLS Upper Bound Rates <sup>2</sup>	
	BLS		BLS		BLS	
	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function
<b>Aircraft (23)</b>						
Years before 1960:						
Air transportation [481]; Depository credit intermediaries [5221]; Activities related to credit intermediation [5223]; Rental and leasing services and lessor of intangible assets[532]	0.1026	20	0.1026	20	0.1026	20
All other industries	0.1356	15	0.1356	15	0.1356	15
1960 to 1984:						
Air transportation [481]; Rail transportation [482]; Depository credit intermediaries [5221]; Activities related to credit intermediation [5223]; Insurance agencies and brokers and related services [5243]; Funds, trusts, and other financial vehicles [525]; Rental and leasing services and lessor of intangible assets [532]; Management of companies and enterprises [5511]; Offices of other holding companies and auxiliaries [5512]	0.0660	31	0.0660	31	0.0666	31
All other industries	0.1079	19	0.1079	19	0.1079	19
1985 and years beyond:						
Air transportation [481]; Rail transportation [482]; Depository credit intermediaries [5221]; Activities related to credit intermediation [5223]; Insurance agencies and brokers and related services [5243]; Funds, trusts, and other financial vehicles [525]; Rental and leasing services and lessor of intangible assets [532]; Management of companies and enterprises [5511]; Offices of other holding companies and auxiliaries [5512]	0.0660	31	0.0520	39	0.1356	15
All other industries	0.1079	19	0.0856	24	0.2165	9
<b>Ships and boats (24)</b>	0.0619	33	0.0481	42	0.1275	16

Table 2b. BLS Current, BLS-125 (Lower Boundary), and BLS-50 (Upper Boundary) Depreciation Rates and Related Service Lives

U.S. Asset Category	BLS Current Rates		BLS Lower Bound Rates <sup>1</sup>		BLS Upper Bound Rates <sup>2</sup>	
	BLS		BLS		BLS	
	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function
<b>Railroad equipment (25)</b>	0.0583	35	0.0458	44	0.1203	17
<b>Photocopying and related equipment (26)</b>	0.1809	11	0.1447	14	0.3520	5
<b>Medical equipment &amp; related instruments (27)</b>	0.1356	15	0.1079	19	0.2686	7
<b>Electromedical instruments (28)</b>	0.1809	11	0.1447	14	0.3520	5
<b>Nonmedical instruments (29)</b>	0.1356	15	0.1079	19	0.2686	7
<b>Other Nonresidential Equipment (30)</b>	0.1447	14	0.1138	18	0.2686	7
<b>Nuclear Fuel (31)</b>	0.4158	4	not revised	not revised	not revised	not revised
<b>Mainframe computers (32)</b>						
Years before 1970	0.2165	9	0.2165	9	0.2165	9
1970 to 1979	0.2686	7	0.2686	7	0.2686	7
1980 to 1984	0.3520	5	0.3520	5	0.3520	5
1985 and years beyond	0.3520	5	0.2686	7	0.6439	2
<b>Personal computers (33)</b>	0.3520	5	0.2686	7	0.6439	2
<b>Direct access storage devices (34)</b>						
Years before 1985	0.2398	8	0.2398	8	0.2398	8
1985	0.2398	8	0.1972	10	0.4158	4
1986 and years beyond	0.2165	9	0.1671	12	0.4158	4
<b>Printers (35)</b>						
Years before 1976	0.1972	10	0.1972	10	0.1972	10
1976 to 1980	0.2398	8	0.2398	8	0.2398	8
1981 to 1984	0.3049	6	0.3049	6	0.3049	6
1985	0.3049	6	0.2398	8	0.5063	3
1986 and years beyond	0.3520	5	0.2686	7	0.6439	2
<b>Terminals (36)</b>						
Years before 1981	0.2165	9	0.2165	9	0.2165	9
1981 to 1984	0.2398	8	0.2398	8	0.2398	8
1985	0.2398	8	0.1972	10	0.4158	4
1986 and years beyond	0.3049	6	0.2398	8	0.5063	3

Table 2b. BLS Current, BLS-125 (Lower Boundary), and BLS-50 (Upper Boundary) Depreciation Rates and Related Service Lives

U.S. Asset Category	BLS Current Rates		BLS Lower Bound Rates <sup>1</sup>		BLS Upper Bound Rates <sup>2</sup>	
	BLS		BLS		BLS	
	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function
<b>Tape drives (37)</b>						
Years before 1981	0.2165	9	0.2165	9	0.2165	9
1981 to 1984	0.2686	7	0.2686	7	0.2686	7
1985 and years beyond	0.2686	7	0.2165	9	0.5063	3
<b>Storage devices (38)</b>	0.3520	5	0.2686	7	0.6439	2
<b>Integrated systems (39)</b>	0.3520	5	0.2686	7	0.6439	2
<b>PRIVATE NONRESIDENTIAL STRUCTURES</b>						
<b>Manufacturing (43)</b>	0.0316	56	0.0247	70	0.0662	28
<b>Office buildings (44)</b>	0.0247	70	0.0192	88	0.0524	35
<b>Commercial warehouses (45)</b>	0.0223	77	0.0172	97	0.0480	38
<b>Other commercial buildings (46)</b>	0.0264	66	0.0205	83	0.0558	33
<b>Educational buildings (47)</b>	0.0187	90	0.0176	95	0.0401	45
<b>Hospitals (48)</b>	0.0187	90	0.0176	95	0.0401	45
<b>Hotels and motels—Lodging (49)</b>	0.0283	62	0.0219	78	0.0596	31
<b>Amusement &amp; recreational buildings (50)</b>	0.0299	59	0.0233	74	0.0639	29
<b>Air transportation (51)</b>	0.0236	73	0.0183	92	0.0509	36
<b>Other railroad structures (52)</b>	0.0176	95	0.0176	95	0.0382	47
<b>Communications (53)</b>	0.0236	73	0.0183	92	0.0509	36
<b>Electric (54)</b>						
Years before 1946	0.0236	73	0.0236	73	0.0236	73
1946 to 1984	0.0210	81	0.0210	81	0.0210	81
1985 and beyond	0.0210	81	0.0176	95	0.0455	40
<b>Gas (55)</b>	0.0236	73	0.0183	92	0.0509	36
<b>Local transit (56)</b>	0.0236	73	0.0183	92	0.0509	36
<b>Petroleum pipelines (57)</b>	0.0236	73	0.0183	92	0.0509	36
<b>Farm (58)</b>	0.0240	72	0.0187	90	0.0509	36
<b>Mining Structures: Petroleum and natural gas (59)</b>						
Years before 1973	0.0558	33	0.0558	33	0.0558	33
1973 to 1984	0.0744	25	0.0744	25	0.0744	25
1985 and beyond	0.0744	25	0.0576	32	0.1529	12
<b>Other Mining (60)</b>	0.0455	40	0.0358	50	0.0933	20

Table 2b. BLS Current, BLS-125 (Lower Boundary), and BLS-50 (Upper Boundary) Depreciation Rates and Related Service Lives

U.S. Asset Category	BLS Current Rates		BLS Lower Bound Rates <sup>1</sup>		BLS Upper Bound Rates <sup>2</sup>	
	BLS		BLS		BLS	
	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function
Medical building (61)	0.0247	70	0.0192	88	0.0524	35
Railroad replacement track (62)	0.0251	69	0.0194	87	0.0541	34
Wind and Solar Energy (63)	0.0304	58	0.0236	73	0.0639	29
Tenant-occ. manufactured homes (64)	0.0933	20	0.0744	25	0.1809	10
Tenant-occupied, 1-4 units, new (65)	0.0213	80	0.0176	95	0.0455	40
Tenant-occupied, 1-4 units, additions and alterations (66)	0.0455	40	0.0358	50	0.0933	20
Tenant-occupied, 1-4 units, major replacements (67)	0.0744	25	0.0576	32	0.1529	12
Tenant-occupied, 5+ units, new (68)	0.0268	65	0.0208	82	0.0576	32
Tenant-occupied, 5+ units, additions and alterations (69)	0.0576	32	0.0455	40	0.1162	16
Tenant-occupied, 5+ units, major replacements (70)	0.0933	20	0.0744	25	0.1809	10
Tenant-occupied, 1-4 units, equipment (71)	0.1418	13	0.1095	17	0.2817	6
Tenant-occupied, 5+ units, equipment (72)	0.1418	13	0.1095	17	0.2817	6
Tenant-occupied, other residential structures (73)	0.0455	40	0.0358	50	0.0933	20
Owner-occupied, 1-4 units, new (74)	0.0213	80	not revised	not revised	not revised	not revised
Owner-occupied, 1-4 units, additions and alterations (75)	0.0455	40	not revised	not revised	not revised	not revised
Owner-occupied, 1-4 units, major replacements (76)	0.0744	25	not revised	not revised	not revised	not revised
Owner-occupied, 5+ units, new (77)	0.0268	65	not revised	not revised	not revised	not revised
Owner-occupied, 5+ units, additions and alterations (78)	0.0576	32	not revised	not revised	not revised	not revised
Owner-occupied, 5+ units, major replacements (79)	0.0933	20	not revised	not revised	not revised	not revised
Owner-occupied, mobile homes (80)	0.0455	40	not revised	not revised	not revised	not revised
Land (81)	na	na	not revised	not revised	not revised	not revised
Special Care (82)	0.0187	90	0.0176	95	0.0401	45
Multimerchandise shopping (83)	0.0260	66	0.0205	83	0.0558	33
Food and beverage establishments (84)	0.0260	66	0.0205	83	0.0558	33
Religious buildings (85)	0.0187	90	0.0176	95	0.0401	45
Mobile offices (86)	0.0558	33	0.0432	42	0.1162	16
Other transportation (87)	0.0236	73	0.0183	92	0.0509	36
Other land transportation (88)	0.0236	73	0.0183	92	0.0509	36
Water Supply (89)	0.0226	76	0.0176	95	0.0480	38
Sewage and Waste Disposal (90)	0.0226	76	0.0176	95	0.0480	38

Table 2b. BLS Current, BLS-125 (Lower Boundary), and BLS-50 (Upper Boundary) Depreciation Rates and Related Service Lives

U.S. Asset Category	BLS Current Rates <sup>1</sup>		BLS Lower Bound Rates <sup>1</sup>		BLS Upper Bound Rates <sup>2</sup>	
	BLS		BLS		BLS	
	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function
Materials inventory, Manufacturing industries	na	na	not revised	not revised	not revised	not revised
Total inventory, Nonmanufacturing industries (91)	na	na	not revised	not revised	not revised	not revised
Work-in-process inventory, manufacturing industries (92)	na	na	not revised	not revised	not revised	not revised
Finished goods inventory, manufacturing industries (93)	0.0236	73	0.0183	92	0.0509	36
Public Safety (94)	0.0226	76	0.0176	95	0.0480	38
Highway and Conservation and Development (95)	0.1418	13	not revised	not revised	not revised	not revised
Tenant-occupied, acquisition costs (96)	0.1418	13	not revised	not revised	not revised	not revised
Tenant-occupied, disposal costs (97)	0.1418	13	not revised	not revised	not revised	not revised
Owner-occupied, acquisition costs (98)	0.1418	13	not revised	not revised	not revised	not revised
Owner-occupied, disposal costs (99)	0.1418	13	not revised	not revised	not revised	not revised
<b>Broad Asset Categories Remaining At Current Values</b>						
Government nonresidential equipment	not revised		not revised		not revised	
Government nonresidential structures	not revised		not revised		not revised	
Private Intellectual Property Products	not revised		not revised		not revised	
Government Intellectual Property Products	not revised		not revised		not revised	

<sup>1</sup> Rates associated with 1.25 times the current BLS service life, rounded up.

<sup>2</sup> Rates associated with .5 times the current BLS service life, rounded down.



Table 2c. Set 2, Set2-250 (Lower Boundary) and Set 2-75 (Upper Boundary) Depreciation Rates and Related Service Lives

U.S. Asset Category	Set 2 Rates <sup>1</sup>			Set 2-250, Lower Bound Rates <sup>2</sup>			Set 2-75 Upper Bound Rates <sup>3</sup>		
	BLS			BLS			BLS		
	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function		Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function		Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	
<b>PRIVATE NONRESIDENTIAL EQUIPMENT</b>									
Household furniture and fixtures (1)	0.1809	11		0.0733	28		0.2398	8	
Other furniture (2)	0.1551	13		0.0619	33		0.2165	9	
Other fabricated metal products (3)	0.1275	16		0.0507	40		0.1671	12	
Steam engines and turbines (4)	0.0683	30		0.0259	75		0.0934	22	
Internal combustion engines (5)	0.2686	7		0.1138	18		0.3520	5	
Farm tractors (6)	0.2686	7		0.1138	18		0.3520	5	
Construction tractors (7)	0.2686	7		0.1138	18		0.3520	5	
Agricultural machinery except tractors (8)	0.1671	12		0.0683	30		0.2165	9	
Construction machinery except tractors (9)	0.2165	9		0.0894	23		0.3049	6	
Mining and oil field machinery (10)	0.1972	10		0.0822	25		0.2686	7	
Metal working machinery (11)									
Durable Manufacturing									
Wood products [321]	0.1809	11		0.0733	28		0.2398	8	
Nonmetallic minerals [ 327]	0.1138	18		0.0448	45		0.1551	13	
Primary metal [331]	0.0790	26		0.0302	65		0.1079	19	
Fabricated metal [ 332]	0.0894	23		0.0342	58		0.1203	17	
Machinery [333]	0.0856	24		0.0329	60		0.1138	18	
Computer/ electronic product [334]	0.1551	13		0.0619	33		0.2165	9	
Electronic equipment/ appliance [335]	0.1551	13		0.0619	33		0.2165	9	
Transportation equipment									
Motor vehicle, body, trailers and equipment parts [3361-3364]	0.1551	13		0.0619	33		0.2165	9	
Other transportation equipment [3364-3366, 3369]	0.1275	16		0.0507	40		0.1671	12	
Furniture and related products [337]	0.1551	13		0.0619	33		0.2165	9	
Miscellaneous Mfg. [339]									
Medical equipment/ supplies [3391]	0.1551	13		0.0619	33		0.2165	9	
Other miscellaneous [3399]	0.1275	16		0.0507	40		0.1671	12	
Nondurable Manufacturing									
Food [311]	0.1079	19		0.0418	48		0.1447	14	
Beverage and tobacco product [312]	0.1026	20		0.0400	50		0.1356	15	
Textile mill and textile mill products [313, 314]	0.1356	15		0.0535	38		0.1809	11	

**Table 2c. Set 2, Set2-250 (Lower Boundary) and Set 2-75 (Upper Boundary) Depreciation Rates and Related Service Lives**

U.S. Asset Category	Set 2 Rates <sup>1</sup>		Set 2-250, Lower Bound Rates <sup>2</sup>		Set 2-75 Upper Bound Rates <sup>3</sup>	
	BLS		BLS		BLS	
	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function
<i>Apparel and leather and allied products [315, 316]</i>	0.1447	14	0.0583	35	0.1972	10
<i>Paper products [322]</i>	0.1356	15	0.0535	38	0.1809	11
<i>Printing and related supported activities [323]</i>	0.1447	14	0.0583	35	0.1972	10
<i>Petroleum and coal products [324]</i>	0.0978	21	0.0376	53	0.1356	15
<i>Chemical products [325]</i>	0.1356	15	0.0535	38	0.1809	11
<i>Plastic and rubber products [326]</i>	0.1551	13	0.0619	33	0.2165	9
Nonmanufacturing industries	0.1356	15	0.0535	38	0.1809	11
<b>Special industry machinery, n.e.c (12)</b>						
<i>Durable Manufacturing</i>						
<i>Wood products [321]</i>	0.1809	11	0.0733	28	0.2398	8
<i>Nonmetallic minerals [327]</i>	0.1138	18	0.0448	45	0.1551	13
<i>Primary metal [331]</i>	0.0790	26	0.0302	65	0.1079	19
<i>Fabricated metal [332]</i>	0.0894	23	0.0342	58	0.1203	17
<i>Machinery [333]</i>	0.0856	24	0.0329	60	0.1138	18
<i>Computer/ electronic product [334]</i>	0.1551	13	0.0619	33	0.2165	9
<i>Electronic equipment appliance [335]</i>	0.1551	13	0.0619	33	0.2165	9
<i>Transportation equipment</i>						
<i>Motor vehicle, body, trailers and equipment parts [3361-3364]</i>	0.1551	13	0.0619	33	0.2165	9
<i>Other transportation equipment [ 3364-3366, 3369]</i>	0.1275	16	0.0507	40	0.1671	12
<i>Furniture and related products [337]</i>	0.1551	13	0.0619	33	0.2165	9
<i>Miscellaneous Mfg. [339]</i>						
<i>Medical equipment/ supplies [3391]</i>	0.1551	13	0.0619	33	0.2165	9
<i>Other miscellaneous [3399]</i>	0.1275	16	0.0507	40	0.1671	12
<i>Nondurable Manufacturing</i>						
<i>Food [311]</i>	0.1079	19	0.0418	48	0.1447	14
<i>Beverage and tobacco product [312]</i>	0.1026	20	0.0400	50	0.1356	15
<i>Textile mill and textile mill products [313, 314]</i>	0.1356	15	0.0535	38	0.1809	11
<i>Apparel and leather and allied products [315, 316]</i>	0.1447	14	0.0583	35	0.1972	10
<i>Paper products [322]</i>	0.1356	15	0.0535	38	0.1809	11
<i>Printing and related supported activities [323]</i>	0.1447	14	0.0583	35	0.1972	10
<i>Petroleum and coal products [324]</i>	0.0978	21	0.0376	53	0.1356	15
<i>Chemical products [325]</i>	0.1356	15	0.0535	38	0.1809	11

Table 2c. Set 2, Set2-250 (Lower Boundary) and Set 2-75 (Upper Boundary) Depreciation Rates and Related Service Lives						
U.S. Asset Category	Set 2 Rates <sup>1</sup>		Set 2-250, Lower Bound Rates <sup>2</sup>		Set 2-75 Upper Bound Rates <sup>3</sup>	
	BLS		BLS		BLS	
	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function
Plastic and rubber products [326]	0.1551	13	0.0619	33	0.2165	9
Nonmanufacturing industries	0.1356	15	0.0535	38	0.1809	11
<b>General industrial equipment incl. materials handling (13)</b>						
Durable Manufacturing						
Wood products [321]	0.1809	11	0.0733	28	0.2398	8
Nonmetallic minerals [327]	0.1138	18	0.0448	45	0.1551	13
Primary metal [331]	0.0822	25	0.0313	63	0.1138	18
Fabricated metal [332]	0.0894	23	0.0342	58	0.1203	17
Machinery [333]	0.0856	24	0.0329	60	0.1138	18
Computer/electronic product [334]	0.1551	13	0.0619	33	0.2165	9
Electronic equipment appliance [335]	0.1551	13	0.0619	33	0.2165	9
Transportation equipment						
Motor vehicle, body, trailers and equipment parts [3361-3364]	0.1551	13	0.0619	33	0.2165	9
Other transportation equipment [3364-3366, 3369]	0.1275	16	0.0507	40		12
Furniture and related products [337]	0.1551	13	0.0619	33	0.2165	9
Miscellaneous Mfg. [339]						
Medical equipment/ supplies [3391]	0.1551	13	0.0619	33	0.2165	9
Other miscellaneous [3399]	0.1275	16	0.0507	40	0.1671	12
Nondurable Manufacturing						
Food [311]	0.1079	19	0.0418	48	0.1447	14
Beverage and tobacco product [312]	0.1026	20	0.0400	50	0.1356	15
Textile mill and textile mill products [313, 314]	0.1356	15	0.0535	38	0.1809	11
Apparel and leather and allied products [315, 316]	0.1447	14	0.0583	35	0.1972	10
Paper products [322]	0.1356	15	0.0535	38	0.1809	11
Printing and related supported activities [323]	0.1447	14	0.0583	35	0.1972	10
Petroleum and coal products [324]	0.0978	21	0.0376	53	0.1356	15
Chemical products [325]	0.1356	15	0.0535	38	0.1809	11

Table 2c. Set 2, Set2-250 (Lower Boundary) and Set 2-75 (Upper Boundary) Depreciation Rates and Related Service Lives						
U.S. Asset Category	Set 2 Rates <sup>1</sup>		Set 2-250, Lower Bound Rates <sup>2</sup>		Set 2-75 Upper Bound Rates <sup>3</sup>	
	BLS		BLS		BLS	
	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function
<i>Plastic and rubber products [326]</i>	0.1551	13	0.0619	33	0.2165	9
<i>Nonmanufacturing industries</i>	0.1356	15	0.0535	38	0.1809	11
<b>Office and accounting machinery (14)</b>						
Years before 1978	0.3049	6	0.2686	7	0.2686	7
1978 to 1984	0.3049	6	0.3049	6	0.3049	6
1985 and years beyond	0.3049	6	0.1356	15	0.4158	4
<b>Service industry machinery (15)</b>						
<i>Wholesale and retail trade [42,44-45]</i>	0.2165	9	0.0894	23	0.3049	6
<i>All other industries</i>	0.1972	10	0.0822	25	0.2686	7
<b>Communications equipment (16)</b>						
<i>Broadcasting &amp; Communications [513]</i>	0.1972	10	0.0822	25	0.2686	7
<i>All other industries</i>	0.1356	15	0.0535	38	0.1809	11
<b>Electrical transmission, distribution, and industrial apparatus (17)</b>	0.0639	32	0.0241	80	0.0856	24
<b>Household appliances (18)</b>	0.2398	8	0.1026	20	0.3049	6
<b>Other electrical equipment (19)</b>	0.2398	8	0.1026	20	0.3049	6
<b>Light trucks, incl. utility vehicles (20)</b>						
<i>Transit and ground passenger transportation [485]</i>	0.1551	13	0.0619	33	0.2165	9
<i>Trucking transportation [484]</i>	0.2165	9	0.0894	23	0.3049	6
<i>Other industries</i>	0.2398	8	0.1026	20	0.3049	6
<b>Other trucks, buses, trailers (21)</b>						
<i>Transit and ground passenger transportation [485]</i>	0.1671	12	0.0683	30	0.2165	9
<i>Trucking transportation [484]</i>	0.2165	9	0.0894	23	0.3049	6
<i>Other industries</i>	0.2398	8	0.1026	20	0.3049	6
<b>Autos (22)</b>	0.2398	8	0.1026	20	0.3049	6
<b>Aircraft (23)</b>						
Years before 1960:						

Table 2c. Set 2, Set2-250 (Lower Boundary) and Set 2-75 (Upper Boundary) Depreciation Rates and Related Service Lives						
U.S. Asset Category	Set 2 Rates <sup>1</sup>		Set 2-250, Lower Bound Rates <sup>2</sup>		Set 2-75 Upper Bound Rates <sup>3</sup>	
	BLS		BLS		BLS	
	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function
Air transportation [481]; Depository credit intermediates [5221]; Activities related to credit intermediation [5223]; Rental and leasing services and lessor of intangible assets [532]	0.1356	15	0.1026	20	0.1026	20
All other industries 1960 to 1984:	0.1809	11	0.1356	15	0.1356	15
Air transportation [481]; Rail transportation [482]; Depository credit intermediates [5221]; Activities related to credit intermediation [5223]; Insurance agencies and brokers and related services [5243]; Funds, trusts, and other financial vehicles [525]; Rental and leasing services and lessor of intangible assets [532]; Management of companies and enterprises [5511]; Offices of other holding companies and auxiliaries [5512]	0.0894	23	0.0660	31	0.0660	31
All other industries 1985 and years beyond:	0.1447	14	0.1079	19	0.1079	19
Air transportation [481]; Rail transportation [482]; Depository credit intermediates [5221]; Activities related to credit intermediation [5223]; Insurance agencies and brokers and related services [5243]; Funds, trusts, and other financial vehicles [525]; Rental and leasing services and lessor of intangible assets [532]; Management of companies and enterprises [5511]; Offices of other holding companies and auxiliaries [5512]	0.0894	23	0.0342	58	0.1203	17
All other industries	0.1447	14	0.0583	35	0.1972	10
Ships and boats (24)	0.0822	25	0.0313	63	0.1138	18
Railroad equipment (25)	0.0894	23	0.0342	58	0.1203	17

Table 2c. Set 2, Set2-250 (Lower Boundary) and Set 2-75 (Upper Boundary) Depreciation Rates and Related Service Lives

U.S. Asset Category	Set 2 Rates <sup>1</sup>		Set 2-250, Lower Bound Rates <sup>2</sup>		Set 2-75 Upper Bound Rates <sup>3</sup>	
	BLS		BLS		BLS	
	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function
<b>Photocopying and related equipment (26)</b>	0.2398	8	0.1026	20	0.3049	6
<b>Medical equipment &amp; related instruments (27)</b>	0.1809	11	0.0733	28	0.2398	8
<b>Electromedical instruments (28)</b>	0.2398	8	0.1026	20	0.3049	6
<b>Nonmedical instruments (29)</b>	0.1809	11	0.0733	28	0.2398	8
<b>Other Nonresidential Equipment (30)</b>	0.1972	10	0.0822	25	0.2686	7
<b>Nuclear Fuel (31)</b>			not revised		not revised	
<b>Mainframe computers (32)</b>						
Years before 1970	0.2398	8	0.2165	9	0.2165	9
1970 to 1979	0.3049	6	0.2686	7	0.2686	7
1980 to 1984	0.4158	4	0.3520	5	0.3520	5
1985 and years beyond	0.4158	4	0.1972	10	0.5063	3
<b>Personal computers (33)</b>	0.4158	4	0.1972	10	0.5063	3
<b>Direct access storage devices (34)</b>						
Years before 1985	0.2686	7	0.2398	8	0.2398	8
1985	0.2398	8	0.1138	18	0.3520	5
1986 and years beyond	0.2398	8	0.1026	20	0.3049	6
<b>Printers (35)</b>						
Years before 1976	0.2165	9	0.1972	10	0.1972	10
1976 to 1980	0.2686	7	0.2398	8	0.2398	8
1981 to 1984	0.3520	5	0.3049	6	0.3049	6
1985	0.3520	5	0.1551	13	0.5063	3
1986 and years beyond	0.4158	4	0.1972	10	0.5063	3
<b>Terminals (36)</b>						
Years before 1981	0.2398	8	0.2165	9	0.2165	9
1981 to 1984	0.2686	7	0.2398	8	0.2398	8
1985	0.2686	7	0.1138	18		5
1986 and years beyond	0.3520	5	0.1551	13	0.5063	3
<b>Tape drives (37)</b>						
Years before 1981	0.2398	8	0.2165	9	0.2165	9

Table 2c. Set 2, Set2-250 (Lower Boundary) and Set 2-75 (Upper Boundary) Depreciation Rates and Related Service Lives

U.S. Asset Category	Set 2 Rates <sup>1</sup>		Set 2-250, Lower Bound Rates <sup>2</sup>		Set 2-75 Upper Bound Rates <sup>3</sup>	
	BLS		BLS		BLS	
	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function
1981 to 1984	0.3049	6	0.2686	7	0.2686	7
1985 and years beyond	0.3049	6	0.1356	15	0.4158	4
Storage devices (38)	0.4158	4	0.1972	10	0.5063	3
Integrated systems (39)	0.4158	4	0.1972	10	0.5063	3
<b>PRIVATE NONRESIDENTIAL STRUCTURES</b>						
Manufacturing (43)	0.0688	27	0.0255	68	0.0933	20
Office buildings (44)	0.0576	32	0.0213	80	0.0776	24
Commercial warehouses (45)	0.0541	34	0.0200	85	0.0744	25
Other commercial buildings (46)	0.0662	28	0.0247	70	0.0888	21
Educational buildings (47)	0.0455	40	0.0176	95	0.0616	30
Hospitals (48)	0.0455	40	0.0176	95	0.0616	30
Hotels and motels—Lodging (49)	0.0688	27	0.0255	68	0.0933	20
Amusement & recreational buildings (50)	0.0715	26	0.0268	65	0.0982	19
Air transportation (51)	0.0596	31	0.0219	78	0.0810	23
Other railroad structures (52)	0.0401	45	0.0176	95	0.0558	33
Communications (53)	0.0596	31	0.0219	78	0.0810	23
Electric (54)						
Years before 1946	0.0541	34	0.0236	73	0.0236	73
1946 to 1984	0.0480	38	0.0210	81	0.0210	81
1985 and beyond	0.0480	38	0.0176	95	0.0662	28
Gas (55)	0.0558	33	0.0205	83	0.0776	24
Local transit (56)	0.0576	32	0.0213	80	0.0776	24
Petroleum pipelines (57)	0.0558	33	0.0205	83	0.0776	24
Farm (58)	0.0576	32	0.0213	80	0.0776	24
Mining Structures: Petroleum and natural gas (59)						
Years before 1973	0.1418	13	0.0558	33	0.0558	33
1973 to 1984	0.1809	10	0.0744	25	0.0744	25
1985 and beyond	0.1809	10	0.0744	25	0.2476	7
Other Mining (60)	0.1095	17	0.0421	43	0.1529	12
Medical building (61)	0.0596	31	0.0219	78	0.0810	23
Railroad replacement track (62)	0.0558	33	0.0205	83	0.0776	24
Wind and Solar Energy (63)	0.0715	26	0.0268	65	0.0982	19

Table 2c. Set 2, Set2-250 (Lower Boundary) and Set 2-75 (Upper Boundary) Depreciation Rates and Related Service Lives						
U.S. Asset Category	Set 2 Rates <sup>1</sup>		Set 2-250, Lower Bound Rates <sup>2</sup>		Set 2-75 Upper Bound Rates <sup>3</sup>	
	BLS		BLS		BLS	
	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function
Tenant-occ. manufactured homes (64)	0.1095	17	0.0421	43	0.1529	12
Tenant-occupied, 1-4 units, new (65)	0.0273	64	0.0176	95	0.0374	48
Tenant-occupied, 1-4 units, additions and alterations (66)	0.0541	34	0.0200	85	0.0744	25
Tenant-occupied, 1-4 units, major replacements (67)	0.0888	21	0.0336	53	0.1237	15
Tenant-occupied, 5+ units, new (68)	0.0336	53	0.0176	95	0.0467	39
Tenant-occupied, 5+ units, additions and alterations (69)	0.0688	27	0.0255	68	0.0933	20
Tenant-occupied, 5+ units, major replacements (70)	0.1095	17	0.0421	43	0.1529	12
Tenant-occupied, 1-4 units, equipment (71)	0.1989	9	0.0810	23	0.2817	6
Tenant-occupied, 5+ units, equipment (72)	0.1989	9	0.0810	23	0.2817	6
Tenant-occupied, other residential structures (73)	0.0541	34	0.0200	85	0.0744	25
Owner-occupied, 1-4 units, new (74)	not revised	not revised	not revised	not revised	not revised	not revised
Owner-occupied, 1-4 units, additions and alterations (75)	not revised	not revised	not revised	not revised	not revised	not revised
Owner-occupied, 1-4 units, major replacements (76)	not revised	not revised	not revised	not revised	not revised	not revised
Owner-occupied, 5+ units, new (77)	not revised	not revised	not revised	not revised	not revised	not revised
Owner-occupied, 5+ units, additions and alterations (78)	not revised	not revised	not revised	not revised	not revised	not revised
Owner-occupied, 5+ units, major replacements (79)	not revised	not revised	not revised	not revised	not revised	not revised
Owner-occupied, mobile homes (80)	not revised	not revised	not revised	not revised	not revised	not revised
Land (81)	not revised	not revised	not revised	not revised	not revised	not revised
Special Care (82)	0.0455	40	0.0176	95	0.0616	30
Multimerchandise shopping (83)	0.0688	27	0.0255	68	0.0933	20
Food and beverage establishments (84)	0.0639	29	0.0236	73	0.0888	21
Religious buildings (85)	0.0455	40	0.0176	95	0.0616	30
Mobile offices (86)	0.1322	14	0.0524	35	0.1809	10
Other transportation (87)	0.0596	31	0.0219	78	0.0810	23
Other land transportation (88)	0.0558	33	0.0205	83	0.0776	24
Water Supply (89)	0.0558	33	0.0205	83	0.0776	24
Sewage and Waste Disposal (90)	0.0558	33	0.0205	83	0.0776	24
Materials inventory, Manufacturing industries	not revised	not revised	not revised	not revised	not revised	not revised
Total inventory, Nonmanufacturing industries (91)	not revised	not revised	not revised	not revised	not revised	not revised
Work-in-process inventory, manufacturing industries (92)	not revised	not revised	not revised	not revised	not revised	not revised



**Table 2c. Set 2, Set2-250 (Lower Boundary) and Set 2-75 (Upper Boundary) Depreciation Rates and Related Service Lives**

U.S. Asset Category	Set 2 Rates <sup>1</sup>		Set 2-250, Lower Bound Rates <sup>2</sup>		Set 2-75 Upper Bound Rates <sup>3</sup>	
	BLS		BLS		BLS	
	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function	Depreciation Rate	Service Life Using Hyperbolic Age- Efficiency Function
Finished goods inventory, manufacturing industries (93)	not revised		not revised		not revised	
Public Safety (94)	0.0576	32	0.0213	80	0.0776	24
Highway and Conservation and Development (95)	0.0576	32	0.0213	80	0.0776	24
Tenant-occupied, acquisition costs (96)	no change		not revised		not revised	
Tenant-occupied, disposal costs (97)	no change		not revised		not revised	
Owner-occupied, acquisition costs (98)	no change		not revised		not revised	
Owner-occupied, disposal costs (99)	no change		not revised		not revised	
<b>Broad Asset Categories Remaining At Current Values</b>						
Government nonresidential equipment	not revised		not revised		not revised	
Government nonresidential structures	not revised		not revised		not revised	
Private Intellectual Property Products	not revised		not revised		not revised	
Government Intellectual Property Products	not revised		not revised		not revised	

<sup>1</sup> Set 2 rates are applied in 1985 forward.

<sup>2</sup> Rates associated with 2.5 times the Set 2 service life.

<sup>3</sup> Rates associated with .75 times the Set 2 service life.

**Table 3a. Revisions to BEA Consumption of Fixed Capital (CFC), Net Investment, and Net Stocks for Private Nonresidential Fixed Assets Based on Statistics Canada Set 1 Depreciation Rates Applied for 1985-2019**

(Billions of Dollars)

Year	CFC (depreciation)			Net fixed investment (Gross fixed investment - CFC)			Net capital stocks		
	Published BEA estimate	Based on Set 1 depreciation rates (applied 1985-2019)	Revision	Published BEA estimate	Based on Set 1 depreciation rates (applied 1985-2019)	Revision	Published BEA estimate	Based on Set 1 depreciation rates (applied 1985-2019)	Revision
1985	403.7	711.7	308.0	204.1	-103.9	-308.0	5,332.4	5,023.0	-309.3
1986	430.6	706.5	275.9	177.1	-98.7	-275.9	5,603.6	5,010.1	-593.5
1987	456.0	703.5	247.5	159.3	-88.3	-247.5	5,919.1	5,061.5	-857.6
1988	489.8	719.7	229.9	172.4	-57.5	-229.9	6,311.3	5,189.8	-1,121.5
1989	523.8	741.3	217.5	192.2	-25.3	-217.5	6,699.8	5,323.2	-1,376.6
1990	556.9	762.9	206.1	182.4	-23.7	-206.1	7,071.3	5,447.5	-1,623.8
1991	585.9	778.2	192.3	137.7	-54.6	-192.3	7,242.6	5,419.0	-1,823.5
1992	603.1	782.0	178.9	138.8	-40.1	-178.9	7,487.0	5,454.4	-2,032.7
1993	629.5	801.8	172.3	169.7	-2.6	-172.3	7,837.6	5,580.5	-2,257.0
1994	664.5	834.6	170.2	204.4	34.2	-170.2	8,272.9	5,774.6	-2,498.3
1995	713.4	883.6	170.2	248.9	78.7	-170.2	8,723.3	5,992.4	-2,731.0
1996	753.5	925.6	172.1	289.7	117.6	-172.1	9,152.3	6,199.9	-2,952.5
1997	803.0	979.1	176.1	346.1	170.0	-176.1	9,674.8	6,487.8	-3,187.0
1998	855.7	1,042.1	186.4	398.5	212.0	-186.4	10,226.6	6,836.7	-3,389.9
1999	920.7	1,123.5	202.7	443.7	241.0	-202.7	10,849.4	7,233.7	-3,615.7
2000	1,002.3	1,222.3	220.0	496.1	276.1	-220.0	11,608.8	7,716.1	-3,892.7
2001	1,063.2	1,290.3	227.2	396.9	169.7	-227.2	12,189.4	8,014.5	-4,174.9
2002	1,098.2	1,320.7	222.5	254.7	32.2	-222.5	12,615.9	8,175.9	-4,440.0
2003	1,125.1	1,338.9	213.8	250.8	37.0	-213.8	13,036.2	8,346.1	-4,690.1
2004	1,177.8	1,391.6	213.8	289.6	75.8	-213.8	14,150.5	8,920.1	-5,230.4
2005	1,264.3	1,485.8	221.5	356.7	135.2	-221.5	15,429.8	9,612.1	-5,817.7
2006	1,359.8	1,592.6	232.8	434.0	201.2	-232.8	16,707.3	10,323.5	-6,383.8
2007	1,447.2	1,690.1	242.9	501.3	258.5	-242.9	17,653.8	10,872.9	-6,780.9
2008	1,532.6	1,781.2	248.6	458.3	209.7	-248.6	18,787.1	11,486.9	-7,300.2
2009	1,547.4	1,783.8	236.4	143.1	-93.4	-236.4	18,237.6	11,049.1	-7,188.5
2010	1,558.6	1,775.4	216.8	176.4	-40.4	-216.8	18,684.5	11,195.8	-7,488.6
2011	1,624.4	1,836.2	211.9	283.1	71.2	-211.9	19,551.3	11,632.8	-7,918.5
2012	1,706.7	1,918.3	211.6	411.8	200.2	-211.6	20,216.9	11,992.8	-8,224.2
2013	1,778.8	1,993.0	214.2	432.7	218.5	-214.2	21,073.3	12,480.3	-8,593.0
2014	1,873.6	2,094.5	220.9	526.5	305.6	-220.9	22,037.1	13,067.2	-8,969.9
2015	1,947.7	2,175.5	227.8	518.8	291.1	-227.8	22,487.0	13,310.6	-9,176.4
2016	1,995.8	2,225.9	230.1	464.7	234.6	-230.1	23,118.3	13,657.6	-9,460.7
2017	2,079.0	2,312.8	233.8	495.5	261.7	-233.8	24,000.9	14,133.1	-9,867.8
2018	2,172.1	2,414.2	242.1	604.6	362.4	-242.1	25,220.0	14,824.7	-10,395.3
2019	2,285.3	2,537.5	252.2	609.7	357.5	-252.2	26,209.2	15,383.8	-10,825.4

**Table 3b. Revisions to BEA Consumption of Fixed Capital (CFC), Net Investment, and Net Stocks for Private Nonresidential Fixed Assets Based on Statistics Canada Set 1 Depreciation Rates Applied for 1901-2019**

(Billions of Dollars)

Year	CFC (depreciation)			Net fixed investment (Gross fixed investment - CFC)			Net capital stocks		
	Published BEA estimate	Based on Set 1 depreciation rates (applied 1901-2019)	Revision	Published BEA estimate	Based on Set 1 depreciation rates (applied 1901-2019)	Revision	Published BEA estimate	Based on Set 1 depreciation rates (applied 1901-2019)	Revision
1985	403.7	476.1	72.5	204.1	131.6	-72.5	5,332.4	3,203.7	-2,128.7
1986	430.6	506.3	75.6	177.1	101.5	-75.6	5,603.6	3,356.6	-2,247.0
1987	456.0	530.0	74.0	159.3	85.2	-74.0	5,919.1	3,532.1	-2,387.0
1988	489.8	564.6	74.8	172.4	97.7	-74.8	6,311.3	3,758.1	-2,553.2
1989	523.8	601.4	77.6	192.2	114.6	-77.6	6,699.8	3,980.4	-2,719.4
1990	556.9	636.2	79.4	182.4	103.0	-79.4	7,071.3	4,196.9	-2,874.4
1991	585.9	664.1	78.2	137.7	59.5	-78.2	7,242.6	4,275.5	-2,967.1
1992	603.1	679.9	76.8	138.8	62.1	-76.8	7,487.0	4,390.3	-3,096.7
1993	629.5	708.2	78.7	169.7	91.0	-78.7	7,837.6	4,572.3	-3,265.3
1994	664.5	748.1	83.6	204.4	120.8	-83.6	8,272.9	4,816.0	-3,456.9
1995	713.4	802.8	89.5	248.9	159.4	-89.5	8,723.3	5,087.5	-3,635.8
1996	753.5	850.9	97.4	289.7	192.2	-97.4	9,152.3	5,347.9	-3,804.4
1997	803.0	909.7	106.7	346.1	239.4	-106.7	9,674.8	5,680.2	-3,994.6
1998	855.7	977.1	121.4	398.5	277.0	-121.4	10,226.6	6,070.5	-4,156.1
1999	920.7	1,062.8	142.1	443.7	301.7	-142.1	10,849.4	6,505.9	-4,343.4
2000	1,002.3	1,165.1	162.8	496.1	333.4	-162.8	11,608.8	7,019.1	-4,589.6
2001	1,063.2	1,235.9	172.8	396.9	224.1	-172.8	12,189.4	7,347.7	-4,841.7
2002	1,098.2	1,269.4	171.2	254.7	83.4	-171.2	12,615.9	7,542.0	-5,073.9
2003	1,125.1	1,290.6	165.5	250.8	85.3	-165.5	13,036.2	7,743.3	-5,292.9
2004	1,177.8	1,344.5	166.7	289.6	122.9	-166.7	14,150.5	8,313.8	-5,836.7
2005	1,264.3	1,438.7	174.4	356.7	182.3	-174.4	15,429.8	9,005.1	-6,424.7
2006	1,359.8	1,545.7	185.9	434.0	248.1	-185.9	16,707.3	9,724.3	-6,983.0
2007	1,447.2	1,644.8	197.6	501.3	303.7	-197.6	17,653.8	10,295.4	-7,358.4
2008	1,532.6	1,737.5	204.9	458.3	253.4	-204.9	18,787.1	10,923.3	-7,863.8
2009	1,547.4	1,743.7	196.3	143.1	-53.2	-196.3	18,237.6	10,549.7	-7,687.9
2010	1,558.6	1,738.7	180.1	176.4	-3.7	-180.1	18,684.5	10,722.9	-7,961.6
2011	1,624.4	1,801.3	177.0	283.1	106.2	-177.0	19,551.3	11,178.0	-8,373.3
2012	1,706.7	1,885.1	178.4	411.8	233.4	-178.4	20,216.9	11,562.6	-8,654.3
2013	1,778.8	1,961.7	182.9	432.7	249.8	-182.9	21,073.3	12,069.3	-9,004.0
2014	1,873.6	2,064.7	191.1	526.5	335.4	-191.1	22,037.1	12,675.3	-9,361.9
2015	1,947.7	2,147.4	199.7	518.8	319.1	-199.7	22,487.0	12,942.5	-9,544.4
2016	1,995.8	2,199.6	203.8	464.7	260.9	-203.8	23,118.3	13,309.2	-9,809.1
2017	2,079.0	2,287.9	208.9	495.5	286.6	-208.9	24,000.9	13,800.0	-10,200.9
2018	2,172.1	2,390.4	218.3	604.6	386.3	-218.3	25,220.0	14,500.7	-10,719.3
2019	2,285.3	2,514.5	229.2	609.7	380.5	-229.2	26,209.2	15,073.4	-11,135.9

**Table 4a. Revisions to BEA Consumption of Fixed Capital (CFC), Net Investment, and Net Stocks for Private Nonresidential Fixed Assets Based on Statistics Canada Set 2 Depreciation Rates Applied for 1985-2019**  
(Billions of Dollars)

assets	CFC (depreciation)			Net fixed investment (Gross fixed investment - CFC)			Net capital stocks		
	Published BEA estimate	Based on Set 2 depreciation rates (applied 1985-2019)	Revision	Published BEA estimate	Based on Set 2 depreciation rates (applied 1985-2019)	Revision	Published BEA estimate	Based on Set 2 depreciation rates (applied 1985-2019)	Revision
1985	403.7	609.8	206.1	204.1	-2.0	-206.1	5,332.4	5,126.5	-205.9
1986	430.6	617.0	186.4	177.1	-9.2	-186.4	5,603.6	5,211.1	-392.5
1987	456.0	623.0	167.0	159.3	-7.8	-167.0	5,919.1	5,352.6	-566.5
1988	489.8	648.1	158.2	172.4	14.2	-158.2	6,311.3	5,561.9	-749.4
1989	523.8	675.8	152.0	192.2	40.2	-152.0	6,699.8	5,775.8	-924.0
1990	556.9	702.8	145.9	182.4	36.4	-145.9	7,071.3	5,970.4	-1,101.0
1991	585.9	723.9	138.0	137.7	-0.3	-138.0	7,242.6	6,010.2	-1,232.4
1992	603.1	732.9	129.8	138.8	9.1	-129.8	7,487.0	6,106.2	-1,380.9
1993	629.5	755.9	126.4	169.7	43.3	-126.4	7,837.6	6,297.4	-1,540.1
1994	664.5	789.8	125.4	204.4	79.0	-125.4	8,272.9	6,558.9	-1,714.1
1995	713.4	838.2	124.9	248.9	124.0	-124.9	8,723.3	6,838.5	-1,884.9
1996	753.5	879.1	125.6	289.7	164.1	-125.6	9,152.3	7,105.0	-2,047.4
1997	803.0	930.6	127.7	346.1	218.5	-127.7	9,674.8	7,441.6	-2,233.2
1998	855.7	989.9	134.2	398.5	264.3	-134.2	10,226.6	7,854.1	-2,372.5
1999	920.7	1,065.6	144.9	443.7	298.8	-144.9	10,849.4	8,328.1	-2,521.3
2000	1,002.3	1,159.3	157.0	496.1	339.1	-157.0	11,608.8	8,884.7	-2,724.1
2001	1,063.2	1,225.7	162.5	396.9	234.4	-162.5	12,189.4	9,245.0	-2,944.3
2002	1,098.2	1,259.4	161.2	254.7	93.4	-161.2	12,615.9	9,456.1	-3,159.7
2003	1,125.1	1,282.8	157.8	250.8	93.1	-157.8	13,036.2	9,680.5	-3,355.7
2004	1,177.8	1,338.6	160.8	289.6	128.7	-160.8	14,150.5	10,351.2	-3,799.3
2005	1,264.3	1,432.6	168.3	356.7	188.4	-168.3	15,429.8	11,097.5	-4,332.3
2006	1,359.8	1,537.7	177.9	434.0	256.1	-177.9	16,707.3	11,897.0	-4,810.3
2007	1,447.2	1,633.9	186.7	501.3	314.6	-186.7	17,653.8	12,529.3	-5,124.5
2008	1,532.6	1,727.2	194.6	458.3	263.7	-194.6	18,787.1	13,234.9	-5,552.2
2009	1,547.4	1,739.0	191.6	143.1	-48.6	-191.6	18,237.6	12,841.0	-5,396.6
2010	1,558.6	1,739.9	181.4	176.4	-5.0	-181.4	18,684.5	13,039.8	-5,644.7
2011	1,624.4	1,804.0	179.7	283.1	103.4	-179.7	19,551.3	13,540.7	-6,010.6
2012	1,706.7	1,887.6	180.9	411.8	230.9	-180.9	20,216.9	13,943.0	-6,273.9
2013	1,778.8	1,961.8	183.0	432.7	249.7	-183.0	21,073.3	14,470.0	-6,603.3
2014	1,873.6	2,061.8	188.2	526.5	338.3	-188.2	22,037.1	15,074.2	-6,963.0
2015	1,947.7	2,137.6	189.9	518.8	328.9	-189.9	22,487.0	15,387.2	-7,099.8
2016	1,995.8	2,178.5	182.6	464.7	282.0	-182.6	23,118.3	15,807.8	-7,310.5
2017	2,079.0	2,257.5	178.5	495.5	317.0	-178.5	24,000.9	16,389.3	-7,611.6
2018	2,172.1	2,354.1	182.0	604.6	422.5	-182.0	25,220.0	17,250.5	-7,969.5
2019	2,285.3	2,473.3	188.0	609.7	421.7	-188.0	26,209.2	17,945.7	-8,263.6

**Table 4b. Revisions to BEA Consumption of Fixed Capital (CFC), Net Investment, and Net Stocks for Private Nonresidential Fixed Assets Based on Statistics Canada Set 2 Depreciation Rates Applied for 1901-2019**  
(Billions of Dollars)

Year	CFC (depreciation)			Net fixed investment (Gross fixed investment - CFC)			Net capital stocks		
	Published BEA estimate	Based on SC Set 2 depreciation rates (applied 1901-2019)	Revision	Published BEA estimate	Based on SC Set 2 depreciation rates (applied 1901-2019)	Revision	Published BEA estimate	Based on SC Set 2 depreciation rates (applied 1901-2019)	Revision
1985	403.7	463.1	59.5	204.1	144.6	-59.5	5,332.4	3,706.5	-1,625.9
1986	430.6	491.7	61.1	177.1	116.0	-61.1	5,603.6	3,896.4	-1,707.3
1987	456.0	514.1	58.1	159.3	101.1	-58.1	5,919.1	4,108.9	-1,810.2
1988	489.8	547.8	57.9	172.4	114.5	-57.9	6,311.3	4,370.1	-1,941.2
1989	523.8	583.2	59.4	192.2	132.8	-59.4	6,699.8	4,634.5	-2,065.3
1990	556.9	617.0	60.2	182.4	122.2	-60.2	7,071.3	4,885.8	-2,185.5
1991	585.9	644.9	59.0	137.7	78.7	-59.0	7,242.6	4,999.5	-2,243.1
1992	603.1	661.1	58.0	138.8	80.8	-58.0	7,487.0	5,146.9	-2,340.2
1993	629.5	688.9	59.3	169.7	110.4	-59.3	7,837.6	5,370.3	-2,467.3
1994	664.5	726.6	62.2	204.4	142.2	-62.2	8,272.9	5,660.6	-2,612.4
1995	713.4	778.1	64.8	248.9	184.1	-64.8	8,723.3	5,975.1	-2,748.2
1996	753.5	822.5	69.0	289.7	220.6	-69.0	9,152.3	6,277.0	-2,875.3
1997	803.0	877.0	74.0	346.1	272.1	-74.0	9,674.8	6,643.4	-3,031.4
1998	855.7	938.7	83.0	398.5	315.4	-83.0	10,226.6	7,083.5	-3,143.1
1999	920.7	1,017.1	96.4	443.7	347.4	-96.4	10,849.4	7,583.2	-3,266.2
2000	1,002.3	1,112.7	110.4	496.1	385.7	-110.4	11,608.8	8,159.7	-3,449.1
2001	1,063.2	1,180.7	117.5	396.9	279.3	-117.5	12,189.4	8,540.9	-3,648.5
2002	1,098.2	1,216.4	118.2	254.7	136.4	-118.2	12,615.9	8,777.1	-3,838.8
2003	1,125.1	1,241.7	116.6	250.8	134.2	-116.6	13,036.2	9,024.8	-4,011.4
2004	1,177.8	1,297.9	120.1	289.6	169.4	-120.1	14,150.5	9,682.9	-4,467.6
2005	1,264.3	1,391.4	127.1	356.7	229.6	-127.1	15,429.8	10,421.8	-5,008.0
2006	1,359.8	1,496.3	136.5	434.0	297.5	-136.5	16,707.3	11,221.1	-5,486.2
2007	1,447.2	1,593.4	146.1	501.3	355.2	-146.1	17,653.8	11,868.2	-5,785.6
2008	1,532.6	1,687.5	154.9	458.3	303.4	-154.9	18,787.1	12,580.4	-6,206.7
2009	1,547.4	1,701.9	154.5	143.1	-11.5	-154.5	18,237.6	12,250.0	-5,987.6
2010	1,558.6	1,705.5	146.9	176.4	29.5	-146.9	18,684.5	12,471.3	-6,213.2
2011	1,624.4	1,770.8	146.5	283.1	136.7	-146.5	19,551.3	12,986.1	-6,565.1
2012	1,706.7	1,855.6	148.8	411.8	263.0	-148.8	20,216.9	13,410.5	-6,806.4
2013	1,778.8	1,931.1	152.3	432.7	280.4	-152.3	21,073.3	13,953.8	-7,119.5
2014	1,873.6	2,032.2	158.6	526.5	367.9	-158.6	22,037.1	14,575.5	-7,461.7
2015	1,947.7	2,109.3	161.5	518.8	357.3	-161.5	22,487.0	14,910.7	-7,576.2
2016	1,995.8	2,151.5	155.6	464.7	309.0	-155.6	23,118.3	15,349.2	-7,769.1
2017	2,079.0	2,231.4	152.4	495.5	343.1	-152.4	24,000.9	15,943.7	-8,057.2
2018	2,172.1	2,328.7	156.6	604.6	448.0	-156.6	25,220.0	16,809.7	-8,410.3
2019	2,285.3	2,448.3	163.0	609.7	446.7	-163.0	26,209.2	17,516.3	-8,693.0

**Table 5a. Capital Stock Measures Based on BLS Current and Set 1 Revised Depreciation Rates for Major Sectors and NIPA Industries, Selected Time Periods**

(Compound Growth Rates)

Industry	Capital Stock											
	1987-2018			1987-2000			2000-2009			2009-2018		
	Capital Stock based on Current BLS rates	Capital Stock based on Set 1 SC rates		Capital Stock based on Current BLS rates	Capital Stock based on Set 1 SC rates		Capital Stock based on Current BLS rates	Capital Stock based on Set 1 SC rates		Capital Stock based on Current BLS rates	Capital Stock based on Set 1 SC rates	
		1901 forward	1985 forward		1901 forward	1985 forward		1901 forward	1985 forward		1901 forward	1985 forward
<b>Private Business Sector</b>	1.666	1.466	0.819	1.937	1.624	1.239	1.458	1.202	0.416	1.484	1.502	0.616
<b>Private Non-Farm Business Sector</b>	1.790	1.615	0.895	2.045	1.720	1.295	1.688	1.522	0.602	1.523	1.557	0.613
<b>Manufacturing Sector</b>	1.581	1.590	0.903	2.042	1.996	1.299	1.122	0.921	0.273	1.376	1.676	0.964
<b>111-112, Farms</b>	0.207	0.173	-0.007	0.845	0.919	0.696	-1.395	-1.626	-1.660	0.905	0.919	0.649
<b>113-115, Forestry, fishing and related activities</b>	1.794	1.630	0.856	0.667	-0.267	-0.578	2.461	3.006	1.798	2.770	3.040	2.013
<b>211, Oil and gas extraction</b>	-0.333	-0.391	-1.443	-0.593	-1.680	-1.393	-0.595	-0.091	-2.220	0.307	1.195	-0.732
<b>212, Mining, except oil and gas</b>	1.348	0.854	0.183	0.116	-1.790	-0.908	1.797	2.131	0.568	2.701	3.489	1.391
<b>213, Support activities for mining</b>	-0.146	0.013	-0.971	-1.433	-2.634	-2.431	-0.190	1.068	-1.229	1.787	2.880	1.440
<b>22, Utilities</b>	1.419	1.087	0.707	1.066	0.030	0.522	1.414	1.522	0.708	1.935	2.193	0.972
<b>23, Construction</b>	1.654	1.502	0.810	2.452	2.030	1.567	2.552	2.452	1.428	-0.366	-0.190	-0.880
<b>321, Wood products</b>	0.182	-0.138	-0.716	0.545	0.206	-0.482	-0.383	-1.584	-1.544	0.225	0.826	-0.219
<b>327, Nonmetallic mineral products</b>	0.859	0.737	-0.044	0.929	0.739	0.182	1.420	1.361	0.313	0.202	0.113	-0.723
<b>331, Primary metals</b>	-0.524	-0.582	-1.263	-0.595	-1.320	-1.080	-0.903	-0.985	-1.849	-0.041	0.905	-0.939
<b>332, Fabricated metal products</b>	1.097	0.886	0.276	1.380	0.885	0.740	0.324	0.031	-0.829	1.464	1.748	0.719
<b>333, Machinery</b>	1.503	1.208	0.798	2.696	2.431	2.185	0.062	-0.569	-0.933	1.242	1.245	0.555
<b>334, Computer and electronic products</b>	2.839	2.669	2.146	5.060	5.093	4.305	1.836	1.285	0.948	0.696	0.622	0.282
<b>335, Electrical equipment, appliances, and components</b>	0.652	0.108	-0.042	1.028	0.234	0.179	0.252	-0.797	-0.620	0.512	0.838	0.219
<b>336, Transportation equipment</b>	1.722	1.559	1.094	2.138	2.113	1.490	1.054	0.441	0.161	1.791	1.887	1.460
<b>337, Furniture and related products</b>	0.968	0.463	0.075	2.379	2.110	1.550	0.478	-0.733	-0.863	-0.553	-0.684	-1.092
<b>339, Miscellaneous manufacturing</b>	1.641	1.476	0.983	1.929	1.720	1.280	1.688	1.424	0.917	1.180	1.176	0.622
<b>311-312, Food and beverage and tobacco products</b>	1.187	1.045	0.303	1.357	1.050	0.508	0.865	0.751	-0.126	1.265	1.331	0.435
<b>313-314, Textile mills and textile product mills</b>	-1.485	-2.058	-2.495	0.280	0.295	-0.879	-3.274	-5.468	-4.836	-2.205	-1.945	-2.440
<b>315-316, Apparel and leather and allied products</b>	-0.819	-1.573	-1.520	0.770	0.360	0.085	-2.234	-3.928	-3.327	-1.666	-1.954	-1.993
<b>322, Paper products</b>	-0.141	-0.490	-1.312	1.154	0.593	-0.400	-1.745	-2.676	-3.236	-0.381	0.168	-0.677
<b>323, Printing and related support activities</b>	0.226	-0.467	-1.120	1.629	1.309	0.174	0.249	-0.533	-1.166	-1.791	-2.914	-2.914
<b>324, Petroleum and coal products</b>	0.926	1.083	0.248	-0.241	-0.885	-0.857	1.447	2.382	0.741	2.107	2.675	1.367
<b>325, Chemical products</b>	3.365	3.725	2.955	3.715	4.073	3.093	3.479	3.833	3.099	2.750	3.119	2.612
<b>326, Plastics and rubber products</b>	1.666	1.419	0.686	3.075	2.986	1.733	0.238	-0.860	-1.122	1.084	1.476	1.005
<b>42, Wholesale trade</b>	2.536	2.471	1.965	2.864	2.793	2.156	2.194	1.727	1.480	2.405	2.754	2.174
<b>44-45, Retail trade</b>	2.355	1.948	1.211	2.998	2.940	2.200	2.090	1.596	0.765	1.696	0.881	0.240
<b>481, Air transportation</b>	1.747	1.349	0.120	2.794	2.919	1.710	0.958	-0.334	-1.582	1.038	0.797	-0.441
<b>482, Rail transportation</b>	-0.174	0.786	-0.685	-0.910	-1.018	-1.127	0.210	1.595	-0.451	0.512	2.625	-0.279
<b>483, Water transportation</b>	0.103	0.551	-0.865	-1.278	-2.281	-2.023	-0.409	0.863	-1.793	2.659	4.463	1.785
<b>484, Truck transportation</b>	2.072	2.237	1.035	1.342	1.787	-0.178	2.829	2.827	1.975	2.377	2.301	1.866
<b>485, Transit and ground passenger transportation</b>	0.592	2.010	-0.261	1.817	5.287	1.181	0.061	0.075	-1.080	-0.625	-0.661	-1.499
<b>486, Pipeline transportation</b>	2.638	3.987	2.108	0.598	0.166	0.307	3.628	6.889	3.001	4.649	6.786	3.859
<b>487, 488, 492, Other transportation and support activities</b>	-0.568	-0.642	-1.476	-0.967	-1.555	-1.646	-0.484	-0.750	-1.723	-0.073	0.799	-0.983
<b>493, Warehousing and storage</b>	0.973	1.536	0.011	1.237	1.210	0.416	1.168	2.333	0.104	0.398	1.213	-0.665
<b>511, 516, Publishing industries, except internet (includes software)</b>	4.045	4.344	3.769	3.585	3.727	3.018	5.566	6.244	5.524	3.206	3.359	3.119
<b>512, Motion picture and sound recording studios</b>	3.108	3.109	2.863	4.823	4.713	4.529	2.261	2.529	2.090	1.515	1.406	1.267
<b>515, 517, Broadcasting and telecommunications</b>	3.520	3.237	2.446	4.214	4.001	3.398	2.773	2.096	1.373	3.270	3.285	2.157
<b>518-519, Data processing, internet publishing, and other information services</b>	10.910	11.466	10.474	9.515	10.382	8.915	8.328	9.323	8.030	15.650	15.268	15.319
<b>521-522, Federal Reserve banks, credit intermediation, and related activities</b>	3.047	2.634	2.036	4.338	3.934	3.295	2.616	1.966	1.345	1.636	1.446	0.929
<b>523, Securities, commodity contracts, and investments</b>	4.507	3.407	3.253	6.388	5.486	5.249	3.816	2.418	2.422	2.526	1.446	1.252
<b>524, Insurance carriers and related activities</b>	3.410	2.450	2.248	6.494	5.871	5.446	1.237	-0.392	-0.273	1.240	0.491	0.273
<b>525, Funds, trusts, and other financial vehicles</b>	0.294	-0.635	-1.330	2.359	1.640	1.205	1.960	1.489	0.381	-4.206	-5.844	-6.502
<b>531, Real estate</b>	1.258	0.489	0.224	1.641	0.828	1.078	1.600	1.050	0.396	0.368	-0.555	-1.167
<b>532-533, Rental and leasing services and lessors of intangible assets</b>	5.706	6.037	4.702	7.871	9.423	6.915	4.744	4.036	3.242	3.597	3.277	3.024
<b>5411, Legal services</b>	3.022	2.172	1.882	3.011	1.885	1.947	5.383	5.320	4.278	0.731	-0.479	-0.551

**Table 5a. Capital Stock Measures Based on BLS Current and Set 1 Revised Depreciation Rates for Major Sectors and NIPA Industries, Selected Time Periods**

(Compound Growth Rates)

Industry	Capital Stock											
	1987-2018			1987-2000			2000-2009			2009-2018		
	Capital Stock based on Current BLS rates	Capital Stock based on Set 1 SC rates		Capital Stock based on Current BLS rates	Capital Stock based on Set 1 SC rates		Capital Stock based on Current BLS rates	Capital Stock based on Set 1 SC rates		Capital Stock based on Current BLS rates	Capital Stock based on Set 1 SC rates	
		1901 forward	1985 forward		1901 forward	1985 forward		1901 forward	1985 forward		1901 forward	1985 forward
<b>5415</b> , Computer systems design and related services	5.885	5.838	5.185	8.555	9.161	8.005	7.862	7.753	7.197	0.273	-0.582	-0.659
<b>5412-5414, 5416-5419</b> , Miscellaneous professional, scientific and technical services	5.098	5.248	4.467	6.175	6.611	5.429	5.609	5.681	4.954	3.060	2.887	2.613
<b>55</b> , Management of companies and enterprises	1.681	0.208	0.524	3.332	2.000	2.491	0.978	-0.918	-0.452	0.033	-1.216	-1.292
<b>561</b> , Administrative and support services	5.155	5.141	4.305	6.638	6.604	5.527	4.731	4.513	3.710	3.464	3.681	3.155
<b>562</b> , Waste management and remediation services	1.208	-0.026	-0.121	2.417	1.618	1.349	0.382	-1.015	-1.025	0.306	-1.378	-1.314
<b>61</b> , Educational services	4.074	3.666	3.293	3.024	2.728	2.435	6.372	6.563	5.751	3.329	2.182	2.116
<b>621</b> , Ambulatory health care services	2.768	2.233	1.680	3.687	2.758	2.164	2.158	1.877	1.457	2.060	1.836	1.208
<b>622-623</b> , Hospitals and nursing and residential care facilities	4.011	3.519	2.802	5.060	5.122	4.024	3.397	2.742	2.148	3.124	2.011	1.710
<b>624</b> , Social assistance	2.225	1.588	1.123	3.336	2.716	2.472	2.355	2.183	1.232	0.513	-0.600	-0.901
<b>711-712</b> , Performing arts, spectator sports, museums, and related activities	2.937	2.719	2.218	3.797	3.939	3.361	2.954	2.813	2.191	1.689	0.891	0.616
<b>713</b> , Amusements, gambling, and recreation industries	2.905	2.980	1.750	2.677	3.142	1.712	2.540	2.629	1.148	3.601	3.096	2.412
<b>721</b> , Accommodation	2.588	2.212	1.368	3.358	2.618	2.453	3.063	3.217	1.730	1.019	0.637	-0.533
<b>722</b> , Food services and drinking places	0.929	0.356	-0.509	2.251	1.867	0.840	-0.616	-1.267	-2.064	0.590	-0.172	-0.877
<b>81</b> , Other services, except government	1.074	0.915	-0.114	1.839	1.588	0.719	0.256	0.855	-0.857	0.796	0.010	-0.564

**Table 5b. Capital Stock Measures Based on BLS Current and Set 2 Revised Depreciation Rates for Major Sectors and NIPA Industries, Selected Time Periods**
*(Compound Growth Rates)*

Industry	Capital Stock											
	1987-2018			1987-2000			2000-2009			2009-2018		
	Capital Stock based on Current BLS rates	Capital Stock based on Set 2, SC rates		Capital Stock based on Current BLS rates	Capital Stock based on Set 2, SC rates		Capital Stock based on Current BLS rates	Capital Stock based on Set 2, SC rates		Capital Stock based on Current BLS rates	Capital Stock based on Set 2, SC rates	
		1901 forward	1985 forward		1901 forward	1985 forward		1901 forward	1985 forward		1901 forward	1985 forward
<b>Private Business Sector</b>	1.666	1.550	1.080	1.937	1.755	1.402	1.458	1.387	0.809	1.484	1.415	0.887
<b>Private Non-Farm Business Sector</b>	1.790	1.694	1.173	2.045	1.856	1.472	1.688	1.694	1.016	1.523	1.460	0.898
<b>Manufacturing Sector</b>	1.581	1.536	1.172	2.042	1.945	1.696	1.122	0.955	0.580	1.376	1.527	1.012
<b>111-112, Farms</b>	0.207	0.165	0.049	0.845	0.932	0.708	-1.395	-1.639	-1.581	0.905	0.883	0.744
<b>113-115, Forestry, fishing and related activities</b>	1.794	1.991	1.092	0.667	0.608	-0.421	2.461	2.916	2.039	2.770	3.089	2.359
<b>211, Oil and gas extraction</b>	-0.333	-0.689	-2.419	-0.593	-3.179	-2.564	-0.595	1.025	-3.282	0.307	1.273	-1.337
<b>212, Mining, except oil and gas</b>	1.348	1.118	0.445	0.116	-1.081	-0.712	1.797	1.906	0.834	2.701	3.575	1.747
<b>213, Support activities for mining</b>	-0.146	0.420	-1.064	-1.433	-3.218	-3.200	-0.190	2.565	-1.062	1.787	3.703	2.104
<b>22, Utilities</b>	1.419	1.160	0.995	1.066	0.376	0.759	1.414	1.357	0.992	1.935	2.104	1.341
<b>23, Construction</b>	1.654	1.764	0.974	2.452	2.619	1.607	2.552	2.722	1.860	-0.366	-0.396	-0.804
<b>321, Wood products</b>	0.182	-0.206	-0.439	0.545	0.078	-0.002	-0.383	-1.214	-1.190	0.225	0.401	-0.315
<b>327, Nonmetallic mineral products</b>	0.859	0.628	0.227	0.929	0.620	0.549	1.420	1.305	0.657	0.202	-0.034	-0.663
<b>331, Primary metals</b>	-0.524	-0.667	-0.868	-0.595	-1.259	-0.798	-0.903	-1.126	-1.338	-0.041	0.659	-0.497
<b>332, Fabricated metal products</b>	1.097	0.975	0.742	1.380	0.987	1.129	0.324	0.193	-0.153	1.464	1.744	1.084
<b>333, Machinery</b>	1.503	1.289	1.134	2.696	2.466	2.467	0.062	-0.320	-0.433	1.242	1.220	0.799
<b>334, Computer and electronic products</b>	2.839	2.672	2.395	5.060	5.084	4.716	1.836	1.436	1.225	0.696	0.496	0.278
<b>335, Electrical equipment, appliances, and components</b>	0.652	0.117	0.164	1.028	0.488	0.628	0.252	-0.753	-0.451	0.512	0.456	0.110
<b>336, Transportation equipment</b>	1.722	1.559	1.331	2.138	2.029	1.842	1.054	0.678	0.494	1.791	1.768	1.435
<b>337, Furniture and related products</b>	0.968	0.601	0.398	2.379	2.190	1.979	0.478	-0.154	-0.285	-0.553	-0.907	-1.170
<b>339, Miscellaneous manufacturing</b>	1.641	1.458	1.217	1.929	1.652	1.614	1.688	1.528	1.180	1.180	1.108	0.682
<b>311-312, Food and beverage and tobacco products</b>	1.187	1.110	0.673	1.357	1.135	0.943	0.865	0.766	0.237	1.265	1.418	0.720
<b>313-314, Textile mills and textile product mills</b>	-1.485	-2.067	-2.136	0.280	0.220	-0.225	-3.274	-4.763	-4.270	-2.205	-2.598	-2.712
<b>315-316, Apparel and leather and allied products</b>	-0.819	-1.496	-1.311	0.770	0.442	0.423	-2.234	-3.457	-2.957	-1.666	-2.284	-2.131
<b>322, Paper products</b>	-0.141	-0.495	-0.821	1.154	0.749	0.484	-1.745	-2.472	-2.713	-0.381	-0.284	-0.783
<b>323, Printing and related support activities</b>	0.226	-0.312	-0.609	1.629	1.367	0.923	0.249	-0.248	-0.665	-1.791	-2.752	-2.728
<b>324, Petroleum and coal products</b>	0.926	1.078	0.533	-0.241	-0.657	-0.558	1.447	2.017	1.012	2.107	2.682	1.644
<b>325, Chemical products</b>	3.365	3.567	3.100	3.715	3.898	3.403	3.479	3.655	3.162	2.750	3.003	2.601
<b>326, Plastics and rubber products</b>	1.666	1.450	1.125	3.075	2.976	2.543	0.238	-0.323	-0.517	1.084	1.050	0.746
<b>42, Wholesale trade</b>	2.536	2.542	2.183	2.864	2.963	2.447	2.194	1.970	1.823	2.405	2.510	2.163
<b>44-45, Retail trade</b>	2.355	2.131	1.610	2.998	3.029	2.461	2.090	1.890	1.314	1.696	1.087	0.685
<b>481, Air transportation</b>	1.747	1.398	1.060	2.794	2.537	2.412	0.958	0.433	0.016	1.038	0.736	0.172
<b>482, Rail transportation</b>	-0.174	0.445	-0.549	-0.910	-1.157	-1.057	0.210	1.152	-0.289	0.512	2.087	-0.072
<b>483, Water transportation</b>	0.103	0.147	-0.372	-1.278	-1.949	-1.603	-0.409	-0.232	-1.085	2.659	3.646	2.165
<b>484, Truck transportation</b>	2.072	2.239	1.333	1.342	1.836	0.345	2.829	3.010	2.345	2.377	2.055	1.761
<b>485, Transit and ground passenger transportation</b>	0.592	2.212	-0.297	1.817	5.933	1.248	0.061	0.136	-1.137	-0.625	-0.922	-1.657
<b>486, Pipeline transportation</b>	2.638	3.490	2.243	0.598	0.391	0.445	3.628	5.546	3.153	4.649	6.029	3.972
<b>487, 488, 492, Other transportation and support activities</b>	-0.568	-0.584	-1.157	-0.967	-1.400	-1.460	-0.484	-0.588	-1.246	-0.073	0.611	-0.629
<b>493, Warehousing and storage</b>	0.973	1.432	0.340	1.237	1.146	0.566	1.168	2.018	0.490	0.398	1.261	-0.135
<b>511, 516, Publishing industries, except internet (includes software)</b>	4.045	4.246	3.864	3.585	3.670	3.269	5.566	6.025	5.484	3.206	3.318	3.120
<b>512, Motion picture and sound recording studios</b>	3.108	3.120	2.927	4.823	4.747	4.603	2.261	2.498	2.149	1.515	1.426	1.319
<b>515, 517, Broadcasting and telecommunications</b>	3.520	3.231	2.924	4.214	4.021	3.805	2.773	2.259	2.060	3.270	3.070	2.525
<b>518-519, Data processing, internet publishing, and other information services</b>	10.910	11.609	10.678	9.515	10.647	9.122	8.328	9.280	8.291	15.650	15.422	15.454
<b>521-522, Federal Reserve banks, credit intermediation, and related activities</b>	3.047	3.012	2.609	4.338	4.191	3.758	2.616	2.793	2.337	1.636	1.549	1.239
<b>523, Securities, commodity contracts, and investments</b>	4.507	3.844	3.711	6.388	5.911	5.668	3.816	2.953	2.949	2.526	1.802	1.694
<b>524, Insurance carriers and related activities</b>	3.410	2.720	2.626	6.494	6.120	5.860	1.237	0.205	0.302	1.240	0.461	0.403
<b>525, Funds, trusts, and other financial vehicles</b>	0.294	-0.289	-0.968	2.359	1.924	1.298	1.960	1.820	0.820	-4.206	-5.403	-5.853



**Table 5b. Capital Stock Measures Based on BLS Current and Set 2 Revised Depreciation Rates for Major Sectors and NIPA Industries, Selected Time Periods**

(Compound Growth Rates)

Industry	Capital Stock											
	1987-2018			1987-2000			2000-2009			2009-2018		
	Capital Stock based on Current BLS rates	Capital Stock based on Set 2, SC rates		Capital Stock based on Current BLS rates	Capital Stock based on Set 2, SC rates		Capital Stock based on Current BLS rates	Capital Stock based on Set 2, SC rates		Capital Stock based on Current BLS rates	Capital Stock based on Set 2, SC rates	
		1901 forward	1985 forward		1901 forward	1985 forward		1901 forward	1985 forward		1901 forward	1985 forward
<b>531, Real estate</b>	1.258	0.654	0.658	1.641	1.207	1.268	1.600	0.949	0.928	0.368	-0.431	-0.483
<b>532-533, Rental and leasing services and lessors of intangible assets</b>	5.706	6.371	5.356	7.871	9.489	7.521	4.744	5.283	4.718	3.597	3.079	2.929
<b>5411, Legal services</b>	3.022	2.574	2.429	3.011	2.332	2.465	5.383	5.597	4.884	0.731	-0.021	-0.018
<b>5415, Computer systems design and related services</b>	5.885	5.971	5.484	8.555	9.103	8.239	7.862	7.942	7.518	0.273	-0.250	-0.293
<b>5412-5414, 5416-5419, Miscellaneous professional, scientific and technical services</b>	5.098	5.263	4.707	6.175	6.536	5.716	5.609	5.830	5.273	3.060	2.898	2.710
<b>55, Management of companies and enterprises</b>	1.681	0.558	0.836	3.332	2.378	2.735	0.978	-0.345	-0.030	0.033	-1.125	-0.996
<b>561, Administrative and support services</b>	5.155	5.286	4.639	6.638	6.784	5.914	4.731	4.703	4.093	3.464	3.732	3.364
<b>562, Waste management and remediation services</b>	1.208	0.356	0.219	2.417	1.972	1.601	0.382	-0.492	-0.550	0.306	-1.100	-0.985
<b>61, Educational services</b>	4.074	3.858	3.553	3.024	2.957	2.631	6.372	6.538	5.959	3.329	2.528	2.517
<b>621, Ambulatory health care services</b>	2.768	2.385	2.117	3.687	3.231	2.991	2.158	1.722	1.530	2.060	1.836	1.452
<b>622-623, Hospitals and nursing and residential care facilities</b>	4.011	3.864	3.300	5.060	5.287	4.411	3.397	3.212	2.720	3.124	2.484	2.290
<b>624, Social assistance</b>	2.225	1.804	1.456	3.336	2.837	2.639	2.355	2.389	1.661	0.513	-0.241	-0.432
<b>711-712, Performing arts, spectator sports, museums, and related activities</b>	2.937	2.861	2.414	3.797	4.019	3.457	2.954	2.961	2.445	1.689	1.112	0.895
<b>713, Amusements, gambling, and recreation industries</b>	2.905	3.126	2.012	2.677	3.256	1.845	2.540	2.827	1.589	3.601	3.239	2.680
<b>721, Accommodation</b>	2.588	2.330	1.653	3.358	2.792	2.614	3.063	3.280	2.121	1.019	0.732	-0.178
<b>722, Food services and drinking places</b>	0.929	0.571	0.011	2.251	2.044	1.381	-0.616	-0.973	-1.524	0.590	0.017	-0.408
<b>81, Other services, except government</b>	1.074	1.014	0.320	1.839	1.584	1.040	0.256	0.963	-0.282	0.796	0.248	-0.111

**Table 5c. Capital Stock Measures Based on BLS Current, BLS-125 (Lower Boundary) and BLS-50 (Upper Boundary) Depreciation Rates for Major Sectors and NIPA Industries, Selected Time Periods**  
(Compound Growth Rates)

Industry	Capital Stock											
	1987-2018			1987-2000			2000-2009			2009-2018		
	Capital Stock based on Current BLS rates	Lower Bound	Upper Bound	Capital Stock based on Current BLS rates	Lower Bound	Upper Bound	Capital Stock based on Current BLS rates	Lower Bound	Upper Bound	Capital Stock based on Current BLS rates	Lower Bound	Upper Bound
	1985 forward			1985 forward			1985 forward			1985 forward		
<b>Private Business Sector</b>	1.666	1.898	0.867	1.937	2.136	1.145	1.458	1.745	0.559	1.484	1.706	0.776
<b>Private Non-Farm Business Sector</b>	1.790	2.029	0.951	2.045	2.255	1.200	1.688	1.981	0.758	1.523	1.752	0.786
<b>Manufacturing Sector</b>	1.581	1.815	0.861	2.042	2.260	1.183	1.122	1.433	0.271	1.376	1.556	0.988
<b>111-112, Farms</b>	0.207	0.310	-0.051	0.845	0.923	0.603	-1.395	-1.250	-1.679	0.905	1.002	0.650
<b>113-115, Forestry, fishing and related activities</b>	1.794	2.141	0.605	0.667	1.212	-1.182	2.461	2.714	2.069	2.770	2.922	1.763
<b>211, Oil and gas extraction</b>	-0.333	0.165	-2.090	-0.593	-0.321	-2.118	-0.595	0.075	-3.006	0.307	0.961	-1.124
<b>212, Mining, except oil and gas</b>	1.348	1.619	0.356	0.116	0.464	-1.133	1.797	2.058	1.146	2.701	2.867	1.747
<b>213, Support activities for mining</b>	-0.146	0.370	-1.874	-1.433	-0.995	-3.356	-0.190	0.398	-1.561	1.787	2.347	-0.013
<b>22, Utilities</b>	1.419	1.538	0.842	1.066	1.194	0.561	1.414	1.521	0.944	1.935	2.053	1.148
<b>23, Construction</b>	1.654	2.040	0.521	2.452	2.770	1.336	2.552	3.026	0.947	-0.366	0.030	-1.066
<b>321, Wood products</b>	0.182	0.495	-0.740	0.545	0.869	-0.559	-0.383	0.041	-1.492	0.225	0.411	-0.245
<b>327, Nonmetallic mineral products</b>	0.859	1.149	-0.113	0.929	1.134	0.103	1.420	1.752	0.212	0.202	0.572	-0.748
<b>331, Primary metals</b>	-0.524	-0.302	-1.353	-0.595	-0.454	-1.186	-0.903	-0.641	-1.911	-0.041	0.258	-1.035
<b>332, Fabricated metal products</b>	1.097	1.365	0.182	1.380	1.566	0.565	0.324	0.678	-0.921	1.464	1.766	0.739
<b>333, Machinery</b>	1.503	1.726	0.710	2.696	2.849	2.084	0.062	0.354	-1.025	1.242	1.494	0.489
<b>334, Computer and electronic products</b>	2.839	3.076	2.170	5.060	5.273	4.242	1.836	2.167	0.960	0.696	0.874	0.440
<b>335, Electrical equipment, appliances, and components</b>	0.652	0.883	-0.023	1.028	1.294	0.062	0.252	0.579	-0.519	0.512	0.595	0.354
<b>336, Transportation equipment</b>	1.722	1.971	0.988	2.138	2.362	1.311	1.054	1.406	0.044	1.791	1.974	1.470
<b>337, Furniture and related products</b>	0.968	1.289	0.084	2.379	2.623	1.466	0.478	0.938	-0.901	-0.553	-0.262	-0.904
<b>339, Miscellaneous manufacturing</b>	1.641	1.874	0.936	1.929	2.137	1.185	1.688	1.950	0.927	1.180	1.418	0.587
<b>311-312, Food and beverage and tobacco products</b>	1.187	1.456	0.266	1.357	1.598	0.394	0.865	1.180	-0.103	1.265	1.526	0.449
<b>313-314, Textile mills and textile product mills</b>	-1.485	-1.110	-2.417	0.280	0.569	-0.926	-3.274	-2.683	-4.680	-2.205	-1.925	-2.264
<b>315-316, Apparel and leather and allied products</b>	-0.819	-0.576	-1.443	0.770	0.952	0.038	-2.234	-1.850	-3.208	-1.666	-1.481	-1.784
<b>322, Paper products</b>	-0.141	0.284	-1.342	1.154	1.556	-0.589	-1.745	-1.110	-3.108	-0.381	-0.139	-0.642
<b>323, Printing and related support activities</b>	0.226	0.696	-1.158	1.629	2.046	-0.037	0.249	0.798	-1.142	-1.791	-1.321	-2.770
<b>324, Petroleum and coal products</b>	0.926	1.128	0.187	-0.241	-0.089	-0.916	1.447	1.683	0.707	2.107	2.350	1.276
<b>325, Chemical products</b>	3.365	3.501	2.954	3.715	3.886	3.021	3.479	3.638	3.190	2.750	2.811	2.623
<b>326, Plastics and rubber products</b>	1.666	2.040	0.683	3.075	3.475	1.524	0.238	0.809	-0.974	1.084	1.222	1.145
<b>42, Wholesale trade</b>	2.536	2.719	2.011	2.864	3.134	1.995	2.194	2.414	1.724	2.405	2.425	2.323
<b>44-45, Retail trade</b>	2.355	2.555	1.588	2.998	3.156	2.382	2.090	2.316	1.257	1.696	1.928	0.781
<b>481, Air transportation</b>	1.747	2.094	0.334	2.794	3.019	1.760	0.958	1.418	-1.154	1.038	1.446	-0.211
<b>482, Rail transportation</b>	-0.174	-0.081	-0.586	-0.910	-0.862	-1.124	0.210	0.336	-0.318	0.512	0.638	-0.075
<b>483, Water transportation</b>	0.103	0.382	-1.001	-1.278	-1.012	-2.176	-0.409	-0.073	-1.897	2.659	2.896	1.642
<b>484, Truck transportation</b>	2.072	2.528	0.629	1.342	2.068	-0.955	2.829	3.148	1.773	2.377	2.575	1.803
<b>485, Transit and ground passenger transportation</b>	0.592	1.039	-0.874	1.817	2.049	0.880	0.061	0.674	-2.250	-0.625	-0.040	-1.994
<b>486, Pipeline transportation</b>	2.638	2.762	2.150	0.598	0.668	0.339	3.628	3.761	3.057	4.649	4.844	3.903
<b>487, 488, 492, Other transportation and support activities</b>	-0.568	-0.248	-1.557	-0.967	-0.634	-2.058	-0.484	-0.118	-1.652	-0.073	0.184	-0.733
<b>493, Warehousing and storage</b>	0.973	1.160	0.268	1.237	1.435	0.471	1.168	1.373	0.471	0.398	0.552	-0.228
<b>511, 516, Publishing industries, except internet (includes software)</b>	4.045	4.149	3.791	3.585	3.753	2.971	5.566	5.644	5.620	3.206	3.241	3.170
<b>512, Motion picture and sound recording studios</b>	3.108	3.165	2.913	4.823	4.897	4.550	2.261	2.296	2.171	1.515	1.568	1.323
<b>515, 517, Broadcasting and telecommunications</b>	3.520	3.731	2.715	4.214	4.402	3.579	2.773	2.991	1.992	3.270	3.506	2.198
<b>518-519, Data processing, internet publishing, and other information services</b>	10.910	11.078	10.434	9.515	9.687	8.877	8.328	8.511	8.041	15.650	15.794	15.217
<b>521-522, Federal Reserve banks, credit intermediation, and related activities</b>	3.047	3.434	1.859	4.338	4.735	2.927	2.616	3.131	1.142	1.636	1.882	1.046
<b>523, Securities, commodity contracts, and investments</b>	4.507	4.725	3.602	6.388	6.624	5.446	3.816	4.053	2.976	2.526	2.700	1.609
<b>524, Insurance carriers and related activities</b>	3.410	3.647	2.536	6.494	6.732	5.502	1.237	1.587	0.218	1.240	1.361	0.674
<b>525, Funds, trusts, and other financial vehicles</b>	0.294	0.532	-0.809	2.359	2.529	1.536	1.960	2.230	0.879	-4.206	-3.908	-5.705
<b>531, Real estate</b>	1.258	1.445	0.415	1.641	1.767	1.046	1.600	1.804	0.676	0.368	0.623	-0.746
<b>532-533, Rental and leasing services and lessors of intangible assets</b>	5.706	6.192	4.075	7.871	8.375	6.014	4.744	5.459	2.578	3.597	3.834	2.816
<b>5411, Legal services</b>	3.022	3.363	2.039	3.011	3.303	2.014	5.383	5.778	4.266	0.731	1.089	-0.105
<b>5415, Computer systems design and related services</b>	5.885	6.156	5.214	8.555	8.717	7.980	7.862	8.146	7.202	0.273	0.676	-0.537

**Table 5c. Capital Stock Measures Based on BLS Current, BLS-125 (Lower Boundary) and BLS-50 (Upper Boundary) Depreciation Rates for Major Sectors and NIPA Industries, Selected Time Periods**  
(Compound Growth Rates)

Industry	Capital Stock											
	1987-2018			1987-2000			2000-2009			2009-2018		
	Capital Stock based on Current BLS rates	Lower Bound	Upper Bound	Capital Stock based on Current BLS rates	Lower Bound	Upper Bound	Capital Stock based on Current BLS rates	Lower Bound	Upper Bound	Capital Stock based on Current BLS rates	Lower Bound	Upper Bound
	1985 forward			1985 forward			1985 forward			1985 forward		
<b>5412-5414, 5416-5419, Miscellaneous professional, scientific and technical services</b>	5.098	5.313	4.464	6.175	6.385	5.386	5.609	5.864	4.932	3.060	3.242	2.686
<b>55, Management of companies and enterprises</b>	1.681	1.879	0.839	3.332	3.501	2.653	0.978	1.207	0.075	0.033	0.243	-0.973
<b>561, Administrative and support services</b>	5.155	5.492	4.192	6.638	6.979	5.308	4.731	5.219	3.475	3.464	3.649	3.311
<b>562, Waste management and remediation services</b>	1.208	1.477	0.125	2.417	2.720	1.419	0.382	0.573	-0.491	0.306	0.605	-1.106
<b>61, Educational services</b>	4.074	4.196	3.509	3.024	3.143	2.524	6.372	6.466	5.926	3.329	3.483	2.555
<b>621, Ambulatory health care services</b>	2.768	3.072	1.762	3.687	4.056	2.254	2.158	2.495	1.533	2.060	2.238	1.284
<b>622-623, Hospitals and nursing and residential care facilities</b>	4.011	4.199	3.180	5.060	5.253	4.227	3.397	3.603	2.650	3.124	3.285	2.212
<b>624, Social assistance</b>	2.225	2.431	1.404	3.336	3.510	2.612	2.355	2.585	1.507	0.513	0.741	-0.417
<b>711-712, Performing arts, spectator sports, museums, and related activities</b>	2.937	3.078	2.378	3.797	3.895	3.413	2.954	3.100	2.385	1.689	1.886	0.895
<b>713, Amusements, gambling, and recreation industries</b>	2.905	3.136	2.020	2.677	2.882	1.817	2.540	2.851	1.455	3.601	3.792	2.884
<b>721, Accommodation</b>	2.588	2.786	1.747	3.358	3.518	2.663	3.063	3.284	2.177	1.019	1.248	0.014
<b>722, Food services and drinking places</b>	0.929	1.242	-0.115	2.251	2.608	0.991	-0.616	-0.226	-1.542	0.590	0.762	-0.267
<b>81, Other services, except government</b>	1.074	1.362	0.106	1.839	2.128	0.763	0.256	0.558	-0.578	0.796	1.068	-0.153

Table 5d. Capital Stock Measures Based on Set 2, Set2-250 (Lower Boundary) and Set2-75 (Upper Boundary) Depreciation Rates for Major Sectors and NIPA Industries, Selected Time Periods (Compound Growth Rates)												
Industry	Capital Stock											
	1987-2018			1987-2000			2000-2009			2009-2018		
	Capital Stock based on Set 2 SC rates	Lower Bound	Upper Bound	Capital Stock based on Set 2 SC rates	Lower Bound	Upper Bound	Capital Stock based on Set 2 SC rates	Lower Bound	Upper Bound	Capital Stock based on Set 2 SC rates	Lower Bound	Upper Bound
	1985 forward			1985 forward			1985 forward			1985 forward		
<b>Private Business Sector</b>	1.080	2.095	0.659	1.402	2.284	0.973	0.809	2.003	0.329	0.887	1.916	0.537
<b>Private Non-Farm Business Sector</b>	1.173	2.232	0.728	1.472	2.410	1.011	1.016	2.243	0.517	0.898	1.964	0.531
<b>Manufacturing Sector</b>	1.172	2.151	0.821	1.696	2.528	1.255	0.580	1.882	0.124	1.012	1.880	0.895
<b>111-112, Farms</b>	0.049	0.429	-0.065	0.708	0.990	0.609	-1.581	-1.088	-1.701	0.744	1.151	0.617
<b>113-115, Forestry, fishing and related activities</b>	1.092	2.508	0.494	-0.421	1.702	-1.316	2.039	3.036	1.775	2.359	3.151	1.869
<b>211, Oil and gas extraction</b>	-2.419	-0.260	-3.269	-2.564	-0.539	-3.483	-3.282	-0.517	-3.935	-1.337	0.401	-2.286
<b>212, Mining, except oil and gas</b>	0.445	1.778	-0.162	-0.712	0.758	-1.436	0.834	2.239	0.519	1.747	2.803	1.020
<b>213, Support activities for mining</b>	-1.064	0.599	-1.812	-3.200	-0.875	-4.236	-1.062	0.523	-0.921	2.104	2.844	0.883
<b>22, Utilities</b>	0.995	1.659	0.623	0.759	1.325	0.466	0.992	1.659	0.627	1.341	2.144	0.846
<b>23, Construction</b>	0.974	2.492	0.376	1.607	2.970	1.006	1.860	3.546	1.078	-0.804	0.769	-1.216
<b>321, Wood products</b>	-0.439	0.940	-0.896	-0.002	1.252	-0.555	-1.190	0.665	-1.781	-0.315	0.764	-0.497
<b>327, Nonmetallic mineral products</b>	0.227	1.483	-0.256	0.549	1.374	0.116	0.657	2.136	0.004	-0.663	0.989	-1.048
<b>331, Primary metals</b>	-0.868	0.013	-1.274	-0.798	-0.269	-1.086	-1.338	-0.260	-1.861	-0.497	0.698	-0.957
<b>332, Fabricated metal products</b>	0.742	1.743	0.311	1.129	1.798	0.749	-0.153	1.169	-0.781	1.084	2.241	0.778
<b>333, Machinery</b>	1.134	2.024	0.747	2.467	3.041	2.172	-0.433	0.757	-0.994	0.799	1.839	0.460
<b>334, Computer and electronic products</b>	2.395	3.400	2.057	4.716	5.518	4.274	1.225	2.598	0.736	0.278	1.199	0.236
<b>335, Electrical equipment, appliances, and components</b>	0.164	1.231	-0.172	0.628	1.626	0.100	-0.451	1.072	-0.908	0.110	0.822	0.176
<b>336, Transportation equipment</b>	1.331	2.368	0.964	1.842	2.661	1.403	0.494	1.966	-0.077	1.435	2.349	1.378
<b>337, Furniture and related products</b>	0.398	1.747	-0.069	1.979	2.900	1.477	-0.285	1.551	-1.048	-1.170	0.299	-1.293
<b>339, Miscellaneous manufacturing</b>	1.217	2.194	0.875	1.614	2.413	1.222	1.180	2.311	0.781	0.682	1.762	0.468
<b>311-312, Food and beverage and tobacco products</b>	0.673	1.796	0.227	0.943	1.878	0.452	0.237	1.599	-0.271	0.720	1.876	0.401
<b>313-314, Textile mills and textile product mills</b>	-2.136	-0.506	-2.562	-0.225	0.928	-0.833	-4.270	-1.818	-4.976	-2.712	-1.239	-2.594
<b>315-316, Apparel and leather and allied products</b>	-1.311	-0.237	-1.611	0.423	1.154	0.030	-2.957	-1.346	-3.477	-2.131	-1.112	-2.078
<b>322, Paper products</b>	-0.821	0.944	-1.378	0.484	2.046	-0.369	-2.713	-0.175	-3.360	-0.783	0.485	-0.824
<b>323, Printing and related support activities</b>	-0.609	1.343	-1.300	0.923	2.535	0.058	-0.665	1.532	-1.381	-2.728	-0.541	-3.150
<b>324, Petroleum and coal products</b>	0.533	1.374	0.150	-0.558	0.073	-0.919	1.012	1.978	0.641	1.644	2.672	1.219
<b>325, Chemical products</b>	3.100	3.689	2.908	3.403	4.083	3.052	3.162	3.870	3.013	2.601	2.943	2.594
<b>326, Plastics and rubber products</b>	1.125	2.624	0.625	2.543	3.962	1.729	-0.517	1.673	-1.220	0.746	1.666	0.901
<b>42, Wholesale trade</b>	2.183	2.992	1.911	2.447	3.456	2.031	1.823	2.785	1.495	2.163	2.533	2.154
<b>44-45, Retail trade</b>	1.610	2.653	1.142	2.461	3.231	2.065	1.314	2.455	0.759	0.685	2.020	0.202
<b>481, Air transportation</b>	1.060	2.516	0.346	2.412	3.290	1.916	0.016	1.979	-1.066	0.172	1.941	-0.479
<b>482, Rail transportation</b>	-0.549	-0.027	-0.826	-1.057	-0.824	-1.196	-0.289	0.397	-0.655	-0.072	0.710	-0.459
<b>483, Water transportation</b>	-0.372	0.734	-0.928	-1.603	-0.664	-2.038	-1.085	0.433	-1.876	2.165	3.097	1.673
<b>484, Truck transportation</b>	1.333	3.295	0.501	0.345	3.062	-0.835	2.345	3.971	1.460	1.761	2.959	1.496
<b>485, Transit and ground passenger transportation</b>	-0.297	1.561	-1.073	1.248	2.240	0.726	-1.137	1.329	-2.363	-1.657	0.817	-2.340
<b>486, Pipeline transportation</b>	2.243	2.859	1.912	0.445	0.741	0.293	3.153	3.866	2.712	3.972	4.969	3.483
<b>487, 488, 492, Other transportation and support activities</b>	-1.157	0.188	-1.654	-1.460	-0.220	-1.984	-1.246	0.411	-1.893	-0.629	0.555	-0.935
<b>493, Warehousing and storage</b>	0.340	1.251	-0.087	0.566	1.500	0.149	0.490	1.455	0.067	-0.135	0.691	-0.579
<b>511, 516, Publishing industries, except internet (includes software)</b>	3.864	4.285	3.741	3.269	3.948	2.951	5.484	5.765	5.530	3.120	3.308	3.115
<b>512, Motion picture and sound recording studios</b>	2.927	3.203	2.832	4.603	4.942	4.443	2.149	2.342	2.087	1.319	1.590	1.281
<b>515, 517, Broadcasting and telecommunications</b>	2.924	3.925	2.411	3.805	4.585	3.408	2.060	3.211	1.470	2.525	3.690	1.923
<b>518-519, Data processing, internet publishing, and other information services</b>	10.678	11.227	10.470	9.122	9.831	8.789	8.291	8.767	8.213	15.454	15.837	15.298
<b>521-522, Federal Reserve banks, credit intermediation, and related activities</b>	2.609	4.132	1.983	3.758	5.222	3.066	2.337	4.032	1.547	1.239	2.675	0.869
<b>523, Securities, commodity contracts, and investments</b>	3.711	4.898	3.136	5.668	6.800	5.013	2.949	4.274	2.307	1.694	2.821	1.300
<b>524, Insurance carriers and related activities</b>	2.626	3.904	2.084	5.860	6.933	5.223	0.302	2.024	-0.495	0.403	1.517	0.247
<b>525, Funds, trusts, and other financial vehicles</b>	-0.968	0.435	-1.685	1.298	2.395	0.758	0.820	2.125	0.199	-5.853	-3.947	-6.895
<b>531, Real estate</b>	0.658	1.539	0.216	1.268	1.830	0.934	0.928	1.907	0.392	-0.483	0.755	-0.984
<b>532-533, Rental and leasing services and lessors of intangible assets</b>	5.356	7.103	4.593	7.521	9.036	6.807	4.718	6.874	3.575	2.929	4.596	2.472
<b>5411, Legal services</b>	2.429	3.814	1.871	2.465	3.635	1.898	4.884	6.242	4.330	-0.018	1.695	-0.569

**Table 5d. Capital Stock Measures Based on Set 2, Set2-250 (Lower Boundary) and Set2-75 (Upper Boundary) Depreciation Rates for Major Sectors and NIPA Industries, Selected Time Periods**  
(Compound Growth Rates)

Industry	Capital Stock											
	1987-2018			1987-2000			2000-2009			2009-2018		
	Capital Stock based on Set 2 SC rates	Lower Bound	Upper Bound	Capital Stock based on Set 2 SC rates	Lower Bound	Upper Bound	Capital Stock based on Set 2 SC rates	Lower Bound	Upper Bound	Capital Stock based on Set 2 SC rates	Lower Bound	Upper Bound
	1985 forward			1985 forward			1985 forward			1985 forward		
<b>5415</b> , Computer systems design and related services	5.484	6.488	5.147	8.239	8.870	7.934	7.518	8.489	7.213	-0.293	1.237	-0.705
<b>5412-5414, 5416-5419</b> , Miscellaneous professional, scientific and technical services	4.707	5.583	4.387	5.716	6.583	5.309	5.273	6.207	4.956	2.710	3.543	2.510
<b>55</b> , Management of companies and enterprises	0.836	1.942	0.356	2.735	3.574	2.294	-0.030	1.273	-0.666	-0.996	0.286	-1.373
<b>561</b> , Administrative and support services	4.639	5.915	4.164	5.914	7.284	5.177	4.093	5.810	3.503	3.364	4.072	3.374
<b>562</b> , Waste management and remediation services	0.219	1.680	-0.488	1.601	2.969	0.951	-0.550	0.753	-1.295	-0.985	0.767	-1.734
<b>61</b> , Educational services	3.553	4.316	3.154	2.631	3.239	2.317	5.959	6.580	5.629	2.517	3.641	1.928
<b>621</b> , Ambulatory health care services	2.117	3.509	1.574	2.991	4.478	2.285	1.530	3.039	1.150	1.452	2.590	0.977
<b>622-623</b> , Hospitals and nursing and residential care facilities	3.300	4.386	2.760	4.411	5.383	3.923	2.720	3.854	2.204	2.290	3.490	1.652
<b>624</b> , Social assistance	1.456	2.577	0.927	2.639	3.556	2.149	1.661	2.768	1.128	-0.432	0.989	-1.012
<b>711-712</b> , Performing arts, spectator sports, museums, and related activities	2.414	3.164	2.051	3.457	3.936	3.206	2.445	3.201	2.048	0.895	2.023	0.408
<b>713</b> , Amusements, gambling, and recreation industries	2.012	3.218	1.423	1.845	2.908	1.291	1.589	3.046	0.833	2.680	3.840	2.208
<b>721</b> , Accommodation	1.653	2.787	1.101	2.614	3.511	2.150	2.121	3.292	1.542	-0.178	1.253	-0.827
<b>722</b> , Food services and drinking places	0.011	1.534	-0.640	1.381	2.869	0.640	-1.524	0.248	-2.168	-0.408	0.915	-0.935
<b>81</b> , Other services, except government	0.320	1.647	-0.255	1.040	2.315	0.441	-0.282	0.956	-0.755	-0.111	1.379	-0.754

**Table 6a. Capital Services Measures Based on BLS Current and Set 1 Revised Depreciation Rates for Major Sectors and NIPA Industries, Selected Time Periods**

(Compound Growth Rates)

Industry	Capital Services											
	1987-2018			1987-2000			2000-2009			2009-2018		
	Capital Services based on Current BLS rates	Capital Services based on Set 1, SC rates		Capital Services based on Current BLS rates	Capital Services based on Set 1, SC rates		Capital Services based on Current BLS rates	Capital Services based on Set 1, SC rates		Capital Services based on Current BLS rates	Capital Services based on Set 1, SC rates	
		1901 forward	1985 forward		1901 forward	1985 forward		1901 forward	1985 forward		1901 forward	1985 forward
Private Business Sector	3.372	3.064	2.482	4.305	4.001	3.346	3.062	2.694	2.125	2.346	2.093	1.601
Private Non-Farm Business Sector	3.469	3.153	2.565	4.451	4.138	3.481	3.160	2.785	2.205	2.373	2.111	1.612
Manufacturing Sector	2.327	2.171	1.510	3.290	3.065	2.320	1.620	1.343	0.697	1.656	1.717	1.160
111-112, Farms	0.150	0.092	-0.284	0.088	0.014	-0.598	-0.825	-0.965	-1.118	1.226	1.273	1.016
113-115, Forestry, fishing and related activities	1.736	1.565	0.894	0.243	-0.622	-1.240	2.736	3.352	2.444	2.921	2.998	2.483
211, Oil and gas extraction	-0.324	-0.408	-1.422	-0.551	-1.672	-1.390	-0.573	-0.125	-2.140	0.254	1.157	-0.747
212, Mining, except oil and gas	0.552	0.443	-0.725	-0.899	-2.255	-2.185	0.725	1.536	-0.593	2.509	3.348	1.287
213, Support activities for mining	-0.122	-0.041	-1.069	-1.488	-2.525	-2.616	0.055	1.169	-0.873	1.704	2.419	1.007
22, Utilities	1.668	1.229	0.883	1.317	0.167	0.298	1.801	1.885	1.304	2.045	2.120	1.311
23, Construction	2.964	2.731	2.187	4.283	4.325	3.640	3.527	2.833	2.249	0.540	0.370	0.064
321, Wood products	0.457	0.288	-0.824	0.920	0.995	-0.842	0.043	-0.896	-1.335	0.204	0.463	-0.285
327, Nonmetallic mineral products	1.196	0.931	0.050	1.596	1.297	0.436	1.518	1.340	0.322	0.301	-0.001	-0.777
331, Primary metals	-0.439	-0.741	-1.299	-0.406	-1.262	-1.142	-1.025	-1.312	-1.951	0.103	0.594	-0.870
332, Fabricated metal products	1.539	1.227	0.642	2.230	1.716	1.426	0.573	0.232	-0.528	1.513	1.522	0.690
333, Machinery	2.114	1.682	1.321	4.388	4.082	3.739	-0.383	-1.149	-1.413	1.398	1.128	0.642
334, Computer and electronic products	3.988	3.667	3.320	6.987	6.926	6.219	2.735	1.991	1.816	1.020	0.764	0.739
335, Electrical equipment, appliances, and components	0.860	0.289	0.003	1.282	0.603	0.175	0.547	-0.483	-0.503	0.567	0.613	0.263
336, Transportation equipment	2.014	1.871	1.423	3.008	3.063	2.344	1.028	0.422	0.210	1.578	1.618	1.318
337, Furniture and related products	1.684	1.109	0.616	3.290	3.181	2.311	1.276	0.024	-0.238	-0.189	-0.747	-0.941
339, Miscellaneous manufacturing	2.393	2.098	1.622	2.777	2.560	1.919	2.550	2.240	1.865	1.687	1.294	0.953
311-312, Food and beverage and tobacco products	1.513	1.316	0.528	2.003	1.640	0.912	0.998	0.834	0.001	1.322	1.332	0.502
313-314, Textile mills and textile product mills	-1.208	-1.981	-2.707	1.015	1.028	-0.857	-3.281	-5.716	-5.479	-2.283	-2.454	-2.540
315-316, Apparel and leather and allied products	-0.559	-1.569	-1.577	1.445	1.179	0.628	-2.198	-4.257	-3.881	-1.765	-2.749	-2.390
322, Paper products	0.148	-0.304	-1.244	1.759	1.135	-0.159	-1.759	-2.775	-3.500	-0.235	0.135	-0.519
323, Printing and related support activities	0.751	-0.014	-0.852	2.385	2.102	0.522	1.053	0.333	-0.368	-1.859	-3.328	-3.276
324, Petroleum and coal products	1.215	1.274	0.461	0.491	-0.349	-0.269	1.231	2.143	0.467	2.253	2.784	1.519
325, Chemical products	4.147	4.187	3.538	5.049	5.148	4.187	4.033	3.897	3.405	2.971	3.099	2.738
326, Plastics and rubber products	1.922	1.659	0.734	3.445	3.514	1.768	0.579	-0.666	-0.999	1.092	1.354	0.996
42, Wholesale trade	3.401	3.170	2.581	4.615	4.257	3.397	2.725	2.181	1.899	2.341	2.603	2.091
44-45, Retail trade	3.794	3.183	2.489	4.587	4.458	3.415	4.083	3.658	3.074	2.373	0.903	0.592
481, Air transportation	2.605	2.060	0.986	5.423	6.121	4.690	0.107	-2.113	-2.879	1.131	0.580	-0.320
482, Rail transportation	-0.028	0.856	-0.558	-0.573	-0.488	-0.817	0.234	1.325	-0.461	0.500	2.352	-0.278
483, Water transportation	0.361	0.356	-0.927	0.042	-0.864	-1.142	-1.183	-1.176	-3.005	2.398	3.730	1.514
484, Truck transportation	2.823	2.836	1.750	2.271	2.688	0.471	3.743	3.413	2.981	2.707	2.475	2.388
485, Transit and ground passenger transportation	2.460	2.474	1.491	4.361	6.028	3.660	1.593	0.330	0.202	0.627	-0.365	-0.293
486, Pipeline transportation	3.286	4.113	2.686	2.268	2.131	1.733	3.523	5.087	2.949	4.536	6.053	3.814
487, 488, 492, Other transportation and support activities	0.328	0.370	-0.468	0.321	0.323	-0.198	-0.256	-0.563	-1.448	0.926	1.380	0.130
493, Warehousing and storage	2.069	2.573	1.214	2.411	2.491	1.537	2.081	3.166	1.174	1.564	2.100	0.789
511, 516, Publishing industries, except internet (includes software)	5.436	5.347	4.983	5.479	5.252	4.712	7.587	7.640	7.298	3.267	3.236	3.102
512, Motion picture and sound recording studios	3.472	3.381	3.232	5.116	5.056	4.861	3.302	3.279	3.143	1.309	1.108	1.011
515, 517, Broadcasting and telecommunications	5.991	5.540	4.970	6.804	6.752	5.781	5.149	4.313	4.020	5.666	5.036	4.756
518-519, Data processing, internet publishing, and other information services	15.600	15.601	15.092	16.848	16.896	16.039	12.740	12.737	12.211	16.709	16.645	16.658
521-522, Federal Reserve banks, credit intermediation, and related activities	5.280	4.793	4.345	8.090	7.738	7.023	4.140	3.452	3.069	2.459	1.987	1.838
523, Securities, commodity contracts, and investments	5.569	4.672	4.468	6.191	5.741	5.118	6.719	5.451	5.561	3.551	2.385	2.463
524, Insurance carriers and related activities	6.115	4.972	4.925	9.653	8.519	8.215	4.589	3.219	3.361	2.683	1.750	1.865
525, Funds, trusts, and other financial vehicles	0.384	-0.575	-1.222	2.362	1.653	1.219	1.944	1.474	0.384	-3.900	-5.652	-6.171
531, Real estate	1.533	0.783	0.769	1.946	1.076	1.565	2.026	1.594	1.215	0.451	-0.439	-0.810
532-533, Rental and leasing services and lessors of intangible assets	7.389	7.377	6.340	12.362	13.530	11.397	4.318	3.233	2.807	3.553	3.050	2.854
5411, Legal services	5.950	5.095	4.702	7.260	6.284	5.762	8.938	8.709	8.091	1.231	-0.035	-0.046
5415, Computer systems design and related services	8.705	8.434	8.187	14.503	14.674	14.139	9.698	9.155	9.064	-0.068	-0.646	-0.670
5412-5414, 5416-5419, Miscellaneous professional, scientific and technical services	7.260	7.125	6.651	9.713	9.795	8.956	8.016	7.732	7.440	3.087	2.801	2.649
55, Management of companies and enterprises	2.916	1.639	1.750	4.409	3.150	3.141	2.319	0.734	1.042	1.385	0.391	0.471
561, Administrative and support services	8.857	8.520	7.910	11.172	11.200	10.052	9.485	8.400	8.123	4.992	4.879	4.684

**Table 6a. Capital Services Measures Based on BLS Current and Set 1 Revised Depreciation Rates for Major Sectors and NIPA Industries, Selected Time Periods**  
(Compound Growth Rates)

Industry	Capital Services											
	1987-2018			1987-2000			2000-2009			2009-2018		
	Capital Services based on Current BLS rates	Capital Services based on Set 1, SC rates		Capital Services based on Current BLS rates	Capital Services based on Set 1, SC rates		Capital Services based on Current BLS rates	Capital Services based on Set 1, SC rates		Capital Services based on Current BLS rates	Capital Services based on Set 1, SC rates	
		1901 forward	1985 forward		1901 forward	1985 forward		1901 forward	1985 forward		1901 forward	1985 forward
<b>562, Waste management and remediation services</b>	1.724	0.394	0.367	2.426	1.357	0.831	1.302	0.130	0.408	1.139	-0.722	-0.341
<b>61, Educational services</b>	4.648	4.246	3.868	3.734	3.535	3.098	7.191	7.313	6.669	3.467	2.274	2.232
<b>621, Ambulatory health care services</b>	4.400	3.921	2.944	5.802	5.093	3.314	4.300	4.048	3.614	2.505	2.124	1.749
<b>622-623, Hospitals and nursing and residential care facilities</b>	4.606	4.139	3.377	6.165	6.363	5.010	3.758	3.110	2.633	3.233	2.018	1.797
<b>624, Social assistance</b>	2.799	2.144	1.765	4.236	3.637	3.311	3.170	3.078	2.391	0.395	-0.880	-1.035
<b>711-712, Performing arts, spectator sports, museums, and related activities</b>	2.321	2.318	1.977	3.189	3.509	3.042	2.224	2.263	1.941	1.176	0.677	0.493
<b>713, Amusements, gambling, and recreation industries</b>	3.815	4.186	3.182	3.705	4.803	3.207	4.376	4.454	3.721	3.415	3.036	2.609
<b>721, Accommodation</b>	2.860	2.496	1.634	3.474	2.743	2.234	3.848	4.133	2.766	1.010	0.533	-0.337
<b>722, Food services and drinking places</b>	1.319	0.734	-0.421	2.927	2.577	0.552	-0.398	-1.159	-1.760	0.747	0.010	-0.473
<b>81, Other services, except government</b>	2.554	2.369	1.293	2.574	2.605	0.872	3.454	4.142	3.038	1.635	0.292	0.180

**Table 6b. Capital Services Measures Based on BLS Current and Set 2 Revised Depreciation Rates for Major Sectors and NIPA Industries, Selected Time Periods**
*(Compound Growth Rates)*

Industry	Capital Services											
	1987-2018			1987-2000			2000-2009			2009-2018		
	Capital Services based on Current BLS rates	Capital Services based on Set 2, SC rates		Capital Services based on Current BLS rates	Capital Services based on Set 2, SC rates		Capital Services based on Current BLS rates	Capital Services based on Set 2, SC rates		Capital Services based on Current BLS rates	Capital Services based on Set 2, SC rates	
		1901 forward	1985 forward		1901 forward	1985 forward		1901 forward	1985 forward		1901 forward	1985 forward
<b>Private Business Sector</b>	3.372	3.152	2.783	4.305	4.130	3.702	3.062	2.870	2.451	2.346	2.034	1.800
<b>Private Non-Farm Business Sector</b>	3.469	3.243	2.877	4.451	4.266	3.857	3.160	2.968	2.538	2.373	2.056	1.814
<b>Manufacturing Sector</b>	2.327	2.185	1.896	3.290	3.107	2.905	1.620	1.437	1.106	1.656	1.613	1.242
<b>111-112, Farms</b>	0.150	0.055	-0.316	0.088	0.178	-0.794	-0.825	-1.046	-1.073	1.226	0.988	1.145
<b>113-115, Forestry, fishing and related activities</b>	1.736	1.879	0.981	0.243	0.306	-1.142	2.736	3.166	2.450	2.921	2.895	2.635
<b>211, Oil and gas extraction</b>	-0.324	-0.599	-2.390	-0.551	-2.812	-2.380	-0.573	0.906	-3.244	0.254	1.157	-1.543
<b>212, Mining, except oil and gas</b>	0.552	0.605	-0.520	-0.899	-1.558	-2.104	0.725	1.101	-0.292	2.509	3.305	1.580
<b>213, Support activities for mining</b>	-0.122	0.456	-1.140	-1.488	-2.546	-3.040	0.055	1.856	-1.036	1.704	3.512	1.563
<b>22, Utilities</b>	1.668	1.323	1.240	1.317	0.620	0.818	1.801	1.619	1.481	2.045	2.049	1.611
<b>23, Construction</b>	2.964	2.986	2.194	4.283	4.848	3.370	3.527	3.163	2.682	0.540	0.184	0.041
<b>321, Wood products</b>	0.457	0.229	-0.218	0.920	0.672	0.142	0.043	-0.387	-0.653	0.204	0.207	-0.303
<b>327, Nonmetallic mineral products</b>	1.196	0.960	0.550	1.596	1.297	1.090	1.518	1.483	0.951	0.301	-0.043	-0.623
<b>331, Primary metals</b>	-0.439	-0.788	-0.844	-0.406	-1.159	-0.703	-1.025	-1.492	-1.480	0.103	0.462	-0.407
<b>332, Fabricated metal products</b>	1.539	1.308	1.152	2.230	1.862	1.962	0.573	0.303	0.131	1.513	1.520	1.011
<b>333, Machinery</b>	2.114	1.824	1.733	4.388	4.162	4.147	-0.383	-0.823	-0.833	1.398	1.168	0.891
<b>334, Computer and electronic products</b>	3.988	3.763	3.647	6.987	6.924	6.705	2.735	2.353	2.254	1.020	0.731	0.737
<b>335, Electrical equipment, appliances, and components</b>	0.860	0.377	0.356	1.282	0.886	0.845	0.547	-0.230	-0.092	0.567	0.253	0.101
<b>336, Transportation equipment</b>	2.014	1.769	1.701	3.008	2.978	2.790	1.028	0.742	0.637	1.578	1.067	1.206
<b>337, Furniture and related products</b>	1.684	1.288	1.090	3.290	3.169	2.893	1.276	0.701	0.523	-0.189	-0.795	-0.903
<b>339, Miscellaneous manufacturing</b>	2.393	2.153	1.977	2.777	2.536	2.434	2.550	2.359	2.157	1.687	1.396	1.142
<b>311-312, Food and beverage and tobacco products</b>	1.513	1.379	0.957	2.003	1.763	1.516	0.998	0.829	0.377	1.322	1.376	0.732
<b>313-314, Textile mills and textile product mills</b>	-1.208	-1.903	-2.003	1.015	0.885	0.325	-3.281	-4.762	-4.443	-2.283	-2.969	-2.850
<b>315-316, Apparel and leather and allied products</b>	-0.559	-1.303	-1.165	1.445	1.185	1.085	-2.198	-3.472	-3.094	-1.765	-2.649	-2.423
<b>322, Paper products</b>	0.148	-0.228	-0.583	1.759	1.369	1.008	-1.759	-2.477	-2.789	-0.235	-0.241	-0.633
<b>323, Printing and related support activities</b>	0.751	0.075	-0.124	2.385	2.188	1.589	1.053	0.589	0.187	-1.859	-3.397	-2.851
<b>324, Petroleum and coal products</b>	1.215	1.304	0.813	0.491	-0.014	0.175	1.231	1.724	0.752	2.253	2.813	1.805
<b>325, Chemical products</b>	4.147	4.134	3.797	5.049	5.092	4.674	4.033	3.885	3.602	2.971	3.014	2.737
<b>326, Plastics and rubber products</b>	1.922	1.703	1.361	3.445	3.400	2.866	0.579	0.040	-0.137	1.092	0.951	0.714
<b>42, Wholesale trade</b>	3.401	3.293	2.910	4.615	4.493	3.901	2.725	2.386	2.223	2.341	2.485	2.176
<b>44-45, Retail trade</b>	3.794	3.463	3.050	4.587	4.618	4.000	4.083	3.870	3.530	2.373	1.417	1.222
<b>481, Air transportation</b>	2.605	2.223	1.942	5.423	5.356	5.111	0.107	-0.681	-0.914	1.131	0.724	0.344
<b>482, Rail transportation</b>	-0.028	0.392	-0.401	-0.573	-0.588	-0.710	0.234	1.020	-0.270	0.500	1.193	-0.086
<b>483, Water transportation</b>	0.361	0.523	-0.173	0.042	-0.416	-0.323	-1.183	-1.280	-1.905	2.398	3.756	1.811
<b>484, Truck transportation</b>	2.823	2.880	2.106	2.271	2.598	1.034	3.743	3.694	3.360	2.707	2.479	2.416
<b>485, Transit and ground passenger transportation</b>	2.460	3.000	1.810	4.361	6.805	4.196	1.593	0.810	0.452	0.627	-0.136	-0.210
<b>486, Pipeline transportation</b>	3.286	3.988	3.006	2.268	2.327	2.146	3.523	4.826	3.477	4.536	5.586	3.785
<b>487, 488, 492, Other transportation and support activities</b>	0.328	0.367	-0.267	0.321	0.188	-0.269	-0.256	-0.348	-0.962	0.926	1.348	0.435
<b>493, Warehousing and storage</b>	2.069	2.433	1.515	2.411	2.342	1.749	2.081	2.861	1.545	1.564	2.136	1.150
<b>511, 516, Publishing industries, except internet (includes software)</b>	5.436	5.407	5.204	5.479	5.380	5.131	7.587	7.638	7.405	3.267	3.260	3.151
<b>512, Motion picture and sound recording studios</b>	3.472	2.166	3.312	5.116	5.082	4.978	3.302	3.301	3.187	1.309	-2.981	1.073
<b>515, 517, Broadcasting and telecommunications</b>	5.991	5.705	5.404	6.804	6.768	6.186	5.149	4.703	4.601	5.666	5.185	5.085
<b>518-519, Data processing, internet publishing, and other information services</b>	15.600	15.771	15.323	16.848	17.105	16.322	12.740	13.011	12.596	16.709	16.650	16.655
<b>521-522, Federal Reserve banks, credit intermediation, and related activities</b>	5.280	5.062	4.661	8.090	7.737	7.436	4.140	3.694	3.457	2.459	2.653	1.953
<b>523, Securities, commodity contracts, and investments</b>	5.569	5.064	4.867	6.191	5.926	5.623	6.719	5.810	5.882	3.551	3.098	2.791
<b>524, Insurance carriers and related activities</b>	6.115	5.569	5.391	9.653	8.952	8.991	4.589	3.611	3.726	2.683	2.774	2.011
<b>525, Funds, trusts, and other financial vehicles</b>	0.384	-0.221	-0.866	2.362	1.934	1.313	1.944	1.800	0.812	-3.900	-5.173	-5.532
<b>531, Real estate</b>	1.533	1.100	1.055	1.946	1.705	1.599	2.026	1.581	1.586	0.451	-0.243	-0.251
<b>532-533, Rental and leasing services and lessors of intangible assets</b>	7.389	7.561	6.767	12.362	13.371	11.699	4.318	3.764	3.474	3.553	3.337	3.207
<b>5411, Legal services</b>	5.950	5.530	5.258	7.260	6.651	6.521	8.938	8.772	8.394	1.231	0.834	0.469
<b>5415, Computer systems design and related services</b>	8.705	8.576	8.491	14.503	14.571	14.423	9.698	9.505	9.429	-0.068	-0.385	-0.401
<b>5412-5414, 5416-5419, Miscellaneous professional, scientific and technical services</b>	7.260	7.183	6.979	9.713	9.702	9.430	8.016	7.958	7.745	3.087	2.901	2.798



**Table 6b. Capital Services Measures Based on BLS Current and Set 2 Revised Depreciation Rates for Major Sectors and NIPA Industries, Selected Time Periods**  
(Compound Growth Rates)

Industry	Capital Services											
	1987-2018			1987-2000			2000-2009			2009-2018		
	Capital Services based on Current BLS rates	Capital Services based on Set 2, SC rates		Capital Services based on Current BLS rates	Capital Services based on Set 2, SC rates		Capital Services based on Current BLS rates	Capital Services based on Set 2, SC rates		Capital Services based on Current BLS rates	Capital Services based on Set 2, SC rates	
		1901 forward	1985 forward		1901 forward	1985 forward		1901 forward	1985 forward		1901 forward	1985 forward
55, Management of companies and enterprises	2.916	-4.178	2.132	4.409	3.523	3.719	2.319	1.186	1.409	1.385	-18.844	0.594
561, Administrative and support services	8.857	8.709	8.299	11.172	11.325	10.566	9.485	8.960	8.752	4.992	4.797	4.667
562, Waste management and remediation services	1.724	0.809	0.716	2.426	1.836	1.254	1.302	0.547	0.719	1.139	-0.399	-0.060
61, Educational services	4.648	4.409	4.139	3.734	3.710	3.362	7.191	7.294	6.839	3.467	2.593	2.610
621, Ambulatory health care services	4.400	4.100	3.657	5.802	5.494	4.786	4.300	4.068	3.786	2.505	2.149	1.921
622-623, Hospitals and nursing and residential care facilities	4.606	4.442	3.907	6.165	6.434	5.521	3.758	3.534	3.139	3.233	2.521	2.377
624, Social assistance	2.799	3.417	2.096	4.236	3.705	3.651	3.170	3.147	2.634	0.395	3.273	-0.632
711-712, Performing arts, spectator sports, museums, and related activities	2.321	2.302	2.067	3.189	3.428	3.075	2.224	2.315	2.045	1.176	0.685	0.652
713, Amusements, gambling, and recreation industries	3.815	4.232	3.291	3.705	4.731	3.211	4.376	4.674	3.991	3.415	3.080	2.709
721, Accommodation	2.860	2.571	1.956	3.474	2.825	2.581	3.848	4.124	3.098	1.010	0.683	-0.059
722, Food services and drinking places	1.319	0.980	0.404	2.927	2.850	1.943	-0.398	-0.796	-1.196	0.747	0.099	-0.187
81, Other services, except government	2.554	2.538	1.885	2.574	2.664	1.672	3.454	4.084	3.335	1.635	0.835	0.760

Table 6c. Capital Services Measures Based on BLS Current, BLS-125 (Lower Boundary) and BLS-50 (Upper Boundary) Depreciation Rates for Major Sectors and NIPA Industries, Selected Time Periods (Compound Growth Rates)												
Industry	Capital Services											
	1987-2018			1987-2000			2000-2009			2009-2018		
	Capital Services based on Current BLS rates	Lower Bound	Upper Bound	Capital Services based on Current BLS rates	Lower Bound	Upper Bound	Capital Services based on Current BLS rates	Lower Bound	Upper Bound	Capital Services based on Current BLS rates	Lower Bound	Upper Bound
		1985 forward			1985 forward			1985 forward			1985 forward	
<b>Private Business Sector</b>	3.372	3.666	2.289	4.305	4.639	2.824	3.062	3.413	2.021	2.346	2.525	1.790
<b>Private Non-Farm Business Sector</b>	3.469	3.766	2.376	4.451	4.786	2.967	3.160	3.516	2.101	2.373	2.556	1.804
<b>Manufacturing Sector</b>	2.327	2.593	1.365	3.290	3.575	1.995	1.620	1.942	0.650	1.656	1.837	1.175
<b>111-112, Farms</b>	0.150	0.336	-0.589	0.088	0.390	-1.329	-0.825	-0.657	-1.222	1.226	1.261	1.132
<b>113-115, Forestry, fishing and related activities</b>	1.736	2.117	0.492	0.243	0.995	-2.504	2.736	2.941	2.954	2.921	2.928	2.472
<b>211, Oil and gas extraction</b>	-0.324	0.208	-2.163	-0.551	-0.205	-2.244	-0.573	0.092	-2.960	0.254	0.924	-1.242
<b>212, Mining, except oil and gas</b>	0.552	1.077	-1.624	-0.899	-0.141	-4.296	0.725	1.224	-0.475	2.509	2.713	1.184
<b>213, Support activities for mining</b>	-0.122	0.520	-2.147	-1.488	-0.744	-4.278	0.055	0.652	-0.985	1.704	2.240	-0.170
<b>22, Utilities</b>	1.668	1.868	0.875	1.317	1.647	-0.069	1.801	1.962	1.623	2.045	2.095	1.500
<b>23, Construction</b>	2.964	3.394	1.526	4.283	4.712	2.595	3.527	4.003	1.466	0.540	0.924	0.059
<b>321, Wood products</b>	0.457	0.894	-0.992	0.920	1.448	-1.242	0.043	0.589	-1.450	0.204	0.403	-0.168
<b>327, Nonmetallic mineral products</b>	1.196	1.570	-0.225	1.596	1.973	-0.001	1.518	1.820	0.327	0.301	0.743	-1.094
<b>331, Primary metals</b>	-0.439	-0.198	-1.477	-0.406	-0.181	-1.458	-1.025	-0.764	-2.068	0.103	0.348	-0.909
<b>332, Fabricated metal products</b>	1.539	1.835	0.424	2.230	2.496	1.041	0.573	0.929	-0.746	1.513	1.795	0.712
<b>333, Machinery</b>	2.114	2.372	1.117	4.388	4.617	3.409	-0.383	-0.049	-1.595	1.398	1.616	0.594
<b>334, Computer and electronic products</b>	3.988	4.213	3.190	6.987	7.207	5.934	2.735	3.024	1.740	1.020	1.188	0.768
<b>335, Electrical equipment, appliances, and components</b>	0.860	1.180	-0.124	1.282	1.657	-0.190	0.547	0.966	-0.474	0.567	0.707	0.323
<b>336, Transportation equipment</b>	2.014	2.234	1.229	3.008	3.236	1.962	1.028	1.312	0.061	1.578	1.719	1.348
<b>337, Furniture and related products</b>	1.684	2.063	0.491	3.290	3.562	2.063	1.276	1.798	-0.481	-0.189	0.196	-0.776
<b>339, Miscellaneous manufacturing</b>	2.393	2.679	1.408	2.777	3.125	1.449	2.550	2.782	1.829	1.687	1.937	0.930
<b>311-312, Food and beverage and tobacco products</b>	1.513	1.814	0.407	2.003	2.330	0.603	0.998	1.327	0.027	1.322	1.558	0.505
<b>313-314, Textile mills and textile product mills</b>	-1.208	-0.700	-2.787	1.015	1.443	-1.178	-3.281	-2.558	-5.451	-2.283	-1.881	-2.389
<b>315-316, Apparel and leather and allied products</b>	-0.559	-0.213	-1.620	1.445	1.657	0.429	-2.198	-1.644	-3.976	-1.765	-1.439	-2.164
<b>322, Paper products</b>	0.148	0.642	-1.381	1.759	2.234	-0.572	-1.759	-0.976	-3.504	-0.235	-0.006	-0.392
<b>323, Printing and related support activities</b>	0.751	1.284	-1.084	2.385	2.917	-0.067	1.053	1.580	-0.422	-1.859	-1.320	-3.182
<b>324, Petroleum and coal products</b>	1.215	1.435	0.327	0.491	0.688	-0.487	1.231	1.471	0.462	2.253	2.487	1.379
<b>325, Chemical products</b>	4.147	4.334	3.470	5.049	5.287	3.939	4.033	4.274	3.452	2.971	3.032	2.813
<b>326, Plastics and rubber products</b>	1.922	2.351	0.608	3.445	3.888	1.377	0.579	1.247	-1.028	1.092	1.263	1.152
<b>42, Wholesale trade</b>	3.401	3.785	2.170	4.615	5.215	2.404	2.725	3.156	1.765	2.341	2.375	2.237
<b>44-45, Retail trade</b>	3.794	4.065	2.717	4.587	4.886	3.254	4.083	4.312	3.277	2.373	2.647	1.394
<b>481, Air transportation</b>	2.605	2.934	1.137	5.423	5.551	4.552	0.107	0.696	-2.699	1.131	1.475	0.202
<b>482, Rail transportation</b>	-0.028	0.067	-0.510	-0.573	-0.546	-0.851	0.234	0.374	-0.359	0.500	0.649	-0.167
<b>483, Water transportation</b>	0.361	0.729	-1.184	0.042	0.426	-1.580	-1.183	-0.669	-3.102	2.398	2.590	1.359
<b>484, Truck transportation</b>	2.823	3.354	1.009	2.271	3.225	-1.216	3.743	4.102	2.586	2.707	2.797	2.708
<b>485, Transit and ground passenger transportation</b>	2.460	2.856	0.938	4.361	4.577	3.022	1.593	2.183	-1.074	0.627	1.082	-0.005
<b>486, Pipeline transportation</b>	3.286	3.391	2.649	2.268	2.363	1.520	3.523	3.549	3.338	4.536	4.733	3.605
<b>487, 488, 492, Other transportation and support activities</b>	0.328	0.667	-0.816	0.321	0.698	-1.129	-0.256	0.204	-1.797	0.926	1.086	0.632
<b>493, Warehousing and storage</b>	2.069	2.289	1.167	2.411	2.744	0.893	2.081	2.306	1.420	1.564	1.620	1.310
<b>511, 516, Publishing industries, except internet (includes software)</b>	5.436	5.612	4.871	5.479	5.747	4.446	7.587	7.744	7.262	3.267	3.331	3.138
<b>512, Motion picture and sound recording studios</b>	3.472	3.522	3.225	5.116	5.186	4.727	3.302	3.321	3.241	1.309	1.361	1.077
<b>515, 517, Broadcasting and telecommunications</b>	5.991	6.322	4.728	6.804	7.235	5.008	5.149	5.572	3.916	5.666	5.765	5.140
<b>518-519, Data processing, internet publishing, and other information services</b>	15.600	15.856	14.666	16.848	17.278	15.205	12.740	12.983	11.983	16.709	16.727	16.622
<b>521-522, Federal Reserve banks, credit intermediation, and related activities</b>	5.280	5.650	3.961	8.090	8.517	6.106	4.140	4.635	2.616	2.459	2.628	2.262
<b>523, Securities, commodity contracts, and investments</b>	5.569	5.901	4.415	6.191	6.677	4.594	6.719	7.016	5.768	3.551	3.697	2.824
<b>524, Insurance carriers and related activities</b>	6.115	6.337	5.090	9.653	9.829	8.231	4.589	4.964	3.544	2.683	2.815	2.216
<b>525, Funds, trusts, and other financial vehicles</b>	0.384	0.620	-0.715	2.362	2.536	1.530	1.944	2.214	0.869	-3.900	-3.611	-5.380
<b>531, Real estate</b>	1.533	1.732	0.612	1.946	2.109	1.071	2.026	2.241	1.111	0.451	0.687	-0.541
<b>532-533, Rental and leasing services and lessors of intangible assets</b>	7.389	7.900	5.628	12.362	12.783	10.298	4.318	5.281	1.782	3.553	3.735	2.977
<b>5411, Legal services</b>	5.950	6.316	4.653	7.260	7.632	5.488	8.938	9.191	8.036	1.231	1.693	0.218
<b>5415, Computer systems design and related services</b>	8.705	8.836	8.142	14.503	14.455	14.108	9.698	9.851	9.057	-0.068	0.269	-0.769
<b>5412-5414, 5416-5419, Miscellaneous professional, scientific and technical services</b>	7.260	7.449	6.502	9.713	9.868	8.672	8.016	8.258	7.251	3.087	3.270	2.722
<b>55, Management of companies and enterprises</b>	2.916	3.158	1.858	4.409	4.716	2.922	2.319	2.574	1.479	1.385	1.524	0.714

**Table 6c. Capital Services Measures Based on BLS Current, BLS-125 (Lower Boundary) and BLS-50 (Upper Boundary) Depreciation Rates for Major Sectors and NIPA Industries, Selected Time Periods**  
(Compound Growth Rates)

Industry	Capital Services											
	1987-2018			1987-2000			2000-2009			2009-2018		
	Capital Services based on Current BLS rates	Lower Bound	Upper Bound	Capital Services based on Current BLS rates	Lower Bound	Upper Bound	Capital Services based on Current BLS rates	Lower Bound	Upper Bound	Capital Services based on Current BLS rates	Lower Bound	Upper Bound
		1985 forward			1985 forward			1985 forward			1985 forward	
<b>561, Administrative and support services</b>	8.857	9.226	7.642	11.172	11.520	9.687	9.485	10.052	7.678	4.992	5.201	4.720
<b>562, Waste management and remediation services</b>	1.724	2.132	0.115	2.426	3.209	-0.520	1.302	1.375	1.145	1.139	1.347	0.012
<b>61, Educational services</b>	4.648	4.767	3.951	3.734	3.890	2.851	7.191	7.212	6.960	3.467	3.627	2.592
<b>621, Ambulatory health care services</b>	4.400	4.808	2.839	5.802	6.389	2.922	4.300	4.690	3.766	2.505	2.681	1.803
<b>622-623, Hospitals and nursing and residential care facilities</b>	4.606	4.824	3.604	6.165	6.425	4.897	3.758	3.994	3.001	3.233	3.371	2.360
<b>624, Social assistance</b>	2.799	3.031	1.771	4.236	4.478	2.950	3.170	3.303	2.634	0.395	0.711	-0.748
<b>711-712, Performing arts, spectator sports, museums, and related activities</b>	2.321	2.387	2.020	3.189	3.245	2.923	2.224	2.259	2.062	1.176	1.288	0.687
<b>713, Amusements, gambling, and recreation industries</b>	3.815	4.034	3.070	3.705	3.862	2.877	4.376	4.672	3.443	3.415	3.649	2.975
<b>721, Accommodation</b>	2.860	3.125	1.732	3.474	3.771	2.064	3.848	4.040	3.129	1.010	1.301	-0.117
<b>722, Food services and drinking places</b>	1.319	1.784	-0.321	2.927	3.553	0.205	-0.398	0.155	-1.499	0.747	0.898	0.108
<b>81, Other services, except government</b>	2.554	2.963	1.051	2.574	3.182	-0.025	3.454	3.679	3.052	1.635	1.938	0.633

Industry	Capital Services											
	1987-2018			1987-2000			2000-2009			2009-2018		
	Capital Stock based on Set 2 SC rates	Lower Bound	Upper Bound	Capital Stock based on Set 2 SC rates	Lower Bound	Upper Bound	Capital Stock based on Set 2 SC rates	Lower Bound	Upper Bound	Capital Stock based on Set 2 SC rates	Lower Bound	Upper Bound
	1985 forward			1985 forward			1985 forward			1985 forward		
<b>Private Business Sector</b>	2.783	3.943	2.293	3.702	4.922	3.042	2.451	3.798	2.048	1.800	2.689	1.465
<b>Private Non-Farm Business Sector</b>	2.877	4.048	2.380	3.857	5.074	3.189	2.538	3.907	2.128	1.814	2.723	1.472
<b>Manufacturing Sector</b>	1.896	2.910	1.449	2.905	3.876	2.305	1.106	2.347	0.623	1.242	2.088	1.049
<b>111-112, Farms</b>	-0.316	0.469	-0.578	-0.794	0.584	-1.228	-1.073	-0.521	-1.235	1.145	1.302	1.038
<b>113-115, Forestry, fishing and related activities</b>	0.981	2.456	0.399	-1.142	1.629	-2.379	2.450	3.227	2.551	2.635	2.888	2.356
<b>211, Oil and gas extraction</b>	-2.390	-0.175	-3.266	-2.380	-0.292	-3.313	-3.244	-0.471	-3.905	-1.543	0.293	-2.553
<b>212, Mining, except oil and gas</b>	-0.520	1.521	-1.633	-2.104	0.495	-3.802	-0.292	1.783	-0.804	1.580	2.757	0.738
<b>213, Support activities for mining</b>	-1.140	0.635	-1.874	-3.040	-0.209	-4.319	-1.036	0.497	-0.726	1.563	2.005	0.592
<b>22, Utilities</b>	1.240	2.110	0.839	0.818	1.978	0.197	1.481	2.269	1.331	1.611	2.144	1.280
<b>23, Construction</b>	2.194	3.761	1.567	3.370	4.943	2.502	2.682	4.417	1.989	0.041	1.437	-0.183
<b>321, Wood products</b>	-0.218	1.459	-0.842	0.142	2.000	-0.844	-0.653	1.374	-1.261	-0.303	0.768	-0.419
<b>327, Nonmetallic mineral products</b>	0.550	1.975	-0.108	1.090	2.364	0.366	0.951	2.189	0.370	-0.623	1.201	-1.262
<b>331, Primary metals</b>	-0.844	0.068	-1.320	-0.703	0.062	-1.173	-1.480	-0.444	-1.992	-0.407	0.591	-0.858
<b>332, Fabricated metal products</b>	1.152	2.185	0.666	1.962	2.796	1.468	0.131	1.372	-0.500	1.011	2.121	0.684
<b>333, Machinery</b>	1.733	2.654	1.294	4.147	4.858	3.747	-0.833	0.352	-1.397	0.891	1.836	0.522
<b>334, Computer and electronic products</b>	3.647	4.468	3.250	6.705	7.421	6.212	2.254	3.353	1.697	0.737	1.429	0.628
<b>335, Electrical equipment, appliances, and components</b>	0.356	1.618	-0.106	0.845	2.075	0.131	-0.092	1.570	-0.634	0.101	1.010	0.083
<b>336, Transportation equipment</b>	1.701	2.509	1.331	2.790	3.469	2.318	0.637	1.703	0.127	1.206	1.940	1.125
<b>337, Furniture and related products</b>	1.090	2.535	0.518	2.893	3.821	2.266	0.523	2.405	-0.315	-0.903	0.832	-1.137
<b>339, Miscellaneous manufacturing</b>	1.977	3.037	1.516	2.434	3.571	1.800	2.157	3.064	1.809	1.142	2.245	0.818
<b>311-312, Food and beverage and tobacco products</b>	0.957	2.156	0.443	1.516	2.676	0.857	0.377	1.743	-0.119	0.732	1.821	0.411
<b>313-314, Textile mills and textile product mills</b>	-2.003	0.009	-2.701	0.325	1.892	-0.698	-4.443	-1.632	-5.487	-2.850	-1.025	-2.736
<b>315-316, Apparel and leather and allied products</b>	-1.165	0.205	-1.652	1.085	1.861	0.578	-3.094	-1.016	-3.978	-2.423	-0.932	-2.480
<b>322, Paper products</b>	-0.583	1.329	-1.252	1.008	2.743	-0.067	-2.789	0.063	-3.561	-0.633	0.578	-0.616
<b>323, Printing and related support activities</b>	-0.124	1.956	-1.003	1.589	3.512	0.383	0.187	2.232	-0.523	-2.851	-0.520	-3.440
<b>324, Petroleum and coal products</b>	0.813	1.676	0.393	0.175	0.873	-0.295	0.752	1.747	0.401	1.805	2.776	1.389
<b>325, Chemical products</b>	3.797	4.545	3.485	4.674	5.531	4.165	3.602	4.568	3.312	2.737	3.113	2.681
<b>326, Plastics and rubber products</b>	1.361	2.980	0.710	2.866	4.358	1.835	-0.137	2.220	-1.016	0.714	1.773	0.836
<b>42, Wholesale trade</b>	2.910	4.318	2.443	3.901	5.860	2.978	2.223	3.908	2.067	2.176	2.533	2.050
<b>44-45, Retail trade</b>	3.050	4.221	2.442	4.000	5.086	3.299	3.530	4.496	3.053	1.222	2.715	0.618
<b>481, Air transportation</b>	1.942	3.295	1.243	5.111	5.620	4.716	-0.914	1.379	-2.231	0.344	1.916	-0.145
<b>482, Rail transportation</b>	-0.401	0.119	-0.708	-0.710	-0.541	-0.869	-0.270	0.445	-0.650	-0.086	0.754	-0.533
<b>483, Water transportation</b>	-0.173	1.183	-0.880	-0.323	0.818	-1.014	-1.905	0.176	-2.820	1.811	2.733	1.299
<b>484, Truck transportation</b>	2.106	4.262	1.253	1.034	4.448	-0.653	3.360	5.152	2.945	2.416	3.114	2.360
<b>485, Transit and ground passenger transportation</b>	1.810	3.176	1.103	4.196	4.763	3.634	0.452	2.599	-0.714	-0.210	1.495	-0.659
<b>486, Pipeline transportation</b>	3.006	3.459	2.652	2.146	2.437	1.799	3.477	3.648	3.336	3.785	4.762	3.211
<b>487, 488, 492, Other transportation and support activities</b>	-0.267	1.083	-0.757	-0.269	1.092	-0.810	-0.962	0.973	-1.484	0.435	1.181	0.053
<b>493, Warehousing and storage</b>	1.515	2.421	1.071	1.749	2.925	1.121	1.545	2.558	1.240	1.150	1.561	0.828
<b>511, 516, Publishing industries, except internet (includes software)</b>	5.204	5.812	4.958	5.131	6.035	4.662	7.405	7.930	7.294	3.151	3.419	3.092
<b>512, Motion picture and sound recording studios</b>	3.312	3.547	3.179	4.978	5.233	4.775	3.187	3.333	3.112	1.073	1.370	0.981
<b>515, 517, Broadcasting and telecommunications</b>	5.404	6.626	4.778	6.186	7.605	5.350	4.601	6.077	3.972	5.085	5.773	4.763
<b>518-519, Data processing, internet publishing, and other information services</b>	15.323	16.079	14.971	16.322	17.667	15.677	12.596	13.239	12.339	16.655	16.679	16.631
<b>521-522, Federal Reserve banks, credit intermediation, and related activities</b>	4.661	6.104	3.997	7.436	8.905	6.293	3.457	5.222	3.216	1.953	3.040	1.530
<b>523, Securities, commodity contracts, and investments</b>	4.867	6.084	4.313	5.623	6.962	4.918	5.882	7.198	5.331	2.791	3.738	2.446
<b>524, Insurance carriers and related activities</b>	5.391	6.526	4.824	8.991	9.870	8.104	3.726	5.379	3.215	2.011	2.985	1.825
<b>525, Funds, trusts, and other financial vehicles</b>	-0.866	0.523	-1.578	1.313	2.411	0.780	0.812	2.112	0.204	-5.532	-3.665	-6.578
<b>531, Real estate</b>	1.055	1.866	0.577	1.599	2.196	1.127	1.586	2.427	1.075	-0.251	0.837	-0.705
<b>532-533, Rental and leasing services and lessors of intangible assets</b>	6.767	8.767	6.310	11.699	13.098	11.244	3.474	7.036	3.357	3.207	4.464	2.411
<b>5411, Legal services</b>	5.258	6.721	4.635	6.521	8.087	5.616	8.394	9.239	7.969	0.469	2.363	0.047

**Table 6d. Capital Services Measures Based on Set 2, Set2-250 (Lower Boundary) and Set2-75 (Upper Boundary) Depreciation Rates for Major Sectors and NIPA Industries, Selected Time Periods**  
(Compound Growth Rates)

Industry	Capital Services											
	1987-2018			1987-2000			2000-2009			2009-2018		
	Capital Stock based on Set 2 SC rates	Lower Bound	Upper Bound	Capital Stock based on Set 2 SC rates	Lower Bound	Upper Bound	Capital Stock based on Set 2 SC rates	Lower Bound	Upper Bound	Capital Stock based on Set 2 SC rates	Lower Bound	Upper Bound
		1985 forward			1985 forward			1985 forward			1985 forward	
<b>5415</b> , Computer systems design and related services	8.491	8.948	8.207	14.423	14.343	14.184	9.429	9.969	9.120	-0.401	0.658	-0.717
<b>5412-5414, 5416-5419</b> , Miscellaneous professional, scientific and technical services	6.979	7.643	6.605	9.430	9.981	8.870	7.745	8.498	7.435	2.798	3.530	2.618
<b>55</b> , Management of companies and enterprises	2.132	3.264	1.573	3.719	4.897	2.885	1.409	2.702	0.904	0.594	1.501	0.369
<b>561</b> , Administrative and support services	8.299	9.571	7.728	10.566	11.814	9.847	8.752	10.592	7.949	4.667	5.427	4.525
<b>562</b> , Waste management and remediation services	0.716	2.476	-0.133	1.254	3.919	-0.106	0.719	1.584	0.365	-0.060	1.309	-0.668
<b>61</b> , Educational services	4.139	4.838	3.715	3.362	3.988	2.951	6.839	7.204	6.588	2.610	3.735	2.002
<b>621</b> , Ambulatory health care services	3.657	5.302	2.945	4.786	6.933	3.546	3.786	5.301	3.527	1.921	2.991	1.509
<b>622-623</b> , Hospitals and nursing and residential care facilities	3.907	5.011	3.333	5.521	6.597	4.924	3.139	4.255	2.653	2.377	3.506	1.748
<b>624</b> , Social assistance	2.096	3.146	1.511	3.651	4.583	2.926	2.634	3.271	2.220	-0.632	0.982	-1.189
<b>711-712</b> , Performing arts, spectator sports, museums, and related activities	2.067	2.410	1.848	3.075	3.279	2.911	2.045	2.248	1.878	0.652	1.329	0.304
<b>713</b> , Amusements, gambling, and recreation industries	3.291	4.186	2.829	3.211	3.868	2.749	3.991	4.964	3.409	2.709	3.872	2.367
<b>721</b> , Accommodation	1.956	3.217	1.293	2.581	3.874	1.816	3.098	4.064	2.659	-0.059	1.444	-0.797
<b>722</b> , Food services and drinking places	0.404	2.239	-0.463	1.943	4.032	0.602	-1.196	0.882	-1.846	-0.187	1.045	-0.602
<b>81</b> , Other services, except government	1.885	3.350	1.128	1.672	3.737	0.508	3.335	4.014	3.195	0.760	2.136	-0.015

**Table 7a. Differences in Capital Stock Growth Rates: BLS Current and Set 1 Revised Depreciation Rates, Selected Time Periods**

(Compound Growth Rates)

Industry	1987-2018		1987-2000		2000-2009		2009-2018	
	BLS official less Set 1 SC rates, 1901 forward	BLS official less Set 1 SC rates, 1985 forward	BLS official less Set 1 SC rates, 1901 forward	BLS official less Set 1 SC rates, 1985 forward	BLS official less Set 1 SC rates, 1901 forward	BLS official less Set 1 SC rates, 1985 forward	BLS official less Set 1 SC rates, 1901 forward	BLS official less Set 1 SC rates, 1985 forward
<b>Private Business Sector</b>	0.200	0.848	0.313	0.698	0.257	1.043	-0.018	0.869
<b>Private Non-Farm Business Sector</b>	0.175	0.894	0.325	0.750	0.166	1.086	-0.034	0.911
<b>Manufacturing Sector</b>	-0.009	0.678	0.046	0.743	0.201	0.849	-0.300	0.412
<b>111-112, Farms</b>	0.033	0.214	-0.074	0.149	0.232	0.265	-0.014	0.256
<b>113-115, Forestry, fishing and related activities</b>	0.164	0.937	0.935	1.246	-0.546	0.662	-0.269	0.757
<b>211, Oil and gas extraction</b>	0.058	1.110	1.087	0.800	-0.503	1.625	-0.888	1.038
<b>212, Mining, except oil and gas</b>	0.494	1.165	1.906	1.024	-0.334	1.229	-0.789	1.310
<b>213, Support activities for mining</b>	-0.160	0.825	1.200	0.997	-1.257	1.039	-1.093	0.346
<b>22, Utilities</b>	0.332	0.712	1.036	0.543	-0.108	0.706	-0.258	0.963
<b>23, Construction</b>	0.152	0.844	0.421	0.884	0.099	1.124	-0.176	0.514
<b>321, Wood products</b>	0.320	0.898	0.339	1.027	1.201	1.162	-0.601	0.444
<b>327, Nonmetallic mineral products</b>	0.123	0.903	0.190	0.747	0.059	1.107	0.089	0.925
<b>331, Primary metals</b>	0.058	0.739	0.725	0.485	0.083	0.946	-0.946	0.898
<b>332, Fabricated metal products</b>	0.211	0.821	0.495	0.640	0.293	1.153	-0.284	0.745
<b>333, Machinery</b>	0.295	0.705	0.265	0.510	0.631	0.995	-0.004	0.687
<b>334, Computer and electronic products</b>	0.170	0.693	-0.033	0.755	0.550	0.888	0.075	0.415
<b>335, Electrical equipment, appliances, and components</b>	0.544	0.694	0.794	0.848	1.049	0.872	-0.327	0.293
<b>336, Transportation equipment</b>	0.162	0.628	0.025	0.648	0.614	0.893	-0.096	0.331
<b>337, Furniture and related products</b>	0.504	0.893	0.269	0.829	1.211	1.341	0.132	0.539
<b>339, Miscellaneous manufacturing</b>	0.165	0.658	0.209	0.650	0.264	0.771	0.004	0.558
<b>311-312, Food and beverage and tobacco products</b>	0.143	0.885	0.307	0.849	0.114	0.991	-0.066	0.830
<b>313-314, Textile mills and textile product mills</b>	0.572	1.009	-0.016	1.159	2.194	1.562	-0.259	0.235
<b>315-316, Apparel and leather and allied products</b>	0.754	0.701	0.410	0.684	1.694	1.094	0.288	0.327
<b>322, Paper products</b>	0.349	1.171	0.561	1.554	0.931	1.491	-0.549	0.295
<b>323, Printing and related support activities</b>	0.693	1.346	0.320	1.456	0.782	1.415	1.123	1.123
<b>324, Petroleum and coal products</b>	-0.157	0.677	0.644	0.616	-0.935	0.706	-0.569	0.739
<b>325, Chemical products</b>	-0.360	0.410	-0.358	0.621	-0.353	0.380	-0.369	0.138
<b>326, Plastics and rubber products</b>	0.247	0.980	0.088	1.341	1.098	1.360	-0.392	0.079
<b>42, Wholesale trade</b>	0.065	0.571	0.071	0.708	0.467	0.713	-0.350	0.231
<b>44-45, Retail trade</b>	0.407	1.144	0.058	0.798	0.494	1.325	0.815	1.457
<b>481, Air transportation</b>	0.398	1.628	-0.125	1.085	1.292	2.539	0.241	1.479
<b>482, Rail transportation</b>	-0.960	0.511	0.107	0.216	-1.386	0.661	-2.112	0.792
<b>483, Water transportation</b>	-0.448	0.968	1.003	0.744	-1.272	1.384	-1.804	0.873
<b>484, Truck transportation</b>	-0.165	1.037	-0.445	1.520	0.002	0.854	0.076	0.511
<b>485, Transit and ground passenger transportation</b>	-1.417	0.854	-3.470	0.636	-0.014	1.141	0.036	0.874
<b>486, Pipeline transportation</b>	-1.349	0.530	0.432	0.290	-3.261	0.627	-2.137	0.790
<b>487, 488, 492, Other transportation and support activities</b>	0.075	0.908	0.588	0.679	0.265	1.238	-0.872	0.910
<b>493, Warehousing and storage</b>	-0.563	0.962	0.027	0.821	-1.165	1.065	-0.815	1.063
<b>511, 516, Publishing industries, except internet (includes software)</b>	-0.298	0.277	-0.142	0.567	-0.678	0.042	-0.153	0.088
<b>512, Motion picture and sound recording studios</b>	-0.001	0.245	0.110	0.295	-0.268	0.171	0.109	0.249
<b>515, 517, Broadcasting and telecommunications</b>	0.282	1.073	0.213	0.816	0.677	1.400	-0.015	1.113
<b>518-519, Data processing, internet publishing, and other information services</b>	-0.556	0.436	-0.867	0.600	-0.996	0.298	0.381	0.331
<b>521-522, Federal Reserve banks, credit intermediation, and related activities</b>	0.413	1.011	0.404	1.043	0.650	1.271	0.190	0.707
<b>523, Securities, commodity contracts, and investments</b>	1.100	1.254	0.902	1.139	1.399	1.395	1.080	1.274
<b>524, Insurance carriers and related activities</b>	0.960	1.162	0.623	1.048	1.628	1.510	0.749	0.967
<b>525, Funds, trusts, and other financial vehicles</b>	0.929	1.625	0.719	1.155	0.471	1.579	1.637	2.296
<b>531, Real estate</b>	0.769	1.034	0.813	0.564	0.550	1.204	0.923	1.535

**Table 7a. Differences in Capital Stock Growth Rates: BLS Current and Set 1 Revised Depreciation Rates, Selected Time Periods**

(Compound Growth Rates)

Industry	1987-2018		1987-2000		2000-2009		2009-2018	
	BLS official less Set 1 SC rates, 1901 forward	BLS official less Set 1 SC rates, 1985 forward	BLS official less Set 1 SC rates, 1901 forward	BLS official less Set 1 SC rates, 1985 forward	BLS official less Set 1 SC rates, 1901 forward	BLS official less Set 1 SC rates, 1985 forward	BLS official less Set 1 SC rates, 1901 forward	BLS official less Set 1 SC rates, 1985 forward
<b>532-533</b> , Rental and leasing services and lessors of intangible assets	-0.331	1.003	-1.552	0.956	0.707	1.502	0.320	0.573
<b>5411</b> , Legal services	0.850	1.140	1.125	1.064	0.063	1.105	1.210	1.281
<b>5415</b> , Computer systems design and related services	0.047	0.700	-0.606	0.550	0.109	0.665	0.855	0.932
<b>5412-5414, 5416-5419</b> , Miscellaneous professional, scientific and technical services	-0.150	0.631	-0.436	0.746	-0.072	0.655	0.173	0.447
<b>55</b> , Management of companies and enterprises	1.473	1.157	1.332	0.841	1.896	1.430	1.249	1.325
<b>561</b> , Administrative and support services	0.014	0.849	0.035	1.112	0.218	1.021	-0.217	0.309
<b>562</b> , Waste management and remediation services	1.234	1.329	0.799	1.068	1.398	1.407	1.684	1.620
<b>61</b> , Educational services	0.408	0.781	0.297	0.590	-0.191	0.621	1.147	1.213
<b>621</b> , Ambulatory health care services	0.534	1.088	0.930	1.523	0.280	0.701	0.224	0.852
<b>622-623</b> , Hospitals and nursing and residential care facilities	0.492	1.209	-0.062	1.036	0.654	1.249	1.114	1.414
<b>624</b> , Social assistance	0.637	1.102	0.621	0.865	0.172	1.123	1.113	1.414
<b>711-712</b> , Performing arts, spectator sports, museums, and related activities	0.217	0.719	-0.142	0.436	0.141	0.763	0.798	1.073
<b>713</b> , Amusements, gambling, and recreation industries	-0.075	1.155	-0.465	0.966	-0.089	1.392	0.505	1.190
<b>721</b> , Accommodation	0.377	1.220	0.740	0.905	-0.155	1.333	0.382	1.552
<b>722</b> , Food services and drinking places	0.573	1.439	0.384	1.411	0.651	1.448	0.763	1.468
<b>81</b> , Other services, except government	0.159	1.188	0.251	1.121	-0.599	1.112	0.786	1.359

**Table 7b. Differences in Capital Stock Growth Rates: BLS Current and Set 2 Revised Depreciation Rates, Selected Time Periods**
*(Compound Growth Rates)*

Industry	1987-2018		1987-2000		2000-2009		2009-2018	
	<i>BLS official less Set 2 SC rates 1901 forward</i>	<i>BLS official less Set 2 SC rates 1985 forward</i>	<i>BLS official less Set 2 SC rates 1901 forward</i>	<i>BLS official less Set 2 SC rates 1985 forward</i>	<i>BLS official less Set 2 SC rates 1901 forward</i>	<i>BLS official less Set 2 SC rates 1985 forward</i>	<i>BLS official less Set 2 SC rates 1901 forward</i>	<i>BLS official less Set 2 SC rates 1985 forward</i>
<b>Private Business Sector</b>	0.117	0.586	0.182	0.535	0.071	0.650	0.069	0.597
<b>Private Non-Farm Business Sector</b>	0.096	0.617	0.189	0.572	-0.006	0.672	0.064	0.625
<b>Manufacturing Sector</b>	0.045	0.408	0.097	0.346	0.167	0.542	-0.152	0.363
<b>111-112, Farms</b>	0.042	0.158	-0.087	0.137	0.244	0.186	0.022	0.161
<b>113-115, Forestry, fishing and related activities</b>	-0.198	0.702	0.059	1.088	-0.455	0.421	-0.319	0.412
<b>211, Oil and gas extraction</b>	0.356	2.086	2.586	1.971	-1.620	2.687	-0.967	1.644
<b>212, Mining, except oil and gas</b>	0.230	0.903	1.197	0.827	-0.109	0.963	-0.874	0.954
<b>213, Support activities for mining</b>	-0.566	0.917	1.784	1.767	-2.755	0.872	-1.916	-0.317
<b>22, Utilities</b>	0.259	0.423	0.689	0.307	0.057	0.422	-0.169	0.594
<b>23, Construction</b>	-0.110	0.680	-0.168	0.844	-0.170	0.691	0.030	0.438
<b>321, Wood products</b>	0.388	0.621	0.468	0.547	0.832	0.807	-0.177	0.539
<b>327, Nonmetallic mineral products</b>	0.232	0.633	0.309	0.380	0.115	0.763	0.236	0.866
<b>331, Primary metals</b>	0.143	0.344	0.664	0.203	0.223	0.435	-0.700	0.456
<b>332, Fabricated metal products</b>	0.122	0.355	0.393	0.251	0.131	0.477	-0.280	0.380
<b>333, Machinery</b>	0.214	0.369	0.230	0.229	0.382	0.495	0.021	0.443
<b>334, Computer and electronic products</b>	0.167	0.445	-0.024	0.344	0.400	0.611	0.200	0.418
<b>335, Electrical equipment, appliances, and components</b>	0.535	0.488	0.539	0.399	1.005	0.703	0.055	0.401
<b>336, Transportation equipment</b>	0.163	0.391	0.109	0.296	0.376	0.560	0.023	0.356
<b>337, Furniture and related products</b>	0.367	0.570	0.189	0.399	0.632	0.762	0.355	0.618
<b>339, Miscellaneous manufacturing</b>	0.183	0.424	0.277	0.315	0.160	0.508	0.072	0.498
<b>311-312, Food and beverage and tobacco products</b>	0.078	0.515	0.222	0.414	0.098	0.628	-0.152	0.545
<b>313-314, Textile mills and textile product mills</b>	0.582	0.651	0.060	0.504	1.488	0.996	0.393	0.507
<b>315-316, Apparel and leather and allied products</b>	0.678	0.492	0.328	0.346	1.223	0.723	0.618	0.465
<b>322, Paper products</b>	0.354	0.680	0.405	0.670	0.726	0.967	-0.098	0.402
<b>323, Printing and related support activities</b>	0.538	0.835	0.263	0.706	0.497	0.914	0.962	0.937
<b>324, Petroleum and coal products</b>	-0.152	0.393	0.416	0.317	-0.570	0.435	-0.576	0.463
<b>325, Chemical products</b>	-0.201	0.266	-0.184	0.312	-0.175	0.317	-0.253	0.149
<b>326, Plastics and rubber products</b>	0.216	0.541	0.099	0.531	0.561	0.755	0.034	0.338
<b>42, Wholesale trade</b>	-0.007	0.353	-0.100	0.417	0.224	0.371	-0.105	0.241
<b>44-45, Retail trade</b>	0.224	0.745	-0.031	0.537	0.200	0.776	0.609	1.011
<b>481, Air transportation</b>	0.349	0.688	0.258	0.382	0.525	0.941	0.302	0.866
<b>482, Rail transportation</b>	-0.619	0.374	0.247	0.146	-0.942	0.498	-1.574	0.584
<b>483, Water transportation</b>	-0.043	0.475	0.671	0.325	-0.177	0.676	-0.987	0.494
<b>484, Truck transportation</b>	-0.167	0.739	-0.494	0.997	-0.181	0.484	0.322	0.616
<b>485, Transit and ground passenger transportation</b>	-1.619	0.889	-4.116	0.569	-0.075	1.198	0.296	1.032
<b>486, Pipeline transportation</b>	-0.852	0.395	0.207	0.153	-1.918	0.476	-1.380	0.677
<b>487, 488, 492, Other transportation and support activities</b>	0.016	0.589	0.433	0.493	0.104	0.762	-0.684	0.557
<b>493, Warehousing and storage</b>	-0.459	0.633	0.092	0.672	-0.850	0.679	-0.864	0.533
<b>511, 516, Publishing industries, except internet (includes software)</b>	-0.200	0.182	-0.085	0.316	-0.460	0.082	-0.112	0.087
<b>512, Motion picture and sound recording studios</b>	-0.012	0.181	0.076	0.220	-0.238	0.112	0.089	0.197
<b>515, 517, Broadcasting and telecommunications</b>	0.289	0.596	0.192	0.409	0.514	0.713	0.200	0.745
<b>518-519, Data processing, internet publishing, and other information services</b>	-0.699	0.232	-1.132	0.393	-0.952	0.036	0.227	0.196
<b>521-522, Federal Reserve banks, credit intermediation, and related activities</b>	0.035	0.438	0.147	0.580	-0.176	0.279	0.086	0.396
<b>523, Securities, commodity contracts, and investments</b>	0.663	0.796	0.477	0.720	0.863	0.868	0.724	0.833
<b>524, Insurance carriers and related activities</b>	0.690	0.784	0.374	0.634	1.032	0.934	0.779	0.837
<b>525, Funds, trusts, and other financial vehicles</b>	0.583	1.262	0.435	1.061	0.140	1.140	1.196	1.647
<b>531, Real estate</b>	0.604	0.600	0.435	0.373	0.651	0.672	0.799	0.851
<b>532-533, Rental and leasing services and lessors of intangible assets</b>	-0.666	0.350	-1.618	0.350	-0.540	0.026	0.518	0.668
<b>5411, Legal services</b>	0.448	0.593	0.678	0.546	-0.214	0.499	0.752	0.748



**Table 7b. Differences in Capital Stock Growth Rates: BLS Current and Set 2 Revised Depreciation Rates, Selected Time Periods**

(Compound Growth Rates)

Industry	1987-2018		1987-2000		2000-2009		2009-2018	
	<i>BLS official less Set 2 SC rates 1901 forward</i>	<i>BLS official less Set 2 SC rates 1985 forward</i>	<i>BLS official less Set 2 SC rates 1901 forward</i>	<i>BLS official less Set 2 SC rates 1985 forward</i>	<i>BLS official less Set 2 SC rates 1901 forward</i>	<i>BLS official less Set 2 SC rates 1985 forward</i>	<i>BLS official less Set 2 SC rates 1901 forward</i>	<i>BLS official less Set 2 SC rates 1985 forward</i>
<b>5415</b> , <i>Computer systems design and related services</i>	-0.086	0.401	-0.548	0.315	-0.081	0.344	0.522	0.566
<b>5412-5414, 5416-5419</b> , <i>Miscellaneous professional, scientific and technical services</i>	-0.166	0.391	-0.362	0.459	-0.221	0.336	0.162	0.350
<b>55</b> , <i>Management of companies and enterprises</i>	1.123	0.845	0.954	0.597	1.323	1.008	1.158	1.029
<b>561</b> , <i>Administrative and support services</i>	-0.131	0.515	-0.146	0.724	0.028	0.638	-0.267	0.100
<b>562</b> , <i>Waste management and remediation services</i>	0.853	0.990	0.445	0.817	0.874	0.932	1.405	1.291
<b>61</b> , <i>Educational services</i>	0.217	0.521	0.068	0.393	-0.166	0.413	0.801	0.812
<b>621</b> , <i>Ambulatory health care services</i>	0.382	0.650	0.456	0.696	0.436	0.627	0.224	0.608
<b>622-623</b> , <i>Hospitals and nursing and residential care facilities</i>	0.148	0.711	-0.228	0.648	0.185	0.677	0.641	0.834
<b>624</b> , <i>Social assistance</i>	0.420	0.769	0.500	0.697	-0.034	0.693	0.754	0.945
<b>711-712</b> , <i>Performing arts, spectator sports, museums, and related activities</i>	0.076	0.523	-0.222	0.340	-0.007	0.509	0.577	0.794
<b>713</b> , <i>Amusements, gambling, and recreation industries</i>	-0.221	0.892	-0.578	0.832	-0.287	0.951	0.363	0.921
<b>721</b> , <i>Accommodation</i>	0.258	0.935	0.566	0.744	-0.217	0.942	0.287	1.197
<b>722</b> , <i>Food services and drinking places</i>	0.358	0.919	0.207	0.870	0.357	0.908	0.574	0.998
<b>81</b> , <i>Other services, except government</i>	0.060	0.754	0.255	0.800	-0.707	0.538	0.548	0.906

**Table 7c. Differences in Capital Stock Growth Rates: BLS Current Compared to BLS-125 (Lower Boundary) and BLS-50 (Upper Boundary) Depreciation Rates, Selected Time Periods**
*(Compound Growth Rates)*

Industry	1987-2018		1987-2000		2000-2009		2009-2018	
	<i>BLS official less Lower Bound rates 1985 forward</i>	<i>BLS official less Upper Bound rates 1985 forward</i>	<i>BLS official less Lower Bound rates 1985 forward</i>	<i>BLS official less Upper Bound rates 1985 forward</i>	<i>BLS official less Lower Bound rates 1985 forward</i>	<i>BLS official less Upper Bound rates 1985 forward</i>	<i>BLS official less Lower Bound rates 1985 forward</i>	<i>BLS official less Upper Bound rates 1985 forward</i>
<b>Private Business Sector</b>	-0.231	0.799	-0.199	0.792	-0.286	0.900	-0.222	0.708
<b>Private Non-Farm Business Sector</b>	-0.239	0.838	-0.210	0.845	-0.293	0.930	-0.229	0.737
<b>Manufacturing Sector</b>	-0.235	0.719	-0.219	0.858	-0.311	0.851	-0.180	0.388
<b>111-112, Farms</b>	-0.103	0.258	-0.078	0.242	-0.145	0.284	-0.097	0.255
<b>113-115, Forestry, fishing and related activities</b>	-0.348	1.189	-0.545	1.850	-0.253	0.391	-0.152	1.007
<b>211, Oil and gas extraction</b>	-0.498	1.757	-0.271	1.525	-0.670	2.411	-0.655	1.430
<b>212, Mining, except oil and gas</b>	-0.271	0.992	-0.349	1.248	-0.262	0.651	-0.167	0.953
<b>213, Support activities for mining</b>	-0.516	1.728	-0.438	1.923	-0.588	1.371	-0.560	1.799
<b>22, Utilities</b>	-0.119	0.576	-0.128	0.505	-0.107	0.470	-0.118	0.787
<b>23, Construction</b>	-0.386	1.134	-0.318	1.115	-0.474	1.605	-0.396	0.700
<b>321, Wood products</b>	-0.313	0.922	-0.324	1.104	-0.423	1.109	-0.187	0.470
<b>327, Nonmetallic mineral products</b>	-0.290	0.973	-0.206	0.826	-0.332	1.208	-0.370	0.950
<b>331, Primary metals</b>	-0.222	0.829	-0.141	0.591	-0.262	1.008	-0.299	0.994
<b>332, Fabricated metal products</b>	-0.269	0.915	-0.186	0.815	-0.354	1.245	-0.302	0.725
<b>333, Machinery</b>	-0.223	0.793	-0.153	0.612	-0.291	1.087	-0.252	0.753
<b>334, Computer and electronic products</b>	-0.237	0.669	-0.213	0.818	-0.331	0.876	-0.178	0.256
<b>335, Electrical equipment, appliances, and components</b>	-0.231	0.675	-0.266	0.966	-0.327	0.771	-0.084	0.157
<b>336, Transportation equipment</b>	-0.249	0.734	-0.224	0.827	-0.352	1.010	-0.183	0.321
<b>337, Furniture and related products</b>	-0.321	0.884	-0.244	0.912	-0.461	1.379	-0.291	0.351
<b>339, Miscellaneous manufacturing</b>	-0.232	0.705	-0.208	0.744	-0.262	0.761	-0.238	0.593
<b>311-312, Food and beverage and tobacco products</b>	-0.268	0.922	-0.241	0.963	-0.316	0.967	-0.261	0.816
<b>313-314, Textile mills and textile product mills</b>	-0.375	0.932	-0.289	1.206	-0.591	1.406	-0.279	0.059
<b>315-316, Apparel and leather and allied products</b>	-0.243	0.624	-0.183	0.731	-0.384	0.974	-0.185	0.117
<b>322, Paper products</b>	-0.425	1.201	-0.403	1.743	-0.636	1.362	-0.242	0.261
<b>323, Printing and related support activities</b>	-0.471	1.384	-0.417	1.667	-0.549	1.392	-0.470	0.979
<b>324, Petroleum and coal products</b>	-0.203	0.739	-0.152	0.675	-0.236	0.741	-0.244	0.831
<b>325, Chemical products</b>	-0.135	0.411	-0.171	0.694	-0.159	0.289	-0.061	0.126
<b>326, Plastics and rubber products</b>	-0.374	0.983	-0.400	1.551	-0.570	1.212	-0.139	-0.062
<b>42, Wholesale trade</b>	-0.183	0.525	-0.270	0.869	-0.220	0.470	-0.020	0.082
<b>44-45, Retail trade</b>	-0.199	0.767	-0.158	0.617	-0.226	0.833	-0.232	0.915
<b>481, Air transportation</b>	-0.347	1.413	-0.224	1.034	-0.461	2.112	-0.408	1.249
<b>482, Rail transportation</b>	-0.093	0.412	-0.049	0.213	-0.126	0.527	-0.126	0.587
<b>483, Water transportation</b>	-0.278	1.104	-0.266	0.898	-0.336	1.488	-0.238	1.017
<b>484, Truck transportation</b>	-0.456	1.443	-0.726	2.296	-0.319	1.056	-0.198	0.574
<b>485, Transit and ground passenger transportation</b>	-0.447	1.467	-0.232	0.937	-0.613	2.311	-0.585	1.369
<b>486, Pipeline transportation</b>	-0.124	0.488	-0.071	0.259	-0.133	0.571	-0.195	0.746
<b>487, 488, 492, Other transportation and support activities</b>	-0.320	0.989	-0.332	1.091	-0.366	1.168	-0.256	0.660
<b>493, Warehousing and storage</b>	-0.187	0.705	-0.198	0.766	-0.205	0.697	-0.155	0.626
<b>511, 516, Publishing industries, except internet (includes software)</b>	-0.104	0.254	-0.169	0.614	-0.079	-0.054	-0.034	0.036
<b>512, Motion picture and sound recording studios</b>	-0.056	0.195	-0.074	0.273	-0.036	0.090	-0.052	0.192
<b>515, 517, Broadcasting and telecommunications</b>	-0.211	0.805	-0.189	0.635	-0.218	0.782	-0.236	1.071
<b>518-519, Data processing, internet publishing, and other information services</b>	-0.168	0.476	-0.172	0.637	-0.183	0.287	-0.144	0.432
<b>521-522, Federal Reserve banks, credit intermediation, and related activities</b>	-0.387	1.188	-0.398	1.410	-0.515	1.474	-0.246	0.590
<b>523, Securities, commodity contracts, and investments</b>	-0.218	0.905	-0.236	0.942	-0.237	0.840	-0.173	0.917
<b>524, Insurance carriers and related activities</b>	-0.237	0.874	-0.238	0.992	-0.351	1.018	-0.121	0.566
<b>525, Funds, trusts, and other financial vehicles</b>	-0.238	1.103	-0.170	0.823	-0.270	1.081	-0.299	1.499
<b>531, Real estate</b>	-0.187	0.842	-0.126	0.595	-0.205	0.924	-0.255	1.114
<b>532-533, Rental and leasing services and lessors of intangible assets</b>	-0.487	1.631	-0.504	1.857	-0.716	2.165	-0.237	0.782
<b>5411, Legal services</b>	-0.341	0.984	-0.292	0.997	-0.395	1.117	-0.359	0.836
<b>5415, Computer systems design and related services</b>	-0.271	0.671	-0.163	0.574	-0.285	0.660	-0.403	0.810

**Table 7c. Differences in Capital Stock Growth Rates: BLS Current Compared to BLS-125 (Lower Boundary) and BLS-50 (Upper Boundary) Depreciation Rates, Selected Time Periods**  
(Compound Growth Rates)

Industry	1987-2018		1987-2000		2000-2009		2009-2018	
	BLS official less Lower Bound rates 1985 forward	BLS official less Upper Bound rates 1985 forward	BLS official less Lower Bound rates 1985 forward	BLS official less Upper Bound rates 1985 forward	BLS official less Lower Bound rates 1985 forward	BLS official less Upper Bound rates 1985 forward	BLS official less Lower Bound rates 1985 forward	BLS official less Upper Bound rates 1985 forward
<b>5412-5414, 5416-5419, Miscellaneous professional, scientific and technical services</b>	-0.215	0.634	-0.211	0.789	-0.255	0.677	-0.182	0.374
<b>55, Management of companies and enterprises</b>	-0.198	0.841	-0.168	0.679	-0.229	0.903	-0.210	1.006
<b>561, Administrative and support services</b>	-0.338	0.963	-0.341	1.330	-0.488	1.256	-0.184	0.153
<b>562, Waste management and remediation services</b>	-0.269	1.083	-0.303	0.999	-0.191	0.873	-0.299	1.412
<b>61, Educational services</b>	-0.122	0.565	-0.118	0.500	-0.094	0.446	-0.154	0.774
<b>621, Ambulatory health care services</b>	-0.304	1.006	-0.369	1.434	-0.337	0.625	-0.178	0.776
<b>622-623, Hospitals and nursing and residential care facilities</b>	-0.187	0.831	-0.193	0.832	-0.206	0.747	-0.160	0.912
<b>624, Social assistance</b>	-0.206	0.821	-0.173	0.724	-0.231	0.847	-0.228	0.930
<b>711-712, Performing arts, spectator sports, museums, and related activities</b>	-0.141	0.558	-0.098	0.384	-0.146	0.568	-0.197	0.794
<b>713, Amusements, gambling, and recreation industries</b>	-0.232	0.885	-0.205	0.860	-0.311	1.085	-0.190	0.718
<b>721, Accommodation</b>	-0.198	0.841	-0.161	0.694	-0.221	0.886	-0.228	1.005
<b>722, Food services and drinking places</b>	-0.313	1.045	-0.357	1.260	-0.390	0.927	-0.172	0.858
<b>81, Other services, except government</b>	-0.288	0.968	-0.289	1.076	-0.302	0.834	-0.272	0.948

**Table 7d. Differences in Capital Stock Growth Rates: Set 2 Compared to Set2-250 (Lower Boundary) and Set2-75 (Upper Boundary) Depreciation Rates, Selected Time Periods**  
(Compound Growth Rates)

Industry	1987-2018		1987-2000		2000-2009		2009-2018	
	Set 2 less Lower Bound rates 1985 forward	Set 2 less Upper Bound rates 1985 forward	Set 2 less Lower Bound rates 1985 forward	Set 2 less Upper Bound rates 1985 forward	Set 2 less Lower Bound rates 1985 forward	Set 2 less Upper Bound rates 1985 forward	Set 2 less Lower Bound rates 1985 forward	Set 2 less Upper Bound rates 1985 forward
<b>Private Business Sector</b>	-1.015	0.421	-0.882	0.429	-1.194	0.480	-1.028	0.350
<b>Private Non-Farm Business Sector</b>	-1.059	0.445	-0.938	0.462	-1.227	0.499	-1.066	0.367
<b>Manufacturing Sector</b>	-0.979	0.351	-0.832	0.441	-1.302	0.455	-0.867	0.117
<b>111-112, Farms</b>	-0.380	0.113	-0.282	0.099	-0.493	0.120	-0.407	0.127
<b>113-115, Forestry, fishing and related activities</b>	-1.416	0.598	-2.122	0.896	-0.997	0.265	-0.793	0.490
<b>211, Oil and gas extraction</b>	-2.159	0.850	-2.025	0.919	-2.766	0.653	-1.738	0.949
<b>212, Mining, except oil and gas</b>	-1.332	0.607	-1.470	0.724	-1.405	0.315	-1.056	0.727
<b>213, Support activities for mining</b>	-1.663	0.748	-2.325	1.036	-1.585	-0.141	-0.741	1.221
<b>22, Utilities</b>	-0.664	0.372	-0.566	0.293	-0.667	0.365	-0.803	0.495
<b>23, Construction</b>	-1.518	0.598	-1.363	0.602	-1.686	0.782	-1.573	0.412
<b>321, Wood products</b>	-1.379	0.457	-1.255	0.553	-1.855	0.591	-1.078	0.182
<b>327, Nonmetallic mineral products</b>	-1.256	0.482	-0.825	0.432	-1.479	0.653	-1.652	0.385
<b>331, Primary metals</b>	-0.881	0.407	-0.529	0.288	-1.077	0.523	-1.195	0.460
<b>332, Fabricated metal products</b>	-1.001	0.431	-0.669	0.379	-1.322	0.628	-1.158	0.305
<b>333, Machinery</b>	-0.891	0.387	-0.573	0.295	-1.190	0.562	-1.040	0.339
<b>334, Computer and electronic products</b>	-1.005	0.337	-0.803	0.441	-1.374	0.489	-0.921	0.042
<b>335, Electrical equipment, appliances, and components</b>	-1.068	0.335	-0.998	0.528	-1.523	0.456	-0.711	-0.065
<b>336, Transportation equipment</b>	-1.038	0.367	-0.820	0.438	-1.472	0.571	-0.914	0.058
<b>337, Furniture and related products</b>	-1.349	0.467	-0.921	0.503	-1.836	0.763	-1.469	0.123
<b>339, Miscellaneous manufacturing</b>	-0.978	0.342	-0.799	0.392	-1.132	0.399	-1.080	0.214
<b>311-312, Food and beverage and tobacco products</b>	-1.123	0.446	-0.935	0.491	-1.362	0.508	-1.155	0.319
<b>313-314, Textile mills and textile product mills</b>	-1.630	0.426	-1.152	0.608	-2.452	0.707	-1.473	-0.118
<b>315-316, Apparel and leather and allied products</b>	-1.075	0.300	-0.731	0.393	-1.612	0.520	-1.019	-0.053
<b>322, Paper products</b>	-1.765	0.557	-1.562	0.853	-2.538	0.647	-1.268	0.041
<b>323, Printing and related support activities</b>	-1.952	0.691	-1.612	0.865	-2.197	0.716	-2.187	0.423
<b>324, Petroleum and coal products</b>	-0.842	0.383	-0.631	0.362	-0.966	0.372	-1.028	0.425
<b>325, Chemical products</b>	-0.589	0.192	-0.680	0.350	-0.707	0.149	-0.342	0.007
<b>326, Plastics and rubber products</b>	-1.500	0.500	-1.419	0.815	-2.190	0.703	-0.920	-0.156
<b>42, Wholesale trade</b>	-0.809	0.272	-1.009	0.416	-0.962	0.328	-0.370	0.009
<b>44-45, Retail trade</b>	-1.043	0.468	-0.770	0.396	-1.141	0.555	-1.335	0.483
<b>481, Air transportation</b>	-1.456	0.714	-0.878	0.496	-1.962	1.083	-1.769	0.651
<b>482, Rail transportation</b>	-0.522	0.277	-0.233	0.140	-0.686	0.367	-0.781	0.388
<b>483, Water transportation</b>	-1.106	0.555	-0.939	0.435	-1.518	0.791	-0.932	0.492
<b>484, Truck transportation</b>	-1.962	0.832	-2.717	1.180	-1.626	0.885	-1.198	0.264
<b>485, Transit and ground passenger transportation</b>	-1.857	0.776	-0.992	0.522	-2.466	1.226	-2.474	0.683
<b>486, Pipeline transportation</b>	-0.616	0.331	-0.296	0.152	-0.713	0.440	-0.996	0.489
<b>487, 488, 492, Other transportation and support activities</b>	-1.345	0.497	-1.240	0.524	-1.658	0.647	-1.184	0.305
<b>493, Warehousing and storage</b>	-0.911	0.427	-0.934	0.417	-0.965	0.423	-0.826	0.444
<b>511, 516, Publishing industries, except internet (includes software)</b>	-0.422	0.122	-0.679	0.318	-0.281	-0.046	-0.188	0.005
<b>512, Motion picture and sound recording studios</b>	-0.276	0.095	-0.338	0.160	-0.193	0.062	-0.271	0.038
<b>515, 517, Broadcasting and telecommunications</b>	-1.001	0.513	-0.780	0.397	-1.151	0.590	-1.165	0.601
<b>518-519, Data processing, internet publishing, and other information services</b>	-0.549	0.208	-0.709	0.333	-0.476	0.078	-0.383	0.156
<b>521-522, Federal Reserve banks, credit intermediation, and related activities</b>	-1.523	0.626	-1.464	0.692	-1.695	0.789	-1.436	0.370
<b>523, Securities, commodity contracts, and investments</b>	-1.187	0.574	-1.131	0.656	-1.325	0.642	-1.128	0.393
<b>524, Insurance carriers and related activities</b>	-1.278	0.542	-1.073	0.637	-1.722	0.797	-1.114	0.156
<b>525, Funds, trusts, and other financial vehicles</b>	-1.403	0.717	-1.097	0.540	-1.305	0.621	-1.906	1.042
<b>531, Real estate</b>	-0.881	0.442	-0.562	0.334	-0.979	0.536	-1.238	0.502
<b>532-533, Rental and leasing services and lessors of intangible assets</b>	-1.747	0.763	-1.515	0.714	-2.157	1.142	-1.668	0.457
<b>5411, Legal services</b>	-1.385	0.558	-1.170	0.566	-1.358	0.554	-1.713	0.551
<b>5415, Computer systems design and related services</b>	-1.004	0.338	-0.631	0.305	-0.971	0.304	-1.530	0.411
<b>5412-5414, 5416-5419, Miscellaneous professional, scientific and technical services</b>	-0.876	0.320	-0.867	0.407	-0.934	0.317	-0.833	0.200
<b>55, Management of companies and enterprises</b>	-1.106	0.479	-0.839	0.441	-1.303	0.636	-1.283	0.377

**Table 7d. Differences in Capital Stock Growth Rates: Set 2 Compared to Set2-250 (Lower Boundary) and Set2-75 (Upper Boundary) Depreciation Rates, Selected Time Periods**  
(Compound Growth Rates)

Industry	1987-2018		1987-2000		2000-2009		2009-2018	
	<i>Set 2 less Lower Bound rates 1985 forward</i>	<i>Set 2 less Upper Bound rates 1985 forward</i>	<i>Set 2 less Lower Bound rates 1985 forward</i>	<i>Set 2 less Upper Bound rates 1985 forward</i>	<i>Set 2 less Lower Bound rates 1985 forward</i>	<i>Set 2 less Upper Bound rates 1985 forward</i>	<i>Set 2 less Lower Bound rates 1985 forward</i>	<i>Set 2 less Upper Bound rates 1985 forward</i>
<b>561, Administrative and support services</b>	-1.276	0.475	-1.370	0.737	-1.717	0.590	-0.708	-0.009
<b>562, Waste management and remediation services</b>	-1.461	0.707	-1.368	0.649	-1.302	0.745	-1.752	0.748
<b>61, Educational services</b>	-0.763	0.399	-0.608	0.314	-0.621	0.330	-1.124	0.589
<b>621, Ambulatory health care services</b>	-1.391	0.543	-1.487	0.706	-1.509	0.380	-1.138	0.475
<b>622-623, Hospitals and nursing and residential care facilities</b>	-1.086	0.540	-0.972	0.488	-1.134	0.516	-1.200	0.638
<b>624, Social assistance</b>	-1.121	0.529	-0.917	0.490	-1.107	0.533	-1.421	0.579
<b>711-712, Performing arts, spectator sports, museums, and related activities</b>	-0.750	0.363	-0.478	0.251	-0.756	0.397	-1.128	0.487
<b>713, Amusements, gambling, and recreation industries</b>	-1.206	0.590	-1.063	0.555	-1.457	0.756	-1.160	0.473
<b>721, Accomodation</b>	-1.134	0.552	-0.897	0.464	-1.171	0.579	-1.431	0.649
<b>722, Food services and drinking places</b>	-1.523	0.650	-1.488	0.741	-1.772	0.644	-1.323	0.527
<b>81, Other services, except government</b>	-1.327	0.575	-1.276	0.599	-1.237	0.473	-1.490	0.643

**Table 8a. Differences in Capital Services Growth Rates: BLS Current and Set 1 Revised Depreciation Rates, Selected Time Periods**

(Compound Growth Rates)

Industry	1987-2018		1987-2000		2000-2009		2009-2018	
	<i>BLS official less Set 1 SC rates 1901 forward</i>	<i>BLS official less Set 1 SC rates 1985 forward</i>	<i>BLS official less Set 1 SC rates 1901 forward</i>	<i>BLS official less Set 1 SC rates 1985 forward</i>	<i>BLS official less Set 1 SC rates 1901 forward</i>	<i>BLS official less Set 1 SC rates 1985 forward</i>	<i>BLS official less Set 1 SC rates 1901 forward</i>	<i>BLS official less Set 1 SC rates 1985 forward</i>
<b>Private Business Sector</b>	0.308	0.890	0.304	0.959	0.368	0.937	0.254	0.746
<b>Private Non-Farm Business Sector</b>	0.316	0.904	0.313	0.970	0.375	0.955	0.262	0.760
<b>Manufacturing Sector</b>	0.156	0.818	0.224	0.969	0.277	0.924	-0.062	0.495
<b>111-112, Farms</b>	0.059	0.435	0.074	0.686	0.140	0.293	-0.047	0.210
<b>113-115, Forestry, fishing and related activities</b>	0.171	0.842	0.865	1.483	-0.616	0.292	-0.077	0.438
<b>211, Oil and gas extraction</b>	0.084	1.098	1.121	0.839	-0.448	1.568	-0.903	1.001
<b>212, Mining, except oil and gas</b>	0.109	1.277	1.357	1.287	-0.811	1.318	-0.840	1.221
<b>213, Support activities for mining</b>	-0.081	0.947	1.037	1.128	-1.115	0.928	-0.715	0.697
<b>22, Utilities</b>	0.439	0.785	1.149	1.019	-0.084	0.497	-0.076	0.734
<b>23, Construction</b>	0.234	0.777	-0.042	0.643	0.694	1.278	0.170	0.476
<b>321, Wood products</b>	0.169	1.281	-0.074	1.762	0.939	1.378	-0.258	0.489
<b>327, Nonmetallic mineral products</b>	0.265	1.146	0.299	1.159	0.178	1.196	0.302	1.078
<b>331, Primary metals</b>	0.302	0.860	0.855	0.736	0.287	0.926	-0.491	0.973
<b>332, Fabricated metal products</b>	0.312	0.897	0.514	0.805	0.341	1.101	-0.008	0.823
<b>333, Machinery</b>	0.433	0.794	0.306	0.649	0.766	1.030	0.270	0.756
<b>334, Computer and electronic products</b>	0.320	0.668	0.061	0.768	0.745	0.920	0.256	0.281
<b>335, Electrical equipment, appliances, and components</b>	0.571	0.857	0.679	1.107	1.031	1.050	-0.046	0.303
<b>336, Transportation equipment</b>	0.144	0.592	-0.054	0.665	0.606	0.818	-0.041	0.260
<b>337, Furniture and related products</b>	0.576	1.068	0.109	0.979	1.252	1.514	0.558	0.752
<b>339, Miscellaneous manufacturing</b>	0.295	0.771	0.217	0.858	0.310	0.685	0.393	0.733
<b>311-312, Food and beverage and tobacco products</b>	0.197	0.985	0.364	1.092	0.164	0.997	-0.010	0.820
<b>313-314, Textile mills and textile product mills</b>	0.773	1.498	-0.014	1.872	2.435	2.198	0.172	0.257
<b>315-316, Apparel and leather and allied products</b>	1.010	1.018	0.267	0.818	2.059	1.683	0.984	0.626
<b>322, Paper products</b>	0.452	1.392	0.624	1.918	1.016	1.741	-0.370	0.284
<b>323, Printing and related support activities</b>	0.764	1.603	0.284	1.864	0.720	1.421	1.469	1.417
<b>324, Petroleum and coal products</b>	-0.059	0.754	0.840	0.760	-0.911	0.764	-0.531	0.734
<b>325, Chemical products</b>	-0.039	0.610	-0.099	0.862	0.136	0.628	-0.128	0.233
<b>326, Plastics and rubber products</b>	0.263	1.188	-0.069	1.677	1.245	1.579	-0.261	0.096
<b>42, Wholesale trade</b>	0.231	0.820	0.358	1.218	0.544	0.826	-0.262	0.249
<b>44-45, Retail trade</b>	0.611	1.305	0.128	1.172	0.425	1.009	1.470	1.782
<b>481, Air transportation</b>	0.546	1.619	-0.698	0.733	2.220	2.985	0.551	1.450
<b>482, Rail transportation</b>	-0.884	0.529	-0.085	0.244	-1.091	0.695	-1.852	0.778
<b>483, Water transportation</b>	0.004	1.288	0.905	1.184	-0.006	1.823	-1.332	0.884
<b>484, Truck transportation</b>	-0.013	1.073	-0.417	1.800	0.329	0.761	0.232	0.320
<b>485, Transit and ground passenger transportation</b>	-0.014	0.969	-1.666	0.702	1.263	1.391	0.992	0.920
<b>486, Pipeline transportation</b>	-0.827	0.600	0.137	0.535	-1.564	0.574	-1.516	0.722
<b>487, 488, 492, Other transportation and support activities</b>	-0.042	0.796	-0.002	0.519	0.307	1.192	-0.454	0.796
<b>493, Warehousing and storage</b>	-0.504	0.855	-0.080	0.874	-1.085	0.908	-0.537	0.775
<b>511, 516, Publishing industries, except internet (includes software)</b>	0.089	0.453	0.227	0.767	-0.053	0.289	0.031	0.165
<b>512, Motion picture and sound recording studios</b>	0.091	0.240	0.060	0.255	0.023	0.159	0.201	0.298
<b>515, 517, Broadcasting and telecommunications</b>	0.450	1.021	0.052	1.023	0.835	1.129	0.630	0.909
<b>518-519, Data processing, internet publishing, and other information services</b>	-0.001	0.509	-0.048	0.809	0.003	0.530	0.064	0.051

**Table 8a. Differences in Capital Services Growth Rates: BLS Current and Set 1 Revised Depreciation Rates, Selected Time Periods**
*(Compound Growth Rates)*

Industry	1987-2018		1987-2000		2000-2009		2009-2018	
	<i>BLS official less Set 1 SC rates 1901 forward</i>	<i>BLS official less Set 1 SC rates 1985 forward</i>	<i>BLS official less Set 1 SC rates 1901 forward</i>	<i>BLS official less Set 1 SC rates 1985 forward</i>	<i>BLS official less Set 1 SC rates 1901 forward</i>	<i>BLS official less Set 1 SC rates 1985 forward</i>	<i>BLS official less Set 1 SC rates 1901 forward</i>	<i>BLS official less Set 1 SC rates 1985 forward</i>
<b>521-522</b> , <i>Federal Reserve banks, credit intermediation, and related activities</i>	0.487	0.936	0.352	1.067	0.688	1.071	0.472	0.621
<b>523</b> , <i>Securities, commodity contracts, and investments</i>	0.898	1.102	0.450	1.073	1.268	1.158	1.165	1.087
<b>524</b> , <i>Insurance carriers and related activities</i>	1.144	1.190	1.134	1.437	1.370	1.228	0.933	0.818
<b>525</b> , <i>Funds, trusts, and other financial vehicles</i>	0.959	1.606	0.709	1.143	0.470	1.560	1.751	2.271
<b>531</b> , <i>Real estate</i>	0.750	0.764	0.870	0.381	0.432	0.811	0.890	1.261
<b>532-533</b> , <i>Rental and leasing services and lessors of intangible assets</i>	0.012	1.049	-1.169	0.965	1.085	1.510	0.503	0.699
<b>5411</b> , <i>Legal services</i>	0.855	1.248	0.976	1.498	0.228	0.847	1.266	1.278
<b>5415</b> , <i>Computer systems design and related services</i>	0.271	0.518	-0.171	0.364	0.543	0.634	0.578	0.602
<b>5412-5414, 5416-5419</b> , <i>Miscellaneous professional, scientific and technical services</i>	0.135	0.609	-0.082	0.757	0.283	0.576	0.286	0.438
<b>55</b> , <i>Management of companies and enterprises</i>	1.277	1.166	1.259	1.268	1.585	1.277	0.995	0.914
<b>561</b> , <i>Administrative and support services</i>	0.337	0.947	-0.028	1.120	1.085	1.362	0.114	0.309
<b>562</b> , <i>Waste management and remediation services</i>	1.330	1.357	1.069	1.595	1.171	0.893	1.860	1.480
<b>61</b> , <i>Educational services</i>	0.401	0.780	0.199	0.636	-0.122	0.522	1.193	1.235
<b>621</b> , <i>Ambulatory health care services</i>	0.479	1.456	0.709	2.489	0.252	0.686	0.381	0.755
<b>622-623</b> , <i>Hospitals and nursing and residential care facilities</i>	0.467	1.229	-0.198	1.155	0.647	1.125	1.215	1.436
<b>624</b> , <i>Social assistance</i>	0.655	1.034	0.599	0.925	0.092	0.779	1.275	1.431
<b>711-712</b> , <i>Performing arts, spectator sports, museums, and related activities</i>	0.003	0.344	-0.320	0.147	-0.039	0.283	0.499	0.683
<b>713</b> , <i>Amusements, gambling, and recreation industries</i>	-0.372	0.633	-1.099	0.498	-0.079	0.655	0.379	0.806
<b>721</b> , <i>Accommodation</i>	0.364	1.226	0.730	1.239	-0.285	1.082	0.478	1.348
<b>722</b> , <i>Food services and drinking places</i>	0.585	1.740	0.350	2.374	0.762	1.362	0.737	1.220
<b>81</b> , <i>Other services, except government</i>	0.186	1.261	-0.032	1.702	-0.688	0.416	1.344	1.456

**Table 8b. Differences in Capital Services Growth Rates: BLS Current and Set 2 Revised Depreciation Rates, Selected Time Periods**
*(Compound Growth Rates)*

Industry	1987-2018		1987-2000		2000-2009		2009-2018	
	<i>BLS official less Set 2 SC rates, 1901 forward</i>	<i>BLS official less Set 2 SC rates, 1985 forward</i>	<i>BLS official less Set 2 SC rates, 1901 forward</i>	<i>BLS official less Set 2 SC rates, 1985 forward</i>	<i>BLS official less Set 2 SC rates, 1901 forward</i>	<i>BLS official less Set 2 SC rates, 1985 forward</i>	<i>BLS official less Set 2 SC rates, 1901 forward</i>	<i>BLS official less Set 2 SC rates, 1985 forward</i>
<b>Private Business Sector</b>	0.220	0.589	0.175	0.603	0.192	0.612	0.312	0.546
<b>Private Non-Farm Business Sector</b>	0.226	0.592	0.185	0.594	0.193	0.622	0.317	0.559
<b>Manufacturing Sector</b>	0.142	0.431	0.183	0.385	0.184	0.515	0.043	0.414
<b>111-112, Farms</b>	0.096	0.467	-0.089	0.882	0.221	0.248	0.238	0.081
<b>113-115, Forestry, fishing and related activities</b>	-0.143	0.755	-0.063	1.385	-0.430	0.285	0.026	0.286
<b>211, Oil and gas extraction</b>	0.275	2.066	2.262	1.830	-1.479	2.671	-0.903	1.797
<b>212, Mining, except oil and gas</b>	-0.053	1.072	0.660	1.205	-0.376	1.017	-0.797	0.929
<b>213, Support activities for mining</b>	-0.578	1.018	1.058	1.552	-1.801	1.090	-1.808	0.141
<b>22, Utilities</b>	0.345	0.428	0.697	0.499	0.182	0.320	-0.004	0.434
<b>23, Construction</b>	-0.022	0.770	-0.565	0.913	0.364	0.845	0.356	0.499
<b>321, Wood products</b>	0.228	0.676	0.248	0.778	0.430	0.696	-0.003	0.507
<b>327, Nonmetallic mineral products</b>	0.236	0.646	0.299	0.506	0.036	0.567	0.344	0.924
<b>331, Primary metals</b>	0.349	0.405	0.753	0.297	0.467	0.455	-0.359	0.510
<b>332, Fabricated metal products</b>	0.231	0.387	0.369	0.268	0.270	0.442	-0.007	0.502
<b>333, Machinery</b>	0.291	0.381	0.226	0.241	0.440	0.450	0.230	0.507
<b>334, Computer and electronic products</b>	0.225	0.341	0.064	0.282	0.383	0.481	0.289	0.283
<b>335, Electrical equipment, appliances, and components</b>	0.483	0.504	0.396	0.437	0.777	0.639	0.313	0.466
<b>336, Transportation equipment</b>	0.246	0.314	0.030	0.218	0.286	0.391	0.510	0.371
<b>337, Furniture and related products</b>	0.397	0.594	0.120	0.397	0.575	0.753	0.606	0.714
<b>339, Miscellaneous manufacturing</b>	0.241	0.416	0.240	0.342	0.191	0.393	0.291	0.545
<b>311-312, Food and beverage and tobacco products</b>	0.134	0.556	0.240	0.487	0.169	0.621	-0.054	0.590
<b>313-314, Textile mills and textile product mills</b>	0.695	0.794	0.129	0.690	1.480	1.162	0.686	0.567
<b>315-316, Apparel and leather and allied products</b>	0.744	0.606	0.261	0.360	1.274	0.896	0.884	0.658
<b>322, Paper products</b>	0.376	0.731	0.390	0.751	0.718	1.030	0.006	0.398
<b>323, Printing and related support activities</b>	0.676	0.875	0.197	0.796	0.464	0.866	1.538	0.991
<b>324, Petroleum and coal products</b>	-0.089	0.401	0.505	0.316	-0.492	0.479	-0.559	0.449
<b>325, Chemical products</b>	0.013	0.350	-0.042	0.375	0.148	0.431	-0.042	0.235
<b>326, Plastics and rubber products</b>	0.219	0.561	0.045	0.579	0.540	0.716	0.141	0.378
<b>42, Wholesale trade</b>	0.108	0.491	0.123	0.714	0.339	0.503	-0.144	0.164
<b>44-45, Retail trade</b>	0.331	0.744	-0.031	0.587	0.213	0.553	0.956	1.152
<b>481, Air transportation</b>	0.382	0.663	0.068	0.312	0.788	1.021	0.407	0.786
<b>482, Rail transportation</b>	-0.421	0.373	0.015	0.137	-0.786	0.504	-0.693	0.585
<b>483, Water transportation</b>	-0.162	0.534	0.458	0.365	0.098	0.722	-1.358	0.587
<b>484, Truck transportation</b>	-0.057	0.717	-0.327	1.237	0.049	0.383	0.229	0.292
<b>485, Transit and ground passenger transportation</b>	-0.540	0.650	-2.444	0.166	0.783	1.141	0.763	0.837
<b>486, Pipeline transportation</b>	-0.702	0.281	-0.059	0.122	-1.302	0.046	-1.050	0.751
<b>487, 488, 492, Other transportation and support activities</b>	-0.039	0.595	0.132	0.590	0.093	0.706	-0.422	0.491
<b>493, Warehousing and storage</b>	-0.364	0.554	0.069	0.662	-0.780	0.537	-0.573	0.414
<b>511, 516, Publishing industries, except internet (includes software)</b>	0.029	0.232	0.099	0.348	-0.051	0.182	0.007	0.116
<b>512, Motion picture and sound recording studios</b>	1.306	0.160	0.034	0.137	0.000	0.115	4.290	0.236
<b>515, 517, Broadcasting and telecommunications</b>	0.286	0.587	0.036	0.618	0.446	0.548	0.481	0.581
<b>518-519, Data processing, internet publishing, and other information services</b>	-0.170	0.277	-0.257	0.526	-0.270	0.144	0.059	0.054



**Table 8b. Differences in Capital Services Growth Rates: BLS Current and Set 2 Revised Depreciation Rates, Selected Time Periods**
*(Compound Growth Rates)*

Industry	1987-2018		1987-2000		2000-2009		2009-2018	
	<i>BLS official less Set 2 SC rates, 1901 forward</i>	<i>BLS official less Set 2 SC rates, 1985 forward</i>	<i>BLS official less Set 2 SC rates, 1901 forward</i>	<i>BLS official less Set 2 SC rates, 1985 forward</i>	<i>BLS official less Set 2 SC rates, 1901 forward</i>	<i>BLS official less Set 2 SC rates, 1985 forward</i>	<i>BLS official less Set 2 SC rates, 1901 forward</i>	<i>BLS official less Set 2 SC rates, 1985 forward</i>
<b>521-522</b> , <i>Federal Reserve banks, credit intermediation, and related activities</i>	0.218	0.619	0.353	0.654	0.447	0.683	-0.194	0.506
<b>523</b> , <i>Securities, commodity contracts, and investments</i>	0.505	0.702	0.264	0.568	0.909	0.837	0.452	0.759
<b>524</b> , <i>Insurance carriers and related activities</i>	0.546	0.724	0.700	0.662	0.978	0.863	-0.091	0.672
<b>525</b> , <i>Funds, trusts, and other financial vehicles</i>	0.604	1.250	0.428	1.049	0.144	1.132	1.273	1.631
<b>531</b> , <i>Real estate</i>	0.433	0.478	0.241	0.347	0.445	0.440	0.694	0.702
<b>532-533</b> , <i>Rental and leasing services and lessors of intangible assets</i>	-0.172	0.622	-1.009	0.663	0.554	0.844	0.216	0.346
<b>5411</b> , <i>Legal services</i>	0.420	0.692	0.609	0.740	0.166	0.544	0.398	0.762
<b>5415</b> , <i>Computer systems design and related services</i>	0.129	0.214	-0.068	0.080	0.192	0.269	0.317	0.333
<b>5412-5414, 5416-5419</b> , <i>Miscellaneous professional, scientific and technical services</i>	0.077	0.281	0.011	0.283	0.058	0.271	0.186	0.289
<b>55</b> , <i>Management of companies and enterprises</i>	7.094	0.784	0.886	0.690	1.134	0.910	20.229	0.791
<b>561</b> , <i>Administrative and support services</i>	0.148	0.558	-0.153	0.605	0.525	0.734	0.195	0.326
<b>562</b> , <i>Waste management and remediation services</i>	0.915	1.008	0.590	1.172	0.755	0.582	1.537	1.198
<b>61</b> , <i>Educational services</i>	0.238	0.509	0.024	0.372	-0.103	0.352	0.874	0.857
<b>621</b> , <i>Ambulatory health care services</i>	0.300	0.743	0.309	1.016	0.232	0.515	0.356	0.584
<b>622-623</b> , <i>Hospitals and nursing and residential care facilities</i>	0.164	0.699	-0.269	0.644	0.223	0.619	0.712	0.856
<b>624</b> , <i>Social assistance</i>	-0.618	0.703	0.531	0.585	0.023	0.536	-2.877	1.027
<b>711-712</b> , <i>Performing arts, spectator sports, museums, and related activities</i>	0.018	0.254	-0.240	0.114	-0.091	0.179	0.491	0.524
<b>713</b> , <i>Amusements, gambling, and recreation industries</i>	-0.418	0.524	-1.026	0.494	-0.298	0.385	0.335	0.706
<b>721</b> , <i>Accommodation</i>	0.289	0.904	0.649	0.892	-0.276	0.749	0.328	1.070
<b>722</b> , <i>Food services and drinking places</i>	0.339	0.914	0.076	0.983	0.399	0.799	0.648	0.934
<b>81</b> , <i>Other services, except government</i>	0.017	0.669	-0.090	0.902	-0.630	0.119	0.800	0.875

Table 8c. Differences in Capital Services Growth Rates: BLS Current Compared to BLS-125 (Lower Boundary) and BLS-50 (Upper Boundary) Depreciation Rates, Selected Time Periods								
<i>(Compound Growth Rates)</i>								
Industry	1987-2018		1987-2000		2000-2009		2009-2018	
	<i>BLS official less Lower Bound rates 1985 forward</i>	<i>BLS official less Upper Bound rates 1985 forward</i>	<i>BLS official less Lower Bound rates 1985 forward</i>	<i>BLS official less Upper Bound rates 1985 forward</i>	<i>BLS official less Lower Bound rates 1985 forward</i>	<i>BLS official less Upper Bound rates 1985 forward</i>	<i>BLS official less Lower Bound rates 1985 forward</i>	<i>BLS official less Upper Bound rates 1985 forward</i>
<b>Private Business Sector</b>	-0.293	1.083	-0.333	1.482	-0.351	1.042	-0.179	0.556
<b>Private Non-Farm Business Sector</b>	-0.297	1.093	-0.335	1.485	-0.356	1.060	-0.183	0.569
<b>Manufacturing Sector</b>	-0.266	0.962	-0.285	1.295	-0.322	0.970	-0.182	0.480
<b>111-112, Farms</b>	-0.186	0.740	-0.302	1.417	-0.168	0.397	-0.035	0.093
<b>113-115, Forestry, fishing and related activities</b>	-0.381	1.245	-0.752	2.747	-0.205	-0.218	-0.007	0.449
<b>211, Oil and gas extraction</b>	-0.532	1.839	-0.346	1.693	-0.665	2.387	-0.670	1.497
<b>212, Mining, except oil and gas</b>	-0.525	2.177	-0.758	3.398	-0.499	1.200	-0.204	1.324
<b>213, Support activities for mining</b>	-0.642	2.025	-0.744	2.790	-0.597	1.040	-0.536	1.874
<b>22, Utilities</b>	-0.200	0.794	-0.330	1.386	-0.161	0.178	-0.050	0.545
<b>23, Construction</b>	-0.430	1.439	-0.430	1.688	-0.476	2.060	-0.384	0.481
<b>321, Wood products</b>	-0.437	1.449	-0.528	2.163	-0.546	1.493	-0.198	0.372
<b>327, Nonmetallic mineral products</b>	-0.374	1.421	-0.378	1.597	-0.302	1.191	-0.441	1.396
<b>331, Primary metals</b>	-0.241	1.038	-0.225	1.052	-0.261	1.043	-0.245	1.012
<b>332, Fabricated metal products</b>	-0.297	1.115	-0.265	1.189	-0.356	1.319	-0.282	0.801
<b>333, Machinery</b>	-0.257	0.997	-0.230	0.978	-0.334	1.212	-0.219	0.804
<b>334, Computer and electronic products</b>	-0.225	0.798	-0.219	1.053	-0.289	0.996	-0.169	0.251
<b>335, Electrical equipment, appliances, and components</b>	-0.320	0.984	-0.375	1.472	-0.419	1.021	-0.141	0.244
<b>336, Transportation equipment</b>	-0.219	0.785	-0.228	1.047	-0.284	0.967	-0.142	0.229
<b>337, Furniture and related products</b>	-0.379	1.193	-0.272	1.227	-0.522	1.757	-0.386	0.587
<b>339, Miscellaneous manufacturing</b>	-0.286	0.985	-0.349	1.328	-0.232	0.720	-0.250	0.757
<b>311-312, Food and beverage and tobacco products</b>	-0.301	1.106	-0.327	1.401	-0.329	0.971	-0.236	0.817
<b>313-314, Textile mills and textile product mills</b>	-0.508	1.578	-0.428	2.192	-0.723	2.169	-0.402	0.107
<b>315-316, Apparel and leather and allied products</b>	-0.346	1.061	-0.212	1.016	-0.554	1.778	-0.326	0.399
<b>322, Paper products</b>	-0.494	1.528	-0.475	2.331	-0.783	1.745	-0.230	0.157
<b>323, Printing and related support activities</b>	-0.533	1.835	-0.532	2.453	-0.527	1.475	-0.539	1.323
<b>324, Petroleum and coal products</b>	-0.220	0.888	-0.197	0.978	-0.239	0.770	-0.234	0.875
<b>325, Chemical products</b>	-0.187	0.678	-0.238	1.110	-0.241	0.581	-0.061	0.158
<b>326, Plastics and rubber products</b>	-0.429	1.314	-0.443	2.068	-0.667	1.608	-0.170	-0.060
<b>42, Wholesale trade</b>	-0.384	1.231	-0.600	2.211	-0.431	0.960	-0.035	0.103
<b>44-45, Retail trade</b>	-0.271	1.076	-0.299	1.333	-0.229	0.806	-0.273	0.979
<b>481, Air transportation</b>	-0.329	1.468	-0.127	0.872	-0.589	2.806	-0.345	0.928
<b>482, Rail transportation</b>	-0.095	0.482	-0.027	0.278	-0.140	0.593	-0.149	0.667
<b>483, Water transportation</b>	-0.368	1.544	-0.385	1.621	-0.514	1.920	-0.192	1.038
<b>484, Truck transportation</b>	-0.531	1.814	-0.954	3.487	-0.359	1.156	-0.089	-0.001
<b>485, Transit and ground passenger transportation</b>	-0.396	1.522	-0.216	1.339	-0.590	2.667	-0.455	0.632
<b>486, Pipeline transportation</b>	-0.104	0.638	-0.095	0.747	-0.026	0.185	-0.197	0.931
<b>487, 488, 492, Other transportation and support activities</b>	-0.339	1.144	-0.378	1.450	-0.460	1.541	-0.161	0.294
<b>493, Warehousing and storage</b>	-0.220	0.902	-0.332	1.519	-0.225	0.661	-0.056	0.254
<b>511, 516, Publishing industries, except internet (includes software)</b>	-0.176	0.565	-0.268	1.033	-0.157	0.325	-0.063	0.129
<b>512, Motion picture and sound recording studios</b>	-0.050	0.247	-0.070	0.389	-0.020	0.061	-0.052	0.232
<b>515, 517, Broadcasting and telecommunications</b>	-0.332	1.263	-0.430	1.796	-0.424	1.233	-0.099	0.526
<b>518-519, Data processing, internet publishing, and other information services</b>	-0.256	0.934	-0.430	1.643	-0.242	0.757	-0.018	0.088
<b>521-522, Federal Reserve banks, credit intermediation, and related activities</b>	-0.370	1.319	-0.427	1.984	-0.495	1.524	-0.169	0.197
<b>523, Securities, commodity contracts, and investments</b>	-0.331	1.155	-0.486	1.597	-0.297	0.951	-0.147	0.727
<b>524, Insurance carriers and related activities</b>	-0.222	1.025	-0.177	1.421	-0.375	1.045	-0.132	0.467
<b>525, Funds, trusts, and other financial vehicles</b>	-0.237	1.099	-0.174	0.832	-0.270	1.075	-0.289	1.480
<b>531, Real estate</b>	-0.200	0.921	-0.163	0.875	-0.215	0.915	-0.236	0.992

<b>Table 8c. Differences in Capital Services Growth Rates: BLS Current Compared to BLS-125 (Lower Boundary) and BLS-50 (Upper Boundary) Depreciation Rates, Selected Time Periods</b>								
<i>(Compound Growth Rates)</i>								
<b>Industry</b>	<b>1987-2018</b>		<b>1987-2000</b>		<b>2000-2009</b>		<b>2009-2018</b>	
	<i>BLS official less Lower Bound rates 1985 forward</i>	<i>BLS official less Upper Bound rates 1985 forward</i>	<i>BLS official less Lower Bound rates 1985 forward</i>	<i>BLS official less Upper Bound rates 1985 forward</i>	<i>BLS official less Lower Bound rates 1985 forward</i>	<i>BLS official less Upper Bound rates 1985 forward</i>	<i>BLS official less Lower Bound rates 1985 forward</i>	<i>BLS official less Upper Bound rates 1985 forward</i>
<b>532-533, Rental and leasing services and lessors of intangible assets</b>	-0.511	1.761	-0.421	2.063	-0.963	2.535	-0.181	0.577
<b>5411, Legal services</b>	-0.366	1.297	-0.371	1.772	-0.253	0.902	-0.462	1.013
<b>5415, Computer systems design and related services</b>	-0.131	0.563	0.049	0.395	-0.153	0.641	-0.337	0.701
<b>5412-5414, 5416-5419, Miscellaneous professional, scientific and technical services</b>	-0.189	0.758	-0.155	1.042	-0.242	0.764	-0.183	0.365
<b>55, Management of companies and enterprises</b>	-0.242	1.058	-0.307	1.487	-0.255	0.840	-0.138	0.672
<b>561, Administrative and support services</b>	-0.369	1.215	-0.348	1.484	-0.567	1.807	-0.208	0.273
<b>562, Waste management and remediation services</b>	-0.408	1.609	-0.783	2.946	-0.073	0.157	-0.209	1.127
<b>61, Educational services</b>	-0.119	0.697	-0.156	0.883	-0.021	0.231	-0.160	0.876
<b>621, Ambulatory health care services</b>	-0.408	1.561	-0.587	2.880	-0.390	0.535	-0.176	0.702
<b>622-623, Hospitals and nursing and residential care facilities</b>	-0.217	1.003	-0.261	1.268	-0.236	0.757	-0.137	0.873
<b>624, Social assistance</b>	-0.232	1.028	-0.242	1.286	-0.133	0.537	-0.316	1.143
<b>711-712, Performing arts, spectator sports, museums, and related activities</b>	-0.067	0.301	-0.056	0.265	-0.035	0.162	-0.112	0.489
<b>713, Amusements, gambling, and recreation industries</b>	-0.220	0.745	-0.157	0.827	-0.296	0.933	-0.234	0.440
<b>721, Accommodation</b>	-0.265	1.128	-0.298	1.410	-0.193	0.719	-0.290	1.127
<b>722, Food services and drinking places</b>	-0.466	1.640	-0.627	2.722	-0.552	1.102	-0.151	0.639
<b>81, Other services, except government</b>	-0.409	1.503	-0.609	2.598	-0.225	0.402	-0.303	1.002

Industry	1987-2018		1987-2000		2000-2009		2009-2018	
	Set 2 less Lower Bound rates 1985 forward	Set 2 less Upper Bound rates 1985 forward	Set 2 less Lower Bound rates 1985 forward	Set 2 less Upper Bound rates 1985 forward	Set 2 less Lower Bound rates 1985 forward	Set 2 less Upper Bound rates 1985 forward	Set 2 less Lower Bound rates 1985 forward	Set 2 less Upper Bound rates 1985 forward
<b>Private Business Sector</b>	-1.160	0.490	-1.220	0.660	-1.347	0.403	-0.889	0.336
<b>Private Non-Farm Business Sector</b>	-1.171	0.497	-1.217	0.667	-1.369	0.410	-0.909	0.342
<b>Manufacturing Sector</b>	-1.013	0.447	-0.971	0.600	-1.242	0.483	-0.846	0.193
<b>111-112, Farms</b>	-0.785	0.261	-1.378	0.434	-0.552	0.162	-0.157	0.107
<b>113-115, Forestry, fishing and related activities</b>	-1.475	0.583	-2.771	1.237	-0.777	-0.100	-0.253	0.279
<b>211, Oil and gas extraction</b>	-2.216	0.876	-2.088	0.933	-2.773	0.661	-1.837	1.010
<b>212, Mining, except oil and gas</b>	-2.041	1.113	-2.599	1.698	-2.075	0.512	-1.178	0.842
<b>213, Support activities for mining</b>	-1.774	0.734	-2.831	1.280	-1.532	-0.309	-0.442	0.972
<b>22, Utilities</b>	-0.871	0.401	-1.161	0.621	-0.788	0.150	-0.532	0.331
<b>23, Construction</b>	-1.567	0.626	-1.572	0.868	-1.735	0.692	-1.396	0.224
<b>321, Wood products</b>	-1.677	0.624	-1.858	0.986	-2.026	0.608	-1.071	0.116
<b>327, Nonmetallic mineral products</b>	-1.425	0.658	-1.274	0.725	-1.238	0.581	-1.824	0.640
<b>331, Primary metals</b>	-0.911	0.477	-0.765	0.470	-1.036	0.512	-0.999	0.451
<b>332, Fabricated metal products</b>	-1.033	0.486	-0.834	0.495	-1.240	0.631	-1.110	0.326
<b>333, Machinery</b>	-0.921	0.440	-0.711	0.400	-1.185	0.564	-0.945	0.369
<b>334, Computer and electronic products</b>	-0.821	0.397	-0.715	0.493	-1.099	0.557	-0.692	0.109
<b>335, Electrical equipment, appliances, and components</b>	-1.262	0.462	-1.230	0.714	-1.662	0.542	-0.910	0.018
<b>336, Transportation equipment</b>	-0.809	0.369	-0.680	0.472	-1.066	0.510	-0.734	0.081
<b>337, Furniture and related products</b>	-1.444	0.573	-0.928	0.627	-1.881	0.838	-1.735	0.234
<b>339, Miscellaneous manufacturing</b>	-1.060	0.461	-1.137	0.634	-0.907	0.348	-1.104	0.324
<b>311-312, Food and beverage and tobacco products</b>	-1.199	0.514	-1.159	0.659	-1.365	0.496	-1.089	0.322
<b>313-314, Textile mills and textile product mills</b>	-2.012	0.698	-1.567	1.023	-2.812	1.044	-1.825	-0.113
<b>315-316, Apparel and leather and allied products</b>	-1.370	0.487	-0.775	0.508	-2.078	0.883	-1.491	0.057
<b>322, Paper products</b>	-1.912	0.669	-1.735	1.075	-2.851	0.773	-1.211	-0.018
<b>323, Printing and related support activities</b>	-2.080	0.879	-1.923	1.206	-2.045	0.710	-2.331	0.590
<b>324, Petroleum and coal products</b>	-0.863	0.420	-0.698	0.470	-0.995	0.351	-0.972	0.416
<b>325, Chemical products</b>	-0.748	0.313	-0.857	0.509	-0.966	0.290	-0.377	0.056
<b>326, Plastics and rubber products</b>	-1.619	0.651	-1.491	1.031	-2.357	0.879	-1.059	-0.122
<b>42, Wholesale trade</b>	-1.409	0.467	-1.959	0.923	-1.686	0.156	-0.357	0.126
<b>44-45, Retail trade</b>	-1.172	0.607	-1.086	0.701	-0.966	0.477	-1.493	0.604
<b>481, Air transportation</b>	-1.352	0.699	-0.509	0.395	-2.293	1.317	-1.572	0.490
<b>482, Rail transportation</b>	-0.521	0.307	-0.169	0.159	-0.715	0.380	-0.839	0.448
<b>483, Water transportation</b>	-1.356	0.707	-1.142	0.691	-2.081	0.916	-0.922	0.512
<b>484, Truck transportation</b>	-2.156	0.853	-3.413	1.687	-1.792	0.415	-0.698	0.055
<b>485, Transit and ground passenger transportation</b>	-1.367	0.706	-0.567	0.561	-2.147	1.166	-1.704	0.449
<b>486, Pipeline transportation</b>	-0.453	0.353	-0.291	0.347	-0.171	0.141	-0.977	0.574
<b>487, 488, 492, Other transportation and support activities</b>	-1.351	0.489	-1.361	0.541	-1.935	0.522	-0.747	0.382
<b>493, Warehousing and storage</b>	-0.906	0.445	-1.176	0.628	-1.014	0.304	-0.411	0.321
<b>511, 516, Publishing industries, except internet (includes software)</b>	-0.608	0.246	-0.904	0.469	-0.525	0.112	-0.268	0.059
<b>512, Motion picture and sound recording studios</b>	-0.236	0.133	-0.254	0.204	-0.147	0.074	-0.296	0.093
<b>515, 517, Broadcasting and telecommunications</b>	-1.222	0.626	-1.419	0.836	-1.476	0.629	-0.689	0.322
<b>518-519, Data processing, internet publishing, and other information services</b>	-0.756	0.352	-1.345	0.645	-0.642	0.257	-0.023	0.025
<b>521-522, Federal Reserve banks, credit intermediation, and related activities</b>	-1.442	0.664	-1.469	1.142	-1.765	0.241	-1.088	0.423
<b>523, Securities, commodity contracts, and investments</b>	-1.216	0.554	-1.340	0.705	-1.316	0.551	-0.947	0.345
<b>524, Insurance carriers and related activities</b>	-1.136	0.567	-0.879	0.887	-1.653	0.511	-0.974	0.186
<b>525, Funds, trusts, and other financial vehicles</b>	-1.389	0.711	-1.097	0.533	-1.300	0.608	-1.866	1.046
<b>531, Real estate</b>	-0.812	0.478	-0.596	0.472	-0.841	0.510	-1.088	0.454

Industry	1987-2018		1987-2000		2000-2009		2009-2018	
	Set 2 less Lower Bound rates 1985 forward	Set 2 less Upper Bound rates 1985 forward	Set 2 less Lower Bound rates 1985 forward	Set 2 less Upper Bound rates 1985 forward	Set 2 less Lower Bound rates 1985 forward	Set 2 less Upper Bound rates 1985 forward	Set 2 less Lower Bound rates 1985 forward	Set 2 less Upper Bound rates 1985 forward
<b>532-533, Rental and leasing services and lessors of intangible assets</b>	-2.000	0.457	-1.399	0.455	-3.562	0.116	-1.257	0.796
<b>5411, Legal services</b>	-1.463	0.623	-1.566	0.905	-0.846	0.425	-1.894	0.422
<b>5415, Computer systems design and related services</b>	-0.457	0.284	0.081	0.240	-0.541	0.309	-1.059	0.315
<b>5412-5414, 5416-5419, Miscellaneous professional, scientific and technical services</b>	-0.664	0.374	-0.550	0.561	-0.753	0.310	-0.732	0.180
<b>55, Management of companies and enterprises</b>	-1.132	0.559	-1.178	0.833	-1.293	0.505	-0.907	0.226
<b>561, Administrative and support services</b>	-1.272	0.571	-1.248	0.719	-1.841	0.803	-0.761	0.142
<b>562, Waste management and remediation services</b>	-1.760	0.849	-2.665	1.359	-0.864	0.354	-1.369	0.608
<b>61, Educational services</b>	-0.699	0.424	-0.626	0.411	-0.366	0.251	-1.125	0.608
<b>621, Ambulatory health care services</b>	-1.645	0.712	-2.147	1.240	-1.515	0.258	-1.069	0.412
<b>622-623, Hospitals and nursing and residential care facilities</b>	-1.104	0.574	-1.076	0.597	-1.116	0.486	-1.129	0.629
<b>624, Social assistance</b>	-1.050	0.585	-0.932	0.726	-0.637	0.414	-1.614	0.556
<b>711-712, Performing arts, spectator sports, museums, and related activities</b>	-0.343	0.219	-0.204	0.164	-0.204	0.167	-0.677	0.348
<b>713, Amusements, gambling, and recreation industries</b>	-0.896	0.461	-0.657	0.462	-0.973	0.582	-1.163	0.342
<b>721, Accomodation</b>	-1.261	0.664	-1.293	0.766	-0.966	0.439	-1.503	0.737
<b>722, Food services and drinking places</b>	-1.835	0.868	-2.089	1.341	-2.079	0.650	-1.232	0.415
<b>81, Other services, except government</b>	-1.464	0.758	-2.065	1.164	-0.680	0.140	-1.376	0.775

Table 9. Comparison of Multifactor Productivity Measures Based on Alternative Depreciation Rates

Year	MFP based on Current BLS rates (Index, 2012=100)		MFP based on Set 1 SC rates (Index, 2012=100)		MFP based on Set 2 SC rates (Index, 2012=100)		MFP based on Current BLS rates (Annual Growth Rates)		MFP based on Set 1 SC rates (Annual Growth Rates)		MFP based on Set 2 SC rates (Annual Growth Rates)		Difference in MFP based on current BLS rates and Set 1 SC rates (Annual Growth Rates)		Difference in MFP based on current BLS rates and Set 2 SC rates (Annual Growth Rates)	
	1901 forward	1985 forward	1901 forward	1985 forward	1901 forward	1985 forward	1901 forward	1985 forward	1901 forward	1985 forward	1901 forward	1985 forward	1901 forward	1985 forward	1901 forward	1985 forward
1987	79.785	77.032	73.595	78.643	76.017	1.0	1.2	1.3	1.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	
1988	80.617	77.957	74.516	79.521	76.872	0.2	0.3	0.4	0.2	0.3	0.4	0.3	0.3	-0.1	-0.1	
1989	80.741	78.215	74.835	79.714	77.088	0.1	0.2	0.4	0.2	0.2	0.4	0.2	0.4	-0.1	-0.3	
1990	80.809	78.41	75.14	79.853	77.381	-0.4	-0.2	-0.1	-0.3	-0.1	-0.1	-0.3	-0.4	-0.2	-0.4	
1991	80.446	78.285	75.076	79.628	77.311	2.9	3.2	3.3	3.0	3.1	-0.3	-0.4	-0.4	-0.1	-0.2	
1992	82.754	80.77	77.518	82.031	79.707	-0.4	-0.1	0.0	-0.3	-0.2	-0.3	-0.4	-0.4	-0.1	-0.2	
1993	82.416	80.665	77.482	81.801	79.56	0.5	0.5	0.8	0.5	0.7	0.5	0.8	-0.3	-0.1	-0.2	
1994	82.797	81.092	78.104	82.235	80.096	0.2	0.3	0.5	0.3	0.4	0.2	0.3	-0.3	0.0	-0.2	
1995	82.98	81.3	78.531	82.447	80.435	1.0	1.0	1.3	1.0	1.2	1.0	1.3	-0.3	0.0	-0.2	
1996	83.804	82.116	79.554	83.28	81.391	0.9	0.9	1.2	0.9	1.1	0.9	1.2	-0.3	0.0	-0.2	
1997	84.577	82.858	80.526	84.046	82.296	1.5	1.5	1.8	1.5	1.7	1.5	1.8	-0.3	0.0	-0.2	
1998	85.861	84.118	81.984	85.316	83.686	2.1	2.1	2.4	2.1	2.3	2.1	2.4	-0.3	0.0	-0.1	
1999	87.679	85.893	83.941	87.106	85.583	1.5	1.5	1.7	1.5	1.6	1.5	1.7	-0.3	0.0	-0.1	
2000	88.968	87.174	85.405	88.382	86.968	0.5	0.7	0.8	0.6	0.7	0.5	0.8	-0.3	0.0	-0.2	
2001	89.42	87.765	86.129	88.869	87.555	2.0	2.3	2.4	2.1	2.2	2.3	2.4	-0.4	-0.1	-0.2	
2002	91.23	89.783	88.214	90.755	89.493	2.3	2.6	2.7	2.5	2.5	2.6	2.7	-0.4	-0.1	-0.2	
2003	93.367	92.137	90.631	92.985	91.766	2.2	2.4	2.6	2.3	2.4	2.2	2.4	-0.3	-0.1	-0.2	
2004	95.428	94.347	92.944	95.102	93.961	1.5	1.6	1.8	1.6	1.7	1.5	1.8	-0.3	-0.1	-0.2	
2005	96.849	95.893	94.622	96.587	95.542	0.5	0.5	0.7	0.5	0.6	0.5	0.7	-0.3	0.0	-0.2	
2006	97.305	96.405	95.313	97.062	96.16	0.5	0.5	0.8	0.5	0.7	0.5	0.8	-0.2	0.1	-0.2	
2007	97.797	96.87	96.03	97.499	96.797	-1.2	-1.2	-0.9	-1.3	-1.0	-1.2	-0.9	-0.3	0.1	-0.2	
2008	96.649	95.725	95.162	96.28	95.807	0.2	0.4	0.6	0.2	0.4	0.2	0.4	-0.4	-0.1	-0.2	
2009	96.829	96.14	95.716	96.509	96.162	2.7	3.0	3.2	2.8	2.9	2.7	3.0	-0.5	-0.2	-0.3	
2010	99.424	99.072	98.735	99.256	98.98	-0.1	0.1	0.2	0.0	0.1	-0.1	0.1	-0.4	-0.1	-0.2	
2011	99.28	99.155	98.97	99.217	99.067	0.7	0.9	1.0	0.8	0.9	0.7	0.9	-0.3	-0.1	-0.2	
2012	100	100	100	100	100	0.1	0.1	0.3	0.1	0.3	0.1	0.3	-0.3	-0.1	-0.2	
2013	100.053	100.128	100.329	100.111	100.263	0.6	0.6	0.8	0.6	0.8	0.6	0.8	-0.2	0.0	-0.2	
2014	100.609	100.717	101.137	100.7	101.026	0.9	0.9	1.1	1.0	1.1	0.9	1.1	-0.2	-0.1	-0.2	
2015	101.527	101.64	102.283	101.687	102.162	-0.5	-0.4	-0.3	-0.4	-0.2	-0.5	-0.4	-0.2	-0.1	-0.2	
2016	101.045	101.185	102.021	101.316	101.91	0.6	0.6	0.8	0.7	0.8	0.6	0.8	-0.2	-0.1	-0.2	
2017	101.658	101.835	102.873	102.048	102.766	0.9	0.9	1.1	1.0	1.1	0.9	1.1	-0.2	-0.1	-0.2	
2018	102.572	102.747	104.021	103.046	103.907											
Compound Growth Rates																
1987-2018						0.8	0.9	1.1	0.9	1.0	0.8	0.9	-0.3	-0.1	-0.2	
1987-2000						0.8	1.0	1.2	0.9	1.0	0.8	1.0	-0.3	-0.1	-0.2	
2000-2009						0.9	1.1	1.3	1.0	1.1	0.9	1.1	-0.3	0.0	-0.2	
2009-2018						0.6	0.7	0.9	0.7	0.9	0.6	0.7	-0.3	-0.1	-0.2	