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Page Count Difference:

Significant errata changes have raised the page count to 999 from 991.

Updates to Chapter 27: Money and Banking

Summary: To address the changes in the ways banks create money, several changes were made in section 27.3 and 27.4 to specify bank behavior with regard to limited reserves. Details are below.

Section 27.3

- On page 347 of the book, page 361 of the PDF, in the second full paragraph above the Link It Up, after the sentence that ends with "...influence bank behavior.)" add the following sentence:
 - Prior to the Financial Crisis of 2007 – 2009, also known as the Great Recession, banks received no interest on the reserves they kept with their regional Federal Reserve bank. This represented an opportunity cost – the foregone interest earned for keeping any excess reserves. Therefore, banks tended to keep only the minimum amount of required reserves. If banks are choosing to keep only the minimum amount of required reserves (or slightly more than that minimum), in other words banks are at or slightly above their reserve requirement, we call this limited reserves. If banks are choosing to keep significantly more than their reserve requirement, they have a large amount of excess reserves, we call this ample reserves.

Section 27.4

- The learning objectives were revised:
 - "Utilize the money multiplier formula to determine how banks create money in an environment of limited reserves."

Chapter 28 Updates:

Summary: Section 28.3 was significantly revised to address monetary policy changes. The revisions include moving several figures to appendices and expanding the coverage, with particular additions related to monetary policy with ample reserves.

- Section 28.3, new Learning Objectives added
 - Distinguish between monetary policy in an environment of limited reserves, and monetary policy in an environment of ample reserves.
- Above the section Open Market Operations, add the following:
 - As noted, these monetary policy tools are used in an environment of limited reserves. However, since the Financial Crisis of 2007 – 2009, also known as the Great Recession, banks have kept what we defined earlier as ample reserves. As such, the FOMC no longer utilizes the limited reserves tools. But, there is nothing that says that banks will not return to keeping limited reserves, so understanding how these tools work is still important.

- On page 364 of the book, 378 of the PDF, under the Link It Up, the section that starts with “To understand how...” change to:
 - To understand how open market operations affect the money supply in a limited reserves environment, assume that Happy Bank starts with \$460 million in assets, divided among reserves, bonds and loans, and \$400 million in liabilities in the form of deposits, with a net worth of \$60 million. When the central bank purchases \$20 million in bonds from Happy Bank, the bond holdings of Happy Bank fall by \$20 million and the bank’s reserves rise by \$20 million. However, Happy Bank only wants to hold \$40 million in reserves so the bank decides to loan out the extra \$20 million in reserves and its loans rise by \$20 million. The central bank's open market operation causes Happy Bank to make loans instead of holding its assets in the form of government bonds, which expands the money supply. As the new loans are deposited in banks throughout the economy, these banks will, in turn, loan out some of the deposits they receive, triggering the money multiplier that we discussed in [Money and Banking](#). To see the impact on Happy Bank’s balance sheet, refer to Appendix 15.1.

 - Previous Figure 15.5/28.5 and Figure 15.6/28.6 have been moved to the new Appendix. The following text should be included with the Figure:
 - [Figure 15.5](#). [Figure 15.5](#) (a) shows that Happy Bank starts with \$460 million in assets, divided among reserves, bonds and loans, and \$400 million in liabilities in the form of deposits, with a net worth of \$60 million. When the central bank purchases \$20 million in bonds from Happy Bank, the bond holdings of Happy Bank fall by \$20 million and the bank’s reserves rise by \$20 million, as [Figure 15.5](#) (b) shows. However, Happy Bank only wants to hold \$40 million in reserves (the quantity of reserves with which it started in [Figure 15.5](#) (a)), so the bank decides to loan out the extra \$20 million in reserves and its loans rise by \$20 million, as [Figure 15.5\(c\)](#) shows.

- The portion of the text related to open market operations has been changed to.

- Open market operations can also reduce the quantity of money and loans in an economy. When Happy Bank purchases \$30 million in bonds, Happy Bank sends \$30 million of its reserves to the central bank, but now holds an additional \$30 million in bonds. However, Happy Bank wants to hold \$40 million in reserves, as in our previous example, so it will adjust down the quantity of its loans by \$30 million, to bring its reserves back to the desired level. In practical terms, a bank can easily reduce its quantity of loans. At any given time, a bank is receiving payments on loans that it made previously and also making new loans. If the bank just slows down or briefly halts making new loans, and instead adds those funds to its reserves, then its overall quantity of loans will decrease. A decrease in the quantity of loans also means fewer deposits in other banks, and other banks reducing their lending as well, as the money multiplier that we discussed in [Money and Banking](#) takes effect. To see the impact on Happy Bank's balance sheet, refer to Appendix 15.1. What about all those bonds? How do they affect the money supply? Read the following Clear It Up feature for the answer.

At the very end of section 28.3, we have added a new subsection on interest on excess reserves is used as a monetary policy tool.

Monetary Policy and Ample Reserves

As we noted previously, banks in the U.S. have historically had very little reason to keep more than their minimum required reserves, because their regional Federal Reserve bank did not pay any interest on those reserves. This behavior changed dramatically during the 2007 – 2009 Financial Crisis.

During this period of time, 389 banks failed. The banks that survived responded to the Financial Crisis by increasing their reserves well beyond their required minimum. Combined with the measures undertaken by the FOMC and the U.S. government to respond to the Financial Crisis, banks' reserves increased from around \$15 billion in 2007, to \$2.7 trillion by late 2014. While reserves did decrease to around \$1.7 trillion by 2017, this was no longer an environment of limited reserves, but an environment of ample reserves. In fact, in 2019, the FOMC issued a statement indicating that monetary policy would be based on ample reserves.

While it may be a good decision for banks to keep ample reserves, as we know, the banking system facilitates both short-term and long-term economic activity when it makes loans, loans which are used to finance consumption, for business investment and expansion, and to help fund and support innovation, among many other possibilities. In a sense, loans allow for the economy to ultimately become more productive, causing an increase in long-run economic growth. The point is that we need the banking system to be willing to make loans and not just keep ample excess reserves. However, when banks are keeping a trillion or more dollars as excess reserves, these are funds that they are choosing not to lend out, potentially causing the economy to grow at a slower rate than it otherwise might.

How then can the FOMC incentivize banks to lend out these excess reserves? This is where the Interest on Reserve Balances (IORB) comes in. The IORB is the interest rate paid to banks for their holdings of excess reserves. Congress granted the Federal Reserve the ability to

pay this interest in 2006. The policy was originally slated to begin in 2011, but the Financial Crisis accelerated its start date to 2008. (For a few years there were two separate rates, the Interest on Required Reserves and the Interest on Excess Reserves, but these two were combined into the IORB in 2021.) The FOMC controls the IORB directly. It sets the IORB at whatever rate it chooses, based on macroeconomic conditions and forecasts.

We can now explore how the IORB may affect banks' decisions to hold more or fewer excess reserves. As we noted in our discussion of open market operations, the federal funds rate (FFR) is the specific interest rate targeted by the FOMC. The federal funds market is where banks borrow and lend their excess reserves from one another, over a very short period of time, often described as overnight. It is a market, as we explained in Chapter 3, with supply, demand, and a price. In the federal funds market, you can think of the FFR as the price a bank gets paid for lending (or selling) excess reserves in the federal funds market, and you can think of the FFR as the price a bank pays for borrowing (or buying) those excess reserves.

The FFR is targeted by the FOMC, because as the FFR increases and decreases, most other interest rates eventually increase or decrease too. In section 15.4, we'll show how changes in interest rates affect the macroeconomy.

To illustrate how changes in the IORB can affect the FFR, assume that the IORB is 2%, which means that a bank can earn 2% on its excess reserves, free of risk. Because the federal funds market is very short-term lending, it is also nearly risk-free, and so most banks view the FFR as a very close alternative to the IORB. If the FFR also pays 2% interest, generally, a bank will be indifferent to where it keeps its excess reserves.

Let's say that macroeconomic conditions convince the FOMC to lower the FFR. To do this, it will lower the IORB. Let's see why. If the IORB decreases to 1.75%, banks will generally choose to reduce their excess reserves holdings at their regional Federal Reserve bank, and instead lend those excess reserves in the federal funds market, in order to earn the currently higher FFR of 2%. But, this increase in the supply of excess reserves in the federal funds market will act to lower the price in the federal funds market, which is the FFR.

When the FOMC lowers the IORB, it also tends to lower the discount rate at the same time. Some banks could then engage in arbitrage, which is the simultaneous (or near-simultaneous) purchase and sale of a good to profit from a difference in the price of that good across markets. In our example, if the discount rate also decreases from 2% to 1.75%, a bank could borrow excess reserves from the Federal Reserve at the 1.75% discount rate, and then lend those same excess reserves in the federal funds market at 2%, earning \$0.0025 on every \$1.00 borrowed. (This may not seem like much, but multiply this by \$1 million or \$10 million, and it adds up quickly.) But this arbitrage activity also ensures that the FFR will decrease as desired by the FOMC, because the increase in the supply of excess reserves will cause the FFR to decrease, and as banks leave the federal funds market to borrow from the Federal Reserve, the decrease in the demand for excess reserves will cause the FFR to decrease too.

Alternatively, let's say that macroeconomic conditions convince the FOMC to raise the FFR. If the FOMC now increases the IORB to 2.25%, banks will now choose to keep more excess reserves at their regional Federal Reserve bank and earn the higher IORB. This decrease in supply in the federal funds market will cause the FFR to increase as well.

Arbitrage will also ensure that the FFR increases. As the IORB increases, banks will borrow more excess reserves in the federal funds market, and deposit them with their regional

Federal Reserve bank, in order to earn a profit on the difference between the IORB and the FFR. This increase in demand will then cause the FFR to increase as well.

- The coverage of Quantitative Easing now follows the new material on Monetary Policy and Ample Reserves section, to keep it together with all the other monetary policy tools.
- Under Key Concepts and Summary, in 15.3 How a Central Bank Executes Monetary Policy, the first sentence, change to:
 - “In a limited reserves environment, the central bank has three traditional tools....”
 - Change the current last sentence to:
 - “In a limited reserves environment, the most...”
- In the same section, add the following after the existing last sentence:
 - Since the Financial Crisis, the U.S. banking system is in an ample reserves environment. The FOMC has moved away from the traditional tools of a limited reserve environment, and now uses changes in the Interest on Reserve Balances as its main monetary policy tool.

Errata:

Below is a table containing submitted errata and the resolutions that OpenStax has provided for this latest text.

Location	Detail	Resolution Notes	Error Type
Chapter 1 Welcome to Economics!: Section 1.1 What Is Economics, and Why Is It Important?	The resource "current events" link you are using is from 2013. My students are in an agricultural region of California where this is a critical issue. I recommend updating your link to an actually current article from THIS decade :) For example https://www.bloomberg.com/graphics/2021-colorado-river-us-west/	This issue was addressed in the 3e version of the book.	General/pedagogical suggestion or question

<p>Chapter 1</p> <p>Welcome to Economics!: Self-Check Questions</p>	<p>Change "A consultant works for \$200 per hour. She likes to eat vegetables, but is not very good at it." to "A consultant works for \$200 per hour. She likes to eat vegetables, but is not very good at growing them." (the wording in the book).</p>	<p>The solution manual will be updated.</p>	<p>Typo</p>
<p>Chapter 2</p> <p>Choice in a World of Scarcity: Section 2.2 The Production Possibilities Frontier and Social Choices</p>	<p>I'm not comfortable with conflating the law of increasing opportunity cost with the law of diminishing returns, as this section does (while never mentioning the first). It makes it harder to talk about resource specialization.</p> <p>Here is a useful pedagogical resource for this topic: https://www.stlouisfed.org/education/economic-lowdown-video-series/episode-8-production-possibilities-frontier/law-of-increasing-opportunity-cost</p>	<p>This issue was addressed in the 3e version of the book.</p>	<p>General/pedagogical suggestion or question</p>

<p>Chapter 3</p> <p>Demand and Supply: Section 3.1 Demand, Supply, and Equilibrium in Markets for Goods and Services</p>	<p>I'm writing to request the removal of a parenthetical remark in section 3.1 of the Microeconomics 3e text. The remark in question reads as follows:</p> <p>(Note that this is an exception to the normal rule in mathematics that the independent variable (x) goes on the horizontal axis and the dependent variable (y) goes on the vertical axis. Economics is not math.)</p> <p>I have three reasons for requesting the removal of this comment:</p> <ol style="list-style-type: none"> 1) The comment is confusing. Nowhere in the preceding discussion are the letters x and y used as variables. 2) The comment is misleading. There is no need to discuss independent and dependent variables here. There are many situations in mathematics where a plot is used to convey the relationship between two variables, without requiring that one be a function of the other. 3) Most importantly, the comment is irritating and insulting to those with mathematical inclinations. There is no need for the "Economics is not math" remark. The fields of math and economics should strive for a friendly, symbiotic relationship, rather than an adversarial one. 	<p>Revise "Economics is not math." to "While economists often use math, they are different disciplines."</p>	<p>General/pedagogical suggestion or question</p>
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	<p>Thank you for considering this feedback.</p>		
<p>Chapter 3 Demand and Supply: Self-Check Questions</p>	<p>The question states that jet fuel price, a production cost, increases by 45%. The answer from the footnote states this is an increase in supply. From my understanding, each quantity produced costs more actually resulting in a left shift in supply and higher equilibrium price. So maybe I misunderstood, or the air travel part isn't clear, but it seems wrong.</p> <p>Thank you!</p>	<p>This issue was addressed in the 3e version of the book.</p>	<p>Incorrect answer, calculation, or solution</p>
<p>Chapter 4 Labor and Financial Markets: Section 4.1 Demand and Supply at Work in Labor Markets</p>	<p>I was comparing the new 3e with 2e. This last paragraph for the "below equilibrium" situation still has the numbers from 2e and doesn't match the new Figure 4.2 and Table 4.1. The numbers are \$60,000, 40,000, and 27,000, but should be \$75,000, 34,000, and 47,000 (per the caption on Figure 4.2).</p>	<p>The numbers in this section will be updated.</p>	<p>Typo</p>

	Note that the previous paragraph for the "above equilibrium" situation was correctly changed for the 3e edition.		
Chapter 4 Labor and Financial Markets: Section 4.1 Demand and Supply at Work in Labor Markets	The Demand Curve in Figure 4.2 does not accurately illustrate the values listed in Table 4.1 above the Equilibrium Quantity Demanded of 34k. The Demand Curve bends forward to suggest a slight increase in Quantity Demanded at the higher salary of \$75k, where the Quantity Demanded should actually continue falling from 34k to 33k. Many thanks!	This issue was addressed in the 3e version of the book.	Other factual inaccuracy in content
Chapter 5 Elasticity: Key Terms	the definition is wrong, the cross price elasticity of demand is the percentage change in the quantity of good A that is demanded as a result of a percentage change IN THE PRICE OF good B.	This issue was addressed in the 3e version of the book.	Other factual inaccuracy in content
Chapter 5 Elasticity: Section 5.1 Price Elasticity of Demand and Price Elasticity of Supply	Change "By convention, we always talk about elasticities as positive numbers" to "By convention, we always talk about price elasticities as positive numbers" because later in the chapter, negative income and cross-price elasticities are mentioned.	Revise "By convention, we always talk about elasticities as positive numbers." to "By convention, we always talk about price elasticities of demand as positive numbers."	Other factual inaccuracy in content
Chapter 5 Elasticity: Critical Thinking Questions	The question #25 is illogical. I believe the elasticity of an economy flight should be 1.12. This would then make the answer in the instructor's guide make sense.	Revise "0.62" to "0.40" and "0.12" to "0.62".	Other

<p>Chapter 5 in the enhanced PowerPoint slides (slide 7 in chapter 5) in "Calculating Price Elasticity of Demand"</p>	<p>PowerPoint does not support advanced-enough math for the equation under the subheading "Calculating Price Elasticity of Demand," so in the slideshow a screenshot of the equation is used instead of text. Therefore, an alt-text description of the equation in the attached screenshots needs to be written for the PowerPoint slides.</p>	<p>This issue was addressed in the 3e version of the book.</p>	<p>Other</p>
<p>Chapter 7 Production, Costs, and Industry Structure: Section 7.1 Explicit and Implicit Costs, and Accounting and Economic Profit</p>	<p>The categorization of depreciation as an implicit cost is inconsistent with its treatment in other sources. Other sources categorize depreciation as an explicit cost. To harmonize the definitions in the book with other sources, you could change "Explicit costs are out-of-pocket costs, that is, actual payments. Wages that a firm pays its employees or rent that a firm pays for its office are explicit costs. Implicit costs are more subtle, but just as important. They represent the opportunity cost of using resources that the firm already owns. Often for small businesses, they are resources that the owners contribute. For example, working in the business while not earning a formal salary, or using the ground floor of a home as a retail store are both implicit costs. Implicit costs also include the depreciation of goods, materials, and equipment that are necessary for a company to operate." to</p>	<p>Delete "Implicit costs also include the depreciation of goods, materials, and equipment that are necessary for a company to operate."</p>	<p>General/pedagogical suggestion or question</p>

	<p>"Explicit costs include actual payments and depreciation. Wages that a firm pays its employees or rent that a firm pays for its office are explicit costs. Explicit costs also include the depreciation of goods, materials, and equipment that are necessary for a company to operate. Implicit costs are more subtle but just as important. They represent the opportunity cost of using resources that the firm already owns. Often for small businesses, they are resources that the owners contribute. For example, working in the business while not earning a formal salary, or using the ground floor of a home as a retail store are both implicit costs. "</p>		
<p>Chapter 7 Production, Costs, and Industry Structure: Section 7.3 Costs in the Short Run</p>	<p>It is mentioned that, 'What is the origin of these cost figures? They come from the production function and the factor payments. The discussion of costs in the short run above, Costs in the Short Run, was based on the following production function, which is similar to Table 7.3 except for "widgets" instead of trees.'</p> <p>Instead of Table 7.3, you should write Table 7.2</p>	<p>This will be corrected in the 3rd edition version of this book.</p>	<p>Other factual inaccuracy in content</p>
<p>Chapter 7 Production, Costs, and Industry Structure: Section 7.5</p>	<p>It says, "Visit this website to read an article about the complexity of the belief that banks can be "too-big-to-fail."</p> <p>The link has been updated to a</p>	<p>Revise "an article about the complexity of the belief that banks can be "too-big-to-fail."" to "an article about Apple's</p>	<p>Other factual inaccuracy in content</p>

Costs in the Long Run	<p>different article about Apple, therefore the LINK IT UP text should say,</p> <p>"Visit this website to read an article about Apple's diseconomies of scale and the next iPhone."</p>	diseconomies of scale and the next iPhone."	
Chapter 8 Perfect Competition: Section 8.3 Entry and Exit Decisions in the Long Run	Add hyphens to increasing cost industry and decreasing cost industry	Revise "increasing cost industry" to "increasing-cost industry" and "decreasing cost industry" to "decreasing-cost industry".	Typo
Chapter 8 Perfect Competition: Self-Check Questions	<p>3. Look at Table 8.13. What would happen to the firm's profits if the market price increases to \$6 per pack of raspberries?</p> <p>The answer at the back of the book for question 3 says the firm's profit will increase. However, in the table, the price is already \$6.</p>	This issue was addressed in the 3e version of the book.	Incorrect answer, calculation, or solution
Chapter 9 Monopoly: Critical Thinking Questions	The book asserts "Intellectual property laws are intended to promote innovation, but some economists, such as Milton Friedman, have argued that such laws are not desirable." Friedman wrote "In both patents and copyrights. there is clearly a strong prima facie case for establishing property rights." I do not think the book's representation of Friedman's views is consistent with the views he expressed on intellectual property in Capitalism and Freedom.	Revise "Milton Friedman" to "Michele Boldrin and David K. Levine".	Other factual inaccuracy in content

<p>Chapter 11 Monopoly and Antitrust Policy: Section 11.1 Corporate Mergers</p>	<p>Change "Before a large merger happens, the antitrust regulators at the FTC and the U.S. Department of Justice can allow the merger, prohibit it, or allow it if certain conditions are met." to "Before a large merger happens, the antitrust regulators at the FTC, the U.S. Department of Justice, or other regulatory agencies can allow the merger, prohibit it, or allow it if certain conditions are met." https://www.justice.gov/atr/annex-3-b Other regulators may have exclusive power in some industries (airlines, financial services, and railroads).</p>	<p>Revise "the FTC and the U.S. Department of Justice" to "the FTC, the FCC, the U.S. Department of Justice, or other regulatory agencies".</p>	<p>Other factual inaccuracy in content</p>
<p>Chapter 11 Monopoly and Antitrust Policy: Section 11.3 Regulating Natural Monopolies</p>	<p>The demand and marginal revenue curves implied by the total revenue column of the table are not perfectly linear despite the fact that the graph shows linear demand and marginal revenue curves. If the firm is split into two competing firms, it is implausible that each produce at half of the monopolist's quantity (I assume that the split firms can produce 1, 2, 3, or 4 units). See the attached pdf for the equilibria of the game between the two firms.</p>	<p>Revise "A second outcome arises if antitrust authorities..." to "While unlikely, a second outcome may arise if antitrust authorities..."</p>	<p>Other factual inaccuracy in content</p>
<p>Chapter 13 Positive Externalities and Public Goods: Section 13.2 How</p>	<p>Update date range to 1990-2020</p>	<p>Revise the figure title to "Patents Filed and Granted, 1990–2020".</p>	<p>Typo</p>

Governments Can Encourage Innovation			
Chapter 15 Poverty and Economic Inequality: Review Questions	Need updated answer for new question in IASG (not in book)	The answer will be updated.	Incorrect answer, calculation, or solution
Chapter 15 Poverty and Economic Inequality: Section 15.1 Drawing the Poverty Line	The link in the Link It Up redirects to an astrology page. Note: this report replaces report 20783, which pointed to the wrong section.	This issue was addressed in the 3e version of the book.	Broken link
Chapter 15 Poverty and Economic Inequality: Section 15.1 Drawing the Poverty Line	Figure should look like this: https://www.census.gov/content/dam/Census/library/visualizations/2022/demo/p60-277/figure1.pdf	Revise the figure title and caption to "The U.S. Poverty Rate Between 2010 and 2019, the poverty rate declined to 10.5%, before rising to 11.4% in 2020 due to the onset of the COVID-19 pandemic in 2020. (Source: U.S. Census Bureau)".	Other factual inaccuracy in content
Chapter 17 Financial Markets: Section 17.1 How Businesses Raise Financial Capital	Change "A private company is owned by the people who run it on a day-to-day basis." to "A private company is not traded on public exchanges. A private company is frequently owned by the people who run it on a day-to-day basis." Some private companies, such as the LLCs created by Lofty (url lofty.ai), are not actively run on a day-to-day basis by their	This issue was addressed in the 3e version of the book.	Other factual inaccuracy in content

	<p>owners (that is handled by a property management firm for Lofty's LLCs).</p> <p>https://www.investopedia.com/terms/p/privatecompany.asp</p>		
<p>Chapter 19</p> <p>The Macroeconomic Perspective: Section 19.1 Measuring the Size of the Economy: Gross Domestic Product</p>	<p>A pie chart is not correct, because of the negative values. Use a bar chart.</p>	<p>This figure and caption will be updated.</p>	<p>Other factual inaccuracy in content</p>
<p>Chapter 19</p> <p>The Macroeconomic Perspective: Section 19.2 Adjusting Nominal Values to Real Values</p>	<p>The text states the question as the real GDP growth rate from 1960 to 2012, but the formula has "2020 real GDP" and the number (13,598.5) is actually the 2010 real GDP. The 2e version consistently used the 2010 real GDP in the question and the formula, so this was apparently an update for 3e that was in error. Note that Table 6.6 has no data beyond 2020, so the 2012 and 2020 real GDPs aren't specified.</p> <p>I recommend adding 2015 and 2020 rows to Table 6.6 and then correcting the calculation to use the 1960-to-2020 formula and numbers.</p>	<p>This section will be updated.</p>	<p>Incorrect answer, calculation, or solution</p>
<p>Chapter 19</p> <p>The Macroeconomic Perspective:</p>	<p>The notes to figure 19.10 say the BEA was the source of real GDP back to 1900. I think this cannot be right? If it is, please specify the source/series in more detail (ideally with a</p>	<p>This issue was addressed in the 3e version of the book.</p>	<p>Other factual inaccuracy in content</p>

Section 19.3 Tracking Real GDP over Time	precise link). I suspect the source is the Maddison Project and not the BEA.		
Chapter 20 Economic Growth: Section 20.2 Labor Productivity and Economic Growth	This table illustrates exponential growth, but (due to rounding error) the differences of the numbers in the last column are not increasing. This confuses alert students. Adding one more decimal point fixes this problem by changing the values to (1.717, 1.765, 1.814, 1.865, 1.917).	This table and the surrounding text will be updated.	Other
Chapter 20.4	(1) Table inexplicably does not show data for 2001-2009. (2) Column headings differ, i.e., "Average Growth Rate" and "Growth Rate". (3) Text that refers to the table says low > middle > high, which is correct for 2010-2019 but incorrect for the 1990-2000 data that show middle > low > high (4.7% > 3.8% > 2.7%). Note that this same text was incorrect for *both* columns of Table 7.5 in the second edition (2e), in which the table showed middle > low > high for both periods (1990-2000 and 2000-2008).	This section will be updated.	Other factual inaccuracy in content
Chapter 21 Unemployment: Introduction to Unemployment	There's no connection between the photo (presumably to illustrate automation replacing jobs) and the caption.	Revise the caption to "Replaced by Robots Robots are replacing the jobs historically done by workers in a bread factory."	General/pedagogical suggestion or question

<p>Chapter 21</p> <p>Unemployment: Section 21.2 Patterns of Unemployment</p>	<p>Figure 21.3 lists as the unemployment data source: https://research.stlouisfed.org/fred2/series/LRUN64TTUSA156S0</p> <p>That link reaches no data, and that series name does not exist on FRED.</p> <p>(Perhaps you want the UNRATE series? But smoothed?)</p>	<p>Revise "(Source: Federal Reserve Economic Data (FRED) https://research.stlouisfed.org/fred2/series/LRUN64TTUSA156S0)" to "(Source: Federal Reserve Economic Data (FRED), Unemployment Rate (UNRATE), https://fred.stlouisfed.org/series/UNRATE)".</p>	<p>Broken link</p>
<p>Chapter 21</p> <p>Unemployment: Section 21.4 What Causes Changes in Unemployment over the Long Run</p>	<p>(a) The effect of a productivity slowdown is described as increasing the natural rate. This increase in unemployment because expectations are wrong is not a change in the natural rate. (b) In contrast, the effect of a productivity speed up is correctly described as temporarily reducing unemployment below the natural rate.</p>	<p>Revise "However, the expectations of employers and workers for wage increases do not shift immediately, so wages keep rising as before. However, the demand for labor has not increased, so at wage W_4, unemployment exists where the quantity supplied of labor exceeds the quantity demanded." to "However, there is a delay or lag in the recognition that productivity is no longer increasing. As a result, wages keep rising as before, but the demand for labor is no longer increasing, so at wage W_3 and wage W_4, unemployment exists where the quantity supplied of labor exceeds the quantity demanded."</p>	<p>Other factual inaccuracy in content</p>
<p>Chapter 21.1</p>	<p>Text refers to data in Table 8.1 from January 2021, but the calculations use data from January 2017 that were in the earlier 2e Table 8.1. Using the</p>	<p>This section will be updated.</p>	<p>Incorrect answer, calculation, or solution</p>

	2021 data (rounded), the calculated labor force participation rate is approximately 61.9%, not 62.9% as stated. The percentage out of the labor force and unemployment rate are similarly incorrect.		
Chapter 22 Inflation: Section 22.2 How to Measure Changes in the Cost of Living	This subsection refers to the "International Price Index" of the BLS. As far as I know, there is no such thing. I suspect the intent was to refer to the import and export price indexes (https://www.bls.gov/mxp/) of the BLS.	This issue was addressed in the 3e version of the book.	Other factual inaccuracy in content
Chapter 23 The International Trade and Capital Flows: Section 23.4 The National Saving and Investment Identity	The supplier is on the left-hand side instead of on the right-hand side.	This will be updated in the text.	Typo
Chapter 24 The Aggregate Demand/Aggregate Supply Model: Section 24.6 Keynes' Law and Say's Law in the AD/AS Model	Current wording of first sentence: "We can explain economic fluctuations, whether those experienced during the 1930s Great Depression, the 1970s stagflation, or the 2008-2009 Great Recession, can be explained using the AD/AS diagram." Suggested replacement: "Using the AD/AS diagram, we can explain economic fluctuations -- whether those experienced during the 1930s	This issue was addressed in the 3e version of the book.	Typo

	Great Depression, the 1970s stagflation, or the 2008-2009 Great Recession."		
Chapter 25 The Keynesian Perspective: Key Terms	Change: "macroeconomic externality occurs when what happens at the macro level is different from and inferior to what happens at the micro level" by striking "and inferior to", since macro externalities can be positive. Also, overall, the discussion of macroeconomic externalities is opaque; be clear about the sense in which it is an externality (i.e., affects those not party to the transactions). A simpler example (like the paradox of thrift) would be very helpful.	The section "The Two Keynesian Assumptions in the AD/AS Model" will be updated, along with the key term definition for macroeconomic externality.	Other factual inaccuracy in content
Chapter 25 The Keynesian Perspective: Section 25.2 The Building Blocks of Keynesian Analysis	Change "a change in spending causes a more than proportionate change in GDP" to "a change in spending causes a larger change in GDP". (After this change, it is probably OK in the context of this particular chapter. But even then, it rules out talking about a multiplier less than 1, as found in much empirical work.)	This section will be updated.	Other factual inaccuracy in content
Chapter 27 Money and Banking: Section 27.1 Defining Money by Its Functions	Watch this video on the "History of Money." However, the link goes to a broken YouTube link so needs to be updated.	This link will be updated.	Broken link

Chapter 27 Money and Banking: Section 27.4 How Banks Create Money	Utilize the money multiplier formulate to determine how banks create money change formulate to "formula"	This has been corrected in the 3rd edition version of the book.	Typo
Chapter 28 Monetary Policy and Bank Regulation: Section 28.3 How a Central Bank Executes Monetary Policy	The book will be updated to reflect current monetary policy.	The book will be updated to reflect current monetary policy.	General/pedagogical suggestion or question
Chapter 28 Monetary Policy and Bank Regulation: Introduction to Monetary Policy and Bank Regulation	Delete "work by"	Delete "work by" in the credit line.	Typo
Chapter 29 Exchange Rates and International Capital Flows: Section 29.1 How the Foreign Exchange Market Works	The text describes the exchange rate "since 1980," which is what Figure 16.3 in the 2e edition showed. However, Figure 16.3(a) is now 1984-2020 and Figure 16.3(b) is 1974-2020. The different timescales in the figures also make it harder to see the "mirror image" mentioned in the Figure 16.3 descriptive text under the graphs. I suggest showing the 1980-2020 (or, better, 2022) exchange rates in both graphs	The figure and caption will be updated.	Typo

	for consistency and to match the text.		
Chapter 29 Exchange Rates and International Capital Flows: Section 29.4 Exchange Rate Policies	The caption says the "figure shows a relatively stable rate between 2011 and 2013," but the graph actually shows a V-shaped dip with a low point in 2011. I retrieved a graph from FRED covering 2000-2022 and it does show more of a flat region in 2011-2012. Not sure why the textbook graph doesn't match the one I retrieved (see uploaded file). If you're going to keep using the existing graph, then the caption should be modified since 2011-2013 is not a flat region.	The figure and caption will be updated.	Other factual inaccuracy in content
Chapter 29 Exchange Rates and International Capital Flows: Key Concepts and Summary	"In a *floating* exchange rate policy, a government determines its country's exchange rate in the foreign exchange market. Should be "in a fixed exchange rate policy"	Revise "floating" to "fixed".	Typo
Chapter 31 The Impacts of Government Borrowing: Section 31.4 Fiscal Policy, Investment, and Economic Growth	This is a resubmission of ID 21829, which was rejected because "Our reviewers determined this was not an error in the most current version of the book's content." I'm attaching a screenshot of the current web textbook showing the error in the text above the figure, which states, "As Figure 18.9 shows, spending **per student**..." (emphasis mine). This is in contrast with the caption, which describes the graph	Revise "As Figure 18.9 shows, spending per student for kindergarten through grade 12 (K–12) increased substantially in real dollars..." to "As Figure 18.9 shows, total federal spending in the U.S. for kindergarten through grade 12 (K–12) increased substantially in nominal dollars..."	Typo

	<p>showing "Total Spending for Elementary, Secondary, and Vocational Education."</p> <p>Here's the original submission which still applies: Text says Figure 18.9 shows spending *per student* but the actual figure shows spending in billions of dollars... clearly not per student, but total government spending on education. (It's also not clear whether this is only federal spending or the total of federal, state, and local spending.)</p>		
<p>Chapter 31 The Impacts of Government Borrowing: Section 31.4 Fiscal Policy, Investment, and Economic Growth</p>	<p>Figure 18.9 was changed from 2e to 3e, but the caption was not and clearly doesn't describe the graph, i.e., dramatic increase in 2008 and steady decrease since 2010. The description of Figure 18.9 in the text (above the figure) is correct and should be paraphrased in the caption.</p> <p>Note that the citation in the caption (OMB) *might* also be incorrect and should be verified. (I was unable to find these data on the OMB website, although I did find some similar data on the Department of Education site: the National Public Education Financial Survey Data.)</p>	<p>The caption will be updated.</p>	<p>Other factual inaccuracy in content</p>

<p>Chapter 33</p> <p>International Trade: Section 33.1 Absolute and Comparative Advantage</p>	<p>Having a comparative advantage means fewer resources are used in production. Whereas absolute advantage means having more total resources. As an example, Saudi Arabia could be used to illustrate both. It has huge reserves of oil so that would give it an absolute advantage over other countries. For Saudi Arabia, extracting oil takes fewer resources, so that would mean it also has a comparative advantage.</p> <p>In Key Terms on page 806 absolute advantage is listed, but the definition is for comparative advantage.</p> <p>Key Terms absolute advantage when one country can use fewer resources to produce a good compared to another country; when a country is more productive compared to another country.</p>	<p>Revise "A country has an absolute advantage over another country in producing a good if it uses fewer resources to produce that good. Absolute advantage can be the result of a country's natural endowment." to "A country has an absolute advantage over another country in producing a good if it can produce more of that good. Absolute advantage can be the result of a country's having more resources, having more productive resources, or its natural endowment."</p> <p>Also update the key term definition to "when one country has more resources, more productive resources, or a natural endowment to produce a good compared to another country; when a country can produce more of a good compared to another country".</p>	<p>General/pedagogical suggestion or question</p>
<p>Chapter 33</p> <p>International Trade: Section 33.3 Intra-industry Trade between Similar Economies</p>	<p>Capitalize "Intra-Industry" heading</p>	<p>Revise "Intra-industry" to "Intra-Industry" in the heading.</p>	<p>Typo</p>