Economics of Money Banking and Financial Markets (Canadian) 7th edition Mishkin Solutions Manual

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Part 2: Chapter Overviews and Teaching Tips

Chapter 1: Why Study Money, Banking, and Financial Markets?

Before embarking on a study of money, banking, and financial markets, the student must be convinced that this subject is worth studying. Chapter 1 pursues this goal in two ways. First, it shows the student that money and banking is an exciting field because it focuses on economic phenomena that affect everyday life. Second, using eight figures, this chapter encourages the student to look at data that bear on the central issues in this field. An additional purpose of Chapter 1 is to provide an overview for the entire book, previewing the topics that will be covered in later chapters, and to indicate how the book will be taught.

In teaching this chapter, the most important goal should be to get the student excited about the material. We have found that talking about the data presented in the figures helps achieve this goal. Furthermore, it shows the student that the subject matter of money and banking has real-world implications that the student should care about.

The appendix to this chapter reviews concepts regarding the definitions of aggregate output, income, and the price level that the student already has seen in an economic principles course. Since these concepts are extremely important, it might be worthwhile to have your students read this appendix outside of class to jog their memories.

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Chapter 2: An Overview of the Financial System

Chapter 2 is an introductory chapter that contains the background information on the structure and operation of financial markets that is needed in later chapters of the book. This chapter allows the instructor to branch out to various choices of later chapters, thus allowing different degrees of coverage of financial markets and institutions.

The most important point to transmit to the student is that financial markets and financial intermediaries are crucial to a well-functioning economy because they channel funds from those who do not have a productive use for them to those who do. Professors who emphasize financial markets and institutions in their course will want to teach this chapter in detail, and those who focus on international issues will want to spend some time on the section "Internationalization of Financial Markets." However, those who slant their course to monetary theory and policy may want to give this chapter a more cursory treatment. No matter how much class time is devoted to this chapter, we have found that it is a good reference chapter for students. You might want to tell them that if in later chapters they do not recall what some financial instrument is or who regulates whom, they can refer back to this chapter, especially to the summary tables.

The chapter introduces Global boxes, which are sprinkled throughout the text, to get students to recognize the growing importance of the global economy. The Global box in this chapter gets students to think about how the financial system is different across countries.

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Chapter 3: What Is Money?

Before becoming immersed in the study of money and banking, the student must understand how money is defined and measured. The first half of Chapter 3 discusses the definition of money: how the economist's definition differs from that of common speech, the functions of money, and a historical view of how what serves as money has changed over time. The second half of the chapter describes the tricky issues involved in applying the definition of money in order to measure it.

Once the student understands what money is, the most important point to get across to him or her is that economists are not exactly sure how to measure money. This presents to policymakers a serious problem: Although they might want to control the money supply to affect the economy, they are not sure which measure of money is the right one to control. In many situations, knowing which measure of money is the right one is not crucial because different measures (such as Ml+, M2+, and M2++) move together. But, as Figure 3-2 illustrates, this is sometimes not the case, presenting the policymaker with a dilemma.

This chapter introduces FYI boxes, which highlight dramatic historical episodes, interesting ideas, and intriguing facts to keep students excited about the material.

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Chapter 4: Understanding Interest Rates

In my years of teaching money and banking, we have found that students have trouble with what we consider to be easy material because they do not understand what an interest rate is: that it is negatively associated with the price of a bond, that it differs from the return on a bond, and that there is an important distinction between real and nominal interest rates.

This chapter spends more time on these issues than does any other competing textbook. Furthermore, it contains many numerical applications to drive home the concepts. Our experience has been that giving this material so much attention is well rewarded. After putting more emphasis on this material in our money and banking courses, we witnessed a dramatic improvement in students' understanding of bank asset and liability management, portfolio choice, models of the demand for money, and other topics in monetary theory. We have also found that students very much enjoy this chapter because it is so useful to them in their careers.

An appendix to the chapter, which can be found in MyLab Economics, provides more detail on how interest-rate risk can be measured with the concept of McCauley's duration. This is a basic financial tool that is used by practitioners and so will be of great interest to students who plan careers in the financial industry.

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Chapter 5: The Behaviour of Interest Rates

As is clear in the Preface to the textbook, we believe that money and banking is taught effectively by emphasizing a few economic principles and then applying them over and over again to the subject matter of this exciting field. Chapter 5 introduces one of these basic economic principles: the theory of portfolio choice. This theory indicates that there are four primary factors that influence people's decisions to hold assets: wealth, expected returns, risk, and liquidity. The simple idea that these four factors explain the demand for assets is, in fact, an extremely powerful one. It is used continually throughout the study of money and banking and makes it much easier for the student to understand how interest rates are determined, how banks manage their assets and liabilities, why financial innovation takes place, how prices are determined in the stock market and the foreign exchange market, and how various theories explain the demand for money.

For instructors who have a greater finance orientation in their course and so want to discuss the theory of portfolio choice in more detail, we have provided an appendix in MyLab Economics that describes finance models of asset pricing.

One teaching device that we have found helps students develop their intuition is the use of summary tables such as Table 5-1 in class. We use the blackboard to write a list of changes in variables that affect the demand for an asset and then ask students to fill in the table by reasoning how demand responds to each change. This exercise gives them good practice in developing their analytic abilities. We use this device continually throughout our courses and in this book, as is evidenced from similar summary tables in later chapters. We recommend this approach highly.

Chapter 5 goes on to lay out two partial equilibrium approaches to the determination of interest rates: supply and demand in the bond market and the liquidity preference framework (supply and demand in the money market). As is made clear in this chapter, these approaches are not inconsistent with each other but are two different and useful ways of looking at the same thing. (A third approach to the determination of interest rates used by some practitioners in financial markets is the so-called loanable funds framework. An appendix to the chapter found in MyLab Economics shows how the supply and demand analysis of the bond market developed in this chapter relates to the loanable funds framework.)

An important feature of the analysis in this chapter is that supply and demand is always done in terms of stocks of assets, not in terms of flows. Recent literature in the professional journals almost always analyzes the determination of prices in financial markets with an asset-market approach: that is, stocks of assets are emphasized rather than flows. The reason for this is that keeping track of stocks of assets is easier than dealing with flows. Correctly conducting analysis in terms of flows is very tricky, for example, when we encounter inflation. Thus, there are two reasons for using a stock approach rather than a flow approach: (1) it is easier and (2) it is more consistent with modern treatment of asset markets by economists.

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Another important feature of this chapter is that it lays out supply and demand analysis of the bond and money markets at a similar level to that found in principles of economics textbooks. The *ceteris paribus* derivation of supply and demand curves with numerical examples are presented, the concept of equilibrium is carefully developed, the factors that shift the supply and demand curves are outlined, and the distinction between movements along a demand or supply curve and shifts in the curve are clearly drawn. Our feeling is that the step-by-step treatment in this chapter is worthwhile because supply and demand analysis is such a basic tool throughout the study of money, banking, and financial markets. We have found that even those students who have had excellent training in their principles course find that this chapter provides a valuable review of supply and demand analysis.

The second appendix to the chapter that can be found in MyLab Economics shows how the analysis developed in the chapter can be applied to understanding how any asset's price is determined. Many students like the application to the gold market because this commodity piques almost everybody's interest and we teach this material in our classes.

Some practitioners use an alternative approach to interest-rate determination, the loanable funds framework. A third appendix in MyLab Economics discusses this framework and shows how it is similar to the analysis of supply and demand analysis for the bond markets in the text.

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Chapter 6: The Risk and Term Structure of Interest Rates

Chapter 6 applies the tools the students learned in Chapter 5 to understanding why and how various interest rates differ. In courses that emphasize financial markets, this chapter is important because students are curious about the risk and term structure of interest rates. On the other hand, professors who focus on monetary theory and policy in their courses might want to skip this chapter. The book has been designed so that skipping this chapter will not hinder the student's understanding of later chapters.

A particularly attractive feature of this chapter is that it gives students a feel for the interaction of data and theory. As becomes clear in the discussion of the term structure, theories are modified because they cannot explain the data. On the other hand, theories do help to explain the data, as the applications on interpreting yield curves in the 1980–2017 period and on the impact of the global financial crisis on the Baa-Treasury spread demonstrates.

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Chapter 7: The Stock Market, the Theory of Rational Expectations, and Efficient Market Hypothesis

Because the stock market is of such great interest to students, this chapter discusses theories of how stocks are priced and how information is incorporated into stock prices. Laying out the simple models of the one-period valuation model, the generalized dividend valuation model, and the Gordon growth model gives students the tools to understand how stock prices are determined. Two applications show students how relevant these models are by applying them to see how monetary policy influences stock prices.

An important development in monetary theory that has far-reaching implications for the way we evaluate economic policy is the theory of rational expectations. Chapter 7 explains this theory and its application to financial markets, which is referred to as the efficient market hypothesis. Although the theory of rational expectations can be laid out in mathematical terms, we have found that it is best to give the students an example such as Joe Commuter's expectations to give them an intuitive sense of what "rational expectations" means. When provided with a graphic example like that used in the text, students have no trouble understanding the theory of rational expectations, which is really just good common sense.

The implications of rational expectations theory become much clearer when this theory is used to understand behaviour in the financial markets as in the efficient market hypothesis. Another area of exciting new research has been on the validity of rational expectations and efficient markets, and this is discussed in more detail in an appendix to the chapter, which can be found in MyLab Economics. Research has been dredging up fascinating anomalies that cast doubt on these theories. This chapter has therefore been written to give a more balanced view of these theories: It reflects this latest research, including a discussion of the new field of behavioural finance, which applies concepts from other social sciences such as anthropology, sociology, and particularly psychology, to understand the often anomalous behaviour of security prices.

Students particularly enjoy the application of rational expectations (efficient market hypothesis) theory to provide a practical guide to investing in the stock market. This application captures the attention of even the most disinterested student because all of us are interested in how to get rich (or, at least, in how to keep from getting poor). This application also gives students practice using the reasoning that they learned earlier in the chapter. In addition, the theory is confronted with evidence that shows the student important implications for the real world.

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Chapter 8: An Economic Analysis of Financial Structure

The development of the literature in economics on asymmetric information and financial structure in recent years now enables financial institutions to be taught with basic economic principles rather than placing emphasis on a set of facts that students may find boring and so will forget after the final exam. This chapter provides an outline of this literature to the student and provides him or her with an economic understanding of why our financial system is structured the way it is. In addition, it emphasizes the ideas of adverse selection and moral hazard, which are basic economic concepts that are useful in understanding principles of bank credit risk management in Chapter 12, principles of bank regulation in Chapter 9, the economics of financial regulation in Chapter 10, and financial crises in Chapter 11.

The chapter begins with a discussion of eight basic facts about financial structure. Students find some of these facts to be quite surprising—the relative unimportance of the stock market as a source of financing investment activities, for example—which piques their interest and stimulates them to want to understand the economics behind our financial structure. The next two sections then explain these facts by providing an understanding of how transaction costs and asymmetric information affect financial structure. Our experience with teaching this material is that it is very intuitive and therefore easy for students to learn. Furthermore, students find the material inherently exciting because it explains phenomena that they know are important in the real world. We have also found that it helps students to learn facts about the financial system because they now have a framework to make sense out of all these facts.

Two applications give students practice with using the concepts in the earlier asymmetric information analysis. They examine the role of financial development on economic growth and whether China is a counter-example to the importance of financial development. Students find these applications to be very stimulating because there is something inherently exciting about economic growth. These applications can be skipped without loss of continuity, especially for courses focusing on financial institutions.

The chapter has been designed to keep the textbook very flexible. The concepts of adverse selection and moral hazard were explained in Chapter 2 and are explained again in Chapter 12, so that Chapter 8 does not have to be covered in order to teach this or later chapters. Furthermore, the applications at the end of the chapter do not need to be covered in order to teach other chapters in the book.

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Chapter 9: Economic Analysis of Financial Regulation

Chapter 9 stresses the economic way of thinking by conducting an economic analysis using the adverse selection and moral hazard concepts to show why our regulatory system takes the form it does and how it can lead to banking crises.

Note that Chapter 8 does not need to be covered in order to teach this chapter. However, if Chapter 8 is covered in class, Chapter 9 is a nice application of the analysis in that chapter. Indeed, the instructor might want to stress in class the counterparts in private financial markets to the methods financial regulators use to cope with adverse selection and moral hazard.

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Chapter 10: Banking Industry: Structure and Competition

Chapter 10 supplements Chapter 2 by going into much greater detail about the structure of the banking system. This chapter differs from conventional chapters on the banking industry in other money and banking textbooks by stressing a more dynamic, analytical framework than in other books. In particular, it provides an analytic framework for understanding the process of financial innovation in which financial institutions respond to changes in the financial environment by searching for innovations that are likely to be profitable. This framework is then used to show how financial innovation and changes in the ability to process information have led to a decline in the traditional banking business and to fundamental changes in the structure of the banking industry.

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Chapter 11: Financial Crises

Financial crises are inherently interesting because they are so dramatic. This has become even more the case with the recent global financial crisis that has had such devastating consequences for not only the U.S. economy, but for Europe as well. Indeed, teaching this material on the financial crises has engaged students' interest more than anything else we have taught in our entire careers of over thirty years of teaching.

This chapter makes use of an asymmetric information analysis (agency theory) to explain the dynamics and adverse impact of financial crises. Teaching Chapter 8 in full is not necessary to cover Chapter 11 as long as the instructor goes over the concepts of asymmetric information, adverse selection, and moral hazard. Although Chapter 11 defines these concepts, many instructors will prefer to cover these concepts in more detail using the material in the first part of Chapter 8.

After defining the basic asymmetric information concepts, the chapter outlines the dynamics of financial crises in advanced economics by separating crises into three phases: the initial phase in which financial innovation or liberalization occurs, but is deeply flawed, so it leads to a credit boom and bust, the second phase of a banking crisis, and the third phase, which only occurs in the worst financial crises, of debt-deflation, in which a decline in the price level causes a further deterioration in household and businesses balance sheets. Figure 11-1 is particularly useful to get students to see the sequence of events and dynamics of financial crises, and going through all the stages in the figure helps students get the big picture of what is happening during financial crises.

Students will be most interested in using the analysis to discuss the application on recent financial crisis in 2007–2009, which was the worst financial crisis to hit the world since the Great Depression. Nonetheless, the application on the Great Depression is worth covering because it contains so many lessons for today.

For those instructors who would like to internationalize their course, a chapter available in MyLab Economics extends the analysis to *emerging market economies*, economies in an early stage of market development that have recently opened up to the flow of goods, services, and capital from the rest of the world.

The chapter ends with a discussion of where financial regulation might be heading in the aftermath of the global financial crisis. Instead of lecturing on this issue, we have the students themselves speculate on what measures may be needed to prevent a crisis like this from happening again. This gets them to apply the concepts in the chapter and makes for a very spirited discussion.

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Chapter 12: Banking and the Management of Financial Institutions

Although this chapter performs the conventional function of outlining what banks (depository institutions) do and what their balance sheets look like, it also emphasizes the economic way of thinking about how banks manage their assets and liabilities to make a profit. Three tools are used throughout this chapter and the rest of the book—the asymmetric information concepts of adverse selection and moral hazard, introduced in Chapter 2, the theory of portfolio choice developed in Chapter 5, and T-accounts, introduced in this chapter. In teaching this material, it is worth emphasizing to the student that mastery of these tools will pay high dividends in helping them to learn (and perform well on exams) in this course.

The economics of bank management is important, not only because it will help students comprehend the operation of banks, the most important of our financial intermediaries, but also because bank management affects the money supply, as shown in Chapter15. The first three sections of the chapter—"The Bank Balance Sheet," "Basic Banking," and "General Principles of Bank Management"—place particular emphasis on the question of why banks hold excess reserves, since banks' decisions about the amount of excess reserves they hold play an important role in the money supply process.

The subsection, "Capital Adequacy Management," and the final three sections in the chapter, "Managing Credit Risk," "Managing Interest-Rate Risk," and "Off-Balance-Sheet Activities," discuss issues that have become increasingly important in recent years. Many instructors may therefore want to include this material in their courses, yet none of this material is essential to understanding later chapters, so it can be skipped without any loss of continuity. The application on how a capital crunch caused a credit crunch during the global financial crisis particularly piques the interest of students because it shows how changes in banks' behaviours can have major effects on the economy.

Chapter 12 has two appendices in MyLab Economics. The first outlines duration gap analysis and the second discuses how to measure bank performance. For instructors who are teaching students who might want to go into the financial industry, these appendices can give these students extra tools that they can use in their future jobs.

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Chapter 13: Risk Management with Financial Derivatives

The treatment of financial derivatives markets (forwards, futures, options, and swaps) in this book differs markedly from that in other money and banking textbooks. Financial derivatives are approached from the perspective of managers of financial institutions, and this is why this material is placed in the financial institutions part of the book. Rather than go into a lot of facts about these different markets, this chapter focuses on how the markets work and how they can be used to hedge the risk faced by financial institutions. This approach makes more sense to students who now clearly see why studying these markets and their operation is relevant.

One problem that we have encountered in teaching students about financial derivatives is that many do not find the financial derivative contracts to be particularly intuitive. In order to get them to understand how these contracts work, we find it helps to first discuss what hedging is and drive home the principal that hedging risk involves engaging in a financial transaction that offsets a long position by taking an additional short position, or vice versa. Then we find it important to walk them through a numerical example in class that shows them what the profits are for these contracts given different outcomes. In addition, to hammer home how these contracts work, this chapter contains several applications that provide specific examples of how hedges are conducted with financial futures, forward contracts, options, and swaps. We know of no other money and banking textbook that takes as applied an approach to teaching students about financial futures and forward contracts as we do in this book. Our experience is that only with applications of the type found in this chapter can students have any real understanding of what financial derivatives are all about.

Other money and banking textbooks tend to give only a cursory treatment of what profits arise for a holder of an option contract given different market outcomes. They may have a figure illustrating the profits, but do not give a detailed explanation of how profits are generated. We think that this is a terrible mistake because students often do not find financial derivatives contracts to be particularly intuitive, and this is particularly true for the options contract. This chapter takes a different approach by containing an extensive explanation and discussion of Figure 13-3, which outlines the profits and losses that occur on financial options and futures contracts depending on what happens to the price of bonds. To get the students to understand these contracts and what their differences are, the instructor needs to carefully walk the students through the numerical example of Figure 13-3. Our experience in class suggests that unless this is done, many students will just not understand what these financial derivatives, and particularly options, are all about.

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Chapter 14: Central Banks and the Bank of Canada

Chapters 14–17 explore in detail how monetary policy is conducted. Although most professors covering monetary theory will want to include much of this material in their courses, later chapters on monetary theory do not directly depend on Chapters 14–17, so they can be skipped without loss of continuity. Other professors covering monetary theory may prefer to teach this material after they have taught the chapters on monetary theory.

The chapter starts by discussing how the central bank in Canada—the Bank of Canada—operates. The basic point that should be driven home in class is that although the Bank of Canada has a complicated bureaucratic structure, in practice it functions like many other central banks around the world. Students should enjoy the discussion of how foreign central banks are structured, and how foreign central banks are similar to or differ from the Bank of Canada.

In addition to the institutional detail on the Bank of Canada that is usually found in money and banking textbooks, Chapter 14 also tries to provide the student with a feel for what motivates central bankers. Furthermore, discussing the theory of bureaucratic behaviour shows students that the economic way of thinking is useful in understanding a wider range of problems than they might otherwise have thought.

To help the instructor spice up the discussion of central banking, the chapter contains a detailed description of the structure and independence of the central bank in the United States --- the Federal Reserve System. We also emphasize that until recently the Federal Reserve had no significant rivals in the central banking world. This changed in January 1999 with the startup of the European Central Bank (ECB), which now conducts monetary policy for countries that are members of the European Monetary Union, which in total have a population that exceeds that of the United States and a GDP comparable to that of the U.S. Because of growing student interest in the workings of the European Central Bank, the chapter has an extensive discussion of the structure and independence of the European Central Bank. To motivate this material, we focus on how the ECB is similar to the Federal Reserve and how it differs. The chapter also contains brief descriptions of the structure and independence of two other important central banks of interest to students: the Bank of England and the Bank of Japan.

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Chapter 15: The Money Supply Process

This chapter provides an analysis of how the money supply is determined. One point that needs to be emphasized at the outset is that the money supply is not determined solely at the whim of the central bank; rather, there are two other players in the money supply process who also play an important role: banks and depositors. Chapter 15 first extensively discusses the simple model of multiple deposit creation, even though it is unrealistic and does not feature all of the players, because it illustrates the basic principles used later in the chapter. The critique of the simple model of multiple deposit creation then leads to a discussion of the money multiplier and a more complete treatment of the money supply process.

We have found that going over the Summary Table 15-1 with students in class is an excellent device to help them review the money supply model; it gives them an overall and complete picture of how the money supply is determined.

Chapter 15 ends with an application on quantitative easing and the money supply in recent years. There has been tremendous confusion about this topic in the media because many pundits claim that quantitative easing has led to an explosion of high-powered money that will be highly inflationary. However, as the application shows, a change in the Fed's rules so that it could pay interest on reserves meant that a massive expansion of the Fed's balance sheet during and after the global financial crisis resulted in only a moderate increase in the money supply. This application should convince students that the analysis they have learned is not mere theory, but a useful means of explaining topics that are hotly debated in the media.

This chapter has three appendices in MyLab Economics: The first provides more detail on the Bank of Canada's balance sheet and the factors that affect the monetary base; the second derives the M2+ money multiplier and explains the intuition behind it; and the third looks at how bank panics during the 1930s affected the money supply. Some instructors may want to cover this material in class because it shows how money supply analysis can be extended to monetary aggregates other than M1+ and provides more detail on how the money supply is determined. In addition, it provides students with additional practice in using the concepts they have learned in the chapter.

For instructors who would prefer to deemphasize discussion of the money supply process in their course, this chapter can easily be skipped. We have also found that we can skip this chapter.

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Chapter 16: Tools of Monetary Policy

Chapter 16 examines in detail the tools at the Bank of Canada's disposal for conducting monetary policy. To fully understand how these tools are used in the conduct of monetary policy, this chapter shows how they affect the overnight interest rate directly. Students are introduced to the nitty gritty of how the Bank of Canada wields these tools and are exposed to current debates on whether Bank of Canada policymaking could be made more effective by altering their use of these tools.

To keep the material in this chapter from being too descriptive, we have started the chapter with an analytic analysis of how Bank of Canada actions influence the overnight funds rate. This analysis reflects the changes in the Bank's operation of its standing liquidity facilities. The chapter also includes an application on the channel/corridor approach for setting interest rates also used by other countries. Teaching this application encourages students to use their economic intuition to understand the tools of monetary policy better.

One topic that frequently does not get enough attention in money and banking courses is the lender-of-last-resort function of central banks. We feel this function should be stressed in class, because students find it inherently interesting in the wake of the recent massive operations by the Bank of Canada and other central banks around the world during the global financial crisis. Students particularly like to hear about real-world examples of central bank lending to avoid banking and financial panics.

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Chapter 17: The Conduct of Monetary Policy: Strategy and Tactics

Chapter 17 outlines the goals, strategies, and tactics of central bank policymaking. It starts by laying out modern theories of central banking: It first discusses the price stability goal and the role of a nominal anchor in solving the time-inconsistency problem, and then discusses the other goals of monetary policy and why price stability is now viewed as the primary goal of monetary policy.

The time-inconsistency problem is one of the most important ideas in monetary theory in the last thirty years. We illustrate the time-inconsistency problem in class by using the example of how many people cannot stick to a diet even though they know this is the right thing for them to do in the long run. Many other examples can bring this idea home to the student. Another good example is the fact that it is optimal not to give in to children when they are behaving badly, but parents still have a tendency to renege on this optimal plan. A third example is that governments usually provide funds to rebuild in coastal areas after a hurricane, even though it is not optimal to build in areas that are likely to be ravaged by hurricanes. You might ask the students to think of other examples in order to hammer home this important idea.

The chapter then goes on to discuss two monetary policy strategies. The first is inflation targeting, which involves announcement of an inflation target objective, with a commitment by the central bank to achieve it. There is an additional monetary policy strategy that central banks used in the past, but not currently—monetary targeting. For those instructors who would like to cover this material, we have provided an appendix to Chapter 17 found in MyLab Economics that covers monetary targeting. We have found that discussing the pros and cons of different monetary policy strategies piques students' interest. One teaching technique is to have students debate which strategy is best.

The chapter concludes the discussion of monetary policy strategy first, with a section on lessons from the global financial crisis. Then it discusses a particularly hot topic in central banking circles after the crisis, the debate on how central banks should respond to asset-price bubbles. Asset-price bubbles are particularly interesting to students because they involve huge booms in asset prices and then crashes, which are very dramatic. The issue of what should be done about asset-price bubbles is very controversial, and so one way of teaching this material is to stage a debate in class with two opposing views: that central banks should not respond at all, which is the position associated with Alan Greenspan, or alternatively, that monetary policy should try to preemptively prick bubbles.

The chapter then moves on to discuss monetary policy tactics: in particular, what policy instrument should be chosen to conduct monetary policy. Figures 17-3 and 17-4 illustrate why targeting on a monetary aggregate like nonborrowed reserves implies a loss of control of interest rates like the overnight interest rate, while targeting on the overnight interest rate implies a loss of control of monetary aggregates. This analysis can also be done in terms of the supply and demand for money framework. Indeed, covering this topic is an excellent way of providing students with another application to give them practice with the supply and demand analysis for the market for reserves or the market for money.

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The second tactical issue is how to set a target for the overnight funds rate with the so-called Taylor rule. Discussion of the Taylor rule helps students understand that the Bank of Canada focuses not only on inflation but also on fluctuations around potential output. The role of the output gap in setting monetary policy follows from Phillips curve theory and the validity of the NAIRU concept. The Phillips curve and NAIRU are very controversial of late, and a discussion of the controversy can engage students in understanding how difficult it is for the Bank of Canada to decide on the appropriate stance of monetary policy.

The chapter has a second appendix in MyLab Economics that provides a historical discussion of how the Bank of Canada has conducted monetary policy over the years. It presents students with many real-world examples that make the study of monetary policy more concrete. It also provides students with a review of the money supply process and how the Bank's policy tools work, thus giving them another pass at this material, which should solidify their understanding of it. Finally, it will give students some perspective on where monetary policy may be heading in the future.

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Chapter 18: The Foreign Exchange Market

Chapter 18 explains behaviour in the foreign exchange market by using a modern asset-market approach to exchange rate determination. This asset-market approach is now the dominant method of analyzing exchange rate movements in the literature, and it has major advantages over the more conventional treatment of the foreign exchange market typically found in money and banking textbooks.

As the second application in the chapter indicates, the asset-market approach, in contrast to earlier approaches emphasizing import and export demand, can be used to explain a feature of the foreign exchange market that has received much attention in the press in recent years: the high volatility of exchange rates. This phenomenon is not well explained by the earlier flow approach because it does not predict that exchange rates should be highly volatile.

The asset-market approach is developed in several steps. First, the long-run determinants of the exchange rate are laid out, and then the information about the long-run determinants is embedded in a model of the short-run determination of exchange rates. The key idea that must be transmitted to the student is that the demand for domestic currency (say dollar) assets is determined by the relative expected return on these assets.

To help students achieve an intuitive grasp of how the relative expected return on domestic assets, and hence the demand curve shifts, tell them to put themselves in the shoes of an investor who is thinking about putting his or her money into foreign or domestic assets. When a factor changes, have them ask themselves whether at the same exchange rate they would earn a higher expected return on domestic assets—if so, the demand curve has shifted to the right. This kind of thinking will help them manipulate the demand curve so they can predict which way the exchange rate changes. Several summary tables in the chapter should help students master the material, and we have found that using them in class helps greatly in clarifying the discussion.

The four applications in the chapter on the *Economist*'s Big Mac Index and PPP, on the response of exchange rates to changes in interest rates, the effect of global financial crisis on the dollar, and the impact of Britain's exit (Brexit) and the subsequent collapse of the pound, can all be used in class to show students that the material they have learned has practical uses.

Some instructors like to teach the foreign exchange market at the same time they discuss the bond market and stock market which is what we do. They can do this by teaching this chapter immediately after Chapter 7 if they so choose.

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Chapter 19: The International Financial System

Chapter 19 shows why international financial transactions have important implications for the conduct of monetary policy. The beginning of the chapter explains how foreign exchange market intervention affects the exchange rate, a country's international reserves, and the money supply. It then discusses the balance of payments, but this sometimes-dry topic can be spiced up for students by a discussion of the box on why large current account deficits worry economists.

The chapter then goes on to discuss the evolution of the international financial system and how fixed exchange rate systems work. Two applications in this section make the material come alive for students. The first examines the September 1992 foreign exchange crisis and recent foreign exchange crises in emerging market countries. This application captures the imagination of students because huge profits were made during this crisis and because government intervention in the markets was massive. The second examines how China has accumulated over $4 trillion of international reserves, a subject of great interest to students. These applications also give students further practice with the model of the foreign exchange market developed in Chapter 18.

The currency and financial crises in recent years have caused policymakers throughout the world to focus on how the architecture of the international financial system might be reformed in order to limit the threat of financial crises. Concerns about international financial architecture have led to a lively debate, to say the least, about the role of the International Monetary Fund and capital controls. We use the discussion in the text on these subjects to stimulate a lively debate among the students, which gets them to realize that what happens outside Canada is still of tremendous importance to us. The next section on international considerations and monetary policy explains how international financial transactions and movements in the exchange rate can affect monetary policy, and this material is closely related to the discussion in Chapter 17 about the conduct of monetary policy.

The final section on exchange rate targeting can be staged as a debate in class of the pros and cons of fixed versus flexible exchange rate regimes and can be linked to the discussion of international financial architecture. Debates can also be staged on the desirability of exchange rate targeting versus other monetary policy strategies such as inflation targeting.

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Chapter 20: Quantity Theory, Inflation, and the Demand for Money

Chapter 20 discusses two of the basic building blocks of monetary theory, the quantity theory of money and the demand for money, examining how these theories can explain inflation in the long run, This material is more appropriate for a course that emphasizes monetary theory, and many professors will prefer not to cover it. Later chapters do not depend on this material, so dropping it from your course will not hinder students' ability to understand later chapters.

The chapter starts with the quantity theory of money. The key equation to get students to understand is the equation of exchange in Equation 2, which is then transformed into the quantity theory Equation 4. The quantity theory embedded in Equation 6 is then tested in the application, "Testing the Quantity Theory of Money," which shows that the theory helps explain long-run inflation.

Using the quantity theory, the next section of the chapter discusses how budget deficits can lead to inflation. Students find this discussion particularly interesting because of the current debates on reigning in budget deficits. The key to getting students to understand why budget deficits matter to inflation is to emphasize the government budget constraint in Equation 7. The application on the Zimbabwean hyperinflation is fun to discuss in class, not only because it illustrates how budget deficits lead to high inflation but also because Robert Mugabe is famous for destroying his country and hyperinflation is one manifestation of his disastrous policies.

This chapter then describes the two basic approaches to theories of the demand for money: Keynesian theories and portfolio-choice theories. This seems to be the natural way to organize this material. It is important to emphasize in class that a central question in monetary theory is whether the demand for money is affected by changes in interest rates, because this issue is crucial to how we view money's effect on aggregate economic activity. This is why the discussion in this chapter always focuses on the role of interest rates in the demand for money.

The chapter ends with a discussion of the current state of empirical evidence on the demand for money, and it focuses on two basic questions that are central in monetary theory: (1) How sensitive is the demand for money to changes in interest rates? and (2) Is the demand for money function stable over time? The discussion here is nontechnical but should give the student a feel for how empirical research in economics is done. A far more extensive discussion of the empirical evidence can be found in an appendix to this chapter in MyLab Economics. If students in the course have some training in regression analysis, a professor may want to spend more time on the empirical work on money demand. An excellent supplementary reading in this case is Goldfeld's article, "The Demand for Money Revisited," listed in the footnotes in the appendix. This article is very clearly written and demonstrates how high-quality empirical work should be done.

To satisfy professors who want to include more detail on Keynesian theories of money demand, a second appendix found in MyLab Economics provides a treatment of the Baumol-Tobin and the Tobin mean-variance models.

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Chapter 21 The IS Curve

This chapter introduces the basic concept of aggregate demand and develops one of the key building blocks of the AD/AS model, the IS curve. The framework here is pretty conventional, first outlining the components of planned expenditure—consumption expenditure, planned investment spending, government purchases, and net exports. Then the chapter goes into detail about goods market equilibrium, when planned equals actual expenditure, and shows how this equilibrium generates the IS curve, the relationship between the real interest rate and equilibrium output. Spending a fair amount of time in class on the concept of goods market equilibrium, and why the economy will gravitate to this equilibrium, is worthwhile because this concept is so important to short-run macroeconomic analysis.

One element of the framework here that is not conventional is that we build directly into the IS curve the impact of financial frictions on aggregate demand. After the global financial crisis, it is now imperative to discuss the interaction of finance and the macroeconomy and this is done at the outset in this textbook's discussion of monetary theory.

The chapter then goes on to provide a deeper understanding of the IS curve by explaining the intuition behind it, using a numerical example to explain it with mathematics. Then the chapter takes the student through all the factors that shift the IS curve and explains the intuition for how each factor shifts the IS curve. The application of the Vietnam War buildup from 1964 to 1969 and its effect on the economy shows that the IS curve analysis is a useful one for explaining interesting historical episodes.

One teaching device that we have found helps students develop their intuition is the use of Summary Table 21-1 in class. You can use the blackboard to write a list of changes in variables that shift the IS curve and ask students to fill in the table by saying which way the IS curve shifts in response to each change and explaining what the reasoning is. This exercise gives them good practice in developing their analytic abilities. We use this device continually throughout this part of the book, as is evidenced from similar summary tables in later chapters. We recommend this approach highly.

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Chapter 22: The Monetary Policy and Aggregate Demand Curves

Chapter 22 develops two other building blocks of the AD/AS framework, the monetary policy curve and the aggregate demand curve. It explains why monetary policymakers raise interest rates when inflation rises so that there is a positive relationship between real interest rates and inflation, which is called the monetary policy (MP) curve. It also explains that shifts in monetary policy involve autonomous easing or tightening of monetary policy, which involve changes in the real interest rate for a given level of inflation. Students often struggle with the difference between movements along the MP curve and shifts in the MP curve. Two applications help clarify this for students. These two applications provide useful illustration to cover in class to hammer home the distinction between movements along and shifts in the MP curve.

The chapter then goes on to use the MP curve with the IS curve from the previous chapter to derive the aggregate demand (AD) curve, a key element in the AD/AS framework. The AD curve has the usual downward slope, but in contrast to the more traditional AD curve in other textbooks, it displays a negative relationship between inflation (instead of the price level) and aggregate demand. The AD curve is derived both graphically and with a numerical example to hone students' intuition, and students are shown that the factors that shift the IS curve are the same ones that shift the AD curve in exactly the same direction.

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Chapter 23: Aggregate Demand and Supply Analysis

The basic tool used to analyze the role of money in the economy in this book is a dynamic aggregate demand and supply analysis. The aggregate demand/aggregate supply model in this book differs from that in many other textbooks because it is inherently dynamic and emphasizes the interaction of inflation and economic activity. In contrast to older AD/AS frameworks that have the price level on the vertical axis, the dynamic AD/AS approach in this textbook has inflation on the vertical axis.

There are several advantages to the approach used here. First, students have to learn only one model to understand fluctuations in output and inflation, the AD/AS model here, while older approaches require two models, the ISLM model and then a separate AD/AS model. Learning just one model is almost always easier than learning two. Second, the dynamic AD/AS model used here directly allows analysis of the interaction of inflation and economic activity, a key feature of modern macroeconomic analysis. Third, because the model directly builds in expectations as a central element, it can far more directly deal with current policy discussions about the importance of credibility to the success of macro policies and the benefits of adopting a strong nominal anchor like an inflation target in conducting monetary policy.

The chapter starts with a recap of the aggregate demand curve. There are two reasons for doing so. First, it drives home the intuition behind the aggregate demand curve, and recaps like this are a good way of getting students to really understand the material. Second, many instructors who are pressed for time might not want to go into so much detail about the derivation of the aggregate demand curve and so would prefer to skip Chapters 21 and 22. The recap in Chapter 23 allows instructors to skip Chapters 21 and 22 and still get across the major ideas in monetary theory. In teaching this material, it is again useful in class to make use of the teaching device of the Summary Table 23-1, which summarizes what factors cause the aggregate demand and supply curves to shift. Listing changes in the variables that shift the AD curve and then asking students to fill in the tables by saying which way the curve will shift and the reasons behind the shift will give them the practice they need to master the aggregate demand curve.

The chapter then develops the remaining building block of the AD/AS framework, the aggregate supply curve. This chapter develops the aggregate supply intuitively, stressing that the long-run aggregate supply curve is a vertical line determined by the amount of capital in the economy, the amount of labour supplied at full (the natural rate level of) employment, and the available technology. It develops the short-run aggregate supply curve using the intuition that there are three factors that drive inflation: (1) expectations of inflation, (2) output gap, and (3) price (supply) shocks. The Summary Table 23-2 can be used to hone students' intuition by listing changes in the variables that shift the short-run AS curve and then asking students to fill in the tables by saying which way the curve will shift and the reasons behind the shift. This intuitive approach to understanding the aggregate supply curve works extremely well with students, but some instructors will want to delve deeper into the theory behind the short-run aggregate supply curve and show that it is developed from a Phillips curve analysis and Okun's law. The appendix at the end of the chapter allows them to do this. The next step is to describe the equilibrium in AD/AS analysis, while getting across the key point that there are two equilibria. The short-run equilibrium occurs at the intersection of the AD curve with the short-run AS curve, while the

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long-run equilibrium occurs at the intersection of the AD curve and the long-run aggregate supply curve. The chapter then shows them how the economy has a self-correcting mechanism because over time, a sequence of short-run equilibria lead the economy to go to the long-run equilibrium at which output returns to potential and the economy is at full employment.

The rest of the chapter shows how inflation and equilibrium output changes as a result of either aggregate demand shocks or aggregate supply (inflation) shocks. To drive home the analysis and also show students how useful the AD/AS model is, the chapter goes through a large number of applications, including applications involving foreign countries. All of these applications are self-contained, so an instructor can pick and choose the ones he or she would like to teach in class. However, we think there is nothing more fun than to explain important historical episodes, which all of the applications do, and show how powerful economic models can be used to explain real-world phenomena.

In order to bring international factors into the aggregate demand and supply analysis of the chapter, net exports are included in the definition of aggregate demand. This enables the instructor to discuss how international trade flows can affect aggregate output and inflation. If the instructor wants to stick with a closed-economy framework, he or she can easily ignore the material in the chapter that deals with international trade by just leaving net exports out of his or her discussion. None of the basic analysis in this or later chapters will be affected by this choice. However, if the instructor wants to fully internationalize the course, he or she might want to teach Chapters 18 and 19, which provide a more complete description of how monetary policy affects foreign exchange rates, before teaching this chapter.

For those instructors who want to spend more time on monetary theory and delve deeper into the dynamic AD/AS model, the chapter has four appendices available in MyLab Economics. The first, "The Effects of Macroeconomic Shocks on Asset Prices," is worth teaching to students who are interested in pursuing careers in finance. It shows how the AD/AS model can explain how macroeconomic events that students are seeing reported in the media every day affect both stock prices and interest rates. The second appendix in MyLab Economics provides a numerical example of aggregate demand and supply analysis, while the third, "The Algebra of the Aggregate Demand and Supply Model," develops all the results described in the chapter algebraically. These two appendices allow the instructor to bring in more mathematics to the treatment of monetary theory for students who are more mathematically inclined. The last appendix formally demonstrates a point made in Chapter 22, that the Taylor principle is necessary for inflation stability and thus provides the rationale for why a central bank has to raise the real interest rate as inflation rises, giving the MP curve an upward slope.

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Chapter 24: Monetary Policy Theory

Chapter 24 brings a new set of actors into the AD/AS framework—policymakers—and develops the theory behind monetary policy making, examining how monetary policymakers react to shocks to the economy in order to stabilize both inflation and economic activity. One unique feature of the dynamic AD/AS framework in this book is that it can address policy questions that other frameworks cannot, such as "When does stabilizing inflation, stabilize output (i.e., when does the divine coincidence occur)?"

The chapter starts by seeing how policymakers respond to shocks to aggregate demand or aggregate supply to achieve these objectives. The analysis in the chapter makes clear that stabilizing inflation stabilizes economic activity, so there is no policy tradeoff, except when there are shocks to aggregate demand or permanent shocks to aggregate supply. On the other hand, temporary shocks to aggregate supply do involve a policy tradeoff because in this case stabilizing inflation does not stabilize economic activity.

Another big issue in macroeconomics is whether policymakers should be activist—i.e., respond aggressively to fluctuations in economic activity—or alternatively, not respond and be nonactivist. One way of bringing home to the students the importance of this issue is to discuss in class the box on the activist/nonactivist debate over the Obama fiscal stimulus package.

The chapter also discusses what causes inflation and one of the most famous adages in macroeconomics, coined by Milton Friedman: "Inflation is always and everywhere a monetary phenomenon." It then delves more deeply into why inflationary monetary policy occurs. The AD/AS model shows that overly expansionary monetary policy that leads to high inflation can occur when the policymakers try to achieve high employment targets.

The chapter ends with a discussion of monetary policy at the zero lower bound. The dynamic aggregate demand and supply framework in this text is especially suited to explaining the impact of the zero lower bound and how nonconventional monetary policy works in this situation. The first step is to show students how the zero lower bound results in a backward bending aggregate demand curve, which means that the self-correcting mechanism is no longer operational. Applying this analysis then allows the instructor to show how nonconventional monetary policy and quantitative easing works. To show students how relevant this analysis is it can be used to show how the historic shift in Japanese monetary policy in 2013, which has been dubbed Abenomics, might help get the Japanese economy out of the funk it has been in for the last fifteen years.

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Chapter 25: The Role of Expectations in Monetary Policy

Over the last thirty years, the role of the public and the market's expectations has moved to the front and centre of the thinking about how the macro economy works. Chapter 25 discusses the most widely used theory to describe the formation of household and business expectations—rational expectations—and develops it from microeconomic principles. Using the AD/AS model developed earlier in the book, it then explores how this theory has shaped current policy making and debates.

The chapter starts by using the concept of rational expectations introduced in Chapter 7 to discuss one of the most important ideas in macroeconomics in the last thirty years, the Lucas critique, which says that macro-econometric relationships based on past data will change when the way policy is done is changed, so that policy evaluation with these models can be very misleading. The intuition behind the Lucas critique is illustrated in an application with a simple example using the consumption function. There are numerous other examples an instructor might want to discuss in class.

The chapter next turns to a set of policy issues. The first is the debate over whether policymakers should follow rules or instead conduct policy with complete discretion, in which policy is conducted on a day-to-day basis. The argument for rules is based on the time-inconsistency problem, another one of the most important ideas in macroeconomics over the last thirty years. The problem with discretion is that policymakers can't commit to good long-run strategies. Instead they have incentives to renege on the good strategy and therefore pursue policy that leads to poor outcomes. I like to illustrate this concept in class by presenting everyday examples. One is how we eat. We don't want to eat unhealthy food, but when we see that juicy hamburger, we just can't resist it. Another example is the inability to stay on a diet, as discussed in the text. I also like discussing the problem of child rearing and the temptation to give in to bad behaviour. This example also illustrates why having a rule helps solve the time-inconsistency problem. Rules, however, "are made to be broken," as the adage says. The application "The Demise of Monetary Targeting in Switzerland," illustrates how following rules can lead to policy mistakes. A solution to the problems with both rules and complete discretion is provided by the concept of "constrained discretion," a term that Ben Bernanke and Rick Mishkin coined in a paper published in 1997. Constrained discretion imposes rule-like behaviour on policymakers by imposing a discipline on them, but one that allows for some flexibility. This is exactly the approach in the policy framework of inflation targeting, which was discussed in Chapter 17.

The next policy issue the chapter discusses is the role of credibility and a nominal anchor. Here, the rational expectations conclusion that expectations about policy affect inflation expectations is embedded in the AD/AS model, which is then used to show that having a credible commitment to a nominal anchor produces better outcomes on both inflation and output when there are either demand or supply shocks. To demonstrate to students that the analysis is relevant to real-world outcomes, it is worth discussing in class the application "A Tale of Three Oil Shocks" to show that a surge in oil prices has adverse affects on the economy when the commitment to a nominal anchor is weak, as occurred in the two oil price shocks in the 1970s. On the other hand, when the central bank commitment to the nominal anchor of controlling inflation was strong, then an oil

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price shock like that in 2007 did not have as adverse consequences (although the financial crisis did).

Students also enjoy historical examples showing how credibility is critical to the success of anti-inflation policies. The box on ending the Bolivian hyperinflation drives home the importance of credibility because it is so dramatic. The final section of the chapter discusses different approaches to establishing a credible nominal anchor. Besides the approaches of inflation targeting, outlined in Chapter 17, and exchange rate targeting, discussed in Chapter 19, this chapter discusses a variant of the inflation targeting approach, nominal GDP targeting, which has received a lot of attention lately.

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Chapter 26: Transmission Mechanisms of Monetary Policy

Chapter 26 discusses the transmission mechanisms of monetary policy so that students can understand how monetary policy affects the economy. The two applications on monetary transmission mechanisms during the Great Recession and the lessons this research provide to monetary policymaking for Japan also stimulate student interest.

An appendix in MyLab Economics discusses the empirical evidence on whether or not money is important to aggregate economic activity and provides the student with an understanding of the transmission mechanisms of monetary policy. We teach this material because it gives students a feel for how tricky it is to interpret empirical evidence in economics and other social sciences. The appendix starts off by dichotomizing evidence into two types: reduced-form versus structural-model evidence. We have found that the best way to teach the difference between these two types of evidence and the advantages and disadvantages of each type is to give several analogies. The link between coffee drinking and heart disease mentioned in the chapter is one useful analogy; others include the link between cholesterol and heart disease or jogging and long life. Explaining why correlation does not imply causation is also helped by stories such as the boxes on the Russian folktale or how to lose an election in Box 2. Students find these stories to be fun, and they really drive the point home.

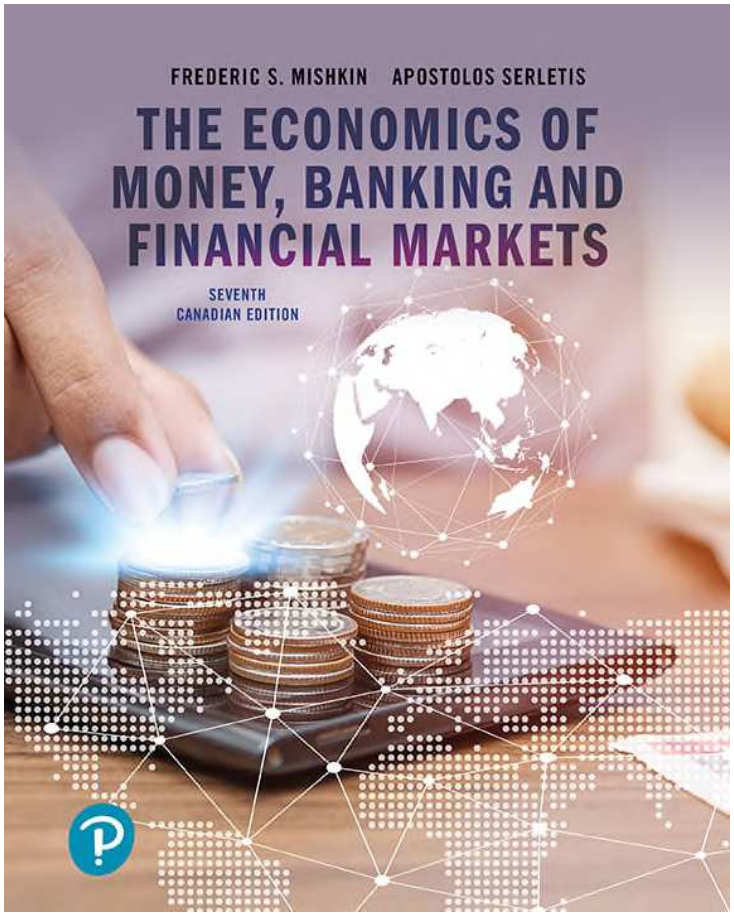
Once students understand the advantages and disadvantages of reduced-form versus structural-model evidence, encourage them to discuss the problems with the Keynesian and monetarist evidence described in the appendix in order to give them practice in using this knowledge. An important point to stress is that evidence is much easier to interpret if we have controlled experiments in which an event is exogenous; we can then look for what happens afterward. The ability to conduct controlled experiments in the hard sciences is one reason why empirical evidence in these sciences is so much more persuasive than in economics. This discussion also suggests why economists frequently look for exogenous events in evaluating empirical evidence: It makes the evidence stronger and easier to interpret, as is the case for monetarist historical evidence.

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The Economics of Money, Banking, and Financial Markets

Seventh Canadian Edition



Chapter 2

An Overview of the Financial System

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Learning Objectives (1 of 2)

1. Compare and contrast direct and indirect finance.
2. Identify the structure and components of financial markets.
3. List and describe the different types of financial market instruments.
4. Recognize the international dimensions of financial markets.

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Learning Objectives (2 of 2)

5. Summarize the roles of transaction costs, risk sharing, and information costs as they relate to financial intermediaries.
6. List and describe the different types of financial intermediaries.
7. Identify the reasons for and list the types of financial market regulations.

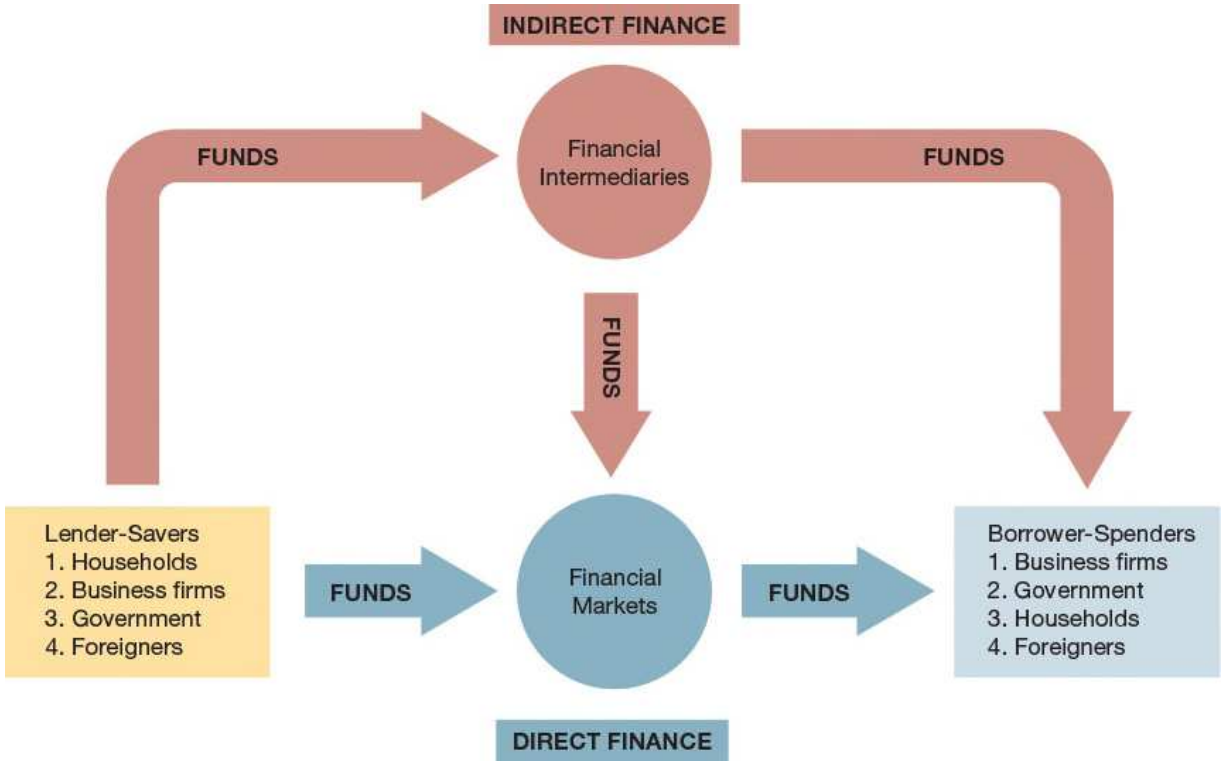
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Function of Financial Markets

- Channel funds from economic players that have surplus funds to those that have a shortage
- Plays important role in the economy
  - Efficient allocation of capital
  - Allows consumers to time their purchases
- **Direct finance**
  - Borrow funds directly from lenders
  - Involves selling a liability (IOU or debt)

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Figure 2-1



Flows of Funds Through the Financial System: The arrows show that funds flow from lender-savers to borrower-spenders via two routes: *direct finance*, in which borrowers borrow funds directly from financial markets by selling securities, and *indirect finance*, in which a financial intermediary borrows funds from lender-savers and then uses these funds to make loans to borrower-spenders.

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Debt and Equity Markets

- **Bonds** – Debt instruments
  - A contract between a borrower (who issues the bond) and lender (who owns it)
  - *Regularly payments until* ***Maturity*** (short-term, < 1 year, intermediate-term, 1-10 years, and long-term, >10 years)
- **Equity** – Shares in a corporation
  - Don't have maturity dates
  - Some make dividend payments
  - Equity holders are residual claimants

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Primary and Secondary Financial Markets

- **Primary Market**
  - New security issues sold to initial buyers
  - Not well known to public; typically private
  - **Investment banks** guarantee prices (called **underwriting**)
- **Secondary Market**
  - Previously issued securities can be bought and sold
  - **Brokers** match buyers and sellers with each other
  - **Dealers** offer to buy and sell securities at stated prices

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Exchanges and Over-the-Counter Markets

- Two main ways to organize a secondary market:
- **Exchanges**
  - Buyers and sellers meet in one central location
  - Toronto Stock Exchange for stocks
  - ICE Futures Canada for commodities (wheat, oats)
- **Over-the-Counter Markets (OTC)**
  - Dealers have inventory, ready to buy/sell at stated prices
  - Many stocks are not traded OTC, but are on exchanges
  - Canadian government bond market is an OTC market

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Money and Capital Markets

- Distinguish markets by maturity of the securities
- **Money Markets**
  - Only short-term debt instruments are traded (<1 year)
  - Corporations and banks actively use money markets to each interest on temporary surplus funds
- **Capital Markets**
  - Market for longer-term debt (>1 year)
- Money markets are more **liquid** than capital markets

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Money Market Instruments

- Government of Canada Treasury Bills
- Certificates of Deposit
- Commercial Paper
- Repurchase Agreements
- Overnight Funds

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Table 2-1 Principal Money Market Instruments

	Amount Outstanding ($ millions)			
Type of Instrument	**1990**	**2000**	**2010**	**2016**
Treasury bills				
Government of Canada	113 654	76 634	150 831	128 538
Provincial governments	12 602	17 523	33 858	51 174
Municipal governments	514	188	875	435
Short-term paper				
Commercial paper	12 971	24 330	11 221	8 188

Source: Statistics Canada Cansim series V37377, V122256, V122257, and V122652.

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Capital Market Instruments

- Stocks
- Mortgages and mortgage-backed securities
- Corporate bonds
- Government of Canada bonds
- Canada Savings bonds
- Provincial and municipal government bonds
- Government agency securities
- Consumer and bank commercial loans

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Table 2-2 Principal Capital Market Instruments

	Amount Outstanding ($ billions)			
Type of Instrument	**1990**	**2000**	**2010**	**2016**
Corporate stocks (market value)	110.7	238.7	366.9	533.6
Residential mortgages	245.3	432.0	990.2	1395.0
Corporate bonds	72.3	186.2	333.4	540.4
Government of Canada securities(marketable)	124.6	301.9	344.3	445.7
Bank commercial loans	133.9	157.7	187.1	333.6
Consumer loans	99.6	193.8	474.3	561.0
Nonresidential and farm mortgages	56.1	52.7	92.7	133.9

Source: Statistics Canada CANSIM series V122642, V122746, V122640, V37378 V122631, V122707, V122656, V122657, V122658, V122659, and V800015, and the authors' calculations

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Internationalization of Financial Markets
(1 of 2)

- **Foreign Bonds**
  - Sold in foreign country, denominated in that country's currency
  - For example, Canadian company selling bond in the United Kingdom denominated in British Pounds
- **Eurobond**
  - Sold in foreign country, denominated in another currency
  - For example, Canadian company selling bond in the United Kingdom denominated in British Pounds
  - Recent development
  - Widely used: over 80% of new issues are Eurobonds

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Internationalization of Financial Markets
(2 of 2)

- **Eurocurrencies**
  - Variant of Eurobond
  - Foreign currencies deposited in banks outside home country
  - **Eurodollars**: U.S. dollars deposited in foreign banks outside the U.S. or in foreign branches of U.S. banks
- **World Stock Markets**
  - NYSE, Nikkei, FTSE, 100-Share Index, and many more

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Financial Intermediaries: Indirect Finance
(1 of 2)

- **Financial Intermediation**
  - Indirect financing using financial intermediates (banks)
  - Primary route to move funds from lenders to borrowers
  - Four main roles of financial intermediates

1. Lowers **Transaction Costs**
   - Economies of scale
   - Economies of scope
   - Liquidity services

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Financial Intermediaries: Indirect Finance
(2 of 2)

2. Improves **Risk Sharing**
   - Asset transformation
   - Diversification
3. Help solve **Asymmetric Information** problems
   - **Adverse Selection:** Potential borrows who are more likely to default will most actively seek out loans
   - **Moral Hazard:** Borrowers might engage in activities that are undesirable from a lender's point of view
   - Financial intermediates can screen and monitor

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Types of Financial Intermediaries

- **Depository Institutions**
  - Chartered Banks, Trusts and Mortgage Loan Companies, Credit Unions and Caisses Populaires
- **Contractual Savings Institutions**
  - Life Insurance Companies, Property and Casual Insurance Companies, Pension Funds and Retirement Funds
- **Investment Intermediaries**
  - Finance Companies, Mutual Funds, Money Market Mutual Funds, Hedge Funds, Investment Banks

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Table 2-3 Primary Assets and Liabilities of Financial Intermediaries

Type of Intermediary	Primary Liabilities (Sources of Funds)	Primary Assets (Uses of Funds)
Depository institutions (banks)		
Chartered banks	Deposits	Loans, mortgages, government bonds
Trust and loan companies	Deposits	Mortgages
Credit unions and caisses populaires	Deposits	Mortgages
Contractual savings institutions		
Life insurance companies	Premiums from policies	Corporate bonds and mortgages
Property and casualty insurance companies	Premiums from policies	Corporate bonds and stocks
Pension funds	Retirement contributions	Corporate bonds and stocks
Investment intermediaries		
Finance companies	Finance paper, stocks, bonds	Consumer and business loans
Mutual funds	Shares	Stocks and bonds
Money market mutual funds	Shares	Money market instruments

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Table 2-4 Relative Shares of Financial Institutions and Pension Plans Regulated by OSFI (as of October 31, 2017)

Type of Intermediary	Total assets (in $ millions)	Percent (%)
Chartered Banks		
Domestic	5 037 396	68.54
Foreign bank subsidiaries	130 286	1.77
Foreign bank branches	1 996	0.03
Trust Companies	164 318	2.24
Loan Companies	188 088	2.56
Cooperative Credit Associations	25 030	0.34
Life Insurance Companies		
Canadian-incorporated	1 412 325	19.22
Foreign branches	19 869	0.27
Fraternal Benefit Societies		
Canadian-incorporated	18 670	0.25
Foreign branches	3 322	0.05
Property and Casualty Insurance Companies		
Canadian-incorporated	123 829	1.68
Foreign branches	26 859	0.37
Pension Plans	198 000	2.69
Total	7 349 988	100.00

Source: OSFI website www.osfi-bsif.gc.ca/Eng/Pages/default.aspx

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Regulation of Financial Markets

Primary Reasons for Regulation:

1. **Increase information available to investors**
   - Reduce adverse selection and moral hazard problems
   - Increase efficiency of financial markets
2. **Ensure soundness of financial intermediaries**
   - Restrictions on entry and competition, reporting requirements, and restrictions on assets and activities
   - Deposit insurance

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Table 2-5 Principal Regulatory Agencies of the Canadian Financial System (1 of 2)

Regulatory Agency	Subject of Regulation	Nature of Regulations
Provincial securities and exchange commissions	Organized exchanges and financial markets	Requires disclosure of information and restricts insider trading
Bank of Canada	Chartered banks, TMLs, and CUCPs	Examines the books of the deposit taking institutions and coordinates with the federal agencies that are responsible for financial institution regulation: OSFI and CDIC
Office of the Superintendent of Financial Institutions Canada (OSFI)	All federally regulated chartered banks, TMLs, CUCPs, life insurance companies, P&C insurance companies, and pension plans	Sets capital adequacy, accounting, and board-of-directors responsibility standards; conducts bank audits and coordinates with provincial securities commissions
Canada Deposit Insurance Corporation (CDIC)	Chartered banks, TMLs, CUCPs	Provides insurance of up to $100 000 for each depositor at a bank, examines the books of insured banks, and imposes restrictions on assets they can hold

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Table 2-5 Principal Regulatory Agencies of the Canadian Financial System (2 of 2)

Regulatory Agency	Subject of Regulation	Nature of Regulations
Québec Deposit Insurance Board	TMLs and credit cooperatives in Québec	Similar role to the CDIC
Canadian Life and Health Insurance Compensation Corporation (Comp Corp)	Life insurance companies	Compensates policyholders if the issuing life insurance company goes bankrupt
P&C Insurance Compensation Corporation (PACIC)	Property and casualty insurance companies	Compensates policyholders if the issuing P&C insurance company goes bankrupt

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