Overview of Section IV
International Macroeconomic Policy

Part IV of the text is comprised of five chapters:

Chapter 18 The International Monetary System, 1870–1973

Chapter 19 Macroeconomic Policy and Coordination Under Floating Exchange Rates

Chapter 20 Optimum Currency Areas and The European Experience

Chapter 21 The Global Capital Market: Performance and Policy Problems

Chapter 22 Developing Countries: Growth, Crisis, and Reform

■ Section IV Overview

This final section of the book, which discusses international macroeconomic policy, provides historical and institutional background to complement the theoretical presentation of the previous section. These chapters also provide an opportunity for you to hone your analytic skills and intuition by applying and extending the models learned in Section III to a range of current and historical issues.

The first two chapters of this section discuss various international monetary arrangements. These chapters describe the workings of different exchange rate systems through the central theme of internal and external balance. The model developed in the previous section provides a general framework for analysis of gold standard, reserve currency, managed floating, and floating exchange rate systems.

Chapter 18 chronicles the evolution of the international monetary system from the gold standard of 1870–1914, through the interwar years, and up to and including the postwar Bretton Woods period. The chapter discusses the price-specie-flow mechanism of adjustment in the context of the discussion of the gold standard. Conditions for internal and external balance are presented through diagrammatic analysis based upon the short-run macroeconomic model of Chapter 16. This analysis illustrates the strengths and weaknesses of alternative fixed exchange rate arrangements. The chapter also draws upon earlier discussion of balance of payments crises to make clear the interplay between "fundamental disequilibrium" and speculative attacks. There is a detailed analysis of the Bretton Woods system that includes a case study of the experience during its decline beginning in the mid-1960s and culminating with its collapse in 1973.

Chapter 19 focuses on recent experience under floating exchange rates. The discussion is couched in terms of current debate concerning the advantages of floating versus fixed exchange rate systems. The theoretical arguments for and against floating exchange rates frame two case studies, the first on the experience between the two oil shocks in the 1970s and the second on the experience since 1980. The transmission of monetary and fiscal shocks from one country to another is also considered. Discussion of the experience in the 1980s points out the shift in policy toward greater coordination in the second half of the decade. Discussion of the 1990s focuses on the strong U.S. economy from 1992 on and the extended economic difficulties in Japan. Current topics, such as the funding of the large U.S. current account deficit and the general problem of today's "global imbalances" are also discussed. Finally, the chapter considers what has been learned about floating rates since 1973. The appendix illustrates losses arising from uncoordinated international monetary policy using a game theory setup.

Europe's switch to a single currency, the euro, is the subject of Chapter 20, and provides a particular example of a single currency system. The chapter discusses the history of the European Monetary System (EMS) and its precursors. The early years of the EMS were marked by capital controls and frequent realignments. By the end of the 1980s, however, there was marked inflation convergence among EMS members, few realignments, and the removal of capital controls. Despite a speculative crisis in 1992–1993, leaders pressed on with plans for the establishment of a single European currency as outlined in the Maastricht Treaty which created Economic and Monetary Union (EMU). The single currency was viewed as an important part of the EC 1992 initiative which called for the free flow within Europe of labor, capital, goods, and services. The single currency, the euro, was launched on January 1, 1999, with eleven original participants. These countries have ceded monetary authority to a supranational central bank and constrained their fiscal policy with agreements on convergence criteria and the stability and growth pact. A single currency imposes costs as well as confers benefits. The theory of optimum currency areas suggests conditions which affect the relative benefits of a single currency. The chapter provides a way to frame this analysis using the GG-LL diagram which compares the gains and losses from a single currency. Finally, the chapter examines the prospects of the European Union (EU) as an optimal currency area compared to the United States and considers the future challenges that the EMU will face.

The international capital market is the subject of Chapter 21. This chapter draws an analogy between the gains from trade arising from international portfolio diversification and international goods trade. There is discussion of institutional structures that have arisen to exploit these gains. The chapter discusses the Eurocurrency market, the regulation of offshore banking, and the role of international financial supervisory cooperation. The chapter examines policy issues of financial markets, the policy trilemma (which is the incompatibility of fixed rates, independent monetary policy, and capital mobility), as well as the tension between supporting financial stability and creating a moral hazard when a government intervenes in financial markets. The chapter also considers evidence of how well the international capital market has performed by focusing on issues such as the efficiency of the foreign exchange market and the existence of excess volatility of exchange rates.

Chapter 22 discusses issues facing developing countries. The chapter begins by identifying characteristics of the economies of developing countries, characteristics that include undeveloped financial markets, pervasive government involvement, and a dependence on commodity exports. The macroeconomic analysis of previous chapters again provides a framework for analyzing relevant issues, such as inflation in or capital flows to developing countries. Borrowing by developing countries is discussed as an attempt to exploit gains from intertemporal trade and is put in historical perspective. Latin American countries' problems with inflation and subsequent attempts at reform are detailed. Finally, the East Asian economic miracle is revisited (it is discussed in Chapter 10), and the East Asian financial crisis is examined. This final topic provides an opportunity to discuss possible reforms of the world's financial architecture.

Chapter 18
The International Monetary System, 1870–1973

■ Chapter Organization

■ Key Themes

Chapter 18 chronicles the evolution of the international monetary system from the gold standard of 1870–1914, through the interwar years, and up to and including the post-World War II Bretton Woods that ended in March 1973. The central focus of the chapter is how each system addressed, or failed to address, the requirements of internal and external balance for its participants. A country is in internal balance when its resources are fully employed and there is price level stability. A country enjoys external balance when its current account is at an appropriate level, and, over the long run, the current account is in balance. External balance does not require current account balance year-to-year since there are good reasons to run temporary current account deficits or surpluses. For example, particularly good investment opportunities call for current account deficits which will be repaid in the future with current account surpluses when the investment opportunities bear fruit.

The price-specie-flow mechanism described by David Hume shows how the gold standard could ensure convergence to external balance. There are three key relationships that together cause this mechanism to work. The first relationship is that the gold holdings of the central bank are directly related to a country's money supply when the government follows the "rules of the game." These rules require governments to contract their monetary bases when gold reserves are falling (corresponding to a current-account deficit) and expand when gold reserves are rising (the surplus case). The second relationship is that the price level rises when the money supply expands, and the price level falls when the money supply contracts. The third relationship relates the current account to the real exchange rate. The real exchange rate, which you recall is defined as (EP^*/P), depreciates with a fall in P and appreciates with a rise in P (E is given in this fixed exchange rate system and P^* can be assumed to be constant for purposes of our analysis). Thus, a current account deficit, for example, would cause a country's money supply to fall as its gold reserves are depleted. This depresses prices in the country, causing a real exchange rate depreciation that makes its exports more attractive and reverses the current account deficit. In theory, a country with expanding gold reserves due to a current account surplus would have just the reverse occur, but in practice there was little incentive for countries with expanding gold reserves to follow these rules. This increased the contractionary burden shouldered by countries with persistent current account deficits. The gold standard also subjugated internal balance to the demands of external balance. Research suggests price level stability and high employment were attained less consistently under the gold standard than in the post-1945 period.

The interwar years were marked by severe economic instability. The monetization of war debt and of reparation payments led to episodes of hyperinflation in Europe. An ill-fated attempt to return to the prewar gold parity for the pound led to stagnation in Britain. Competitive devaluations and protectionism were pursued in a futile effort to stimulate domestic economic growth during the Great Depression. These beggar-thy-neighbor policies provoked foreign retaliation and led to the disintegration of the world economy. As one of the case studies shows, strict adherence to the Gold Standard appears to have hurt many countries during the Great Depression.

Determined to avoid repeating the mistakes of the interwar years, Allied economic policy makers met at Bretton Woods in 1944 to forge a new international monetary system for the postwar world. The exchange-rate regime that emerged from this conference had at its center the U.S. dollar. All other currencies had fixed exchange rates against the dollar, which itself had a fixed value in terms of gold. An International Monetary Fund (IMF) was set up to oversee the system and facilitate its functioning by lending to countries with temporary balance of payments problems.

We are able to analyze some of the issues concerning internal and external balance by plotting a schedule for each in a graph with the exchange rate on the vertical axis and a measure of fiscal policy on the horizontal axis. The negative slope of the internal balance line (II) shows that the contractionary effects of a revaluation of the currency must be offset by the stimulative effects of a fiscal expansion to keep employment and prices stable. The external balance line (XX) has a positive slope since a devaluation,

which would increase the balance of payments surplus, must be offset by greater fiscal stimulus to maintain balance of payments equilibrium. The intersection of the *II* and *XX* line represents overall balance. Any other point in the graph represents some type of "economic discomfort," and any point not on either line represents both internal and external imbalance.

A government may attempt to move back to balance through some combination of expenditure-switching and expenditure-changing policies. Expenditure-switching policies, such as a devaluation, affect consumption and production choices between domestic and foreign goods. These policies are reflected by vertical movements in the *II–XX* graph. Expenditure-changing policies affect the overall level of expenditures, and are depicted as horizontal movements in the *II–XX* graph. It is easy to see that, unless an economy is directly above or below the overall balance point, expenditure-changing policies are required and, unless it is directly to the left or to the right of the balance point, expenditure-switching policies are required.

The Bretton Woods system, with its emphasis on infrequent adjustment of fixed parities, restricted the use of expenditure-switching policies. Increases in U.S. monetary growth to finance fiscal expenditures after the mid-1960s led to a loss of confidence in the dollar and the termination of the dollar's convertibility into gold. The analysis presented in the text demonstrates how the Bretton Woods system forced countries to "import" inflation from the United States and shows that the breakdown of the system occurred when countries were no longer willing to accept this burden.

■ Key Terms

Define the following key terms:

1. Internal Balance _____

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2. External Balance _____

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3. Balance of Payments Equilibrium _____

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4. Price-Specie-Flow Mechanism _____

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5. Bretton Woods Agreement _____

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6. Expenditure-Changing Policy _____

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7. Expenditure-Switching Policy _____

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■ Review Questions

1. In the late 1890s, gold was discovered in Alaska. During this time, the United States was a member of the international gold standard.

   a. Use the price-specie-flow analysis to show how the discovery of gold in Alaska affected the United States' balance of payments, price level, and money supply.

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   b. Do you expect any permanent effects on the U.S. balance of payments or real money balances because of the discovery of Alaskan gold?

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2. a. How is the money supply of a country which is a member of a gold-standard affected if it has a current account deficit and it follows the "rules of the game" described in the chapter?

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b. How may a country avoid the effect on its money supply described in Part (a)? What does this imply for its adherence to the "rules of the game?"

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c. In a study of the gold standard period, Alberto Giovannini found that there was a significant link between gold inflows and changes in the domestic interest rate for Germany between 1892 and 1907, and for France between 1900 and 1907. There is no significant link between gold inflows and the domestic interest rate, however, for the United Kingdom between 1889 and 1907. If we consider the domestic interest rate as a target that authorities may wish to influence, what do these results imply for the adherence to the rules of the game for these three countries? (Alberto Giovannini, "How do fixed-exchange-rate regimes work? Evidence from the gold standard, Bretton Woods and the EMS," in Marcus Miller, Barry Eichengreen, and Richard Portes, eds., *Blueprints for Exchange Rate Management*, Academic Press Inc., San Diego, CA, c.1989)

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d. Relate your answer to Part (c) to the issue of asymmetry of the gold standard.

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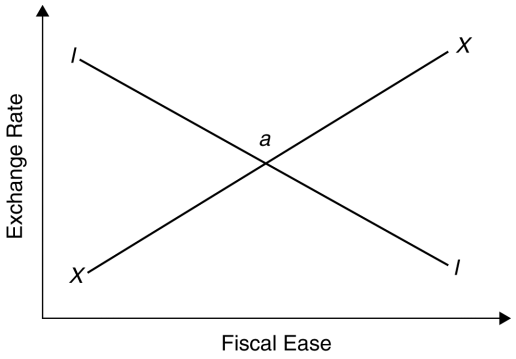
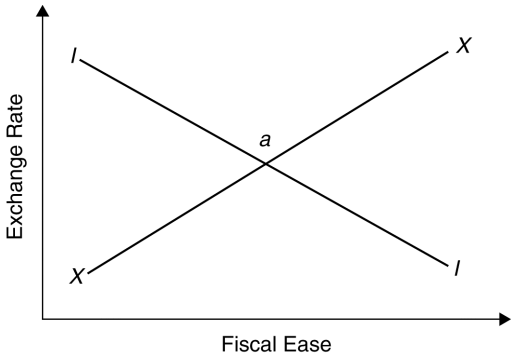
3. The country of Midas, which is on the gold standard, enjoys both internal and external balance. In the two diagrams below, this is reflected by an initial position for the economy at a point where there the *II* and *XX* schedules intersect.

a. Suppose that there is a change of tastes among people in Midas' main export market towards goods from countries other than Midas. In the diagram below show how this affects the internal and external balance in Midas.



b. Midas economists, reasoning that the change in tastes for Midas exports is an "external" event, decide that their policy response to this should involve only their "external" policy tool, the exchange rate. Do you agree with their assessment?

c. Now suppose that, again beginning at point *a*, there is a sudden increase in the number of workers looking for jobs in Midas because the army of Midas is demobilized due to the removal of the threat from a neighboring country with the change of leadership in that country. In the diagram below show how this event affects internal and external balance.



d. Midas officials decide to cut taxes since less revenue is required by the government when the army is reduced in size. Will this tax cut restore internal and external balance? Show the effects of the tax cut in the diagram above to answer this question.

4. a. Suppose that the demand for real money balances grows by \$1 for each \$1 rise in real income and that money demand falls by \$2 for each 1 percent rise in the interest rate. Use this relationship to complete the following chart:

Real Money Demand	Income	Interest Rate
\$100	\$120	10%
\$100	\$122	%
\$100	\$	13%
\$	\$130	10%
\$	\$135	10%

b. In a pure gold standard, the money supply of each member is equal to the gold holdings of its central bank. Under the assumptions in Part (a), what must happen to the following variables for there to be equilibrium if the rate of growth of world gold stocks is 2 percent per year.

i. Income, if the price level and interest rates are constant.

ii. The price level, if income and interest rates are constant.

iii. The interest rate, if inflation is 2 percent per year and income is constant.

iv. The interest rate if there is no inflation and if income grows at 2 percent per year.

c. Explain how a reserve-currency system, like Bretton Woods, allowed world liquidity to expand faster than the rate of growth of world gold stocks. (Thinking of the stylized balance sheets of the United States and Germany shown below may help.)

Balance Sheet of U.S. Central Bank (changes in billions US$)		**Balance Sheet of German Bundesbank (changes in billions DM)**	
Assets	**Liabilities**	**Assets**	**Liabilities**
US$ Assets Gold	Dollar Money Supply	E × (US$ Assets)	German Money Supply

d. Discuss the "confidence problem" whereby the ability of the Federal Reserve to maintain a gold price of $35 per ounce is threatened by an increase in dollars at a rate that exceeds the increase in the world gold stock.

e. Use your answers to Parts (a) to (c) to discuss the two-horned dilemma of a reserve currency system; maintaining liquidity while maintaining confidence in the reserve currency.

5. Below are stylized balance sheets for the central banks of the United States and of Canada during the Bretton Woods era. The assets of the U.S. central bank consist of U.S. dollar-denominated assets while the assets of the central bank of Canada consist of U.S. dollar-denominated assets and Canadian dollar-denominated assets.

Balance Sheet of U.S. Central Bank (changes in billions US$)

Assets	Liabilities
U.S. Dollar Assets	U.S. Dollar Money Supply

Balance Sheet of Canadian Central Bank (changes in billions Canadian $)

Assets	Liabilities
U.S. Dollar Assets	Canadian Money Supply
Can. Dollar Assets	

a. Suppose that the United States increases its money supply. Given that exchange rates are fixed, what would happen to the relative attractiveness of United States versus Canadian bonds?

b. If people in Canada and in the United States attempt to alter their asset holdings in response to the change in relative bond returns, what would be the consequence for the US$/C$ exchange rate?

c. Since the U.S. central bank does not hold any Canadian-dollar denominated assets, the Canadian central bank must act to preserve the US$/C$ exchange rate. How would it do this, and what would the effect of this be on the Canadian money supply?

d. Suppose the Canadian central bank attempted an open market operation to increase its money supply. What would the effect of this be on its holdings of U.S. dollar assets, on Canadian dollar assets, and on the money supply? Would there be an effect on the U.S. money supply?

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■ Answers to Odd-Numbered Textbook Problems

1. a. Since it takes considerable investment to develop uranium mines, you would want a larger current account deficit to allow your country to finance some of the investment with foreign savings.

   b. A permanent increase in the world price of copper would cause a short-term current account deficit if the price rise leads you to invest more in copper mining. If there are no investment effects, you would not change your external balance target because it would be optimal simply to spend your additional income.

   c. A temporary increase in the world price of copper would cause a current account surplus. You would want to smooth out your country's consumption by saving some of its temporarily higher income.

   d. A temporary rise in the world price of oil would cause a current account deficit if you were an importer of oil, but a surplus if you were an exporter of oil.

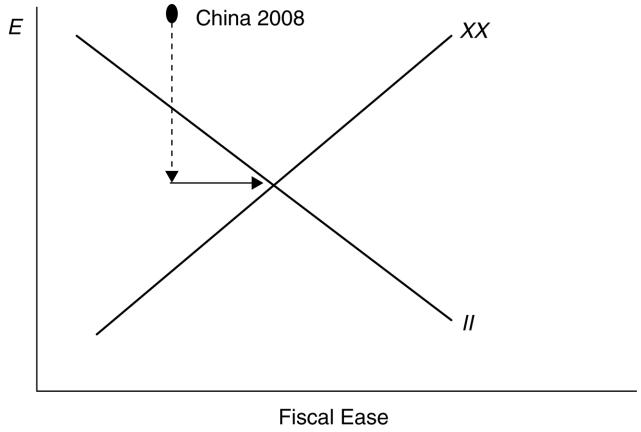
3. Changes in parities reflected both initial misalignments and balance of payments crises. Attempts to return to the parities of the prewar period after the war ignored the changes in underlying economic fundamentals that the war caused. This made some exchange rates less than fully credible and encouraged balance of payments crises. Central bank commitments to the gold parities were also less than credible after the wartime suspension of the gold standard, and as a result of the increasing concern of governments with internal economic conditions.

5. The increase in domestic prices makes home exports less attractive and causes a current account deficit. This diminishes the money supply and causes contractionary pressures in the economy which serve to mitigate and ultimately reverse wage demands and price increases.

7. An increase in the world interest rate leads to a fall in a central bank's holdings of foreign reserves as domestic residents trade in their cash for foreign bonds. This leads to a decline in the home country's money supply. The central bank of a "small" country cannot offset these effects since it cannot alter the world interest rate. An attempt to sterilize the reserve loss through open market purchases would fail unless bonds are imperfect substitutes.

9. Yes, it does seem that the external balance problem of a deficit country is more severe. While the macroeconomic imbalance may be equally problematic in the long run regardless of whether it is a deficit or surplus, large external deficits involve the risk that the market will fix the problem quickly by ceasing to fund the external deficit. In this case, there may have to be a rapid adjustment that could be disruptive. Surplus countries are rarely forced into rapid adjustments, making the problems less risky.

11. a. We know that China has a very large current account surplus, placing them high above the *XX* line. They also have moderate inflationary pressures (described as "gathering" in the question, implying they are not yet very strong). This suggests that China is above the *II* line, but not too far above it. It would be placed in zone 1 (see below).



b. China needs to appreciate the exchange rate to move down on the graph towards balance. (shown on the graph with the dashed line down)

c. China would need to expand government spending to move to the right and hit the overall balance point. Such a policy would help cushion the negative aggregate demand pressure that the appreciation might generate.