Fundamentals of Multinational Finance 6th edition Moffett Solutions Manual

SKU: 9780134472133-SOLUTIONS

Chapter 2

The International Monetary System

■ Learning Objectives

1. Explore how the international monetary system has evolved from the days of the gold standard to today's eclectic currency arrangement
2. Examine how the choice of fixed versus flexible exchange rate regimes is made by a country in the context of its desires for economic and social independence and openness
3. Describe the tradeoff a nation must make between a fixed exchange rate, monetary independence, and freedom of capital movements—the impossible trinity
4. Explain the dramatic choices the creation of a single currency for Europe—the euro—required of the European Union's member states
5. Study the complexity of exchange rate regime choices faced by many emerging market countries today including China

■ Chapter Outline

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B. The Interwar Years and World War II, 1914–1944

C. Bretton Woods and the International Monetary Fund, 1944

D. Fixed Exchange Rates, 1945–1973

E. The Floating Exchange Rates, 1973–1997

F. The Emerging Era, 1997–Present

G. IMF Classification of the Currency Regimes

H. Brief Classification History

I. The IMF's 2009 de facto System

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2. Category 2: Soft Pegs
3. Category 3: Floating Arrangements
4. Category 4: Residual

J. A Global Eclectic

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C. The Launch of the Euro

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D. Globalizing the Chinese Renminbi

E. Two-Market Currency Development

F. Theoretical Principles and Practical Concerns

1. The Triffin Dilemma

G. Exchange Rate Regimes: What Lies Ahead?

■ Questions

1. **The Rules of the Game**. Under the gold standard, all national governments promised to follow the "rules of the game." What did this mean?

A country's money supply was limited to the amount of gold held by its central bank or treasury. For example, if a country had 1,000,000 ounces of gold and its fixed rate of exchange was 100 local currency units per ounce of gold, that country could have

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100,000,000 local currency units outstanding. Any change in its holdings of gold needed to be matched by a change in the number of local currency units outstanding.

2. **Defending a Fixed Exchange Rate.** What did it mean under the gold standard to "defend a fixed exchange rate," and what did this imply about a country's money supply?

   Under the gold standard, a country's central bank was responsible for preserving the exchange value of the country's currency by being willing and able to exchange its currency for gold reserves upon the demand of a foreign central bank. This required the country to restrict the rate of growth in its money supply to a rate that would prevent inflationary forces from undermining the country's own currency value.

3. **Bretton Woods**. What was the foundation of the Bretton Woods international monetary system, and why did it eventually fail?

   Bretton Woods, the fixed exchange rate regime of 1945–73, failed because of widely diverging national monetary and fiscal policies, differential rates of inflation, and various unexpected external shocks. The U.S. dollar was the main reserve currency held by central banks and was the key to the web of exchange rate values. The United States ran persistent and growing deficits in its balance of payments requiring a heavy outflow of dollars to finance the deficits. Eventually the heavy overhang of dollars held by foreigners forced the United States to devalue the dollar because the United States was no longer able to guarantee conversion of dollars into its diminishing store of gold.

4. **Technical Float**. Speaking very specifically—technically, what does a floating rate of exchange mean? What is the role of government?

   A truly floating currency value means that the government does not set the currency's value or intervene in the marketplace, allowing the supply and demand of the market for its currency to determine the exchange value.

5. **Fixed versus Flexible.** What are the advantages and disadvantages of fixed exchange rates?

   - Fixed rates provide stability in international prices for the conduct of trade. Stable prices aid in the growth of international trade and lessen risks for all businesses.
   - Fixed exchange rates are inherently anti-inflationary, requiring the country to follow restrictive monetary and fiscal policies. This restrictiveness, however, can often be a burden to a country wishing to pursue policies that alleviate continuing internal economic problems, such as high unemployment or slow economic growth.
   - Fixed exchange rate regimes necessitate that central banks maintain large quantities of international reserves (hard currencies and gold) for use in the occasional defense of

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the fixed rate. As international currency markets have grown rapidly in size and volume, increasing reserve holdings has become a significant burden to many nations.

- Fixed rates, once in place, may be maintained at rates that are inconsistent with economic fundamentals. As the structure of a nation's economy changes, and as its trade relationships and balances evolve, the exchange rate itself should change. Flexible exchange rates allow this to happen gradually and efficiently, but fixed rates must be changed administratively—usually too late, too highly publicized, and at too large a one-time cost to the nation's economic health.

6. ***De facto* and *de jure***. What do the terms *de facto* and *de jure* mean in reference to the International Monetary Fund's use of the terms?

   A country's actual exchange rate practices is the *de facto* system. This may or may not match the "official" or publicly and officially system commitment, the *de jure* system.

7. **Crawling Peg**. How does a crawling peg fundamentally differ from a pegged exchange rate?

   In a *crawling peg* system, the government will make occasional small adjustments in its fixed rate of exchange in response to changes in a variety of quantitative indicators such as inflation rates or economic growth. In a truly *pegged exchange rate regime*, no such changes or adjustments are made to the official fixed rate of exchange.

8. **Global Eclectic**. What does it mean to say the international monetary system today is a global eclectic?

   The current global market in currency is dominated by two major currencies, the U.S. dollar and the European euro, and after that, a multitude of systems, arrangements, currency areas, and zones.

9. **The Impossible Trinity**. Explain what is meant by the term Impossible Trinity, and why it is in fact "impossible."

   - Countries with floating rate regimes can maintain monetary independence and financial integration but must sacrifice exchange rate stability.
   - Countries with tight control over capital inflows and outflows can retain their monetary independence and stable exchange rate, but surrender being integrated with the world's capital markets.
   - Countries that maintain exchange rate stability by having fixed rates give up the ability to have an independent monetary policy.

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10. **The Euro**. Why is the formation and use of the euro considered to be such a great accomplishment? Was it really needed? Has it been successful?

The creation of the euro required a near-Herculean effort to merge the monetary institutions of separate sovereign states. This required highly disparate cultures and countries to agree to combine, giving up a large part of what defines an independent state. Member states were so highly integrated in terms of trade and commerce, maintaining separate currencies and monetary policies was an increasing burden on both business and consumers, adding cost and complexity that added sizeable burdens to global competitiveness. The euro is widely considered to have been extremely successful since its launch.

11. **Currency Board or Dollarization**. Fixed exchange rate regimes are sometimes implemented through a currency board (Hong Kong) or dollarization (Ecuador). What is the difference between the two approaches?

In a *currency board* arrangement, the country issues its own currency but that currency is backed 100% by foreign exchange holdings of a hard foreign currency—usually the U.S. dollar. In *dollarization*, the country abolishes its own currency and uses a foreign currency, such as the U.S. dollar, for all domestic transactions.

12. **Argentine Currency Board**. How did the Argentine currency board function from 1991 to January 2002 and why did it collapse?

Argentina's currency board exchange regime of fixing the value of its peso on a one-to-one basis with the U.S. dollar ended for several reasons:

- As the U.S. dollar strengthened against other major world currencies, including the euro, during the 1990s, Argentine export prices rose vis-à-vis the currencies of its major trading partners.
- This problem was aggravated by the devaluation of the Brazilian real in the late 1990s.
- These two problems, in turn, led to continued trade deficits and a loss of foreign exchange reserves by the Argentine central bank. (4) This problem, in turn, led Argentine residents to flee from the peso and into the dollar, further worsening Argentina's ability to maintain its one-to-one peg.

13. **Special Drawing Rights**. What are Special Drawing Rights?

The Special Drawing Right (SDR) is an international reserve asset created by the IMF to supplement existing foreign exchange reserves. It serves as a unit of account for the IMF and other international and regional organizations and is also the base against which some countries peg the exchange rate for their currencies.

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Defined initially in terms of a fixed quantity of gold, the SDR has been redefined several times. It is currently the weighted value of currencies of the five IMF members having the largest exports of goods and services. Individual countries hold SDRs in the form of deposits in the IMF. These holdings are part of each country's international monetary reserves, along with official holdings of gold, foreign exchange, and its reserve position at the IMF. Members may settle transactions among themselves by transferring SDRs.

14. **The Ideal Currency**. What are the attributes of the ideal currency?

If the ideal currency existed in today's world, it would possess three attributes, often referred to as *The Impossible Trinity*:

15. **Exchange rate stability**. The value of the currency would be fixed in relationship to other major currencies so traders and investors could be relatively certain of the foreign exchange value of each currency in the present and into the near future.

16. **Full financial integration**. Complete freedom of monetary flows would be allowed, so traders and investors could willingly and easily move funds from one country and currency to another in response to perceived economic opportunities or risks.

17. **Monetary independence**. Domestic monetary and interest rate policies would be set by each individual country to pursue desired national economic policies, especially as they might relate to limiting inflation, combating recessions, and fostering prosperity and full employment.

The reason that it is termed *The Impossible Trinity* is that a country must give up one of the three goals described by the sides of the triangle, monetary independence, exchange rate stability, or full financial integration. The forces of economics do not allow the simultaneous achievement of all three.

18. **Emerging Market Regimes**. High capital mobility is forcing emerging market nations to choose between free-floating regimes and currency board or dollarization regimes. What are the main outcomes of each of these regimes from the perspective of emerging market nations?

Highly restrictive regimes like currency boards and dollarization require a country to give up the majority of its discretionary ability over its own currency's value. Currency boards, like that used by Argentina in the 1990s, restricted the rate of growth in the country's monetary policy in order to preserve a fixed exchange rate regime. This proved to be a very high price for Argentine society to pay, and in the end, it could not be maintained. Dollarization, an even more radical extreme in the adoption of another country's currency for all exchange, removes one of a government's major attributes of sovereignty.

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A free-floating rate of exchange is, however, in many ways not that different from the highly restrictive choices just mentioned. In a free-floating regime, the government allows the foreign currency markets to determine the currency's value, although the government does maintain sovereignty over its own monetary policy, which in turn has significant direct impacts on the currency's value.

19. **Globalizing the Yuan**. What are the major changes and developments that must occur for the Chinese yuan to be considered "globalized?"

First, the yuan must become readily accessible for trade transaction purposes. This is the fundamental and historical use of currency. Secondly, it then needs to mature toward a currency easily and openly usable for international investment purposes. The third and final stage of currency globalization is when the currency itself takes on a role as a reserve currency, currency held by central banks of other countries as a store of value and a medium of exchange for their own currencies.

20. **Triffin Dilemma**. What is the Triffin Dilemma? How does it apply to the development of the Chinese yuan as a true global currency?

The *Triffin Dilemma* is the potential conflict in objectives that may arise between domestic monetary and currency policy objectives and external or international policy objectives when a country's currency is used as a reserve currency. Domestic monetary and economic policies may on occasion require both contraction and the creation of a current account surplus (balance on trade surplus).

21. **China and the Impossible Trinity**. What choices do you believe that China will make in terms of the Impossible Trinity as it continues to develop global trading and use of the Chinese yuan?

This is purely speculative opinion, but many believe China will continue to move the yuan toward globalization rapidly. As Chinese financial institutions and policies become more mature, and policies more consistent with those of other major country financial markets, the yuan will grow as a medium of exchange for both commercial trade and capital investment transactions. The gradual opening of the Chinese economy to foreign investment is a critical component of this process.

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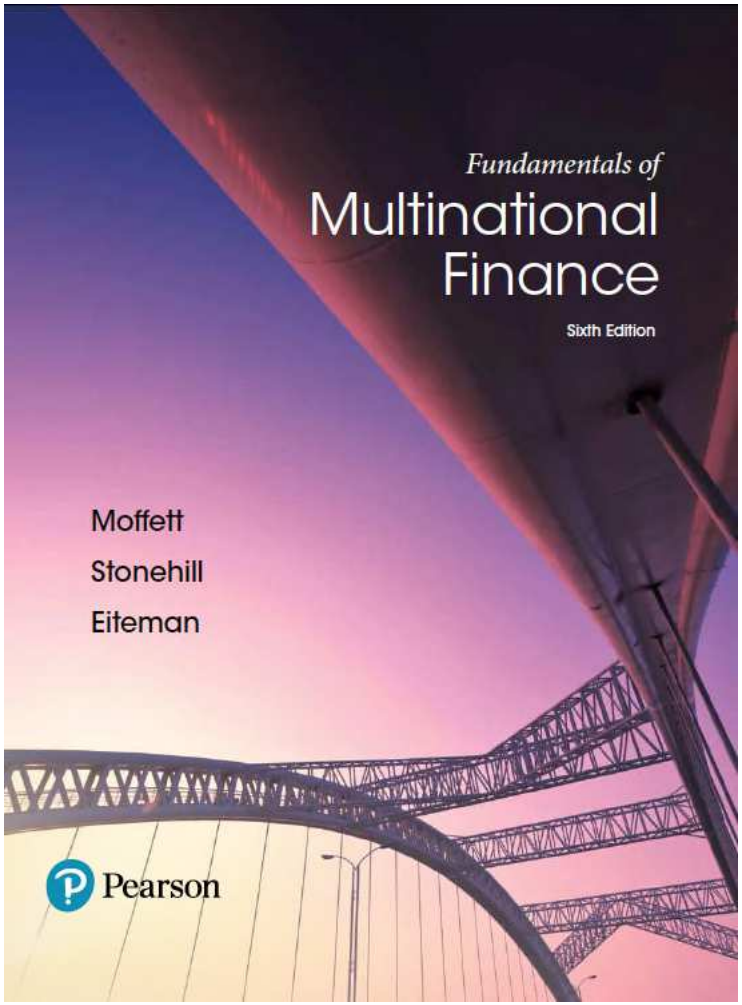

Chapter 2

The International Monetary System

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Learning Objectives

2.1 Explore how the international monetary system has evolved from the days of the gold standard to today's eclectic currency arrangement

2.2 Examine how the choice of fixed versus flexible exchange rate regimes is made by a country in the context of its desires for economic and social independence and openness

2.3 Describe the tradeoff a nation must make between a fixed exchange rate, monetary independence, and freedom of capital movements—the impossible trinity

2.4 Explain the dramatic choices the creation of a single currency for Europe—the euro—required of the European Union's member states

2.5 Study the complexity of exchange rate regime choices faced by many emerging market countries today including China

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History of the International Monetary System (1 of 9)

- The Gold Standard (1876-1913)
  - Gold has been a medium of exchange and store of value since 3000 BC
  - "Rules of the game" were simple, each country set the rate at which its currency unit could be converted to a weight of gold
  - Currency exchange rates were in effect "fixed"
  - Expansionary monetary policy was limited to a government's supply of gold
  - Was in effect until the outbreak of WWI when the free movement of gold was interrupted

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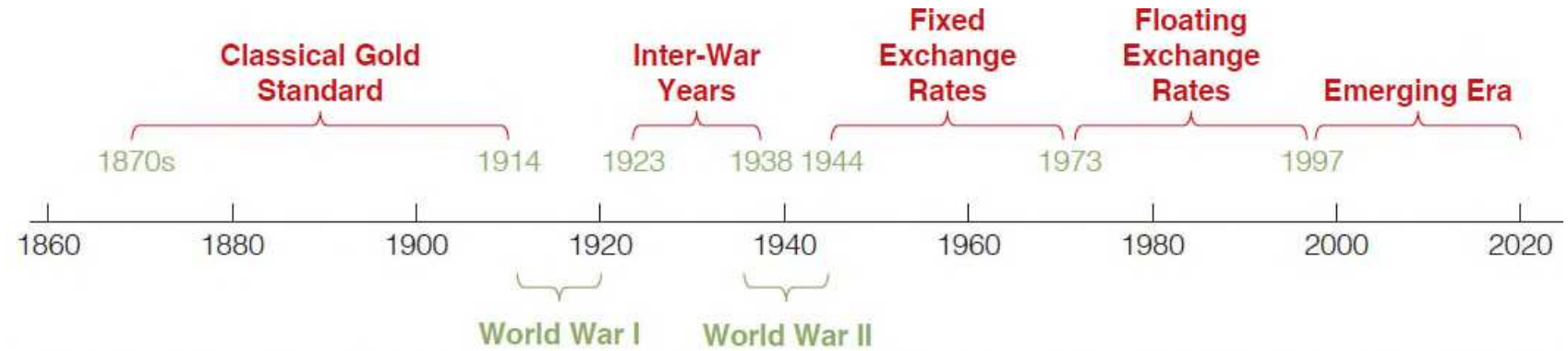
Exhibit 2.1: The Evolution of the Global Monetary System



Impact on Trade	Trade dominated capital flows	Increased barriers to trade & capital flows	Capital flows begin to dominate trade	Capital flows dominate trade	Selected emerging nations open capital markets
Impact on Economies	Increased world trade with limited capital flows	Protectionism & nationalism	Expanded open economies	Industrial economies increasingly open; emerging nations open slowly	Capital flows drive economic development

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History of the International Monetary System (2 of 9)

- The Inter-War Years & WWII (1914-1944)
  - During this period, currencies were allowed to fluctuate over a fairly wide range in terms of gold and each other
  - Increasing fluctuations in currency values became realized as speculators sold short weak currencies
  - The U.S. adopted a modified gold standard in 1934
  - During WWII and its chaotic aftermath the U.S. dollar was the only major trading currency that continued to be convertible

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History of the International Monetary System (3 of 9)

- Bretton Woods and the International Monetary Fund (IMF) (1944)
  - The Bretton Woods Agreement established a U.S. dollar based international monetary system and created two new institutions the International Monetary Fund (IMF) and the World Bank

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History of the International Monetary System (4 of 9)

- Bretton Woods and the International Monetary Fund (IMF) (1944)
  - The IMF was the key institution in the new international monetary system and was created to:
    - Help countries defend their currencies against cyclical, seasonal, or random occurrences
    - Assist countries having structural trade problems if they promise to take adequate steps to correct these problems
    - Special Drawing Right (SDR) serves as a unit of account for the IMF and other international and regional organizations

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History of the International Monetary System (5 of 9)

- Fixed Exchange Rates (1945-1973)
  - After WWII, widely diverging monetary and fiscal policies, differential rates of inflation and various currency shocks resulted in the demise of Bretton Woods
  - The U.S. dollar became the main reserve currency held by central banks, resulting in a consistent and growing balance of payments deficit which required a heavy capital outflow of dollars to finance these deficits and meet the growing demand for dollars from investors and businesses

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History of the International Monetary System (6 of 9)

- Fixed Exchange Rates (1945-1973)
  - Eventually, the heavy overhang of dollars held by foreigners resulted in a lack of confidence in the ability of the U.S. to met its commitment to convert dollars to gold
  - Between 1971 and 1973, the U.S. suffered the loss of a large amount of its official gold reserves as global confidence in the value of the dollar plummeted

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History of the International Monetary System (7 of 9)

- Fixed Exchange Rates (1945-1973)
  - By late February 1973, a fixed-rate system no longer appeared feasible given the speculative flows of currencies
  - The major foreign exchange markets were actually closed for several weeks in March 1973
  - When markets reopened, most currencies were allowed to float to levels determined by market forces

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History of the International Monetary System (8 of 9)

- The Floating Era (1973-1997)
  - Since March 1973, exchange rates have become much more volatile and less predictable than they were during the “fixed” period
  - There have been numerous, significant world currency events over the past 30 years
  - The volatility of the U.S. dollar exchange rate index is illustrated in Exhibit 2.2

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Exhibit 2.2: The BIS Exchange Rate Index of the Dollar

Source: BIS.org. Nominal exchange rate index (narrow definition) for the U.S. dollar.

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History of the International Monetary System (9 of 9)

- The Emerging Era (1997-present)
  - Emerging market economics are multiplying in number and growing in complexity
  - This results in a growing number of emerging market currencies

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IMF Classification of Currency Regimes (1 of 4)

- IMF Classifications of Currency Regimes
  - There is no single governing body or single
  - official global policing authority for global exchange of currencies
  - As part of its self-appointed duties, the IMF has created a classification system of currency regimes

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IMF Classification of Currency Regimes (2 of 4)

- Brief Classification History
  - The IMF was for many years the central clearinghouse for exchange rate classifications
  - Member states submitted their exchange rate policies to the IMF, and those submissions were the basis for its categorization of exchange rate regimes
  - Beginning in 1998, the IMF changed its practice and confined its regime classifications and reports to analysis performed in-house

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IMF Classification of Currency Regimes (3 of 4)

- The IMF's **de facto** System
  - The IMF's methodology of classifying exchange rate regimes today, in effect since January 2009, is presented in Exhibit 2.3
  - It is based on actual observed behavior, *de facto* results, and not on the official policy statements of the respective governments, **de jure** classification

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IMF Classification of Currency Regimes (4 of 4)

- The IMF's de facto System
  - Category 1: Hard Pegs
    - Countries that have given up their own sovereignty over monetary policy
  - Category 2: Soft Pegs
    - AKA fixed exchange rates
  - Category 3: Floating Arrangements
    - Mostly market driven, these may be free floating or floating with occasional government intervention
  - Category 4: Residual
    - The remains of currency arrangements that don't well fit the previous categorizations

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Exhibit 2.3: IMF Exchange Rate Classifications (1 of 2)

Rate Classification	2009 de facto System	Description and Requirements
Hard Pegs	Arrangement with no separate legal tender	The currency of another country circulates as the sole legal tender (formal dollarization), as well as members of a monetary or currency union in which the same legal tender is shared by the members.
	Currency board arrangement	A monetary arrangement based on an explicit legislative commitment to exchange domestic currency for a specific foreign currency at a fixed exchange rate, combined with restrictions on the issuing authority. Restrictions imply that domestic currency will be issued only against foreign exchange and that it remains fully backed by foreign assets.
Soft Pegs	Conventional pegged arrangement	A country formally pegs its currency at a fixed rate to another currency or a basket of currencies of major financial or trading partners. Country authorities stand ready to maintain the fixed parity through direct or indirect intervention. The exchange rate may vary ±1% around a central rate, or may vary no more than 2% for a six-month period.
	Stabilized arrangement	A spot market rate that remains within a margin of 2% for six months or more and is not floating. Margin stability can be met by either a single currency or basket of currencies (assuming statistical measurement). Exchange rate remains stable as a result of official action.
	Intermediate pegs: Crawling peg	Currency is adjusted in small amounts at a fixed rate or in response to changes in quantitative indicators (e.g., inflation differentials).

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Exhibit 2.3: IMF Exchange Rate Classifications (2 of 2)

Rate Classification	2009 de facto System	Description and Requirements
Crawl-like arrangement	Crawl-like arrangement	Exchange rate must remain with a narrow margin of 2% relative to a statistically defined trend for six months or more. Exchange rate cannot be considered floating. Minimum rate of change is greater than allowed under a stabilized arrangement.
	Pegged exchange rate within horizontal bands	The value of the currency is maintained within 1% of a fixed central rate, or the margin between the maximum and minimum value of the exchange rate exceeds 2%. This includes countries that are today members of the Exchange Rate Mechanism II (ERM II) system.
Floating Arrangements	Floating	Exchange rate is largely market determined without an ascertainable or predictable path. Market intervention may be direct or indirect, and serves to moderate the rate of change (but not targeting). Rate may exhibit more or less volatility.
	Free floating	A floating rate is freely floating if intervention occurs only exceptionally, and confirmation of intervention is limited to at most three instances in a six-month period, each lasting no more than three business days.
	Other managed arrangements	This category is residual, and is used when the exchange rate does not meet the criteria for any other category. Arrangements characterized by frequent shifts in policies fall into this category.

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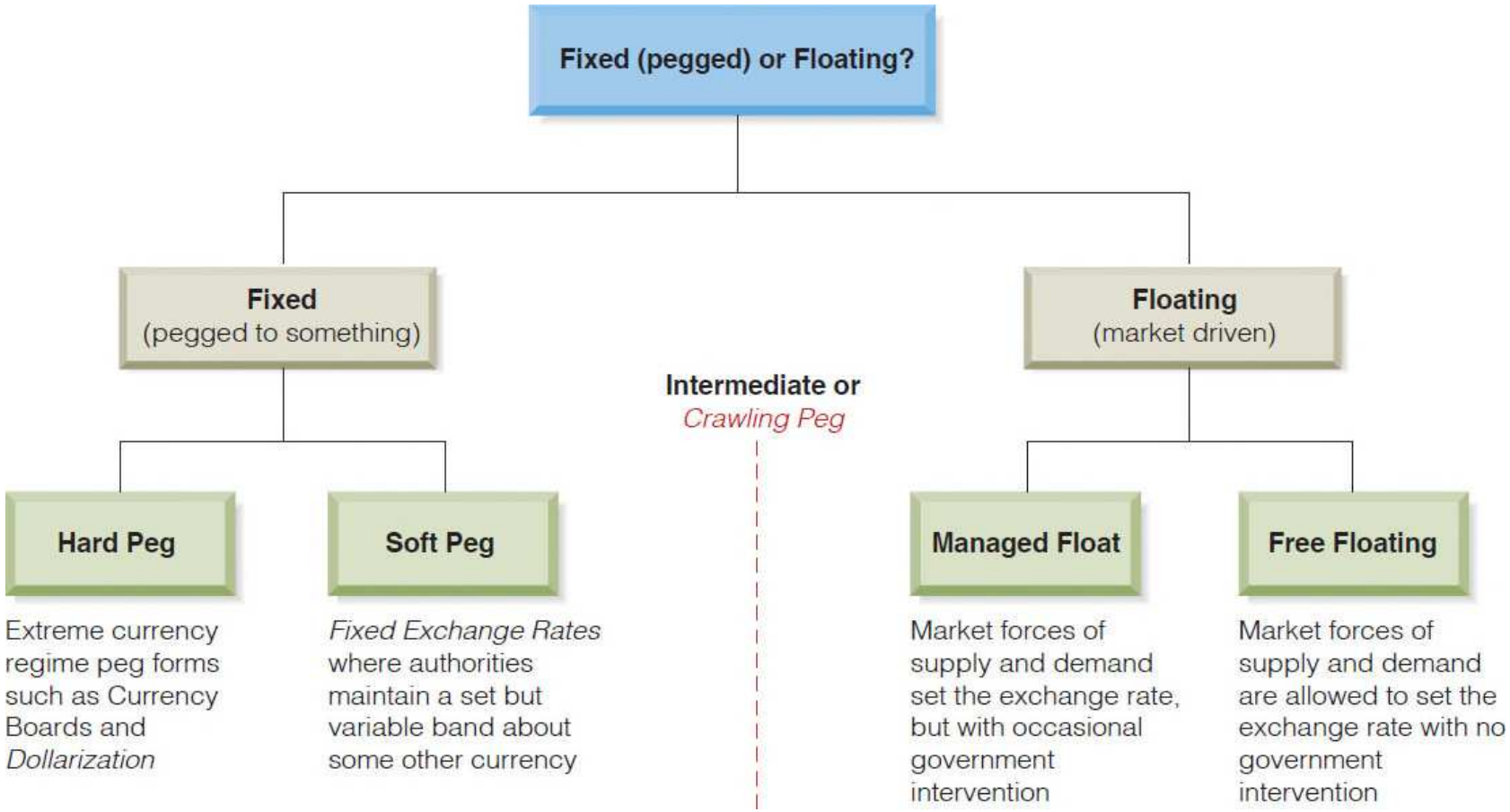
Exhibit 2.4: Taxonomy of Exchange Rate Regimes



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IMF Classification of Currency Regimes

- A Global Eclectic
  - Despite the IMF's attempt to apply rigor to regime classifications, the global monetary system today is indeed a global eclectic
  - For example, the euro itself is an example of a rigidly fixed system, acting as a single currency for its member countries
  - However, the euro is also an independently floating currency against all other currencies

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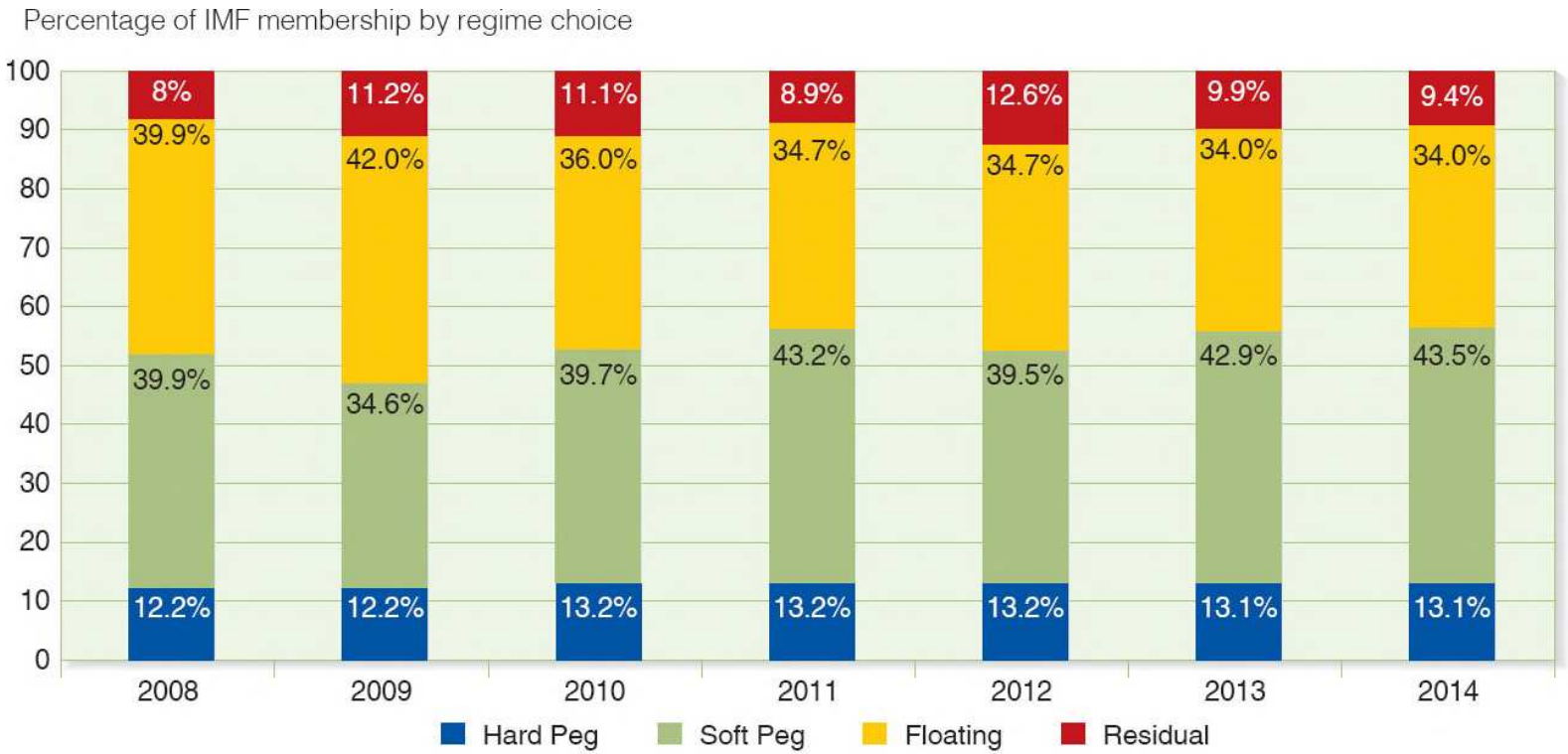
Exhibit 2.5: IMF Membership Exchange Rate Regime Choices



Source: Data drawn from Annual Report on Exchange Arrangements and Exchange Restrictions 2014, International Monetary Fund, 2014, Table 3, Exchange Rate Arrangements 2008–2014.

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Fixed Versus Flexible Exchange Rates (1 of 3)

- A nation's choice as to which currency regime to follow reflects national priorities about all facets of the economy, including:
  - inflation
  - unemployment
  - interest rate levels
  - trade balances
  - economic growth
- The choice between fixed and flexible rates may change over time as priorities change

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Fixed Versus Flexible Exchange Rates (2 of 3)

- Fixed rates provide stability in international prices for the conduct of trade
- Fixed exchange rates are inherently anti-inflationary, requiring the country to follow restrictive monetary and fiscal policies

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Fixed Versus Flexible Exchange Rates (3 of 3)

- Fixed exchange rate regimes necessitate that central banks maintain large quantities of international reserves (hard currencies and gold) for use in the occasional defense of the fixed rate
- Fixed rates, once in place, may be maintained at levels that are inconsistent with economic fundamentals

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The Impossible Trinity

- Trilemma of International Finance
  - Exchange Rate Stability
  - Full Financial Integration
  - Monetary Independence
    - The forces of economics do not allow the simultaneous achievement of all three

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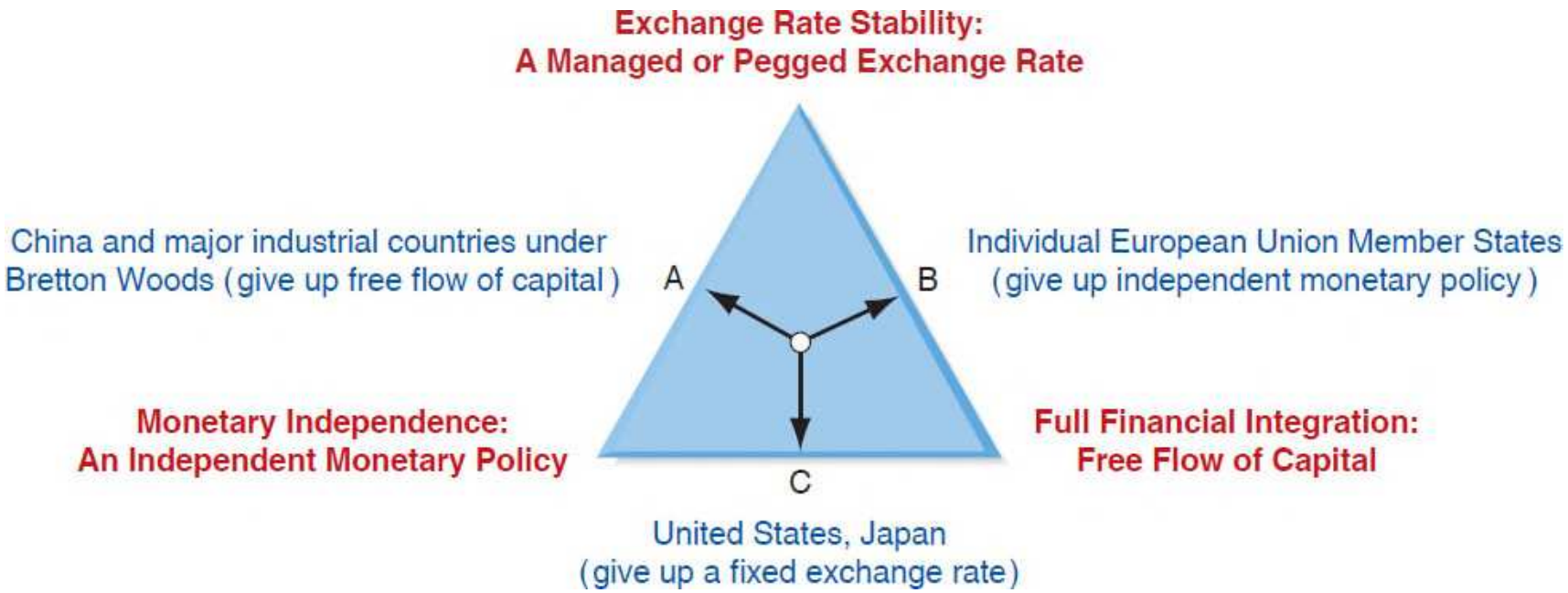
Exhibit 2.6: The Impossible Trinity



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A Single Currency for Europe: The Euro
(1 of 5)

- The Maastricht Treaty and Monetary Union
  - In December 1991, the members of the European Union met at Maastricht, the Netherlands, to finalize a treaty that changed Europe's currency future
  - This treaty set out a timetable and a plan to replace all individual ECU currencies with a single currency called the euro

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A Single Currency for Europe: The Euro
(2 of 5)

- To prepare for the EMU, a convergence criteria was laid out whereby each member country was responsible for managing the following to a specific level:
  - Nominal inflation rates
  - Long-term interest rates
  - Fiscal deficits
  - Government debt

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A Single Currency for Europe: The Euro
(3 of 5)

- The European Central Bank (ECB)
  - The ECB is an independent central bank that dominates the activities of the individual countries' central banks
    - The ECB's structure and functions were modeled after the German Bundesbank, which in turn had been modeled after the U.S. Federal Reserve System
  - The single most important mandate of the ECB is its charge to promote price stability within the European Union

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A Single Currency for Europe: The Euro
(4 of 5)

- The Launch of the Euro
  - On January 4, 1999, the euro was officially launched and replaced individual countries' currencies
  - Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain were the original 11 participating countries
    - The United Kingdom, Sweden, and Denmark chose to maintain their individual currencies

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A Single Currency for Europe: The Euro
(5 of 5)

- The Launch of the Euro
  - Benefits of the Euro:
    - Cheaper transaction costs in the eurozone
    - Currency risks and costs related to uncertainty are reduced
    - All consumers and businesses both inside and outside the eurozone enjoy price transparency and increased price-based competition

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Exhibit 2.7 The U.S. Dollar-European Euro Spot Exchange Rate

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Emerging Markets and Regime Choices (1 of 11)

- Currency Boards
  - A currency board exists when a country's central bank commits to back its monetary base – its money supply – entirely with foreign reserves at all times
  - This means that a unit of domestic currency cannot be introduced into the economy without an additional unit of foreign exchange reserves being obtained first.

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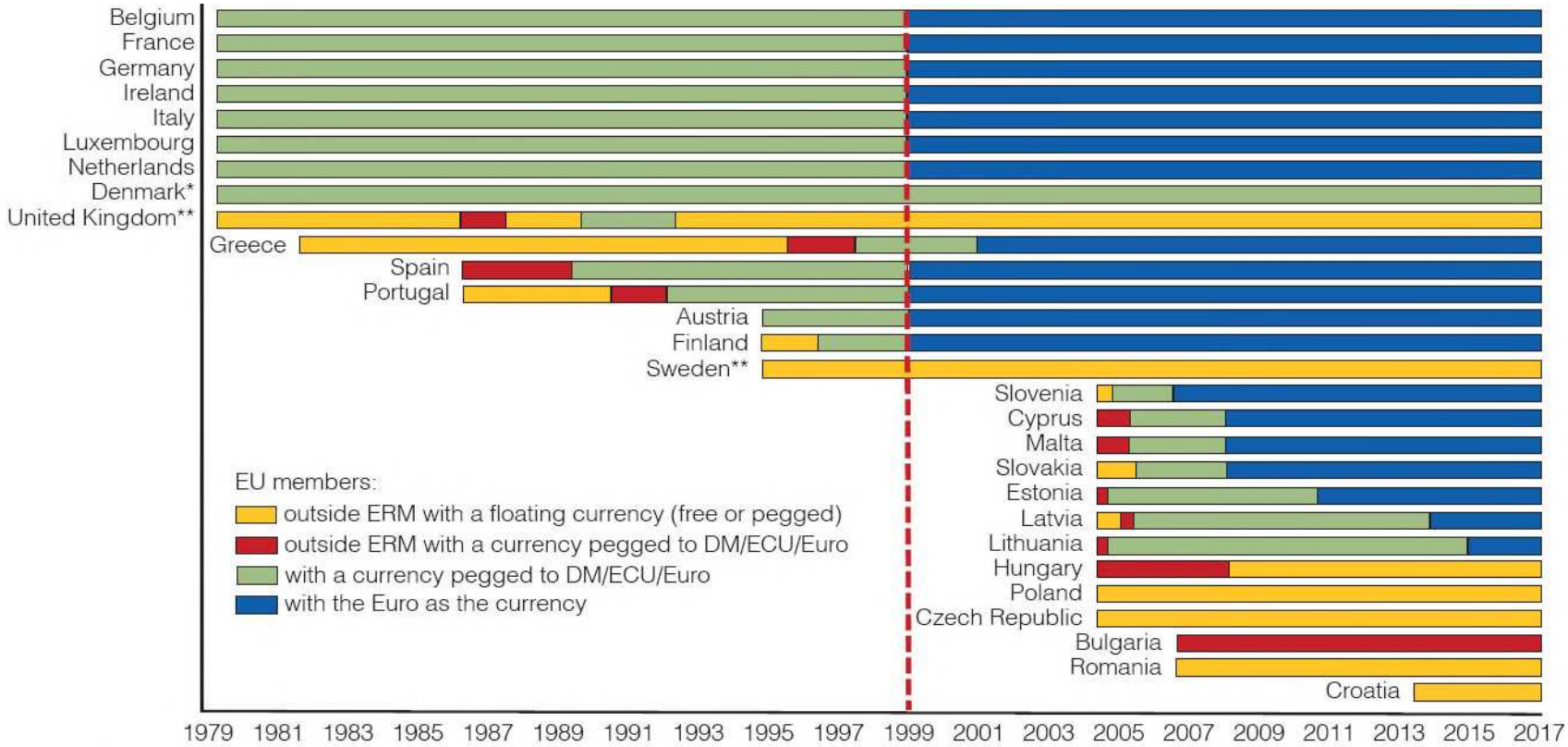
Exhibit 2.8: Exchange Rate Regimes of European Union Members



Source: Based on data from the European Union's Convergence Reports.
Notes: *ERM II participant; **Non-ERM participant; ERM = Exchange Rate Mechanism; ECU = European Currency Unit; DM = Deutsche mark.
In June 2016 the United Kingdom voted to leave the European Union.

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Emerging Markets and Regime Choices (2 of 11)

- Currency Boards
  - Argentina
    - Moved from a managed exchange rate to a currency board in 1991, which pegged the Argentine peso's value to the U.S. dollar on a one-to-one basis
    - From the very beginning there was substantial doubt in the market that the Argentine government could maintain the fixed exchange rate
    - In 2002, the country ended the currency board as a result of substantial economic and political turmoil

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Emerging Markets and Regime Choices (3 of 11)

- Dollarization
  - The use of the U.S. dollar as the official currency of the country
    - One attraction of dollarization is that sound monetary and exchange-rate policies no longer depend on the intelligence and discipline of domestic policymakers.
    - A country that dollarizes removes any currency volatility (against the dollar) and would theoretically eliminate the possibility of future currency crises

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Emerging Markets and Regime Choices (4 of 11)

- Dollarization
  - Disadvantages
    - Loss of sovereignty over monetary policy
    - Loss of the power of seigniorage, the ability to profit from its ability to print its own money
    - The central bank of the country, because it no longer has the ability to create money within its economic and financial system, can no longer serve the role of lender of last resort

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Emerging Markets and Regime Choices (5 of 11)

- Ecuador
  - Ecuador officially completed the replacement of the Ecuadorian sucre with the U.S. dollar as legal tender in September 2000
    - The results of dollarization in Ecuador are still unknown
    - Today, many years later, Ecuador continues to struggle to find both economic and political balance with its new currency regime

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Emerging Markets and Regime Choices (6 of 11)

- Currency Regime Choices for Emerging Markets
  - Many experts suggest countries will be forced to extremes when choosing currency regimes—either a hard peg or free-floating
  - Three common features that make emerging market choices difficult:
    - Weak fiscal, financial and monetary institutions
    - Tendencies for commerce to allow currency substitution and the denomination of liabilities in dollars
    - The emerging market's vulnerability to sudden stoppages of outside capital flows

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Exhibit 2.9: Currency Regime Choices for Emerging Market Nations

Emerging Market Nation Currency Choices

High capital mobility is forcing emerging market nations to *choose* between two extremes

Free-Floating Regime

- Currency value is free to float up and down with international market forces
- Independent monetary policy
- Free movement of capital allowed, but at the loss of stability
- Increased volatility may be more than what a small country with a small financial market can withstand

Fixed Rate or Currency Board

- Fixed rate regime requires all exhange at the government's set rate of exchange
- Currency board fixes the value of local currency to another currency or basket
- Independent monetary policy is lost; political influence on monetary policy is eliminated
- *Seignorage*, the benefits accruing to a government from the ability to print its own money, is lost

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Emerging Markets and Regime Choices (7 of 11)

- Globalizing the Chinese Renminbi
  - Although trading in the Chinese renminbi (RMB) is closely controlled by the People's Republic of China (PRC), its reach is spreading
  - The RMB's value has been carefully controlled but allowed to gradually revalue against the dollar over time
  - It is now quickly moving rapidly toward what most think is an inevitable role as a true international currency

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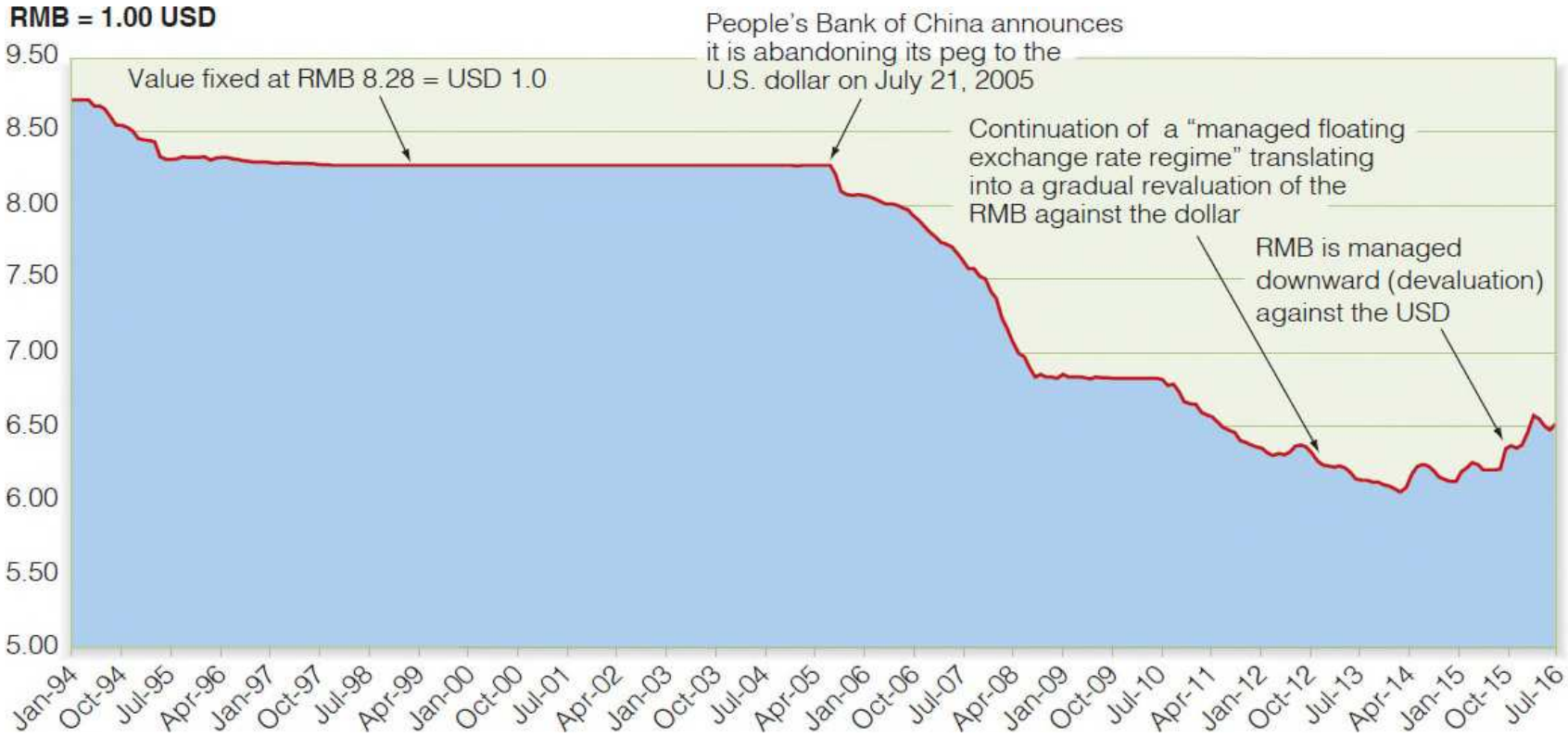
Exhibit 2.10: The Revaluation of the Chinese Yuan (1994–2016)



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Emerging Markets and Regime Choices (8 of 11)

- Two-Market Currency Development
  - The RMB continues to develop along a segmented onshore/offshore two-market structure regulated by the PRC
    - The onshore market is a two-tier market, with retail exchange and an interbank wholesale exchange
    - The offshore market for the RMB has grown out of a Hong Kong base
      - Growth in this market has been fueled by the issuance of RMB-denominated debt, so-called Panda Bonds

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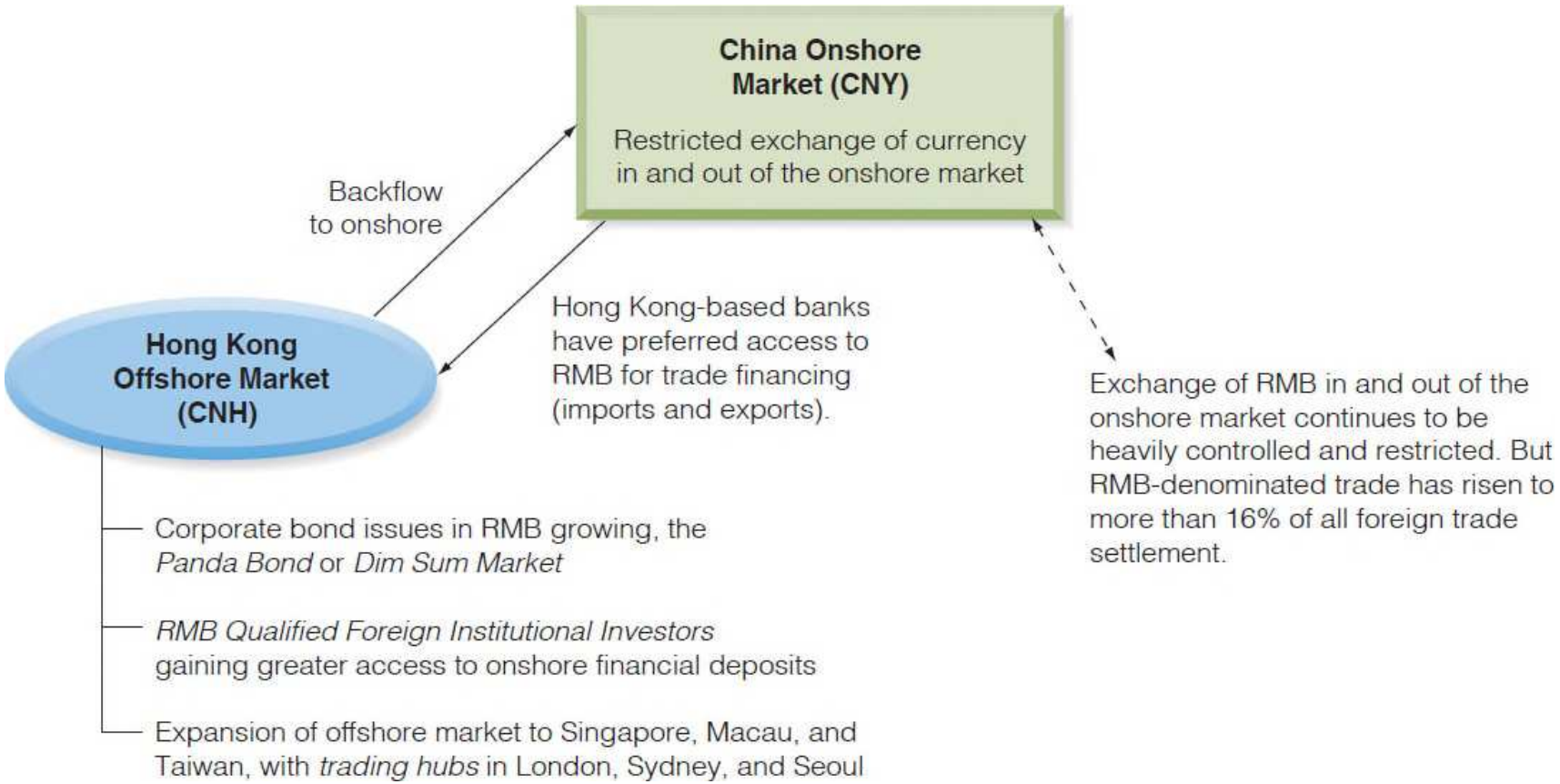
Exhibit 2.11: Structure of the Chinese Renminbi Market



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Emerging Markets and Regime Choices (9 of 11)

- Theoretical Principles and Practical Concerns
  - A first degree of internationalization occurs when an international currency becomes readily accessible for trade
  - A second degree of internationalization occurs with the use of the currency for international investment
  - A third degree of internationalization occurs when a currency takes on a role as a reserve currency

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Emerging Markets and Regime Choices (10 of 11)

- Theoretical Principles and Practical Concerns
  - The Triffin Dilemma
    - The potential conflict in objectives that may arise between domestic monetary and currency policy objectives and external or international policy objectives when a country's currency is used as a reserve currency

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Emerging Markets and Regime Choices (11 of 11)

- Exchange Rate Regimes: What Lies Ahead?
  - All exchange rate regimes must deal with the tradeoff between rules and discretion, as well as between cooperation and independence
    - The present international monetary system is characterized by no rules, with varying degrees of cooperation

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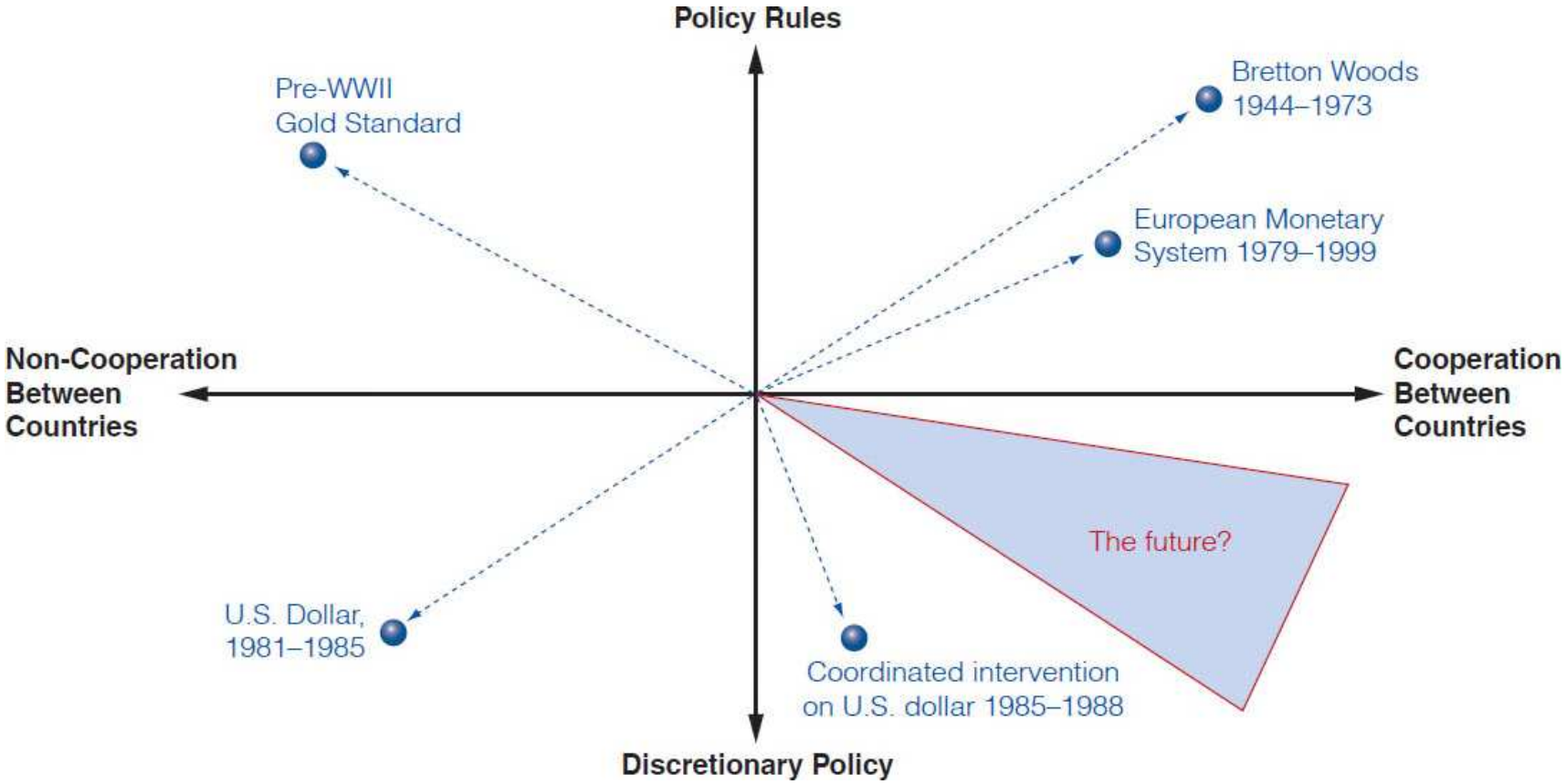
Exhibit 2.12: Exchange Rate Regime Tradeoffs



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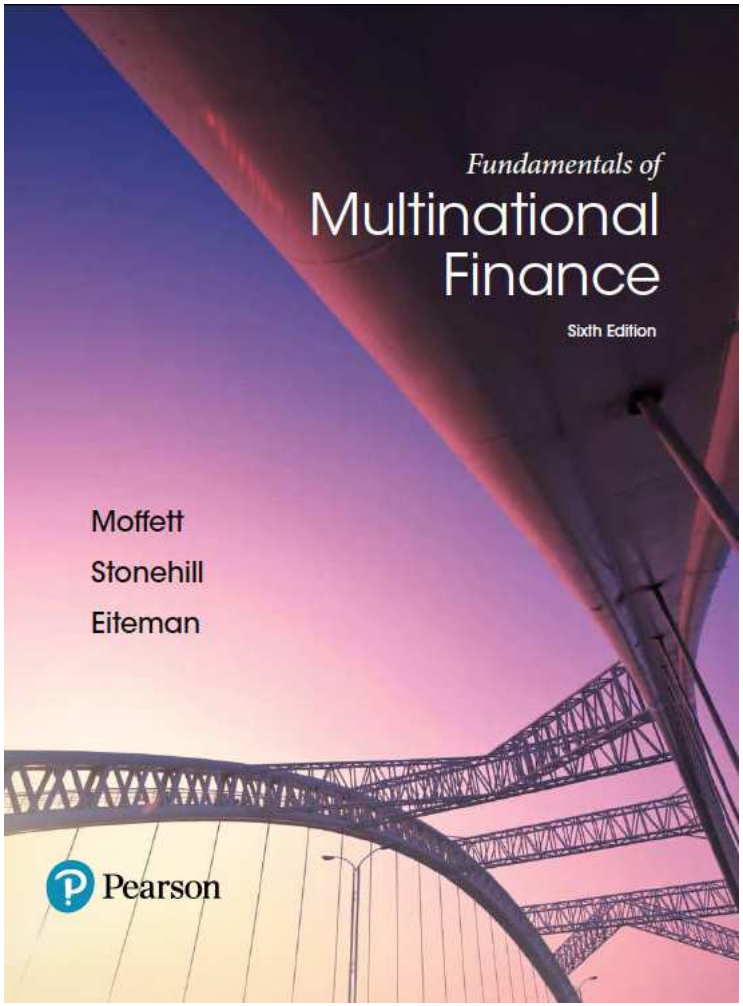

Chapter 2

The International Monetary System

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Mini-Case

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Iceland – A Small Country in a Global Crisis (1 of 2)

There was the short story, and the longer more complex story. Iceland had seen both. And what was the moral of the story? Was the moral that it's better to be a big fish in a little pond, or was it once burned twice shy, or something else?

- Iceland was a country of only 300,000 people. It was relatively geographically isolated, but its culture and economy were heavily intertwined with that of Europe, specifically northern Europe and Scandinavia.
- A former property of Denmark, it considered itself both independent and yet Danish. Iceland's economy was historically driven by fishing and natural resource development. Although not flashy by any sense of the word, they had proven to be solid and lasting industries, and in recent years, increasingly profitable.
- At least that was until Iceland discovered "banking."

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Iceland – The Short Story (1 of 10)

- Iceland's economy had grown very rapidly in the 2000 to 2008 period. Growth was so strong and so rapid that inflation—an ill of the past in most of the economic world— was a growing problem.
- As a small, industrialized and open economy, capital was allowed to flow into and out of Iceland with economic change.
- As inflationary pressures rose, the Central Bank of Iceland had tightened monetary policy, interest rates rose.
- Higher interest rates attracted capital from outside Iceland, primarily European capital, and the banking system was flooded with capital.
- The banks in turn invested heavily in everything from real estate to Land Rovers (or Game Overs as they became known).

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Iceland – The Short Story (2 of 10)

- Then September of 2008 happened. The global financial crisis, largely originating in the United States and its real estate-securitized-mortgage-debt-credit-default-swap crisis brought much of the international financial system and major industrial economies to a halt.
- Investments failed— in the U.S., in Europe, in Iceland. Loans to finance those bad investments fell delinquent.
- The Icelandic economy and its currency—the krona—collapsed. As illustrated in Exhibit A, the Krona fell more than 40% against the euro in roughly 30 days, more than 50% in 90 days. Companies failed, banks failed, unemployment grew, and inflation boomed.
- A long, slow, and painful recovery began.

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Exhibit A: The Icelandic Short Story—Fall of the Krona

Date	ISK = EUR 1.00	Percent Chg
Sept 3, 2008	121.28	
Oct 6, 2008	172.16	–42.0%
Dec 2, 2008	187.70	–54.8%

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Iceland – The Long Story (3 of 10)

- The longer story of Iceland's crisis has its roots in mid-1990s, when Iceland—like many other major industrial economies—embraced privatization and deregulation.
- The financial sector, once completely owned and operated by government, was privatized and largely deregulated by 2003.
- Home mortgages were deregulated in 2003; new mortgages required only a 10% down payment. Investment— foreign direct investment (FDI)—flowed into Iceland rapidly.
- A large part of the new investment was in aluminum production, an energy-intensive process that could utilize much of Iceland's natural (natural after massive damn construction) hydroelectric power. But FDI of all kinds also flowed into the country, including household and business capital.

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Iceland – The Long Story (4 of 10)

- The new Icelandic financial sector was dominated by three banks—Glitnir, Kaupthing, and Landsbanki Islands. Their opportunities for growth and profitability seemed unlimited, both domestically and internationally.
- Iceland's membership in the European Economic Area (EEA) provided the Icelandic banks a financial passport to expand their reach throughout the greater European marketplace.
- As capital flowed into Iceland rapidly in 2003–2006, the krona rose, increasing the purchasing power of Icelanders but raising concerns with investors and government.
- Gross domestic product (GDP) had grown at 8% in 2004, 6% in 2005, and was still above 4% by 2006. While the average unemployment rate of the major economic powers was roughly 6%, Iceland's overheating economy had only 3% unemployment.

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Iceland – The Long Story (5 of 10)

- But rapid economic growth in a small economy, as happens frequently in economic history, stoked inflation.
- And the Icelandic government and central bank then applied the **standard prescription**: slow money supply growth to try to control inflationary forces.
- The result—as expected—was higher interest rates

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Iceland – The Long Story (6 of 10)

A financial crash in Iceland snowballed yesterday, setting off a series of tremors as far afield as Brazil and South Africa. At one point the Icelandic krona was down 4.7 per cent at a 15-month low of IKr69.07 to the dollar, having fallen a further 4.5 per cent on Tuesday, its biggest one-day slide in almost five years. The krona's collapse meant carry trade investors who borrowed in euros to gain exposure to Reykjavik's 10 per cent interest rate, saw one-and-a-half years' worth of carry trade profit wiped out in less than two days. The collapse, which was sparked by Fitch downgrading its outlook on Iceland, citing fears over an "unsustainable" current account deficit and drawing parallels with the imbalances evident before the 1997 Asian crisis, led to a generalised sell-off in Icelandic assets . . .

—"Iceland's Collapse Has Global Impact," Financial Times, Feb 23, 2006, p. 42.

- The mini-shock suffered by Iceland in 2006 was short lived, and investors and markets quickly shook off its effects. Bank lending returned, and within two years the Icelandic economy was in more trouble than ever.

Brennt barn forðast eldinn (A burnt child keeps away from fire)

— Icelandic proverb

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Iceland – The Long Story (7 of 10)

- In 2007 and 2008 Iceland's interest rates continued to rise—both market rates (like bank overnight rates) and central bank policy rates.
- Global credit agencies rated the major Icelandic banks AAA.
- Capital flowed into Icelandic banks, and the banks in turn funneled that capital into all possible investments (and loans) domestically and internationally.
- Iceland's banks created Icesave, an Internet banking system to reach out to depositors in Great Britain and the Netherlands. It worked. Iceland's bank balance sheets grew from 100% of GDP in 2003 to just under 1,000% of GDP by 2008.
- Iceland's banks were now more international than Icelandic. (By the end of 2007 their total deposits were 45% in British pounds, 22% Icelandic krona, 16% euro, 3% dollar, and 14% other.)

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Iceland – The Long Story (8 of 10)

- Icelandic real estate and equity prices boomed. Increased consumer and business spending resulted in the growth in merchandise and service imports, while the rising krona depressed exports.
- The merchandise, service, and income balances in the current account all went into deficit.
- Behaving like an emerging market country that had just discovered oil, Icelanders dropped their fish hooks, abandoned their boats, and became bankers.
- Everyone wanted a piece of the pie, and the pie appeared to be growing at an infinite rate.
- **Everyone could become rich.**

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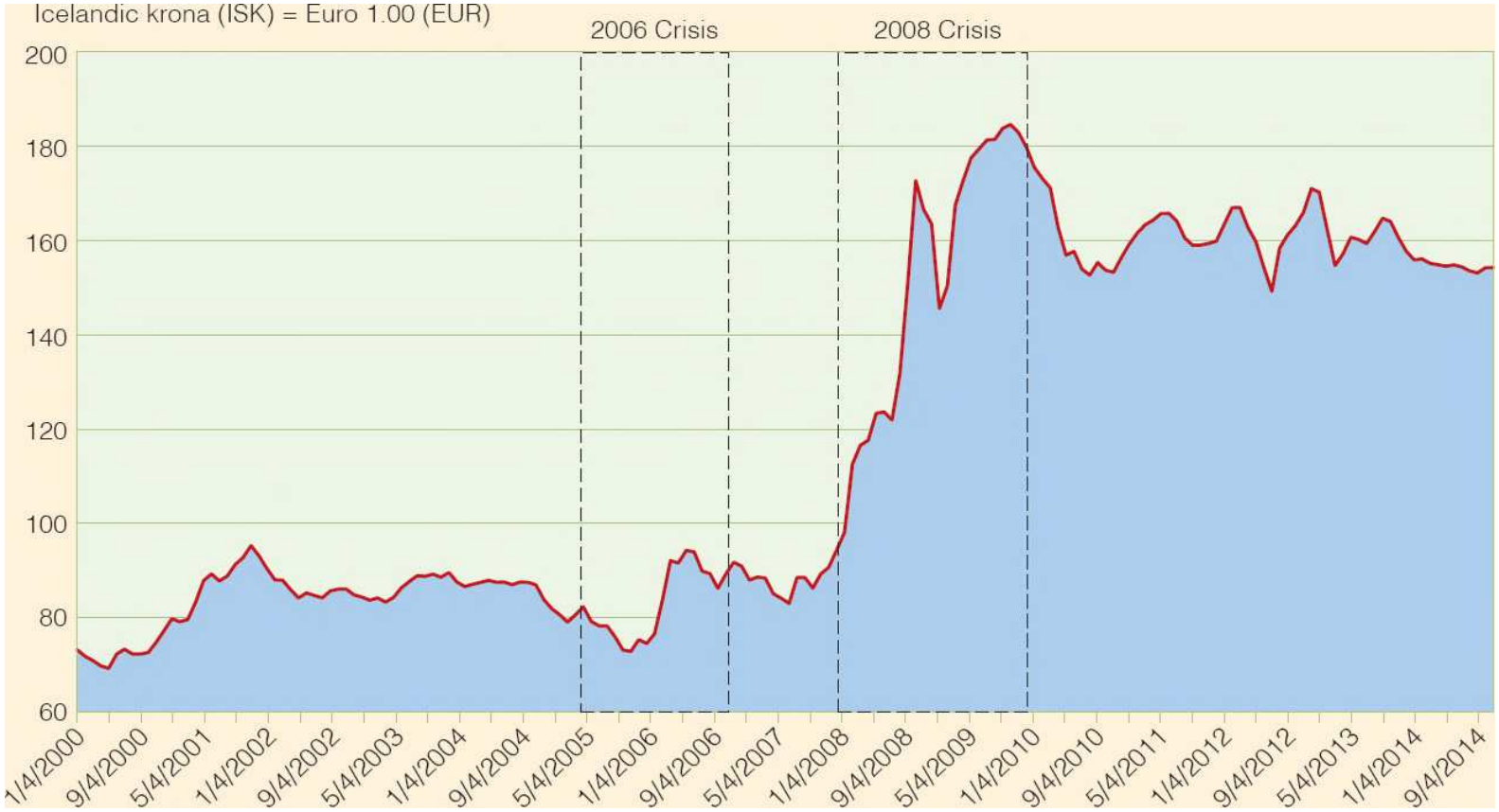
Exhibit B: The Icelandic Krona—European Euro Spot Exchange Rate



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Iceland – The Long Story (9 of 10)

- Then it all stopped, suddenly, without notice. Whether it was caused by the failure of Lehman Brothers in the U.S., or was a victim of the same forces, it is hard to say.
- But beginning in September 2008 the krona started falling and capital started fleeing. Interest rates were increased even further to try and entice (or 'bribe') money to stay in Iceland and in krona.
- None of it worked.
- As illustrated by Exhibit B, the krona's fall was large, dramatic, and somewhat permanent. In retrospect, the 2006 crisis had been only a small rain shower; 2008 proved a **tsunami**.

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Iceland – The Long Story (10 of 10)

- Now those same interest rates, which had been driven up by both markets and policy, prevented any form of renewal—mortgage loans were either impossible to get or impossible to afford, business loans were too expensive given the new limited business outlook.
- The international interbank market, which had largely frozen-up during the midst of the crisis in September and October 2008, now treated the Icelandic financial sector like a leper.
- As illustrated by Exhibit C, interest rates had a long way to fall to reach earth (the Central Bank of Iceland's overnight rate rose to well over 20%).

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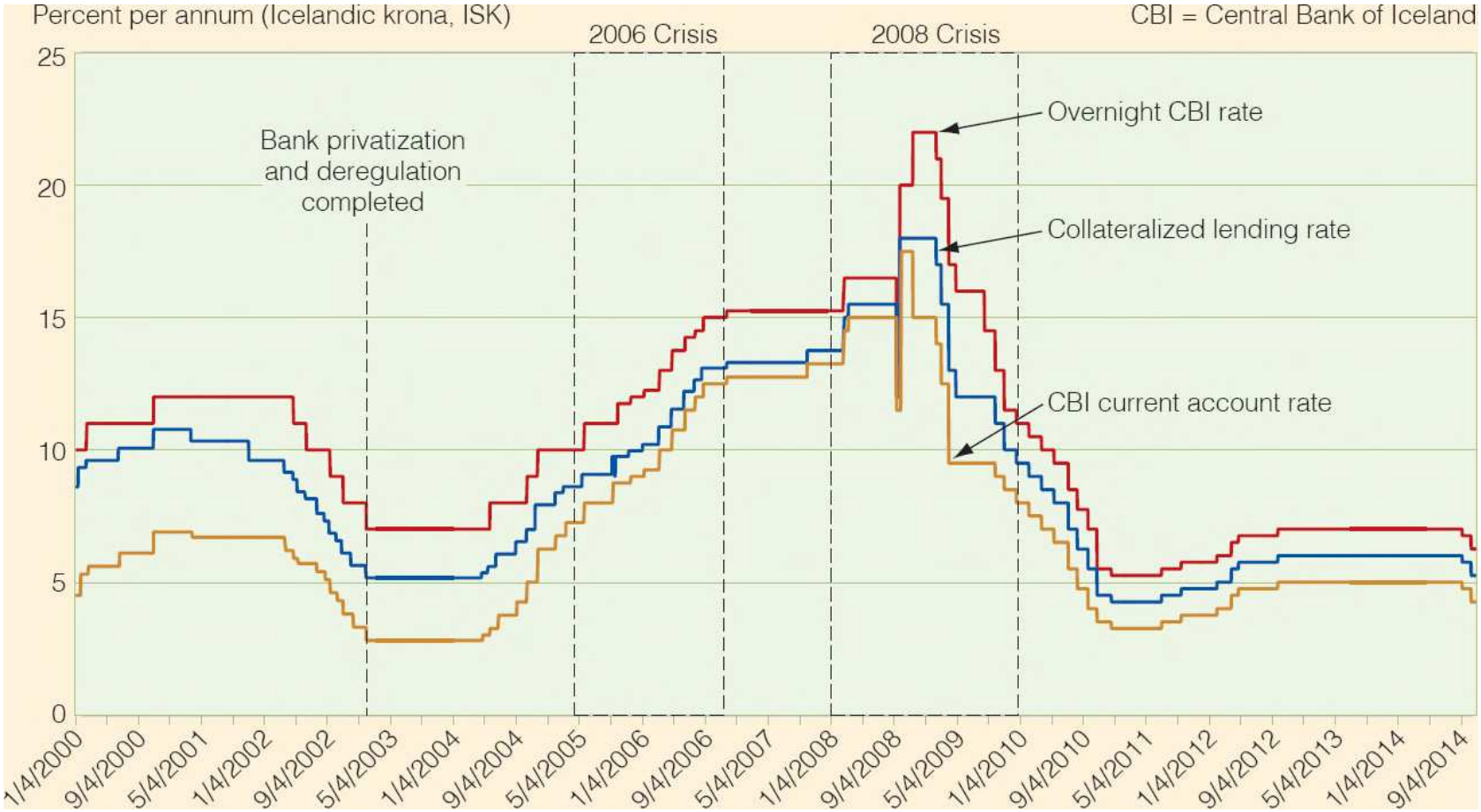
Exhibit C: Icelandic Central Bank Interest Rates



Note: Constructed by authors based on data compiled by the Central Bank of Iceland.

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Iceland – The Policy Response (1 of 4)

- There is a common precept observed by governments and central banks when they fall victim to financial crises: **save the banks**.
- Regardless of whether the banks and bankers were considered the cause of the crisis, or complicit (one Icelandic central banker termed them the usual suspects), it is common belief that all economies need a functioning banking system in order to have any hope for business rebirth and employment recovery.
- This was the same rule used in the U.S. in the 1930s and across South Asia in 1997 and 1998.
- But the Icelandic people did not prescribe to the usual medicinal. Their preference: **let the banks fail**.

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Iceland – The Policy Response (2 of 4)

- Taking to the streets in what was called the pots and pans revolution, the people wanted no part of the banks, the bankers, the bank regulators, or even the Prime Minister. The logic was some combination of "allow free markets to work" and "I want some revenge." (This is actually quite similar to what many analysts have debated over what happened in the U.S. at the same time when the U.S. government let Lehman go.)
- In contrast to the bank bailouts in the United States in 2008 following the onset of the financial crisis undertaken under the mantra of "**too big to fail**," Iceland's banks were considered "**too big to save**." Each of the three major banks, which had all been effectively nationalized by the second week of October in 2008, was closed.
- As illustrated in Exhibit D, although Iceland's bank assets and external liabilities were large, and had grown rapidly, Iceland was not alone.
- Each failed bank was reorganized by the government into a good bank and a bad bank in terms of assets, but not combined into singular good banks and bad banks.

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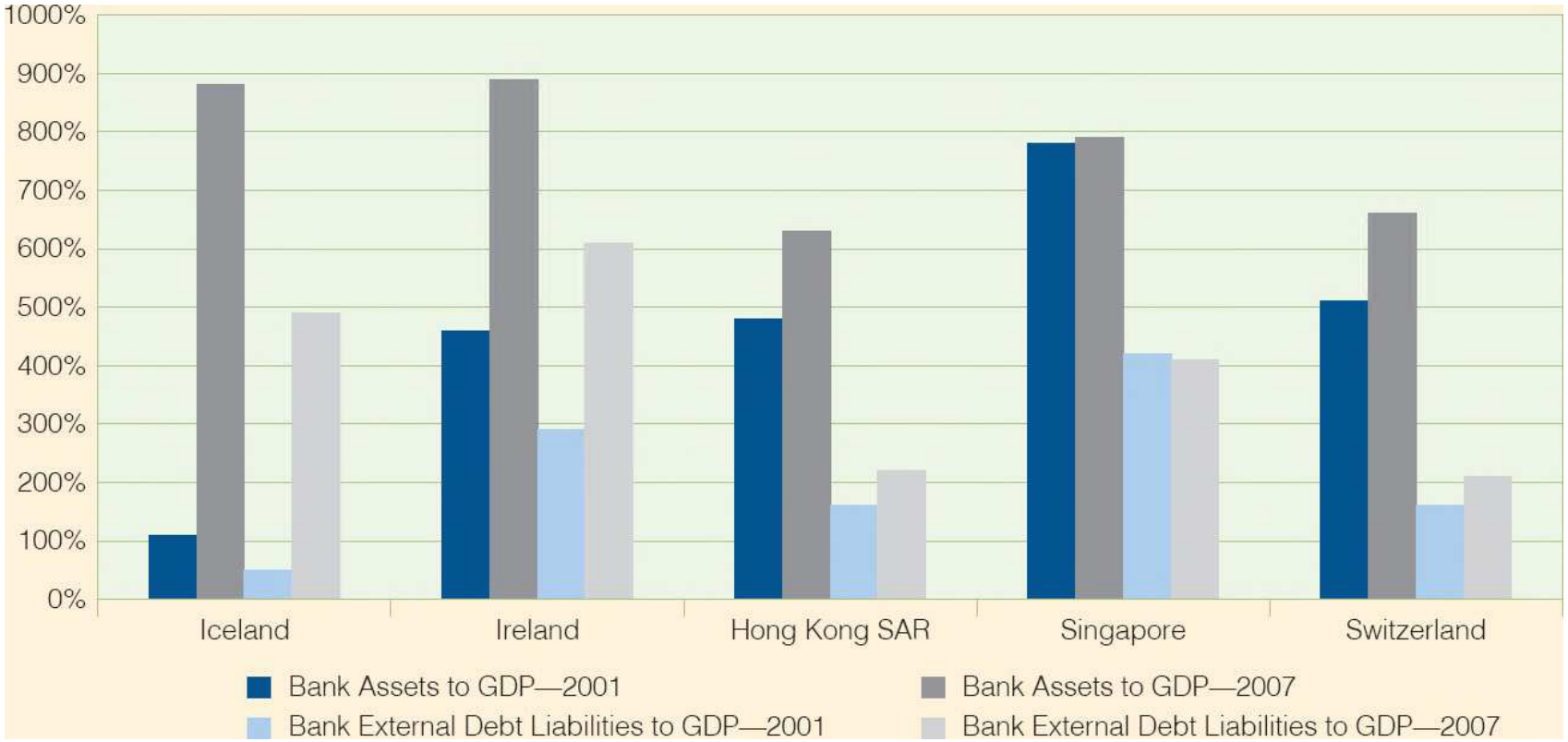
Exhibit D: Icelandic Banks Compared to Others in Potential Crisis



Source: IMF and Iceland Central Bank.

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Iceland – The Policy Response (3 of 4)

- The governing authorities surviving in office in the fall of 2008 undertook a thee-point emergency plan:
  1) stabilize the exchange rate;
  2) regain fiscal sustainability; and
  3) rebuild the financial sector.
- The primary tool was capital controls.
  - Iceland shut down the borders and the Internet lines for moving capital into or out of the country.

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Iceland – The Policy Response (4 of 4)

- The most immediate problem was the exchange rate.
  - The falling krona had decimated purchasing power, and the rising prices of imported goods were adding even more inflationary pressure.
- The bank failures (without bailout) raised serious and contentious discussions between Iceland and other authorities in the United Kingdom, the EU, the Netherlands, and elsewhere.
  - Because so many of the deposits in Iceland banks were from foreign depositors, home-country authorities wanted assurance that their citizens' financial assets would be protected.
  - In Iceland, although the government guaranteed domestic residents that their money was insured (up to a limit), foreign depositors were not.
- Foreign residents holding accounts with Icelandic financial institutions were prohibited from pulling the money out of Iceland and out of the krona.

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Iceland: 20-20 Hindsight (1 of 2)

- Interestingly, in the years since the crisis, there has been a reversal (or as one writer described it, 20-20-20-20 hindsight) in the assessment of Iceland's response to the crisis.
- In the first few years it was believed that Iceland's recovery would be shorter and stronger than other European countries falling into crisis in 2009 and 2010, like Ireland, Estonia, and others.
- But then, after a few more years of experience, revised hindsight concluded that Iceland's recovery has been slower, weaker, and less successful than that of others, partly a result of allowing the banks to fail, partly a result of the country's "addiction" to capital controls.

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Iceland: 20-20 Hindsight (2 of 2)

- And the lessons? What are the lessons to be taken from the Icelandic saga?
  - Deregulation of the financial system is risky?
  - Banks and bankers are not to be trusted?
  - Crossborder banking is risky?
  - Inadequate cross-border banking regulations allow banks to borrow too much, where they shouldn't, and invest too much where they shouldn't?
  - Bank loan books and bank capital needs to be regulated?
- Small countries cannot conduct independent monetary policy? Small fish should not swim in big ponds? Or . . .

The paper concludes that, to prevent future crises of similar proportions, it is impossible for a small country to have a large international banking sector, its own currency and an independent monetary policy.

—"Iceland's Economic and Financial Crisis: Causes, Consequences and Implications," by Rob Spruk, European Enterprise Institute, 23 February 2010.

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Iceland – A Small Country in a Global Crisis: Discussion Questions

1. Do you think a country the size of Iceland—a Lilliputian— is more or less sensitive to the potential impacts of global capital movements?
2. Many countries have used interest rate increases to protect their currencies for many years. What are the pros and cons of using this strategy?
3. How does the Iceland story fit with our understanding of the Impossible Trinity? In your opinion, which of the three elements of the Trinity should Iceland have taken steps to control more?
4. In the case of Iceland, the country was able to sustain a large current account deficit for several years, and at the same time have ever-rising interest rates and a stronger and stronger currency. Then one day, it all changed. How does that happen?

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Iceland – A Small Country in a Global Crisis (2 of 2)

Given the substantial macroeconomic risks, capital controls were an unfortunate but indispensable ingredient in the policy mix that was adopted to stabilise the króna when the interbank foreign-exchange market was restarted in early December 2008.

—*Capital Control Liberalisation*, Central Bank of Iceland, August 5, 2009, p. 2.

Payments linked to current account transactions and inward FDI were released after a short period of time. Thus, transactions involving actual imports and exports of goods and services are allowed and so are interest payments, if exchanged within a specified time limit. Most capital transactions are controlled both for residents and non-residents; that is, their ability to shift between ISK and FX is restricted. Króna-denominated bonds and other like instruments cannot be converted to foreign currency upon maturity. The proceeds must be reinvested in other ISK instruments. Furthermore, the Rules require residents to repatriate all foreign currency that they acquire.

—*Capital Control Liberalisation*, Central Bank of Iceland, August 5, 2009, p. 2–3.

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