

## CHAPTER 1

# MULTINATIONAL FINANCIAL MANAGEMENT: OPPORTUNITIES AND CHALLENGES

**1. Globalization Risks in Business.** What are some of the risks that come with the growing globalization of business?

- Exchange rates. The international monetary system, an eclectic mix of floating and managed fixed exchange rates, is constantly changing. For example the growth of the Chinese yuan is now changing the global currency landscape.
- Interest rates. Large fiscal deficits, including the current eurozone crisis, plague most of the major trading countries of the world, complicating fiscal and monetary policies, and ultimately, interest rates and exchange rates.
- Many countries experience continuing balance of payments imbalances, and in some cases, dangerously large deficits and surpluses, all will inevitably move exchange rates.
- Ownership, control, and governance vary radically across the world. The publicly traded company is not the dominant global business organization-the privately held or family-owned business is the prevalent structure-and their goals and measures of performance vary dramatically.
- Global capital markets that normally provide the means to lower a firm's cost of capital, and even more critically, increase the availability of capital, have in many ways shrunk in size and have become less open and accessible to many of the world's organizations.
- Financial globalization has resulted in the ebb and flow of capital in and out of both industrial and emerging markets, greatly complicating financial management (Chapter 5 and 8).

**2. Globalization and the Multinational Enterprise (MNE).** The term globalization has become widely used in recent years. How would you define it?

Narayana Murthy's quote is a good place to start any discussion of globalization:

*"I define globalization as producing where it is most cost-effective, selling where it is most profitable, and sourcing capital where it is cheapest, without worrying about national boundaries."*

Narayana Murthy, President and CEO, Infosys

- 3. Assets, Institutions, and Linkages.** Which assets play the most critical role in linking the major institutions that make up the global financial marketplace?

The debt securities issued by governments. These low risk or risk-free assets form the foundation for the creation, trading, and pricing of other financial assets like bank loans, corporate bonds, and equities (stock). In recent years a number of additional securities have been created from the existing securities – derivatives, whose value is based on market value changes in the underlying securities. The health and security of the global financial system relies on the quality of these assets.

- 4. Currencies and Symbols.** What technological change is even changing the symbols we use in the representation of different country currencies?

As currency trading has shifted from verbal telephone conversations to electronic and digital trading, currency symbols (many of which were not common across alphabetic platforms like the British pound, £) have been replaced with the ISO-4217 codes, three-letter currency codes like USD, EUR, and GBP.

- 5. Eurocurrencies and LIBOR.** Why have eurocurrencies and LIBOR remained the centerpiece of the global financial marketplace for so long?

Eurocurrencies and LIBOR (and there are LIBOR rates for all eurocurrencies) reflect the 'purest' of market driven currencies and instrument rates. They are largely unregulated, and therefore reflect freely traded assets whose value is set by the daily global marketplace.

- 6. Theory of Comparative Advantage.** Define and explain the theory of comparative advantage.

The *theory of comparative advantage* provides a basis for explaining and justifying international trade in a model world assumed to enjoy free trade, perfect competition, no uncertainty, costless information, and no government interference. The theory contains the following features:

- Exporters in Country A sell goods or services to unrelated importers in Country B.
- Firms in Country A specialize in making products that can be produced relatively efficiently, given Country A's endowment of factors of production: that is, land, labor, capital, and technology. Firms in Country B do likewise, given the factors of production found in Country B. In this way the total combined output of A and B is maximized.
- Because the factors of production cannot be moved freely from Country A to Country B, the benefits of specialization are realized through international trade.

- The way the benefits of the extra production are shared depends on the terms of trade, the ratio at which quantities of the physical goods are traded. Each country's share is determined by supply and demand in perfectly competitive markets in the two countries. Neither Country A nor Country B is worse off than before trade, and typically both are better off, albeit perhaps unequally.

**7. Limitations of Comparative Advantage.** Key to understanding most theories is what they say and what they don't. Name four or five key limitations to the theory of comparative advantage.

Although international trade might have approached the comparative advantage model during the nineteenth century, it certainly does not today, for the following reasons:

- Countries do not appear to specialize only in those products that could be most efficiently produced by that country's particular factors of production. Instead, governments interfere with comparative advantage for a variety of economic and political reasons, such as to achieve full employment, economic development, national self-sufficiency in defense-related industries, and protection of an agricultural sector's way of life. Government interference takes the form of tariffs, quotas, and other non-tariff restrictions.
- At least two of the factors of production, capital and technology, now flow directly and easily between countries, rather than only indirectly through traded goods and services. This direct flow occurs between related subsidiaries and affiliates of multinational firms, as well as between unrelated firms via loans, and license and management contracts. Even labor flows between countries such as immigrants into the United States (legal and illegal), immigrants within the European Union, and other unions.
- Modern factors of production are more numerous than in this simple model. Factors considered in the location of production facilities worldwide include local and managerial skills, a dependable legal structure for settling contract disputes, research and development competence, educational levels of available workers, energy resources, consumer demand for brand name goods, mineral and raw material availability, access to capital, tax differentials, supporting infrastructure (roads, ports, communication facilities), and possibly others.
- Although the terms of trade are ultimately determined by supply and demand, the process by which the terms are set is different from that visualized in traditional trade theory. They are determined partly by administered pricing in oligopolistic markets.

- Comparative advantage shifts over time as less developed countries become more developed and realize their latent opportunities. For example, over the past 150 years comparative advantage in producing cotton textiles has shifted from the United Kingdom to the United States, to Japan, to Hong Kong, to Taiwan, and to China.
- The classical model of comparative advantage did not really address certain other issues such as the effect of uncertainty and information costs, the role of differentiated products in imperfectly competitive markets, and economies of scale.

Nevertheless, although the world is a long way from the classical trade model, the general principle of comparative advantage is still valid. The closer the world gets to true international specialization, the more world production and consumption can be increased, provided the problem of equitable distribution of the benefits can be solved to the satisfaction of consumers, producers, and political leaders. Complete specialization, however, remains an unrealistic limiting case, just as perfect competition is a limiting case in microeconomic theory.

**8. International Financial Management.** What is different about international financial management?

Multinational financial management requires an understanding of cultural, historical, and institutional differences such as those affecting corporate governance. Although both domestic firms and MNEs are exposed to foreign exchange risks, MNEs alone face certain unique risks, such as political risks, that are not normally a threat to domestic operations.

MNEs also face other risks that can be classified as extensions of domestic finance theory. For example, the normal domestic approach to the cost of capital, sourcing debt and equity, capital budgeting, working capital management, taxation, and credit analysis needs to be modified to accommodate foreign complexities. Moreover, a number of financial instruments that are used in domestic financial management have been modified for use in international financial management. Examples are foreign currency options and futures, interest rate and currency swaps, and letters of credit.

**9. Ganado's Globalization.** After reading the chapter's description of Ganado's globalization process, how would you explain the distinctions between international, multinational, and global companies?

The difference in definitions for these three terms is subjective, with different writers using different terms at different times. No single definition can be considered definitive, although as a general matter the following probably reflect general usage.

*International* simply means that the company has some form of business interest in more than one country. That international business interest may be no more than exporting and importing, or it may include having branches or incorporated

subsidiaries in other countries. International trade is usually the first step in becoming “international,” but the term also encompasses foreign subsidiaries created for the single purpose of marketing, distribution, or financing. The term international is also used to encompass what are defined as multinational and global below.

*Multinational* is usually taken to mean a company that has operating subsidiaries and performs a full set of its major operations in a number of countries; i.e., in “many nations.” “Operations” in this context includes both manufacturing and selling, as well as other corporate functions, and a multinational company is often presumed to operate in a greater number of countries than simply an international company. A multinational company is presumed to operate with each foreign unit “standing on its own” – although that term does not preclude specialization by country and/or supplying parts from one country operation to another.

*Global* is a newer term which essentially means about the same as “multinational;” i.e., operating around the globe. Global has tended to replace other terms because of its use in demonstrators at the international meetings (“global forums?”) of the International Monetary Fund and World Bank that took place in Seattle in 1999 and Rome in 2001. Terrorist attacks on the World Trade Center and the Pentagon in 2001 led politicians to refer to the need to eliminate “global terrorism.”

**10. Ganado, the MNE.** At what point in the globalization process did Ganado become a multinational enterprise (MNE)?

Ganado became a multinational enterprise (MNE) when it began to establish foreign sales and service subsidiaries, followed by creation of manufacturing operations abroad or by licensing foreign firms to produce and service Trident’s products. This multinational phase usually follows the international phase, which involved the import and/or export of goods and/or services.

**11. Role of Market Imperfections.** What is the role of market imperfections in the creation of opportunities for the multinational firm?

- MNEs strive to take advantage of imperfections in national markets for products, factors of production, and financial assets.
- Imperfections in the market for products translate into market opportunities for MNEs. Large international firms are better able to exploit such competitive factors as economies of scale, managerial and technological expertise, product differentiation, and financial strength than are their local competitors.
- MNEs thrive best in markets characterized by international oligopolistic competition, where these factors are particularly critical.
- Once MNEs have established a physical presence abroad, they are in a better position than purely domestic firms to identify and implement market opportunities through their own internal information network.

**12. Why Go.** What do firms become multinational?

1. Entry into new markets, not currently served by the firm, which in turn allow the firm to grow and possibly to acquire economies of scale.
2. Acquisition of raw materials, not available elsewhere.
3. Achievement of greater efficiency, by producing in countries where one or more of the factors of production are underpriced relative to other locations.
4. Acquisition of knowledge and expertise centered primarily in the foreign location.
5. Location of the firms' foreign operations in countries deemed politically safe.

**13. Multinational Versus International.** What is the difference between an international firm and a multinational firm?

A multinational firm goes beyond simply selling to or trading with firms in foreign countries (international), by expanding its intellectual capital and acquiring a physical presence in foreign countries. This allows the firm to expand and deepen its core competitiveness and global reach to more markets, customers, suppliers, and partners.

**14. Ganado's Phases.** What are the main phases that Ganado passed through as it evolved into a truly global firm? What are the advantages and disadvantages of each?

- a. *International trade.* Two advantages are finding out if the firms' products are desired in the foreign country and learning about the foreign market. Two disadvantages are lack of control over the final sale and service to final customer (many exports are to distributors or other types of firms that in turn resell to the final customer) and the possibility that costs and thus final customer sales prices will be greater than those of competitors that manufacture locally.
- b. *Foreign sales and service offices.* The greatest advantage is that the firm has a physical presence in the country, allowing it great control over sales and service as well as allowing it to learn more about the local market. The disadvantage is the final local sales prices, based on home country plus transportation costs, may be greater than competitors that manufacture locally.
- c. *Licensing a foreign firm to manufacture and sell.* The advantages are that product costs are based on local costs and that the local licensed firm has the knowledge and expertise to operate efficiently in the foreign country. The major disadvantages are that the firm might lose control of valuable proprietary technology and that the goals of the foreign partner might differ from those of the home country firm. Two common problems in the latter category are whether or not the foreign firm (that is manufacturing the product under license) is a shareholder wealth or corporate wealth maximizer, which in turn often leads to disagreements about reinvesting earnings to achieve greater future growth versus making larger current dividends to owners and payments to other stakeholders.

- d. *Part ownership of a foreign, incorporated, subsidiary; i.e., a joint venture.* The advantages and disadvantages are similar to those for licensing: Product costs are based on local costs and that the local joint owner presumably has the knowledge and expertise to operate efficiently in the foreign country. The major disadvantages are that the firm might lose control of valuable proprietary technology to its joint venture partner, and that the goals of the foreign owners might differ from those of the home country firm.
- e. *Direct ownership of a foreign, incorporated, subsidiary.* If fully owned, the advantage is that the foreign operations may be fully integrated into the global activities of the parent firm, with products resold to other units in the global corporate family without questions as to fair transfer prices or too great specialization. (Example: the Ford transmission factory in Spain is of little use as a self-standing operation; it depends on its integration into Ford's European operations.) The disadvantage is that the firm may come to be identified as a "foreign exploiter" because politicians find it advantageous to attack foreign-owned businesses.

**15. Financial Globalization.** How do the motivations of individuals, both inside and outside the organization or business, define the limits of financial globalization?

If influential insiders in corporations and sovereign states continue to pursue the increase in firm value, there will be a definite and continuing growth in financial globalization. But, if these same influential insiders pursue their own personal agendas which may increase their personal power, influence, or wealth, then capital will not flow into these sovereign states and corporations. The result is the growth of financial inefficiency and the segmentation of globalization outcomes creating winners and losers.

The three fundamental elements – *financial theory, global business, management beliefs and actions* – combine to present either the problem or the solution to the growing debate over the benefits of globalization to countries and cultures worldwide.

## Problem 1.1 Rio Games and the Brazilian Real

Ryan Lock had planned his trip to the Olympic Games in Rio de Janeiro, Brazil, for many months. He had budgeted – saved – \$15,000 for expenses while in Rio. But he had postponed exchanging the dollars for Brazilian currency – real (BRL) – until the very last minute, doing it in the airport in the United States at BRL 3.1805 = 1.00 USD. Given the following average exchange rates in the spring and summer of 2016, when should he have exchanged the dollars for real to maximize his Brazilian spending money?

### Assumptions

US dollar funds for expenses in Rio de Janeiro

### Value

**\$15,000.00**

Average exchange rate for the month (BRL = 1.00 USD):

January	<b>BRL 4.0553</b>
February	<b>BRL 3.9651</b>
March	<b>BRL 3.6984</b>
April	<b>BRL 3.5639</b>
May	<b>BRL 3.5416</b>
June	<b>BRL 3.4236</b>
July	<b>BRL 3.2785</b>
August 8 in Airport	<b>BRL 3.1805</b>

### Answers

### Toys

Brazilian real proceeds from exchange by month:

US\$ x spot exchange rate (BRL = 1.00 USD)

January	<b>BRL 60,829.50</b>
February	<b>BRL 59,476.50</b>
March	<b>BRL 55,476.00</b>
April	<b>BRL 53,458.50</b>
May	<b>BRL 53,124.00</b>
June	<b>BRL 51,354.00</b>
July	<b>BRL 49,177.50</b>
August 8 in Airport	<b>BRL 47,707.50</b>

Looks like Ryan messed up by waiting to exchange the currency on his flight out to Rio. The airport spot rate turned out to be the worst for Ryan as the Brazilian real had appreciated versus the US dollar over the year. The best exchange rate was that in January of 2016. But then again, Ryan did not have a crystal ball and did not know how the exchange rate would do over the year. Welcome to the dilemma of exchange rates in international travel -- and business.



## Problem 1.2 Peso, Dollar, Yen & Pokémon-Go

Crystal Gomez, who lives in Mexico City (as noted in the *Global Finance in Practice 1.2* in the chapter), bought 100 Pokécoins for 17 Mexican pesos (Ps or MXN). Nintendo of Japan, one of the part owners of Pokémon-Go, will need to convert the Mexican pesos (Ps or MXN) into its home currency, the Japanese yen, in order to record the financial proceeds. The current spot exchange rate between the Mexican peso and the U.S. dollar is 18.00 (MXN = 1.00 USD) and the current spot rate between the dollar and the Japanese yen (¥ or JPY) is 100.00. What are the yen proceeds of Crystal Gomez's purchase?

### Assumptions

	Value
Price of 100 Pokecoins in Mexico City (Mexican pesos, MXN or Ps)	MXN 17
Spot exchange rate between the peso and the dollar (MXN = 1.00 USD)	MXN 18.00
Spot exchange rate between the dollar and the yen (JPY = 1.00 USD)	¥100.00

### Answers

- a. What are the US dollar proceeds of the sale in Mexican pesos?

Proceeds in Mexican pesos (MXN) / Spot exchange rate (MXN/\$)	\$0.9444
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- b. What are the Japanese yen proceeds of the US dollar proceeds of the sale?

Proceeds in U.S. dollars x Spot exchange rate (¥/\$)	¥94.44
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## Problem 1.2 Isaac Díez of Brazil

Isaac Díez Peris lives in Rio de Janeiro, Brazil. While attending school in Spain he meets Juan Carlos Cordero from Guatemala. Over the summer holiday Isaac decides to visit Juan Carlos in Guatemala City for a couple of weeks. Isaac's parents give him some spending money, 4,500 Brazilian reais. Isaac wants to exchange it to Guatemalan quetzals (GTQ). He collects the following rates:

Spot rate on the GTQ/EUR:	GTQ 10.5799/EUR
Spot rate on the EUR/BRL:	EUR0.4462/BRL

- What is the Brazilian reais/Guatemalan quetzal cross rate?
- How many Guatemalan quetzals will Isaac get for his Brazilian reais?

Assumptions	Values
Amount of Brazilian reais from parents	4,500.00
Spot rate (BRL/EUR)	10.5799
Spot rate (EUR/GTQ)	0.4462

### a. What is the BRL/GTQ cross rate?

Cross rate (BRL/GTQ)	4.72
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$$BRL/GTQ = BRL/EUR \times EUR/GTQ$$

### b. How many Guatemalan quetzals will he get for his Brazilian reais?

Converting your reais into quetzals	21,243
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### Problem 1.3 Munich to Moscow

On your post-graduation celebratory trip you decide to travel from Munich, Germany to Moscow, Russia. You leave Munich with 15,000 euros (EUR) in your wallet. Wanting to exchange all of these for Russian rubles (RUB), you obtain the following quotes:

Spot rate on the dollar/euro cross rate	USD1.0644/EUR
Spot rate on the ruble/dollar cross rate	RUB59.468/USD

- What is the Russian ruble/euro cross rate?
- How many Russian rubles will you obtain for your euros?

Assumptions	Values
Beginning your trip with euros	15,000.00
Spot rate (USD/EUR)	1.0644
Spot rate (RUB/USD)	59.468

#### a) What is the Russian ruble/euro cross rate?

Cross rate (RUB/EUR)	63.30
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$$RUB/EUR = RUB/USD \times USD/EUR$$

#### b) How many Russian rubles will you obtain for your euros?

Converting your euros into Rubles	949,466
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## Problem 1.5 Moscow to Tokyo

After spending a week in Moscow you get an email from your friend in Japan. He can get you a really good deal on a plane ticket and wants you to meet him in Tokyo next week to continue your post-graduation celebratory trip. You have 450,000 Russian rubles (RUB) left in your money pouch. In preparation for the trip you want to exchange your Russian rubles for Japanese yen (JPY) so you get the following quotes:

Spot rate on the rubles/dollar cross rate	RUB 30.96/USD
Spot rate on the yen/dollar cross rate	JPY84.02/USD

- What is the Russian ruble/yen cross rate?
- How many Japanese yen will you obtain for your Russian rubles?

Assumptions	Values
Beginning your trip with rubles	450,000.00
Spot rate (RUB = 1.00 USD)	30.96
Spot rate (JPY = 1.00 USD)	84.02

### a) What is the Russian ruble/yen cross rate?

Cross rate (RUB/JPY)	0.3685
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$$RUB/JPY = RUB/USD \div JPY/USD$$

### b) How many Japanese yen will you obtain for your Russian rubles?

Converting your Rubles into yen	1,221,177
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### Problem 1.6 Chantal DuBois in Brussels

Chantal DuBois lives in Brussels. She can buy a U.S. dollar for €0.7600. Christopher Keller, living in New York City, can buy a euro for \$1.3200. What is the foreign exchange rate between the dollar and the euro?

Assumptions	Values
Buy a US dollar in Brussels for (€/€)	0.7600
Which is equivalent, the reciprocal (\$/€)	\$1.3158
Buy a euro in NY for (\$/€)	\$1.3200
Which is equivalent, the reciprocal (€/€)	0.7576

There is an obvious minor difference between the two currency quotes.

### Problem 1.7 Mexico's Cada Seis Años

Mexico was famous – or infamous – for many years in having two things every six years (*cada seis años* in Spanish): a presidential election and a currency devaluation. This was the case in 1976, 1982, 1988, and in 1994. In its last devaluation on December 20, 1994, the value of the Mexican peso (Ps) was officially changed from Ps3.30/\$ to Ps5.50/\$. What was the percentage devaluation?

Assumptions	Rate	Values
Spot rate, December 20, 1994 (Ps/\$)	S1	3.30
Spot rate, December 21, 1994 (Ps/\$)	S2	5.50

#### Calculation percentage of devaluation:

Percentage change in the peso versus the dollar

-40.00%

$$\text{Percent change} = (S1 - S2) \div (S2)$$

The peso since that time, and we have now weathered two additional six-year dates (2000 and 2006), has been remarkable stable against all major currencies, including the dollar.

### Problem 1.8 Kyle's Competing Offers

Kyle, after an arduous post-graduation job search, has received an offer of the following three different country posts with a major multinational company. Each of the three countries -- the United Kingdom, the Czech Republic, and France -- offer different starting salaries and different signing bonuses, but in different currencies. Kyle wants to first compare all of the compensation packages in a common currency, the U.S. dollar. Use the following data to determine which offer represents the greatest initial U.S. dollar compensation package.

Country	ISO	Currency	Salary	Signing Bonus	Currency = \$1.00
United Kingdom	GBP	pounds (£)	£73,000.00	£20,000.00	0.7000
Czech Republic	CZK	koruna (Kč)	1,850,000.00 Kč	325,000.00 Kč	24.35
France	EUR	euros (€)	€ 83,000.00	€ 17,000.00	0.9000

#### Converting Each Salary and Signing Bonus into US Dollars:

Country	ISO	Currency	Salary	Signing Bonus	Currency = \$1.00	Salary (US\$)	Bonus (US\$)	Total (US\$)
United Kingdom	GBP	pounds (£)	£73,000.00	£20,000.00	0.7000	\$104,286	\$28,571	\$132,857.14
Czech Republic	CZK	koruna (Kč)	1,850,000.00 Kč	325,000.00 Kč	24.35	\$75,975	\$13,347	\$89,322.38
France	EUR	euros (€)	€ 83,000.00	€ 17,000.00	0.9000	\$92,222	\$18,889	\$111,111.11

The posting in the United Kingdom has the highest total value as measured in U.S. dollars.

Now if you were Kyle, you might also consider the cost of living in each location and the appropriate tax rate. And of course the career potential, your capabilities in second languages, your cultural interests, and everything else that has to be considered when choosing where you will live -- at least initially.



## Problem 1.9 Comparing Cheap Dates Around the World

Comparison of prices or costs across different country and currency environments requires the translation of the local currency into a single common currency. This is most meaningful when the comparison is for the identical or near-identical product or service across countries. Deutsche Bank has recently started publishing a comparison of cheap dates -- and evening on the town for two to eat at McDonald's, see a movie, and drink a beer. Once all costs are converted to a common currency, the U.S. dollar in this case, the cost of the date can be compared across cities relative to the base case of a cheap date in USD in New York City.

After completing the table below, answer the following questions.

- Which city in the table is truly the cheapest date?
- Which city in the table is the most expensive-cheap date?
- If the exchange rate in Moscow on the Russian ruble (RUB) was 0.04200, instead of 0.0283, what would be the USD price?
- If the exchange rate in Shanghai was CNY 6.66 = 1 USD, what would be its cost in USD and relative to a cheap date in New York City?

Country	City	Cheap Date in Local Currency	Exchange Rate Quote	Exchange Rate 7 April 2014	Cheap Date in In USD	Relative to NYC
Australia	Sydney	AUD 111.96	USD = 1 AUD	0.9290	104.01	112%
Brazil	Rio de Janeiro	BRL 135.43	USD = 1 BRL	0.4363	59.09	63%
Canada	Ottawa	CAD 78.33	USD = 1 CAD	0.9106	71.33	77%
China	Shanghai	CNY 373.87	USD = 1 CNY	0.1619	60.53	65%
France	Paris	EUR 75.57	USD = 1 EUR	1.3702	103.55	111%
Germany	Berlin	EUR 76.49	USD = 1 EUR	1.3702	104.81	112%
Hong Kong	Hong Kong	HKD 467.03	USD = 1 HKD	0.1289	60.20	65%
India	Mumbai	INR 1,379.64	USD = 1 INR	0.0167	23.04	25%
Indonesia	Jakarta	IDR 314,700	USD = 1 IDR	0.0001	31.47	34%
Japan	Tokyo	JPY 10,269.07	USD = 1 JPY	0.0097	99.61	107%
Malaysia	Kuala Lumpur	MYR 117.85	USD = 1 MYR	0.3048	35.92	39%
Mexico	Mexico City	MXN 423.93	USD = 1 MXN	0.0769	32.60	35%
New Zealand	Auckland	NZD 111.52	USD = 1 NZD	0.8595	95.85	103%
Phillipines	Manila	PHP 1,182.88	USD = 1 PHP	0.0222	26.26	28%
Russia	Moscow	RUB 2,451.24	USD = 1 RUB	0.0283	69.37	74%
Singapore	Singapore	SGD 77.89	USD = 1 SGD	0.7939	61.84	66%
South Africa	Cape Town	ZAR 388.58	USD = 1 ZAR	0.0946	36.76	39%
United Kingdom	London	GBP 73.29	USD = 1 GBP	1.6566	121.41	130%
United States	New York City	USD 93.20	1 USD	1.0000	93.20	100%
United States	San Francisco	USD 88.72	1 USD	1.0000	88.72	95%

Source: Data drawn from *The Random Walk, Mapping the World's Prices 2014*, Deutsche Bank Research, 09 May 2014, Figures 30 and 32, with author calculations. 'Relative to NYC' is calculated as = Cheap Date in USD/93.20.

Note: The *cheap date* combines the local currency cost of a cab ride for two, two McDonald's hamburgers, two soft drinks, two movie tickets, and two beers. In 2013 Deutsche Bank had included sending a bouquet of roses in the date, but did not include that in the 2014 index, making the two years not directly comparable.

- The truly cheapest cheap date could be had in Mumbai, India, at only 25% of what it costs in New York City.
- The most expensive-cheap date would be London at 130% of the cost of New York City.
- If the Russian ruble was actually trading at 0.042 instead of 0.0283, Moscow would be 110% of the cost of a cheap date in New York City.
- If the exchange rate in Shanghai was CNY 6.66 = 1 USD, a cheap date would cost USD 56.14, only 60% of the cost in New York City.

## Problem 1.10 Blundell Biotech

Blundell Biotech is a U.S.-based biotechnology company with operations and earnings in a number of foreign countries. The company's profits by subsidiary, in local currency (in millions), are shown in the following table for 2013 and 2014.

<u>Net Income</u>	<u>Japanese Subsidiary</u>	<u>British Subsidiary</u>	<u>European Subsidiary</u>	<u>Chinese Subsidiary</u>	<u>Russian Subsidiary</u>	<u>United States Subsidiary</u>
2013	JPY 1,500	GBP 100.00	EUR 204.00	CNY 168.00	RUB 124.00	USD 360.00
2014	JPY 1,460	GBP 106.40	EUR 208.00	CNY 194.00	RUB 116.00	USD 382.00

The average exchange rate for each year, by currency pairs, was the following. Use this data to answer the following questions.

<u>Exchange Rate</u>	<u>JPY = 1 USD</u>	<u>USD = 1 GBP</u>	<u>USD = 1 EUR</u>	<u>CNY = 1 USD</u>	<u>RUB = 1 USD</u>	<u>USD</u>
2013	97.57	1.5646	1.3286	6.1484	31.86	1.0000
2014	105.88	1.6473	1.3288	6.1612	38.62	1.0000

- What was Blundell Biotech's consolidated profits in U.S. dollars in 2013 and 2014?
- If the same exchange rates were used for both years, what was the change in corporate earnings on a "constant currency" basis?
- Using the results of the 'constant currency' analysis in part b, is it possible to separate Blundell's growth in earnings between local currency earnings and foreign exchange rate impacts on a consolidated basis?

a. Consolidated profits or earnings is found by consolidating the converted profits in each foreign currency to U.S. dollars for that period. (This is simplified. Actual accounting practices would require the additional netting of any intra-company transactions resulting to eliminate any double-counting of profits.)

<u>Net Income (USD)</u>	<u>Japanese Subsidiary</u>	<u>British Subsidiary</u>	<u>European Subsidiary</u>	<u>Chinese Subsidiary</u>	<u>Russian Subsidiary</u>	<u>United States Subsidiary</u>	<u>Consolidated Earnings</u>
2013	USD 15.37	USD 156.46	USD 271.03	USD 27.32	USD 3.89	USD 360.00	USD 834.08
2014	USD 13.79	USD 175.27	USD 276.39	USD 31.49	USD 3.00	USD 382.00	USD 881.94
							5.74%

- If the exchange rates for 2013 are used for both years, earnings from individual subsidiaries and consolidation appear as follows.

<u>Net Income (USD)</u>	<u>Japanese Subsidiary</u>	<u>British Subsidiary</u>	<u>European Subsidiary</u>	<u>Chinese Subsidiary</u>	<u>Russian Subsidiary</u>	<u>United States Subsidiary</u>	<u>Consolidated Earnings</u>
2013	USD 15.37	USD 156.46	USD 271.03	USD 27.32	USD 3.89	USD 360.00	USD 834.08
2014	USD 14.96	USD 166.47	USD 276.35	USD 31.55	USD 3.64	USD 382.00	USD 874.98
Change	(USD 0.41)	USD 10.01	USD 5.31	USD 4.23	(USD 0.25)	USD 22.00	USD 40.90
Percent change	-2.7%	6.4%	2.0%	15.5%	-6.5%	6.1%	4.90%

On a constant currency basis, all subsidiaries showed growth in profits except for the Japanese and Russian subsidiaries. Fortunately for Blundell, neither of those subsidiaries is a major contributor to total profits.

- Blundell Biotech's consolidated earnings grew 5.7%. Since 4.9% of that was on an actual results basis (using constant currency assumption), the exchange rate-based change in earnings can be solved for:

$$\text{Total percent change} = (1 + \text{Actual percent change}) \times (1 + \text{Foreign exchange percent change}) - 1$$

When rearranged to solve for the FX percent change:

$$\text{FX percent change} = (1.0574)/(1.0490) - 1 = 0.80\%$$

### Problem 1.11 Peng Plasma Pricing

Peng Plasma is a privately held Chinese business. It specializes in the manufacture of plasma cutting torches. Over the past eight years it has held the Chinese renminbi price of the PT350 cutting torch fixed at Rmb 18,000 per unit. Over that same period it has worked to reduce costs per unit, but has struggled of late due to higher input costs. Over that same period the renminbi has continued to be revalued against the U.S. dollar by the Chinese government. After completing the table – assuming the same price in renminbi for all years – answer the following questions.

- What has been the impact of Peng's pricing strategy on the US\$ price? How would you expect their U.S. dollar-based customers to have reacted to this?
- What has been the impact on Peng's margins from this pricing strategy?

#### Fixed Rmb Pricing of the PT350 Plasma Cutting Torch

Year	Cost (Rmb)	Margin (Rmb)	Price (Rmb)	Margin (percent)	Average Rate (Rmb/US\$)	Price (US\$)	Percent Chg in US\$ Price
2007	16,000	2,000	18,000	11.1%	7.61	2,365	---
2008	15,400	2,600	18,000	14.4%	6.95	2,590	9.50%
2009	14,800	3,200	18,000	17.8%	6.83	2,635	1.76%
2010	14,700	3,300	18,000	18.3%	6.77	2,659	0.89%
2011	14,200	3,800	18,000	21.1%	6.46	2,786	4.80%
2012	14,400	3,600	18,000	20.0%	6.31	2,853	2.38%
2013	14,600	3,400	18,000	18.9%	6.15	2,927	2.60%
2014	14,800	3,200	18,000	17.8%	6.16	2,922	-0.16%
Cumulative							23.54%

## Problem 1.12 Santiago Pirolta's Compensation Agreement

Santiago Pirolta has accepted the Managing Director position for Vitro de Mexico's U.S. operations. Vitro is a Mexico-based manufacturer of flat and custom glass products. Much of its U.S. sales are based on a variety of bottle products, both mass market (e.g., glass bottles for soft drinks and beer) as well as specialty products (high-end cosmetic bottles with rare metal coloring and quality). He will live and work in the United States (Dallas, Texas) and wishes to be paid in US dollars. Vitro has agreed that his base salary of USD350,000 will be paid in U.S. dollars, but Vitro wishes to tie his annual performance bonus to the Mexican peso value of U.S. sales since Vitro consolidates all final results for reporting to stockholders in Mexican pesos (MXN).

Santiago, however, is a bit uncertain on having his bonus based on the Mexican peso values of U.S. sales. As a close friend and colleague, what advice would you give him based on your completion of the table below?

<u>Year</u>	<u>Vitro's U.S. Sales (millions of USD)</u>	<u>Percent Change</u>	<u>Annual Avg Rate MXN = 1 USD</u>	<u>Vitro's U.S. Sales (millions of MXN)</u>	<u>Percent Change</u>
2011	USD 820		MXN 12.80	MXN 10,496	
2012	USD 842	2.7%	MXN 13.30	MXN 11,199	6.7%
2013	USD 845	0.4%	MXN 12.70	MXN 10,732	-4.2%
2014	USD 860	1.8%	MXN 13.40	MXN 11,524	7.4%

Based on Vitro's U.S. sales, in both U.S. dollars and Mexican pesos, you should recommend that Santiago continue to argue for his performance bonus to be based on the U.S. dollar value, not the translated Mexican peso value.

First, under the previous Managing Director, U.S. sales measured both ways was volatile. The volatility, however, was larger in pesos than dollars. If that was the only concern, then it would only be up to Santiago to choose his 'risk tolerance' -- how much volatility he is willing to bear in his annual performance bonus.

But more importantly, if his performance was based on the USD value of U.S. sales, he would be measured on the actual sales which he had direct control over. Santiago does not, and will not, control the exchange rate between the dollar and the peso. And changes in that exchange rate could potentially destroy all growth in U.S. sales (and his bonus) as it did in 2013. In 2013 U.S. sales grew (not much, but they grew), and he would have theoretically received a bonus. But as measured in Mexican pesos in 2013, as a result of a fall in the value of the peso, his performance would have not been positive -- and probably so would be the value of his bonus.

### Americo Industries - 2017

Problems 6 through 10 are based on Americo Industries. Americo is a U.S.-based multinational manufacturing firm, with wholly owned subsidiaries in Brazil, Germany, and China, in addition to domestic operations in the United States. Americo is traded on the NASDAQ. Americo currently has 650,000 shares outstanding. The basic operating characteristics of the various business units is as follows:

Business Performance (000s, local currency)	U.S. Parent Company (US\$)	Brazilian Subsidiary (reais, R\$)	German Subsidiary (euros, €)	Chinese Subsidiary (yuan, ¥)
Earnings before taxes (EBT)	\$4,500	R\$6,250	€ 4,500	¥2,500
Corporate income tax rate	35%	25%	40%	30%
Average exchange rate for the period	-----	R\$1.80/\$	€0.7018/\$	¥7.750/\$

### Problem 1.13 Americo Industries' Consolidate Earnings

Americo must pay corporate income tax in each country in which it currently has operations.

a. After deducting taxes in each country, what are Americo's consolidated earnings and consolidated earnings per share in U.S. dollars?

b. What proportion of Americo's consolidated earnings arise from each individual country?

c. What proportion of Americo's consolidated earnings arise from outside the United States?

d. Americo has been watching the new U.S. tax plan in Congress. The latest news is that the U.S. may cut its corporate income tax rate to 21% beginning in 2018. How would this change Americo's EPS?

Business Performance (000s)	U.S. Parent Company (US\$)	Brazilian Subsidiary (reais, R\$)	German Subsidiary (euros, €)	Chinese Subsidiary (yuan, ¥)
Earnings before taxes, EBT (local currency)	4,500.00	6,250.00	4,500.00	2,500.00
Less corporate income taxes	35% (1,575.00)	25% (1,562.50)	40% (1,800.00)	30% (750.00)
Net profits of individual subsidiary	2,925.00	4,687.50	2,700.00	1,750.00
Avg exchange rate for the period (f/\$)	-----	1.8000	0.7018	7.7500
Net profits of individual subsidiary (US\$)	\$ 2,925.00	\$ 2,604.17	\$ 3,847.25	\$ 225.81
Consolidated profits (total across units)	\$ 9,602.22			
Total diluted shares outstanding (000s)	650.00			
a. Consolidated earnings per share (EPS)	\$ 14.77			
b. Proportion of total profits originating by country	30.5%	27.1%	40.1%	2.4%
c. Proportion of total profits originating from outside the United States	69.5%			
d. Americo's EPS if US tax cut to 21%?	\$ 15.74			

### Problem 1.14 Americo's EPS Sensitivity to Exchange Rates (A)

Assume a major political crisis wracks Brazil, first affecting the value of the Brazilian reais and, subsequently, inducing an economic recession within the country. What would be the impact on Americo's consolidated EPS if the Brazilian reais were to fall in value to R\$3.00/\$, with all other earnings and exchange rates remaining the same?

<b>Business Performance (000s)</b>	<b>U.S. Parent Company (US\$)</b>	<b>Brazilian Subsidiary (reais, R\$)</b>	<b>German Subsidiary (euros, €)</b>	<b>Chinese Subsidiary (yuan, Y)</b>
Earnings before taxes, EBT (local currency)	4,500.00	6,250.00	4,500.00	2,500.00
Less corporate income taxes	35% (1,575.00)	25% (1,562.50)	40% (1,800.00)	30% (750.00)
Net profits of individual subsidiary	2,925.00	4,687.50	2,700.00	1,750.00
Avg exchange rate for the period (fc/\$)	-----	1.8000	0.7018	7.7500
Net profits of individual subsidiary (US\$)	\$ 2,925.00	\$ 2,604.17	\$ 3,847.25	\$ 225.81
Consolidated profits (total across units)	\$ 9,602.22			
Total diluted shares outstanding (000s)	650.00			
Baseline earnings per share (EPS)	\$ 14.77			

#### Brazilian reais falls in value against the U.S. dollar

<b>Business Performance (000s)</b>	<b>U.S. Parent Company (US\$)</b>	<b>Brazilian Subsidiary (reais, R\$)</b>	<b>German Subsidiary (euros, €)</b>	<b>Chinese Subsidiary (yuan, Y)</b>
Earnings before taxes, EBT (local currency)	4,500.00	6,250.00	4,500.00	2,500.00
Less corporate income taxes	35% (1,575.00)	25% (1,562.50)	40% (1,800.00)	30% (750.00)
Net profits of individual subsidiary	2,925.00	4,687.50	2,700.00	1,750.00
Avg exchange rate for the period (fc/\$)	-----	3.0000	0.7018	7.7500
Net profits of individual subsidiary (US\$)	\$ 2,925.00	\$ 1,562.50	\$ 3,847.25	\$ 225.81
Consolidated profits (total across units)	\$ 8,560.56			
Total diluted shares outstanding (000s)	650.00			
"New" earnings per share (EPS)	\$ 13.17			
EPS change from baseline:	-10.8%			

## Problem 1.15 Americo's EPS Sensitivity to Exchange Rates (B)

Assume a major political crisis wracks Brazil, first affecting the value of the Brazilian reais and, subsequently, inducing an economic recession within the country. What would be the impact on Americo's consolidated EPS if, in addition to the fall in the value of the reais to R\$3.00/\$, earnings before taxes in Brazil fell as a result of the recession to R\$5,800,000?

Business Performance (000s)	U.S. Parent Company (US\$)	Brazilian Subsidiary (reais, R\$)	German Subsidiary (euros, €)	Chinese Subsidiary (yuan, Y)
Earnings before taxes, EBT (local currency)	4,500.00	6,250.00	4,500.00	2,500.00
Less corporate income taxes	35% (1,575.00)	25% (1,562.50)	40% (1,800.00)	30% (750.00)
Net profits of individual subsidiary	2,925.00	4,687.50	2,700.00	1,750.00
Avg exchange rate for the period (fc/\$)	-----	1.8000	0.7018	7.7500
Net profits of individual subsidiary (US\$)	\$ 2,925.00	\$ 2,604.17	\$ 3,847.25	\$ 225.81
Consolidated profits (total across units)	\$ 9,602.22			
Total diluted shares outstanding (000s)	650.00			
Baseline earnings per share (EPS)	\$ 14.77			

*Brazilian reais falls in value against the U.S. dollar and Americo's Brazilian sales decline*

Business Performance (000s)	U.S. Parent Company (US\$)	Brazilian Subsidiary (reais, R\$)	German Subsidiary (euros, €)	Chinese Subsidiary (yuan, Y)
Earnings before taxes, EBT (local currency)	4,500.00	5,800.00	4,500.00	2,500.00
Less corporate income taxes	35% (1,575.00)	25% (1,450.00)	40% (1,800.00)	30% (750.00)
Net profits of individual subsidiary	2,925.00	4,350.00	2,700.00	1,750.00
Avg exchange rate for the period (fc/\$)	-----	3.0000	0.7018	7.7500
Net profits of individual subsidiary (US\$)	\$ 2,925.00	\$ 1,450.00	\$ 3,847.25	\$ 225.81
Consolidated profits (total across units)	\$ 8,448.06			
Total diluted shares outstanding (000s)	650.00			
Revised earnings per share (EPS)	\$ 13.00			
Change in EPS from both changes:	-12.0%			

## Problem 1.16 Americo's Earnings and the Fall of the Dollar

The U.S. dollar has experienced significant swings in value against most of the world's currencies in recent years.

- a. What would be the impact on Americo's consolidated EPS if all foreign currencies were to appreciate 20% against the U.S. dollar?  
 b. What would be the impact on Americo's consolidated EPS if all foreign currencies were to depreciate 20% against the U.S. dollar?

Baseline exchange rate (fc/\$)	-----	1.8000	0.7018	7.7500
Percent change (+ appreciation, - depreciation)		20%	20%	20%
New exchange rate (fc/\$)		1.5000	0.5848	6.4583

### Appreciation Case

Business Performance (000s)	U.S. Parent Company (US\$)	Brazilian Subsidiary (reais, R\$)	German Subsidiary (euros, €)	Chinese Subsidiary (yuan, Y)
Earnings before taxes, EBT (local currency)	4,500.00	6,250.00	4,500.00	2,500.00
Less corporate income taxes	35% (1,575.00)	25% (1,562.50)	40% (1,800.00)	30% (750.00)
Net profits of individual subsidiary	2,925.00	4,687.50	2,700.00	1,750.00
Avg exchange rate for the period (fc/\$)	-----	1.5000	0.5848	6.4583
Net profits of individual subsidiary (US\$)	\$ 2,925.00	\$ 3,125.00	\$ 4,616.70	\$ 270.97
Consolidated profits (total across units)	\$ 10,937.67			
Total diluted shares outstanding (000s)	650.00			
Baseline earnings per share (EPS)	\$ 14.77			
EPS if foreign currencies appreciate	\$ 16.83	EPS has changed by:	13.9%	

Baseline exchange rate (fc/\$)	-----	1.8000	0.7018	7.7500
Percent change (+ appreciation, - depreciation)		-20%	-20%	-20%
New exchange rate (fc/\$)		2.2500	0.8773	9.6875

### Depreciation Case

Business Performance (000s)	U.S. Parent Company (US\$)	Brazilian Subsidiary (reais, R\$)	German Subsidiary (euros, €)	Chinese Subsidiary (yuan, Y)
Earnings before taxes, EBT (local currency)	4,500.00	6,250.00	4,500.00	2,500.00
Less corporate income taxes	35% (1,575.00)	25% (1,562.50)	40% (1,800.00)	30% (750.00)
Net profits of individual subsidiary	2,925.00	4,687.50	2,700.00	1,750.00
Avg exchange rate for the period (fc/\$)	-----	2.2500	0.8773	9.6875
Net profits of individual subsidiary (US\$)	\$ 2,925.00	\$ 2,083.33	\$ 3,077.80	\$ 180.65
Consolidated profits (total across units)	\$ 8,266.78			
Total diluted shares outstanding (000s)	650.00			
Baseline earnings per share (EPS)	\$ 14.77			
EPS if foreign currencies depreciate	\$ 12.72	EPS has changed by:	-13.9%	



**Problem 1.17 Americo's Earnings and Global Taxation**

All MNEs attempt to minimize their global tax liabilities. Return to the original set of baseline assumptions and answer the following questions regarding Americo's global tax liabilities:

- What is the total amount – in U.S. dollars – which Americo is paying across its global business in corporate income taxes?
- What is Americo's effective tax rate (total taxes paid as a proportion of pre-tax profit)?
- What would be the impact on Americo's EPS and global effective tax rate if Germany instituted a corporate tax reduction to 28%, and Americo's earnings before tax in Germany rose to €5,000,000?

<b>Business Performance (000s)</b>		<b>U.S. Parent Company (US\$)</b>		<b>Brazilian Subsidiary (reais, R\$)</b>		<b>German Subsidiary (euros, €)</b>		<b>Chinese Subsidiary (yuan, ¥)</b>
Earnings before taxes, EBT (local currency)		4,500.00		6,250.00		4,500.00		2,500.00
Less corporate income taxes	35%	(1,575.00)	25%	(1,562.50)	40%	(1,800.00)	30%	(750.00)
Net profits of individual subsidiary		2,925.00		4,687.50		2,700.00		1,750.00
Avg exchange rate for the period (f/€/\$)		-----		1.8000		0.7018		7.7500
Net profits of individual subsidiary (US\$)		\$ 2,925.00		\$ 2,604.17		\$ 3,847.25		\$ 225.81
Consolidated profits (total across units)		\$ 9,602.22						
Total diluted shares outstanding (000s)		650.00						
Consolidated earnings per share (EPS)		\$ 14.77						
Tax payments by country in US dollars		\$ 1,575.00		\$ 868.06		\$ 2,564.83		\$ 96.77

a. Total global tax bill, US\$

\$ 5,104.66

b. What is Americo's effective tax rate?

EBT by country, US\$	\$ 4,500.00	\$ 3,472.22	\$ 6,412.08	\$ 322.58
Consolidated EBT	\$ 14,706.89			
Total tax bill	\$ 5,104.66			
Effective tax rate	34.7%			

c. What would be the impact on Americo's EPS and global effective tax rate if Germany instituted a tax cut to 28% and German subsidiary earnings rose to 5 million euros?

<b>Business Performance (000s)</b>		<b>U.S. Parent Company (US\$)</b>		<b>Brazilian Subsidiary (reais, R\$)</b>		<b>German Subsidiary (euros, €)</b>		<b>Chinese Subsidiary (yuan, ¥)</b>
Earnings before taxes, EBT (local currency)		4,500.00		6,250.00		5,000.00		2,500.00
Less corporate income taxes	35%	(1,575.00)	25%	(1,562.50)	28%	(1,400.00)	30%	(750.00)
Net profits of individual subsidiary		2,925.00		4,687.50		3,600.00		1,750.00
Avg exchange rate for the period (f/€/\$)		-----		1.8000		0.7018		7.7500
Net profits of individual subsidiary (US\$)		\$ 2,925.00		\$ 2,604.17		\$ 5,129.67		\$ 225.81
Consolidated profits (total across units)		\$ 10,884.64						
Total diluted shares outstanding (000s)		650.00						
Consolidated earnings per share (EPS)		\$ 16.75						
EBT by country, US\$		\$ 4,500.00		\$ 3,472.22		\$ 7,124.54		\$ 322.58
Tax payments by country in US dollars		\$ 1,575.00		\$ 868.06		\$ 1,994.87		\$ 96.77
Consolidated EBT		\$ 15,419.34						
Total tax bill		\$ 4,534.70						
Effective tax rate		29.4%						