

# Tech Workers and Time Zones: India's Comparative Advantage

## 28.1 Introduction

When people lose their credit cards or have trouble with their computers, they need help fast. Usually they phone a call center. Such centers handle large numbers of phone calls for a business. Often the callers do not realize that the call center might be halfway around the world.

Call centers have become a big business in India. They are part of a global revolution in **information technology (IT)**. IT is the use of technology to move, record, and process information. Computers, satellites, cell phones, and the Internet are all part of IT. This technology allows us to talk by phone to people almost anywhere on Earth. It also allows computers to move data around the world in an instant.

IT makes it possible for companies to **outsource** call center jobs. To outsource means to hire someone outside a company to do work that was once done inside the company. In recent years, American companies have outsourced many jobs to India. Indian workers now prepare tax returns, review medical records, and tutor students for U.S. companies.

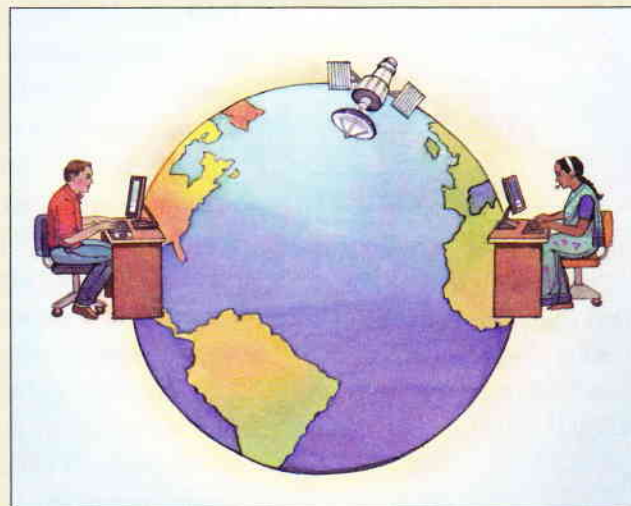
India attracts these jobs because it has a **comparative advantage** over many other countries. This means that India can offer some services more cheaply or effectively than competing countries. As a result, companies often look to India when they want to outsource jobs. In this chapter, you will learn about some factors that give India this advantage.

### Essential Question

**What factors give some countries a comparative advantage in the global IT revolution?**

This illustration shows a customer in the United States communicating with a worker in India. Both are part of the global IT revolution. Information technology, such as communications satellites, allows data to move quickly and cheaply around the world. This helps people in distant countries to work together. Keep this illustration in mind as you try to answer the Essential Question.

### Graphic Organizer





### An IT Worker in India

India is one of the world's poorest countries. But its economy is growing rapidly, in part thanks to the IT revolution. IT jobs like the one shown here are attractive to people because they pay more than most other work.

### India's Major IT Centers



### Information Technology Centers

India's IT centers attract jobs from around the globe. The main hub of IT work is the city of Bangalore. More than 5 million people live in this bustling IT center.

## 28.2 The Geographic Setting

India is a large and varied country in South Asia. It has great mountains, **rainforests**, and **deserts**. It also has many large cities. India is about one third the size of the United States, but its population is more than three times as large. With over one billion people, India is the second most populous country in the world.

**The World's Largest Democracy** India is ruled by an elected government. This makes it the largest democracy in the world. Under India's constitution, all Indians are equal. But Indians are not always treated equally in Indian society.

For thousands of years, Indian society has been divided into many groups called *castes*. The caste system was rooted in ancient beliefs. People were born into the same caste as their parents. The system fixed what jobs each caste could do. Upper caste people were priests and warriors. They ran India. Lower caste people worked as farmers and laborers. Today the caste system is beginning to change. Members of the lower castes are improving their position. But the caste system is still a powerful force in Indian society.

India is also divided by religion. The two main faiths are Hinduism and Islam. More than three fourths of Indians are Hindus. Muslims form a large minority. The two groups disagree on many issues. At times, these religious conflicts lead to violence.

**A Fast-Growing Economy** Economic problems also trouble India. It is one of the world's poorest countries. More than a fourth of all Indians live in poverty. Many of the poorest people live on less than a dollar a day.

At the same time, India's economy is growing rapidly. One reason for this growth has been the global IT revolution. Indian businesses have been quick to adopt this technology. They offer IT services at low prices. As a result, they have attracted jobs from many foreign companies.

Another attraction for American companies is India's location on the other side of the world. There is a time difference of 10 or more hours between India and the United States. These differences in **time zones** mean that Indians are at work while Americans are sleeping. A time zone is an area that uses the same clock time.

American companies take advantage of these time differences by setting up night call centers in India. During the day, customers' calls may be answered by centers in the United States. At night, they are answered by call centers in India. In this way, a U.S. company can have workers answering calls around the clock without hiring a night shift in either country.

India's IT industry is spread across the country. But its main hub is the city of Bangalore in southern India. Like Silicon Valley, California's IT center, Bangalore attracts highly skilled people who are interested in new ways to get work done.

## ► Geoterms

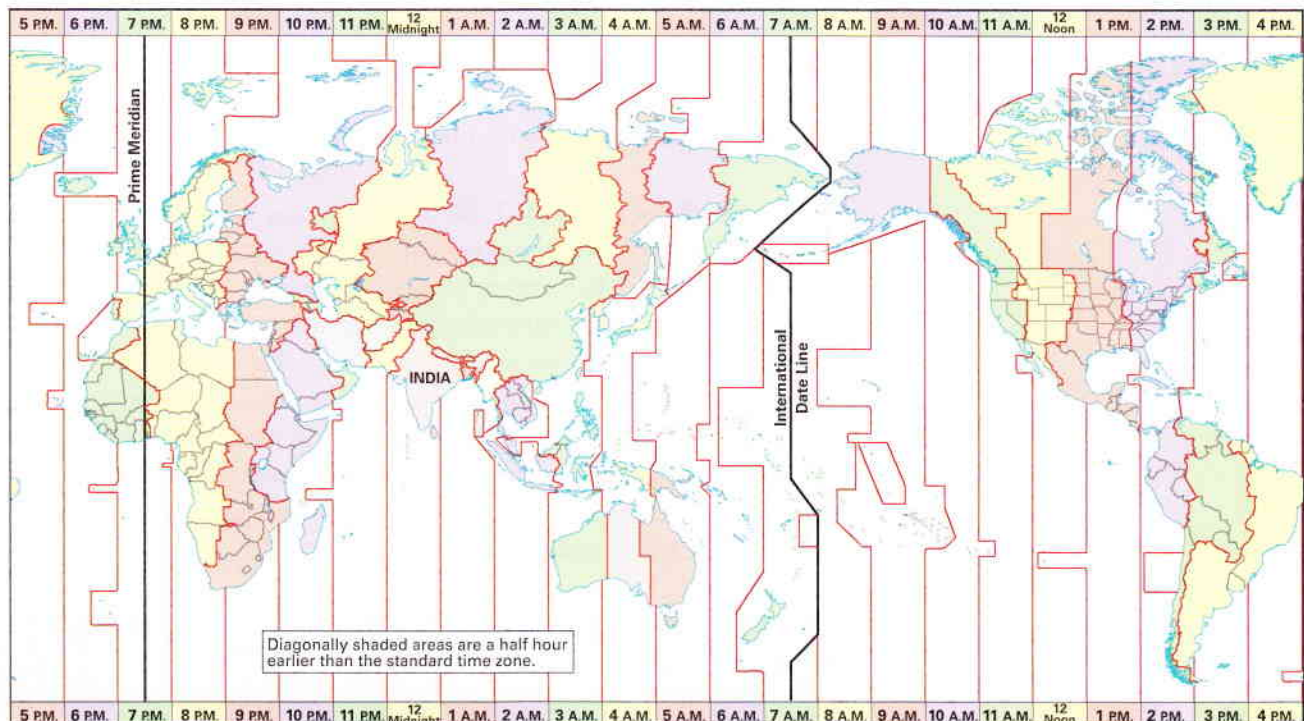
**comparative advantage** the ability of one country to produce a good or provide a service at a lower cost or more effectively than another country

**information technology (IT)** the use of technology to move, record, and process information. IT includes computers, communication satellites, cell phones, and the Internet.

**outsource** to hire someone outside a company to do work that was once done inside the company. Information technology has made it possible to outsource jobs to businesses in other countries.

**time zone** an area that uses the same clock time. Earth is divided into 24 standard time zones. Each zone has its clocks set to the same hour and minute.

### Time Zones Around the World



### Earth's Many Time Zones

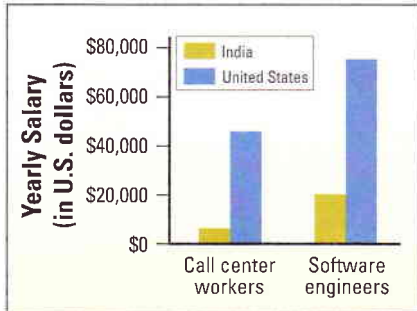
The world has been divided into 24 standard time zones. Each zone covers about 15 degrees of longitude and represents 1 hour of the 24-hour day. The United States has six standard time zones. India has a nonstandard time zone. It is a half-hour off standard time. Note the International Date Line running through the middle of the Pacific Ocean. Travelers who cross that line going west toward Asia jump ahead one day on the calendar. When they cross the line heading east to the Americas, they lose a day.



## 28.3 Advantage Factor One: Low Wages

In 2003, a call center worker at a U.S. airline made \$46,000 a year. Sangita Ray did the same job in India. She earned \$6,000. This difference in pay is one reason India attracts IT jobs. American companies that outsource work to India can save money.

### IT Worker Salaries, 2003



Sources: *Information Week*, [www.informationweek.com](http://www.informationweek.com),  
*International Herald Tribune*, [www.ihf.com](http://www.ihf.com).

### Who Earns What

This graph looks at the average pay of American and Indian IT workers in 2003. Software engineers make more in both countries.

**A Large, Fast-Growing Workforce** India has a large and rapidly growing workforce. In 2003, there were more people working in India than the entire population of the United States. By 2020, India is expected to have the largest workforce in the world.

Labor costs in India are among the lowest in the world. This gives India a comparative advantage in attracting IT jobs. American companies can cut their wage costs in half by shifting some of their work to India.

Several factors affect how much workers in India earn. One is the size of its workforce. With so many people looking for work, competition for jobs can be fierce. As a result, Indians often accept lower pay than workers in other countries.

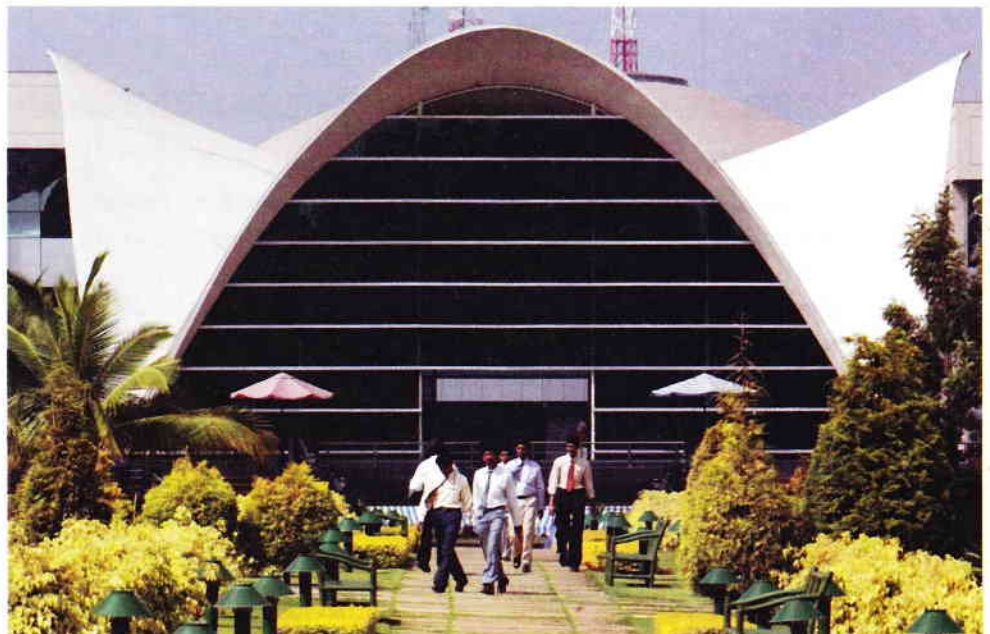
Another factor is the low **cost of living** in India. Basic goods like food and clothing cost much less than in many other countries. Bangalore, in particular, is known for its low cost of living. This makes it possible for many Indians to enjoy a high **standard of living** despite pay that seems low to Americans.

**Indian Workers Want IT Jobs** Good pay and working conditions make IT jobs attractive to Indians. In 2003, the average Indian worker earned \$530 a year. In contrast, a computer programmer might be paid \$10,000 or more. Call center jobs may pay half that much.

Many IT company workplaces look like college campuses. They feature clean, modern buildings in parklike settings. Some have stores, swimming pools, and gyms for their workers. A pleasant work environment helps attract Indians to IT jobs. Of the thousands of Indians who apply for call center jobs, only about 5 percent are hired. Most of those who do get jobs are college graduates.

### An IT Campus in Bangalore

IT companies offer workers attractive workplaces. More than 13,000 people work at this company campus in Bangalore. The company provides them with food courts, a large gym, and a small golf course.





**English Is Widely Spoken in India** People in India speak more than 1,000 languages and **dialects**. A dialect is a version of a language that is spoken in a specific area. Hindi is India's national language. More than two fifths of Indians speak Hindi at home. But almost all educated Indians also speak English.

India gained its independence in 1947. By that time, English was widely spoken. Today it remains the main language of business. It is also used for government business. In cities, many parents send their children to schools that teach in English. Many college classes are also taught in English.

Because of India's colonial past, Indians tend to speak English with a British accent. That is why some companies are teaching workers how to talk with American accents. They hope the training will help workers communicate better with callers and clients in the United States.

This teacher is helping call center workers in India learn American English. The workers learn to speak with American accents. They also study American culture. Some even adopt names like Nancy and Jim to sound more like Americans on the phone.



### Homegrown Technology

Indian IT companies do a lot of out-sourced work. But they also create products for use at home. This man is holding an Indian invention. It is a small, affordable computer with Internet access. Devices like this may help bring the benefits of the global IT revolution to poor Indians.

## 28.5 Advantage Factor Three: Trained Workers

Rajiv Johri is 16 years old. He wants to study computer science at a top university in India, but first he must pass the college entrance exam. To prepare, Rajiv goes to a test prep class every day after school. He studies late into the night. Each morning he gets up early to attend another test prep session before school.

Rajiv is not alone. Millions of Indians see education as their ticket to a good job. This educated workforce is a third factor in India's comparative advantage over countries with less skilled workers. American companies send work to India because they know it will be done by well-trained workers.

**India Is a Leader in Technical Education** India's educated workforce is no accident. India puts a lot of money into higher education. In 2003, more than 3 million Indians graduated from college. Many of them were trained in technical fields such as math, science, and engineering. By 2010, the number of Indians with college degrees is expected to double.

India has made special efforts to promote technical education. In 1951, the Indian Institute of Technology, or IIT, was founded. Today IIT has seven campuses. It is ranked among the best technical universities in the world. Some of the world's top scientists and engineers are educated there.

**Not All Indians Have Equal Access to Education** Indian law says that all children up to the age of 14 must go to school. In fact, only about half of India's children attend school to that age. As a result, about a third of the population is **illiterate**. This means that roughly 350 million people in India cannot read and write.

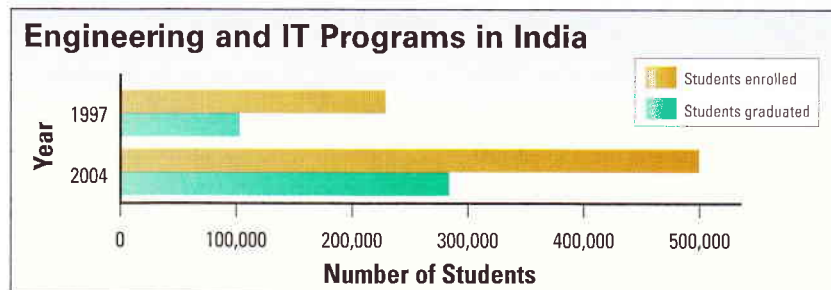
Why don't more children go to school? One reason is poverty. Many poor children have to work to help support their families. They have no time or energy for school.

Another reason is caste. Many Indians still link education to caste. People expect children who are born into high castes to be well educated. They don't expect this for children born into low castes.

It is hard enough for many Indians to get a basic education. It is even harder to go on to college. In 2005, only about 6 percent of young people in India attended college. And only a fraction of these students will graduate with a degree in math, science, or engineering.

### Technical Education in India

This graph shows the growth of engineering and IT programs in India over eight years. During this time, the number of people enrolled in these technical programs more than doubled, and the number of graduates nearly doubled.



Source: National Association of Software and Service Companies, [www.nasscom.org](http://www.nasscom.org).





**India's Brain Drain and Brain Gain** In the past, many students with technical degrees could not find the jobs they wanted near home. Some left India to work in more developed countries, including the United States. The result was a serious **brain drain**.

This trend began to change when the IT industry took off in India. New opportunities for people with technical degrees opened up. Many Indians who were working out of the country returned to join the boom. These IT professionals brought with them valuable business experience as well as special skills. For the companies they joined, the brain drain turned into a brain gain.

Some Indians also returned home with money to invest in new companies. This investment has helped the Indian IT industry expand. In fact, some Indian companies have grown so fast that they now outsource jobs to IT workers in China.

### **Computers for Kids**

These students are learning about computers at an IT exhibition in Bangalore. Not all Indian children get a good education. One project in Bangalore is helping poor children learn how to read and use computers. The project is paid for by some of the city's leading IT companies.

## **28.6 Beginning to Think Globally**

In this chapter, you read how India has become part of the global IT revolution. You learned about three factors that give India a comparative advantage over some other countries in attracting IT jobs from the United States. The first is low wages. The second is English speakers. The third is an educated workforce. In addition, India is located in a time zone halfway around the world from the United States. As a result, Indians work while Americans sleep. All these factors have led U.S. companies to outsource work to India.

Outsourcing is only one way that companies do business in another country. Another way is through **foreign investment**, or investment by a person or company based in another country. Many people and businesses around the world invest money in the United States. This money is used to buy U.S. companies. It is also used to start new businesses in the United States.

In the next section, you will read more about foreign-owned companies in the United States. You will also explore this country's comparative advantages in attracting business from around the world.

## 28.7 Global Connections

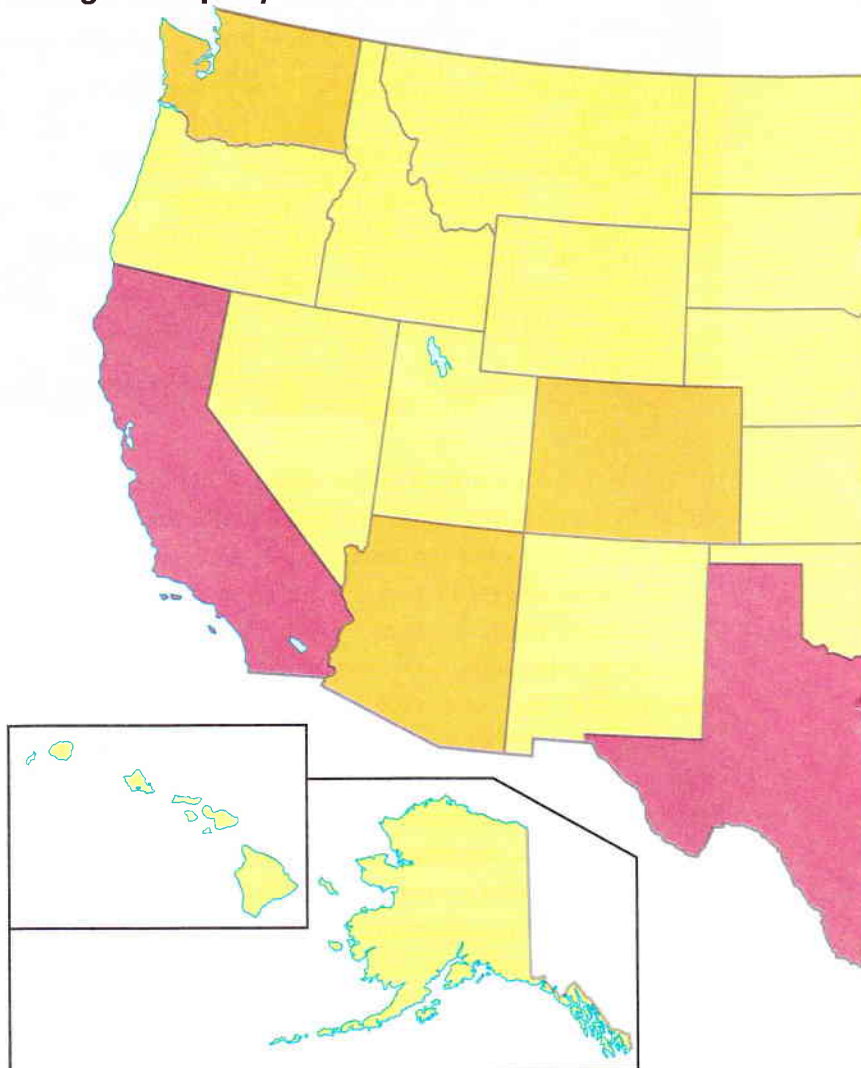
The United States loses jobs when they are outsourced to other countries. But it gains jobs when foreign companies invest here. The map shows where companies owned by foreign investors were doing business in the U.S. in 2001. The graph shows foreign investment in the U.S. between 1994 and 2004. The U.S. attracts so much foreign investment because of its many comparative advantages.

**Is the number of Americans working for foreign companies rising or falling?** In 1987, about 2.6 million Americans worked for foreign-owned companies. Since then, the number has more than doubled to over 5 million. The new jobs created by foreign investment help to make up for jobs lost due to outsourcing.

**What kinds of jobs are created by foreign-owned companies in the U.S.?** Americans working for foreign-owned companies do all kinds of jobs. They build cars, airplanes, and medical equipment. They do research and develop new technologies. In general, Americans working for foreign companies earn more than those working for U.S. businesses.

**What gives the U.S. a comparative advantage in attracting foreign businesses?** The U.S. is a highly developed country. It has many skilled workers. It has highly educated IT professionals, engineers, researchers, and business-people. Foreign companies invest here to take advantage of this talented workforce. The U.S. also has a very high per capita GDP. Many foreign companies start businesses in the U.S. to be close to its nearly 300 million consumers.

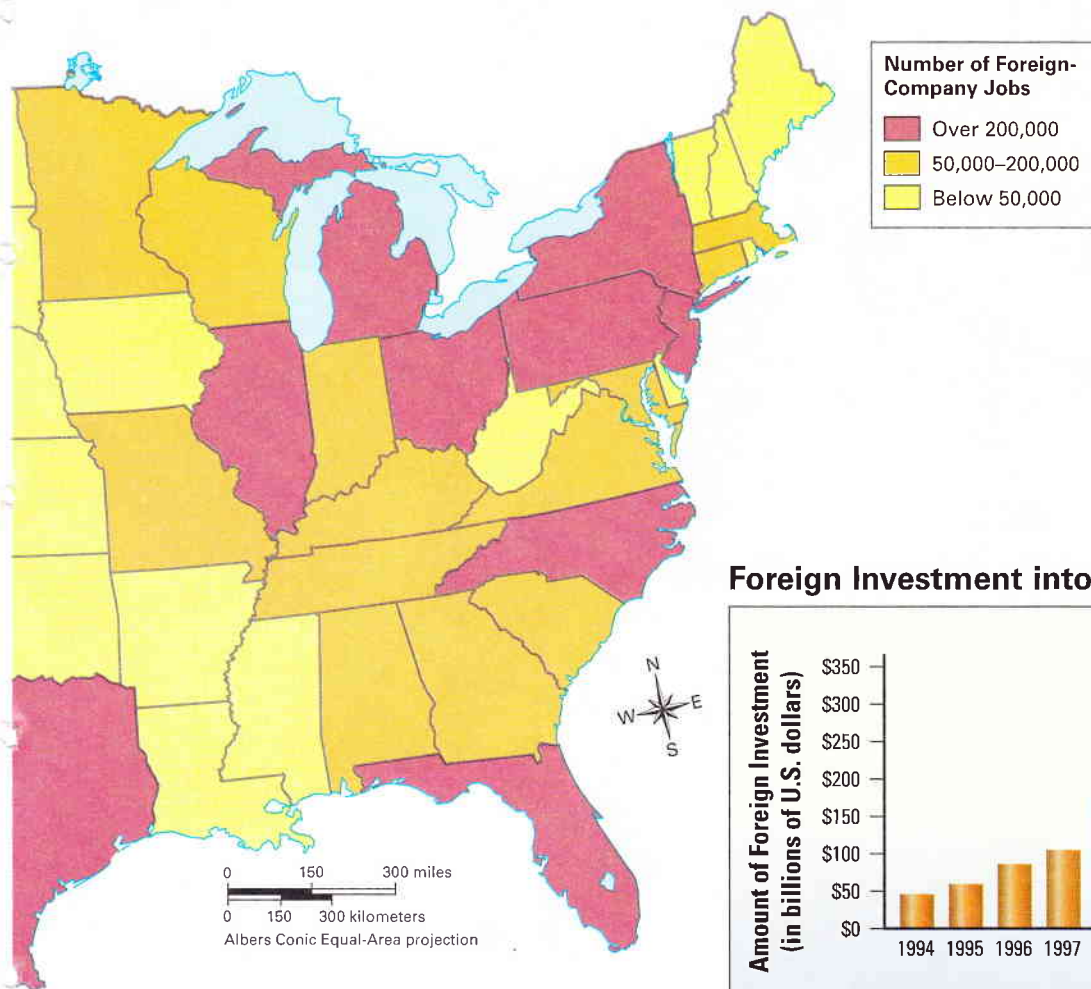
Foreign-Company Jobs in the United States, 2001



Three Foreign-Owned Companies in the U.S.

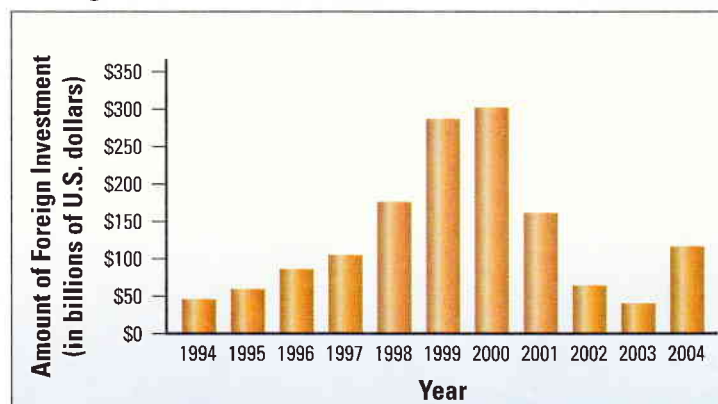
|  | Dassault Falcon Jet Corporation   |
|--|---|
| Location of Parent Company                       | France  |
| U.S. Locations                                   | Arkansas, Delaware, New Jersey  |
| Business Activities                              | <ul style="list-style-type: none"> <li>• manufacturing jet airplanes</li> <li>• sales and service</li> </ul>                                    |
| Why Parent Company Invested in the United States | <ul style="list-style-type: none"> <li>• skilled workers</li> <li>• talented engineers</li> <li>• close to customers in the Americas</li> </ul> |





Source: Organization for International Investment, [www.ofii.org/insourcing/](http://www.ofii.org/insourcing/).

### Foreign Investment into the United States



Source: U.S. Bureau of Labor Statistics, U.S. Department of Labor, [www.bls.gov](http://www.bls.gov).

| Phillips Medical Systems   | American Honda Motor Company   |
|--|--|
| Netherlands  | Japan  |
| Massachusetts  | Alabama, California, Colorado, Georgia, Michigan, North Carolina, Ohio, South Carolina, Texas  |
| <ul style="list-style-type: none"> <li>• manufacturing medical equipment</li> <li>• research and development of new products</li> <li>• sales and services</li> </ul>  | <ul style="list-style-type: none"> <li>• manufacturing cars, motorcycles, ATVs, boats, engines</li> <li>• research and development of new products</li> <li>• safety education</li> <li>• sales</li> </ul> |
| <ul style="list-style-type: none"> <li>• skilled workers</li> <li>• talented engineers and medical researchers</li> <li>• close to North American customers</li> </ul> | <ul style="list-style-type: none"> <li>• skilled workers</li> <li>• talented engineers and designers</li> <li>• close to North American customers</li> </ul>   |