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# Economic Letter

*Insights from the*  
FEDERAL RESERVE BANK OF DALLAS

*Technology-driven  
virtual immigration  
has held up better  
than traditional  
physical immigration.*

## Labor Market Globalization in the Recession and Beyond

by W. Michael Cox, Richard Alm and Justyna Dymerska

In recent decades, technology and trade liberalization have propelled globalization in product and financial markets, leading to substantial gains in international trade and capital flows. Labor market globalization has proceeded at a slower pace, largely because restrictive immigration policies hinder workers' movement across borders.

Today's computer and telecommunications technologies have provided a way to circumvent barriers to labor market globalization's traditional mode—the *physical immigration* that brings the workers to the work. This *virtual immigration* moves the work rather than the workers, and it typically involves the long-distance delivery of services.

Virtual immigration has unleashed forces that shape globalization in two important ways: First, it has fueled an offshoring boom that shifts some



services from high-wage countries to low-wage ones. Second, it has allowed highly paid workers in the U.S. and other wealthy countries to sell sophisticated services around the world.

Both physical and virtual immigration have contributed to globalization of the labor force over the past quarter century. This integration has largely taken place in good times, where unemployment has been low and the number of jobs has been increasing, particularly in the U.S. Recessions have been brief and shallow.

In the past two years, however, the economic climate has changed dramatically. Recession has spread to most parts of the world, slowing or even reversing globalization's momentum. Trade has been squeezed. Financial flows have been contracting. The slowdown has also taken a toll on both physical and virtual immigration—a consequence largely related to market forces rather than inward-looking policies to preserve existing jobs.

In recovery, the long-term factors supporting cross-border inte-

gration of trade, finance and labor are likely to reemerge, although it may take time to fully restore globalization's momentum. The outlook could change if hard times linger and countries succumb to protectionist temptations, setting off a destructive process of deglobalization.

### Labor Goes Global

The World Bank describes three waves of globalization.<sup>1</sup> The first came between 1870 and 1914, and the second from 1950 to 1980. The third and current wave began in 1980, triggered by the entry of many developing countries into the global marketplace, declining transportation costs and revolutionary innovations in information technology.

The third wave, like the two globalizations that preceded it, brought a surge in physical immigration. As the world economy grew in recent decades, workers moved across borders in search of better jobs—from Latin America to the U.S., from Eastern to Western

Europe and from South Asia to the Middle East and elsewhere.

Data on global labor flows are sketchy, but United Nations estimates for net annual immigration from developing to developed regions show a sharp third-wave spike from 1.1 million in the early 1980s to 3.2 million in the first half of this decade. An estimated 100 million people are working outside their home countries, about 3 percent of the global labor force.<sup>2</sup>

We're on firmer ground in tracking the U.S. immigrant labor force. The latest data, covering both legal and illegal workers, show an increase of 68 percent to 24 million in the past 12 years.<sup>3</sup> As a share of the labor force, the foreign born rose from 10.8 percent in 1996 to 15.6 percent in 2008 (*Chart 1*).

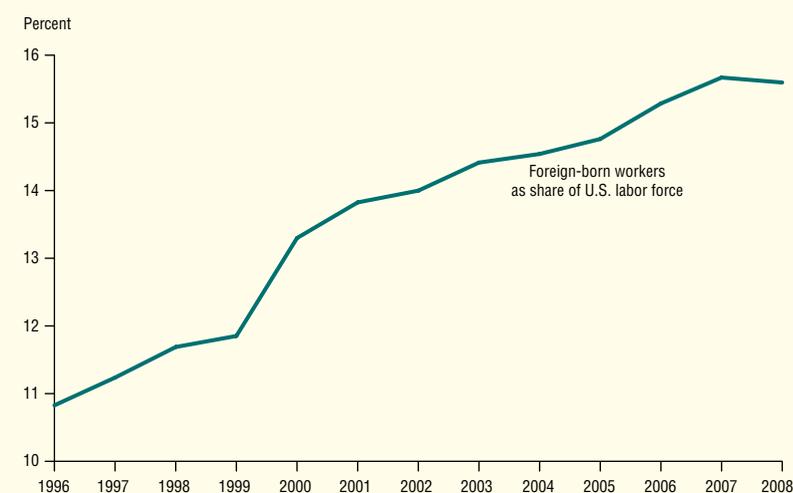
Any accounting of physical migration underestimates the impulse toward labor market globalization. Many more workers might choose to go abroad and many companies might want to hire them if not for laws that limit legal immigration and the illegal route's risks and high costs. In short, physical immigration has been steadily globalizing the labor market—but at a slower pace than the market would dictate.

Given the barriers and costs to physical immigration, it's not surprising that a signature feature of globalization's third wave has been a technology-driven alternative—virtual immigration.<sup>4</sup> Work that doesn't require local market knowledge or face-to-face contact with customers is increasingly performed in far-flung locations and “shipped” back across national borders.

Virtual immigration is an intuitively satisfying concept for the Information Age, but no country's labor market reports measure it explicitly. So how can we track it? Much of virtual immigrants' work involves importing or exporting specialized knowledge and infor-

Chart 1

### More Immigrants Seek Work in U.S.



SOURCE: Bureau of Labor Statistics.



mation—just the kind of intangibles that distinguish services from goods in international trade.

Looking at U.S. services trade, we see a wide swath of economic activity, only some of it properly classified as virtual immigration. The key is physical separation between services providers and their customers, a distance bridged by remote delivery of work across international boundaries.

An American company may send financial data to New Delhi, where an Indian bookkeeper cobbles it into a report. An American tourist may fly British Airways from New York to London. Services trade statistics would capture both transactions as imports, but only the bookkeeper can be called a virtual immigrant.

Now consider services exports. A U.S. consulting firm's Dallas-based staff may map out a long-term strategic plan for a Taiwanese company. A surgeon may treat a Mexican patient at a San Antonio hospital. The consultants are virtual immigrants, not the doctor.

The U.S. tracks imports and exports for about two dozen types of services. Based on the Commerce Department's descriptions, nearly a third of the categories contain low concentrations of virtual immigrants. Three of them involve travel and transport. Others are hands-on business services—for example, equipment installation, maintenance and repair. Low virtual immigration also characterizes personal services such as medical procedures and education.<sup>5</sup>

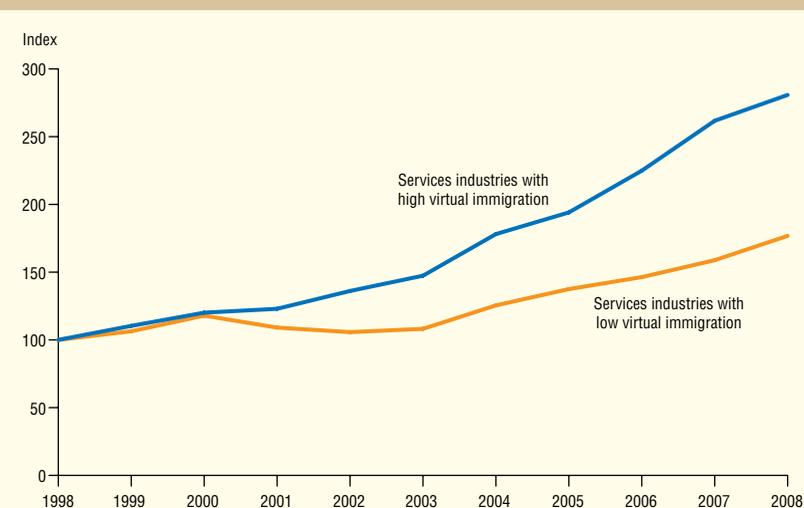
Two-thirds of the Commerce Department's categories are likely to include high concentrations of virtual immigrants. They consist largely of business-to-business services—computer and information processing, engineering, accounting, insurance, advertising, finance, legal work, leasing, management and consulting.<sup>6</sup>

U.S. exports and imports from high virtual immigration services industries have risen 180 percent since 1998, growing far faster than the low virtual immigration categories (*Chart 2*). Since overall services trade rose sharply in the decade, virtual immigration represents a growing share of an expanding pie, suggesting a labor market globalization that parallels the one driven by physical immigration.

Virtual immigration has become increasingly significant in the past decade as computer and telecommunications advances ratchet up our capacity to move vast amounts of data around the world cheaply and quickly. Particularly significant has been the Internet's reaching critical mass in two key areas. First, it has spread widely enough to become an indispensable tool for modern international business. Second, data-transmission capacity has become big enough to move large amounts of information anywhere in the world.

*Much of virtual immigrants' work involves importing or exporting specialized knowledge and information.*

**Chart 2**  
**Technology Spurs Virtual Immigration**



SOURCE: Bureau of Economic Analysis.



*Now, labor  
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For U.S. companies and entrepreneurs, virtual immigration creates opportunities. Offshoring cuts production costs and enhances global competitiveness, and U.S. services firms grow and profit by expanding overseas. For workers, virtual immigration brings competition. U.S. computer programmers vie with lower-wage rivals in India, while U.S. lawyers, architects and consultants take on foreign countries' homegrown firms.

Developing nations, with an abundance of relatively unskilled labor, focus on exporting routine services such as computer programming, claims processing, debt collection and other back-office operations. These businesses are the mainstays of an offshoring industry in which India ranks as the global kingpin, employing about 800,000 workers in 2007.<sup>7</sup>

Developed nations, with an abundance of highly skilled workers, gravitate toward exporting knowledge-intensive and high-value-added services—the work of lawyers, accountants, architects, consultants

and engineers. The U.S. has taken advantage of it. As the Internet facilitated a wave of virtual immigration, we saw the overall surplus in services trade grow from \$78.8 billion in 1998 to \$161.4 billion in 2008.

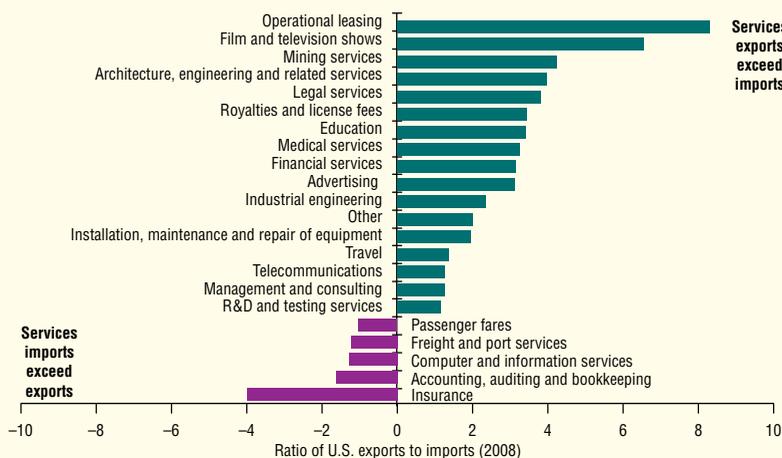
High virtual immigration categories account for eight of the 11 industries with trade surpluses of better than two to one in 2008 (Chart 3). We exported \$830 for every \$100 in imports in operational leasing, a segment of the industry that handles short-term deals on airplanes, vehicles and other equipment.<sup>8</sup>

Our edge was six to one in distributing movies and television shows and nearly four to one in architectural, construction and engineering services. Royalties and licensing fees, one of the largest categories in dollar terms, came out better than three to one, as did law, finance and advertising. Mining, education and medicine are among the low virtual immigration categories with surpluses.

The U.S. imports more than it exports in a few high virtual immigration categories. The deficits are relatively small in areas related to the offshoring of back-office functions—computer and information services and accounting. Only in insurance did the U.S. run a significant deficit, a persistent outcome that reflects foreign prowess in the reinsurance end of the business.

These patterns hold over time. The pecking order may change from year to year—for example, the biggest surpluses were for industrial engineering in 2006 and film and television in 2007—but the data consistently show the U.S. is highly competitive in a wide range of services categories. Critics complain about U.S. jobs lost as services work goes overseas, but the trade data show virtual immigration is a two-way street, going out as services imports and coming in as services exports.

**Chart 3**  
**U.S. Holds Widespread Edge in Services Trade**



SOURCE: Bureau of Economic Analysis.



## Facing Global Recession

Even in the favorable environment of recent decades, labor market globalization generated a backlash. U.S. politicians and interest groups, for example, have been railing against offshoring in particular and immigrants in general. These sentiments didn't gain much traction while the nation needed foreign-born workers to build houses, assemble manufactured goods, handle back-office work and grow technology industries.

Now, labor market globalization faces a stern test—a long, severe slump. As recession deepened and spread, signs pointed to collapsing demand for immigrant labor. In the U.K., work applications from eight new European Union member states fell 50 percent in the first three months of 2009. Japan, Spain and the Czech Republic resorted to programs that paid foreign workers to go home. United Arab Emirates' recruiting of new migrants declined 60 percent.

Take a look at America's H-1B temporary work visas, awarded principally to educated foreigners. When the U.S. economy is growing, applications typically reach their cap minutes after online filing opens.<sup>9</sup> In 2009, nearly a third of the slots were still available three months into the process, indicating companies had little immediate need to hire workers that in previous years had been in short supply.<sup>10</sup>

Mexico tracks the outflow of workers on a timely basis. Recent census reports show a precipitous drop in emigration—both legal and illegal—as the U.S. economy faltered. The decline began in 2006—at about the time the U.S. housing bubble burst, delivering a severe blow to homebuilding, a big employer of foreign-born workers. It continued in 2007 and 2008 as America's economy plunged into recession (*Chart 4*). Mexican work-

ers have responded to the job market's deterioration by staying home and waiting for the U.S. economy to rebound.<sup>11</sup>

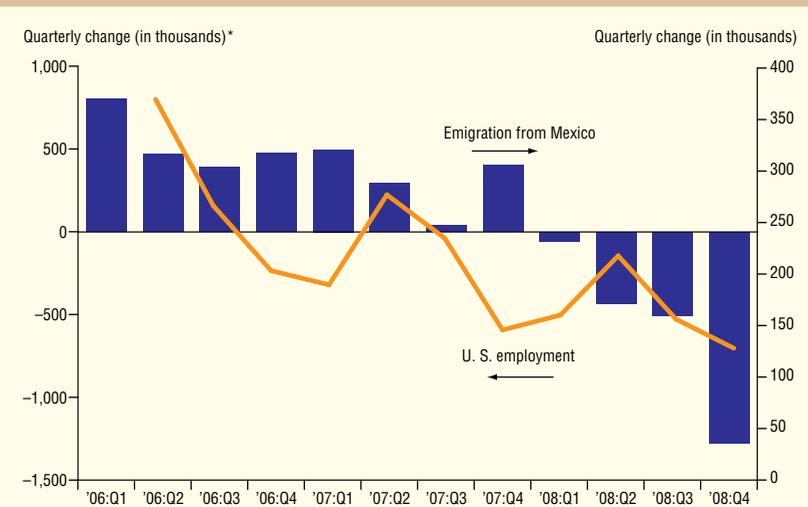
The U.S. Current Population Survey indicates recession has shrunk employment of foreign-born workers. At the start of 2007, with the U.S. economy in growth mode, 25.6 percent of foreign-born workers had jobs in two highly cyclical industries—construction and manufacturing. Native-born workers' exposure was 18 percent.

By October 2009, the recession was in its 22nd month, and foreign-born employment had fallen 35.4 percent from its peak in construction and 16 percent in manufacturing. The financial industry, which provided work for 5.6 percent of immigrants in January 2007, cut foreign-born employment 31.4 percent. The heavy toll in building and finance squares with a housing-led recession that roiled financial markets. Immigrants faced smaller job losses in some less-cyclical sectors—for example, the

*In 2009, companies had little immediate need to hire workers that in previous years had been in short supply.*

Chart 4

### Global Recession Reducing Emigration from Mexico



\*Seasonally adjusted.

SOURCES: Instituto Nacional de Estadística y Geografía; Bureau of Labor Statistics.



*Virtual immigration's continued growth in recession contrasts with the evidence of declines in demand for physical immigrants.*

5.7 percent decline in leisure and hospitality.

The data suggest that foreign-born workers were among the first jettisoned as business activity soured. Employment fell at least two times faster for immigrants than for natives in mining, financial activities, nonhospital health care and two categories of professional services (*Chart 5*). Large gaps also show up in construction and transportation and utilities.

Overall, demand for foreign-born labor declined 8.7 percent from its prerecession peak, well above the natives' 5.5 percent rate. In recent months, the gap in job losses has shrunk, suggesting employers who began by laying off immigrants have now turned to trimming their payrolls by cutting native workers.

All told, the anecdotal reports and data suggest physical migration is highly sensitive to the business cycle in general and labor demand in particular.

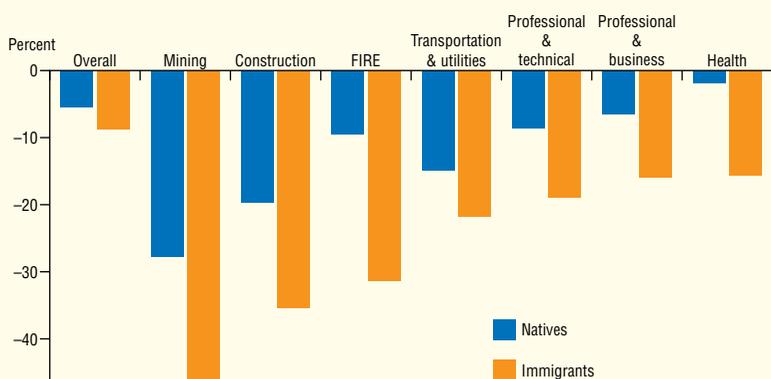
What about virtual immigration? Offshoring data are rarely reliable or up to date, creating difficulties for measuring the recession's impact on sending work to low-wage nations overseas. Hard times might pressure companies to cut costs, quickening offshoring's pace. At the same time, companies might pull back on offshoring because of cuts in IT budgets and plentiful labor close to home.

India shows these contradictory forces at work. Forecasts call for continued expansion in the country's software and IT services exports, a sign of relatively healthy demand for outsourcing (*Chart 6*). However, the projected 17 percent growth rate for these sectors in 2009 is less than half the pace of the previous four years. Industry reports document deals being canceled or postponed and clients seeking price cuts of up to 10 percent.<sup>12</sup>

U.S. services provide another view on how virtual immigration responds to recession. Services trade in industries with high concentrations of virtual immigrants grew an average of 11.3 percent a year from 1998 to 2007. The growth rate slowed to 7.3 percent in 2008, the first year of the downturn.<sup>13</sup> In the eight-month recession in 2001, the growth rate of these high virtual immigration categories retreated to 2.4 percent.

Several sectors actually sped up significantly in the recession year of 2008, led by R&D and testing services, accounting, legal services, management and consulting, and telecommunications (*Chart 7*). Finance, insurance and most other categories still grew last year—but at a slower pace. Only two categories showed outright declines—film and television rentals and industrial engineering. Data aren't available to track services trade in high virtual immigration industries into 2009.

**Chart 5**  
**Job Losses Hit Foreign-Born Workers in U.S.**



NOTES: Employment trends represent the percent change from each category's employment peak in 2007 or 2008 to the latest available data in October 2009. FIRE stands for finance, insurance and real estate.

SOURCE: Bureau of Labor Statistics (unpublished data).



Virtual immigration's continued growth in recession contrasts with the evidence of declines in demand for physical immigrants in 2008 and into 2009. Most likely, the difference stems from the jobs the two types of immigrants typically do. Physical immigrants work in construction and other highly cyclical industries. Virtual immigrants are more likely to work in the services economy. It has traditionally been less sensitive than goods to cyclical fluctuations, largely because services aren't subject to the kind of inventory bulges that make goods production unstable.

Recession will pass. At some point, the world economy will begin to grow again, raising questions about whether the labor market integration we've seen in globalization's third wave will resume and, if so, at what pace.

The long-term economic forces that have propelled both physical and virtual immigration should reassert themselves once labor demand rebounds. Large wage differentials and developing nations' labor surpluses will once again spur migration to the richer countries. The same forces will create incentives for more companies to globalize production and cut costs through offshoring.

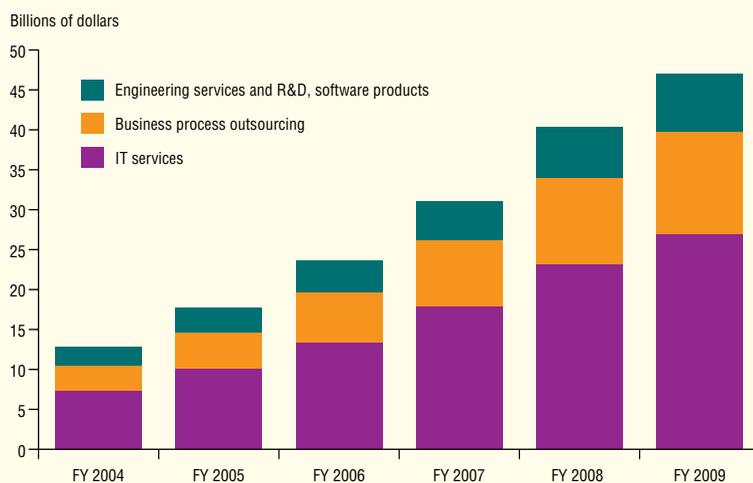
*Cox is a senior fellow in the Dallas Fed's Globalization and Monetary Policy Institute and director of the William J. O'Neil Center for Global Markets and Freedom at Southern Methodist University's Cox School of Business. Alm is a senior economics writer in the Dallas Fed's Research Department. Dymerska, a former consultant in the Research Department, is an associate with Best Associates in Dallas.*

## Notes

<sup>1</sup> "The New Wave of Globalization and Its Economic Effects," by Paul Collier and David Dollar, in *Globalization, Growth and Poverty: Building an Inclusive World Economy*, New York: World Bank and Oxford University Press, 2002.

### Chart 6

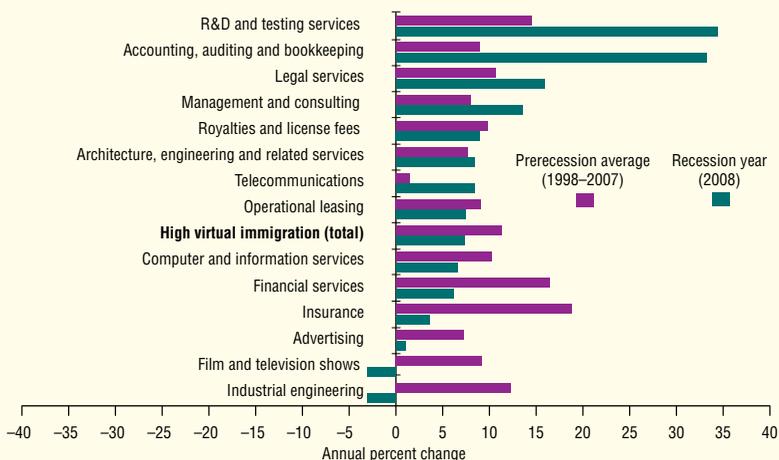
## Outsourcing Market in India Continues to Grow



SOURCE: "Impact of Economic Crisis on Outsourcing," Nasscom Research & Intelligence, June 5, 2009.

### Chart 7

## Recession Takes Varied Toll on Virtual Immigration



SOURCE: Bureau of Economic Analysis.

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FEDERAL RESERVE BANK OF DALLAS  
2200 N. PEARL ST.  
DALLAS, TX 75201

<sup>2</sup> The estimate of 100 million migrants comes from the International Labor Organization Message by Juan Somavia on International Migrants Day (Dec. 18, 2008). According to the ILO, about 200 million people are living outside their home countries, half of them economic migrants. The majority of the world's migrants move from one developing country to another rather than from a developing country to a developed one. This is a consequence of restrictive immigration policies.

<sup>3</sup> Bureau of Labor Statistics civilian labor force data cover workers 16 years old and above. Immigrant population includes legally admitted immigrants, refugees, temporary immigrants (students, workers) and undocumented migrants.

<sup>4</sup> For a more detailed discussion, see *Virtual Migration*, by Aneesh Aneesh, Durham N.C., and London: Duke University Press, 2006.

<sup>5</sup> Seven categories are low in virtual immigration: educational services; freight and port services; travel services; passenger fares; medical services; mining services; and equipment installation, maintenance and repair services.

<sup>6</sup> Fourteen categories are high in virtual immigration: computer and information services; accounting, auditing and bookkeeping; insurance; royalties and licensing fees; R&D and testing; financial services; film and television show distribution; architecture, engineering and related services; management and consulting; legal services; advertising; operational leasing; telecommunications; and industrial engineering. A catchall for other services couldn't be characterized as high or low virtual immigration.

<sup>7</sup> Estimates combine employment in business process outsourcing levels and knowledge process outsourcing. The former come from "The Indian Offshoring Story—Over 170 Years in the Making," by Amit Paul Babu and Ullas Marar,

Sept. 18, 2008. The latter come from "India's Knowledge Process Outsourcing (KPO) Sector: Origin, Current State and Future Directions," by Evaluateserve, July 5, 2007.

<sup>8</sup> For more on globalization and services, see "Opportunity Knocks: Selling Our Services to the World," by W. Michael Cox and Richard Alm, Federal Reserve Bank of Dallas 2007 Annual Report.

<sup>9</sup> The H-1B temporary visa program for foreigners carries an annual cap of 65,000, plus an additional 20,000 spots for graduates with U.S. master's and doctoral degrees. Foreigners hired by universities, higher-learning research institutions and nonprofit organizations are exempt from the cap. The H-1B visas are awarded for three years and renewable one time for another three years.

<sup>10</sup> On Dec. 21, 2009, U.S. Citizenship and Immigration Services announced it had received enough H-1B petitions to meet the statutory cap for fiscal year 2010.

<sup>11</sup> Remittances—the money expatriate workers send home—also suggest that fewer Mexicans are working abroad. According to Banco de México statistics, remittances grew strongly from the start of this decade and peaked in mid-2007.

They registered an annual decline for the first time ever in 2008. In April 2009, remittances were \$1.7 billion, down 18 percent in a year.

<sup>12</sup> Information on India's outsourcing in the recession comes from Nasscom Research & Intelligence, an industry group. See "Impact of the Economic Crisis on Outsourcing," June 5, 2009.

<sup>13</sup> In recessionary 2008, the low virtual immigration categories of U.S. services trade grew 11.3 percent, well above their decade-long average of 5.3 percent. Outside of the small construction category, the largest gains from the previous year came in demand for passenger fares. In the 2001 recession, these low virtual immigration categories fell 7.5 percent.