

Labor Markets in Turbulent Times: Some Evidence from Mexico

By Sangeeta Prata and Erwan Quintin

Financial shocks increase the need to shift workers among employers, industries and occupations. These disruptions, in turn, can have adverse impacts on productivity.

Shock waves from falling housing prices and faltering mortgages are making the destructive effects of financial turmoil all too evident to industrialized nations. In the past year, the U.S. and other countries have seen billion-dollar write-offs, troubled firms and households, and tightening lending standards—all of which are taking a toll on economic activity.

For Mexico and other emerging economies, however, financial panics have been commonplace. Massive currency devaluations, debt defaults and banking crises have crippled Mexico's economy several times during the past 30 years, with prolonged and deep consequences. The supply of domestic finance slowed to a trickle after Mexico's most recent banking crisis in the mid-1990s, and it took more than a decade for the financial sector to begin to recover.

Emerging economies are less prepared than industrialized ones to weather the impacts of financial turmoil. Such basic institutions as contract enforcement don't function well in the emerging nations, and safety

nets are generally inadequate. Despite the development gaps, emerging nations' experiences can provide valuable insights into the effects of financial difficulties.

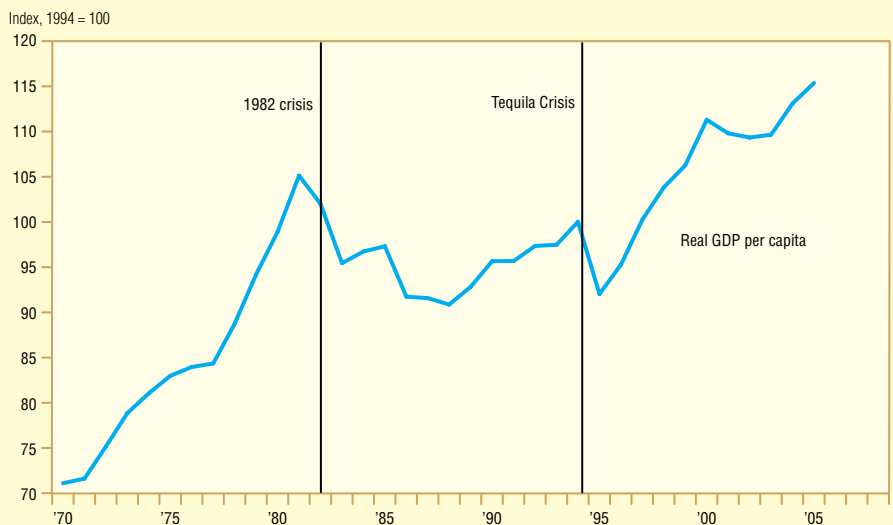
For instance, we can see how abrupt disruptions play out in labor markets. Financial shocks increase the need to shift workers among employers, industries and occupations. These disruptions, in turn, can have adverse impacts on productivity as workers devote time and resources to learning new skills and new tasks. This has important implications for how financial turmoil spreads to economic activity, not just in emerging nations but in industrial ones as well.

Productivity Plunge

Mexico's real GDP per capita declined sharply as a result of the two major crises that hit the country in the past three decades (*Chart 1*). The 1982 crisis signaled the end of two decades of miraculous growth. Real output per capita fell by more than 6 percent in the year after the crisis,

Chart 1

Financial Crises Take Toll on Mexico's Economy



NOTE: Vertical lines mark the onset of each crisis.

SOURCE: Organization for Economic Cooperation and Development.

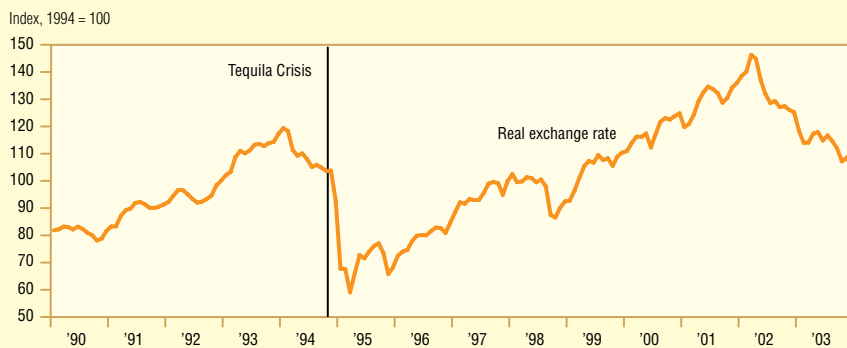
Chart 2 Shocks Accompany Tequila Crisis

A. Borrowing Costs Shoot Higher



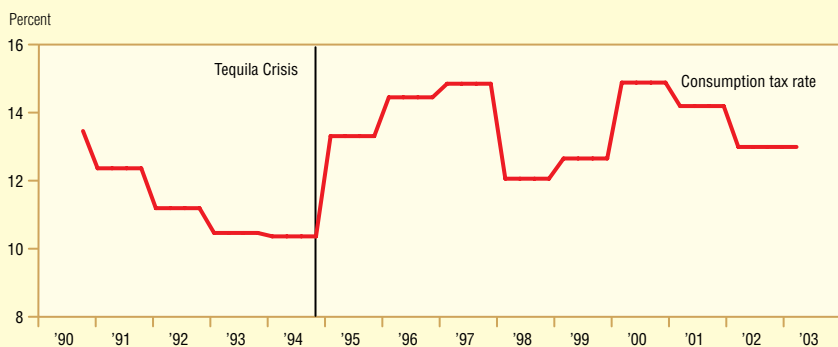
SOURCE: "Factor Utilization and the Real Impact of Financial Crises," by Felipe Meza and Erwan Quintin, in *B.E. Journal of Macroeconomics*, vol. 7, no. 1, 2007, article 33.

B. Imports Cost More, Exports Cost Less



SOURCES: International Financial Statistics, International Monetary Fund; Banco de México.

C. Government Raises Taxes



SOURCE: "Factor Utilization and the Real Impact of Financial Crises," by Felipe Meza and Erwan Quintin, in *B.E. Journal of Macroeconomics*, vol. 7, no. 1, 2007, article 33.

and ripple effects caused Mexico to experience a decade of economic stagnation. During the 1994–95 Tequila Crisis, GDP per capita fell almost 10 percent.

Our understanding of what causes financial collapses in emerging economies has improved markedly in recent years. A heavy reliance on short-term debt denominated in foreign currencies, lax credit

conditions and fixed exchange rates all contribute to making these nations financially vulnerable.¹

Avoiding these pitfalls helps promote financial stability. In recent years, improved debt management and steadfast commitment to monetary and fiscal discipline and flexible exchange rates have helped Mexico reduce its exposure to financial shocks.

However, several aspects of financial crises remain mysterious. For instance, it's now well documented that real GDP falls much more than standard measures of aggregate capital use and hours worked.² More simply, an economy's overall productivity declines drastically during crises, much more than at any other time.

Economists have offered several explanations for the productivity collapse. They've argued that the fall of the ratio of measured input use to aggregate output might result from drops in factor utilization, declines in the use of imported intermediate goods and barriers to the movement of resources across sectors.³

We examine another potential explanation—increased labor market mobility. Using data from a broad survey of Mexican households, we show that financial turmoil speeds up worker movement across jobs.

This acceleration, in turn, likely leads to a temporary drop in the effective supply of labor as worker displacement makes job-specific skills and accumulated experience less valuable. This, we argue, could account for part of the fall of measured productivity that typically follows financial collapses.⁴

The Perfect Storm

Financial crises generate a variety of shocks that accelerate resource movements. They ripple out from the initial financial troubles, amounting to a perfect storm of sorts that spreads the damage into the general economy.

First, domestic credit costs rise sharply, which saps the profitability of firms that rely on outside financing. These companies shrink to pay off increased debt or, in some cases, shut down.

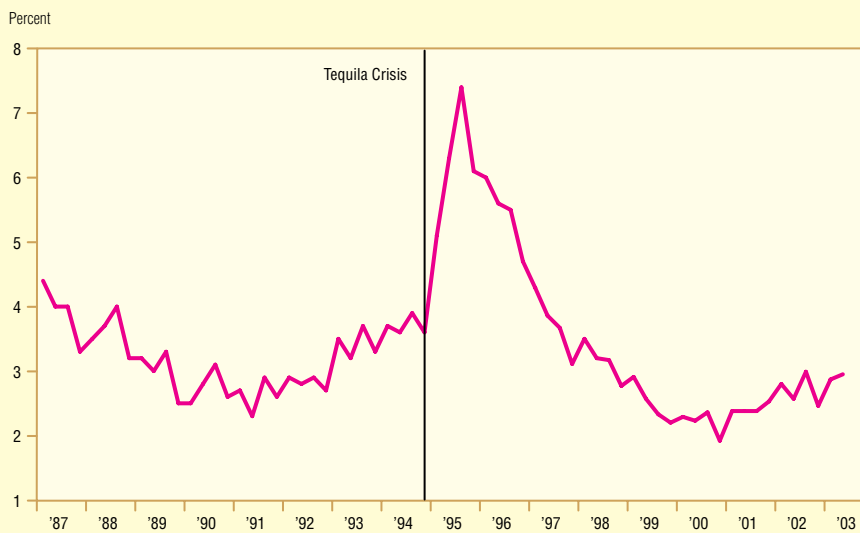
Second, the ratio of export prices to import prices usually rises, leading over time to a reallocation of production toward exports and away from goods and services for domestic use. This shift is facilitated by the fact that export-oriented sectors typically benefit from a privileged access to foreign investment at a time when domestic lending is scarce.

Third, nations in crisis often experience deep fiscal shocks as part of the government's effort to boost tax revenues. Tax rate hikes have an adverse impact on formal employment by giving employers incentives to operate outside the tax-paying fold.

All these shocks are visible in Mexico's Tequila Crisis (*Chart 2*). The quarterly interest rate on dollar-denominated debt

Shifts across sectors and occupations caused by layoffs, bankruptcies and downsizing are likely to be associated with significant declines in productivity and real wages.

Chart 3
Mexico's Unemployment Rate Spikes



SOURCE: Encuesta Nacional de Empleo Urbano.

soared during the first two quarters of 1995, while the real exchange rate collapsed. In an effort to reduce budget deficits, Mexico increased the consumption tax rate in the first quarter of 1995 as well as the regulated price of various energy products.

Labor Market Impacts

The shocks that follow from financial crises induce worker movements across employers, occupations and sectors. As

employers in capital-intensive sectors scale back their operations, for instance, many employees are forced to seek work in sectors less dependent on finance.

In countries such as Mexico, adjustments are delayed by notoriously stringent labor market restrictions. Despite these barriers, labor mobility does pick up significantly during crises, a fact demonstrated by quarterly data from Mexico's Encuesta Nacional de Empleo Urbano, a broad urban household survey.

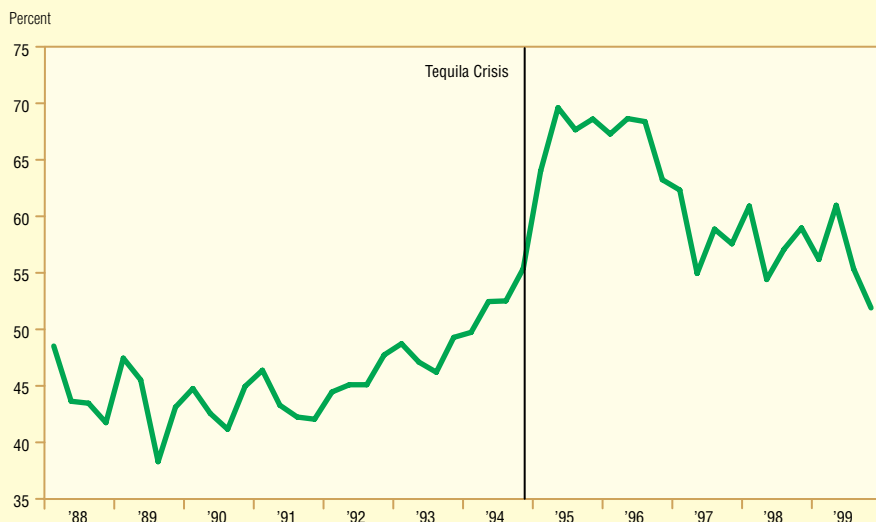
The survey reveals that the unemployment rate doubled to more than 7 percent as the Tequila Crisis roiled Mexico's economy during the first two quarters of 1995 (*Chart 3*).

In addition, involuntary separations increased significantly in 1995. The household survey contains a question that can be used to determine whether employees or employers initiated recent separations. The share of terminations coming from the employer side rose almost 20 percent during the crisis (*Chart 4*).

Spells of inactivity, whether voluntary or involuntary, are only part of the reallocation story, however. Many workers who remained employed during the crisis reported significant changes in their employment conditions.

For example, the 1995 crisis saw marked increases in the fraction of self-employed workers and those who work for establishments with five or fewer employees (*Charts 5A, B*). These facts suggest that,

Chart 4
Involuntary Separations Rise
(Employer-initiated separations as a share of total separations)



SOURCES: Encuesta Nacional de Empleo Urbano; authors' calculations.

among survey respondents, the fraction employed in the informal sector increased significantly in 1995.

The informal sector accounts for a large portion of production and employment in Mexico and other emerging economies. The sector includes all establishments and self-employed individuals not complying with government regulations, such as labor laws and the tax code.

Informal employees typically fail to receive government-mandated benefits and may earn less than the minimum wage. The fraction of workers who fail to receive the benefits mandated by labor laws did in fact spike up in 1995 (*Chart 5C*).

Finally, the household survey reveals that many of these worker transitions involved occupational and industry changes. For example, the fraction of industrial workers drops drastically at the onset of the crisis, accompanied by increases in workers who say they are merchants—a prominent occupation among informal workers.

We use a measure called the Kolmogorov–Smirnov test statistic to compare the quarter-to-quarter distributions of employment for industries at the Mexican classification system’s three-digit level. The higher the test statistic, the more likely significant changes occurred in the distributions. For the 1995 crisis, the Kolmogorov–Smirnov test statistic shows that certain sectors and occupations shrank significantly, making it necessary for many workers age 16 to 65 to find new employment (*Chart 6*).

Wage Impacts

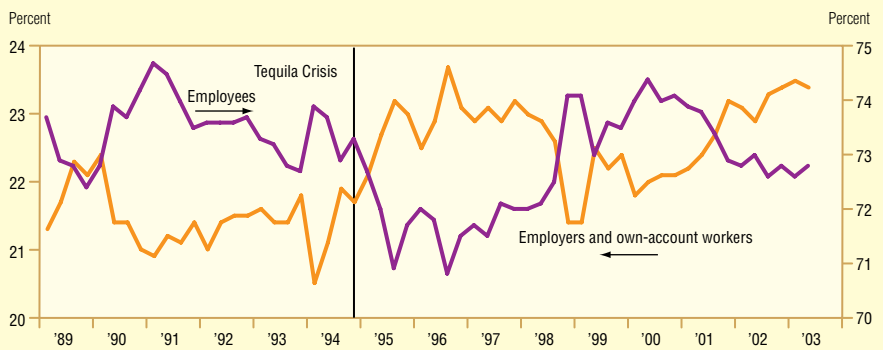
It matters who initiates job changes—employees or employers. Shifts across sectors and occupations initiated by employees—often to pursue higher-paying opportunities—are probably going to be associated with an eventual rise in productivity and real wages, even if accompanied by transitional productivity losses as workers adapt to their new jobs.

Shifts across sectors and occupations caused by layoffs, bankruptcies and downsizing are likely to be associated with significant declines in productivity and real wages. Workers forced to seek new jobs may find their old skills are ill-suited for their new jobs, and new skills will have to be learned.

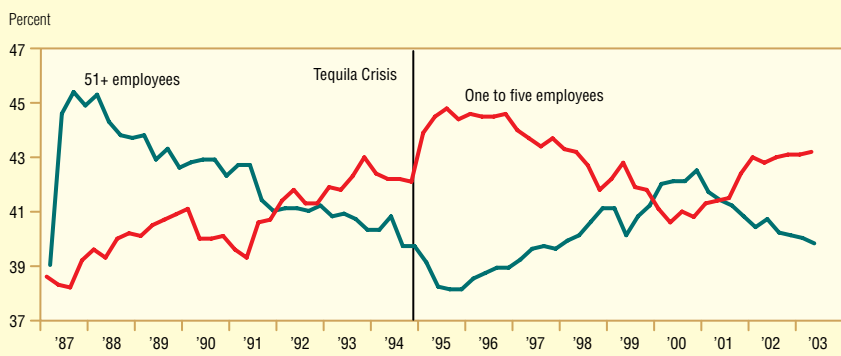
We’ve seen that a crisis can trigger a marked rise in the portion of involuntary labor force movements, making these movements a potential explanation for the

Chart 5 Employment Shifts Accompany Tequila Crisis

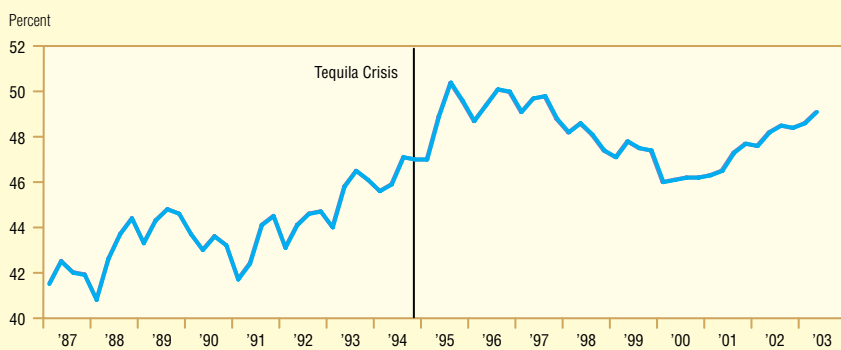
A. Employment Status



B. Establishment Size



C. Workers With No Employment Benefits



SOURCES: Encuesta Nacional de Empleo Urbano; authors' calculations.

productivity collapses that accompany financial disruptions.

A formal test of our hypothesis involves a comparison of the earnings of workers who stay in the same sector or occupation with the earnings of those whose occupational status changes, both in normal times and crises. If movers tend to become less productive than workers who stay put, we would expect them to have lower earnings, even after controlling for other characteristics that affect earnings. These differences should be particularly large dur-

ing crisis periods.

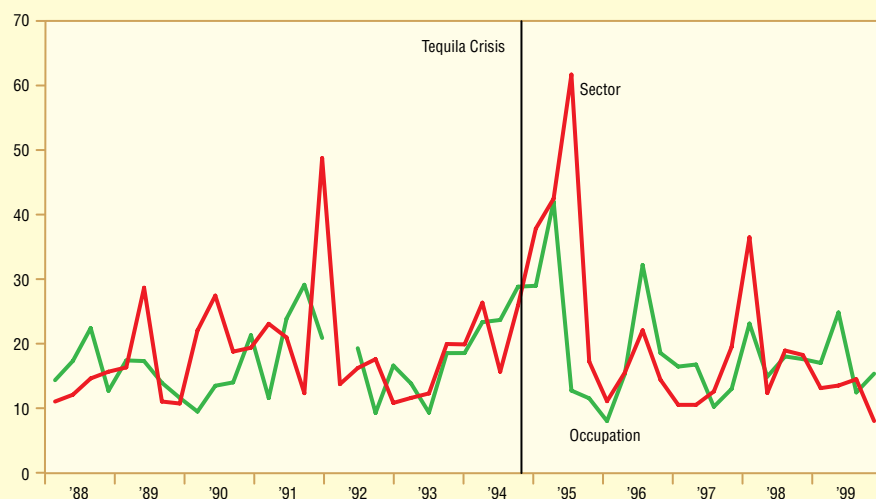
The Encuesta Nacional de Empleo Urbano gives us more than 3 million observations on individual workers between 1988 and 1999. Looking outside the Tequila Crisis period—and controlling for gender, age and education—we find that workers who remained in the same sector had real hourly wages 1.4 percent higher than those who moved.⁵ During the crisis, the wage gap between movers and nonmovers rose to 2.4 percent for sectors.

Outside the Tequila Crisis, workers

Chart 6

Crisis Brings Sharp Changes in Where Employees Work

(Kolmogorov–Smirnov test statistic)



NOTE: Statistic is computed at the three-digit level in the Mexican classifications of occupations and sectors. Due to a classification change, the occupation statistics cannot be computed in the second quarter of 1992.

SOURCES: Encuesta Nacional de Empleo Urbano; authors' calculations.

who stayed in the same occupation earned about 1 percent more than individuals who changed occupations. During the crisis, the gap grew to 2.5 percent.

What if workers who change employment status are systematically different from individuals who stay in the same sector or occupation? For instance, lower wages for movers could reflect differences in inherent ability, rather than differences in accumulated skills.

The fact that each individual appears up to five times in the household survey enables us to control for these fixed individual differences, whether observed or unobserved. Doing so reduces the wage impact of changing sector or occupation during normal times to essentially zero, suggesting that labor market flows in and of themselves have little effect on average labor productivity outside crises periods.

During the Tequila Crisis, however, the wages of individuals who changed occupations fell by an added 3.3 percent compared with the wages of similar workers who didn't move. Individuals who changed sectors saw wages fall about 3 percent more than those who stayed in the same sectors.

Adding it up, real wages fell an additional 6 percent during the Tequila Crisis for individuals who changed both sector

and occupation, compared with similar individuals who stayed put. This constitutes evidence that labor market flows cause deep drops in worker productivity during financial crises.

Mexico's experience suggests that labor market adjustments are an important aspect of how financial turmoil ripples through economies. The large gaps between emerging and industrial economies may lead to differences in timing, magnitude and duration, but both are likely to experience significant labor market spillovers from financial distress.

The reduced availability of credit may result in a pick-up in job destruction, increased worker mobility and temporary losses in productivity as workers devote time to learning new skills. Whether in emerging markets or mature economies, these disruptions are reminders of the critical importance of maintaining well-functioning financial markets for economic growth.

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Notes

¹ While the two crises share similarities, they also differ in important ways. For more on these issues, see "Mexico's Financial Vulnerability: Then and Now," by Erwan Quintin and José Joaquín López, Federal Reserve Bank of Dallas *Economic Letter*, no. 6, 2006.

² See, for instance, "Factor Utilization and the Real Impact of Financial Crises," by Felipe Meza and Erwan Quintin, in *B.E. Journal of Macroeconomics*, vol. 7, no. 1, 2007, article 33, www.bepress.com/bejm/vol7/iss1/art33.

³ See, among many other papers, "External Constraints on Monetary Policy and the Financial Accelerator," by Mark Gertler, Simon Gilchrist and Fabio Natalucci, NBER Working Paper Series, no. 10128, December 2003; "Sudden Stops, Sectoral Reallocations and the Real Exchange Rate," by Timothy J. Kehoe and Kim J. Ruhl, University of Texas, unpublished paper, 2007; and "Financial Frictions and Total Factor Productivity: Accounting for the Real Effects of Financial Crises," by Sangeeta Pratap and Carlos Urrutia, Instituto Tecnológico Autónomo de México (ITAM), unpublished paper, 2008.

⁴ This confirms with different data the outcome of some recent studies of labor market dynamics in Latin America. See, in particular, "Sudden Stops and Reallocation: Evidence from Labor Market Flows in Latin America," by Francisco Gallego and Jose Tessada, Massachusetts Institute of Technology, unpublished paper, 2008.

⁵ Details of our estimation approach are available upon request. Real hourly earnings are deflated using Mexico's quarterly consumer price index and multiplied by 13/12 for workers who receive an *aguinaldo*, or Christmas bonus. Mexican labor laws specify that all employees should receive a year-end bonus equivalent to at least two weeks worth of earnings in December. In practice, roughly half of workers report that they receive an *aguinaldo*. Among employers that do comply with the *aguinaldo* requirement, the majority make the year-end bonus one extra month of earnings.