



THE BUSINESS OF EDUCATION: MEETING THE DEMANDS OF A STRONG ECONOMY THROUGH EDUCATIONAL CHANGE

EDUCATION REFORM IS an important issue not only for students, parents and educators, but also for the businesses that will one day employ today's students. With this in mind, the Federal Reserve Bank of Dallas hosted a public policy conference, "The Business of Education: Meeting the Demands of Strong Economy Through Educational Change," on October 17, 1997. The conference brought together educators, policymakers, academics and members of the business community to discuss the current condition of the educational system, the goals and standards of education, popular educational reform issues and business' stake in the outcome.

As conference participants made clear, the current condition of education in Texas raises serious concerns about the quality of tomorrow's workforce. Tom Luce noted that on national standardized tests only 26 percent of Texas fourth-graders are ranked proficient in reading and less than 20 percent are ranked proficient in mathematics. Thirty percent of high school graduates who enter Texas colleges cannot pass a basic academic skills test and must take remedial

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Featured Speakers

James R. Adams, Chairman of the Board, Texas Instruments Inc., Dallas

Lynne V. Cheney, Distinguished Fellow, American Enterprise Institute, and Cohost, *Crossfire* (CNN), Washington, D.C.

Pascal D. Forgione, Jr., U.S. Commissioner of Education Statistics, National Center for Education Statistics, Washington, D.C.

Caroline M. Hoxby, Morris Kahn Associate Professor of Economics, Harvard University, and Research Fellow, National Bureau of Economic Research, Cambridge, Massachusetts

Gary Huggins, Executive Director, Education Leaders Council (ELC), Washington, D.C.

Sandy Kress, Partner, Akin, Gump, Strauss, Hauer and Feld LLP, Dallas

Robert B. Lane, President, NationsBank Texas, Dallas

Myron Lieberman, Chairman, Education Policy Institute, Washington, D.C., and Senior Research Scholar, Social Philosophy and Policy Center, Bowling Green State University, Bowling Green, Ohio

Tom Luce, Founder and Partner, Hughes & Luce LLP, Dallas

James M. Mansour, President, National Telecommunications, Austin

Jill Shugart, Superintendent, Garland Independent School District

Robert F. Smith, President, Texas Council on Economic Education, Houston

Diane R. Spradlin, Director of Community Affairs, EDS, Plano

John H. Stevens, Executive Director, Texas Business and Education Coalition, Austin

Lori L. Taylor, Senior Economist and Policy Advisor, Federal Reserve Bank of Dallas, and Adjunct Professor of Economics, Southern Methodist University, Dallas

Judy Zimny, Principal, L.L. Hotchkiss Elementary School, Dallas Public Schools

courses. It is not particularly reassuring to note that despite these weaknesses, Texas ranks in the middle of the pack nationally on standardized tests.

Building on a broad consensus about the need for educational reform, conference participants addressed three questions at the heart of the education debate: Who should decide how students will be educated? What's the best road to reform? How should we fund education?

Who Should Decide How Students Will Be Educated?

Students and their families have an obvious role in educational decision-making. The current debate rests on the issue of whether any other party—namely, government—should also be involved in the decision.

Conference panelist Lori Taylor offered three economic rationales for government participation in the educational decisions of parents and children. First, education may generate benefits to society that exceed those to the students themselves. For example, from the student's perspective, the primary benefit of additional education is an increase in take-home pay. However, from society's perspective, the benefits also include any increased taxes that the students will pay as a result of their additional education. Furthermore, all other things being equal, communities with lots of educated residents grow faster than other communities and are more likely to attract new firms. No student thinks about the impact additional schooling might have on the community's economic growth or its attractiveness to business. Because students and their families don't consider all the benefits when they make an educational decision—like whether to go on to college or to drop out of high school—they might tend to invest less in education than is optimal from society's point of view. Thus, society has an interest in encouraging people to invest in more education than they would privately choose to do.

The high cost of education provides a second economic rationale for government participation in the decision.

The full cost of providing a child with a high school education can exceed the sticker price of a top-of-the-line Lexus. However, without government assistance, it would be much harder to get a loan to pay for that high school education than it is to get a car loan. The lack of collateral would lead lenders to charge an especially high rate of interest for an education loan—if you could even find someone who would lend money to an inner-city kid with no credit history. Thus, government has a role in making the education credit market work—either by helping finance an education directly or by subsidizing private loans for education. However, there is a catch: just as the private lender has every right to make sure that the money from a car loan is used to actually buy a car, the government has every right to ensure that a student uses an education loan to buy schooling.

The third possible rationale for government participation in education lies in charity. If society feels charitable toward children (or toward their parents), then financing of education is a tool for redistributing some of society's resources in their direction. Although students and their families might prefer cash, they receive schooling because society is paternalistic. A similar argument explains why poor people are given food stamps rather than cash; society wants the recipients to consume what *it* thinks is good for them, not necessarily what *they* think is good for them.

Taylor argued that acceptance of any of these rationales implies that government has a legitimate role in educational decision-making. However, it is not obvious which level of government—federal, state or local—should fill government's role in education. For example, panelist Lynne Cheney argued that national educational standards "may be a good idea in the abstract [but] you don't get the common-sense input of informed citizens when you develop these things at that high, etherial level." Cheney, who favors less centralized decision-making, claimed that "many states have gone through rigorous debates about what standards should be...and the results are pretty good."

What's the Best Road to Reform?

Conference panelists discussed a variety of reforms to the current educational system. Some panelists stressed the benefits of fostering market-based competition to traditional public schools, while others stressed the benefits of reforming the public school system from within. A recurring theme among the conference participants, regardless of their perspective on reform strategy, was the need for a mechanism to measure school successes (and failures).

Market-Based Solutions. Myron Lieberman argued that a competitive market system is better than government operation of the school system. In his opinion, the problem is that “public schools are not part of a system where improvement is mandatory to survive.” He favors privatizing the public school system altogether.

Caroline Hoxby discussed some of her research on the positive effects of enhancing school competition through vouchers.¹ She finds that, first, “public schools really can and do respond to competition...by really improving student performance.” Second, the response of public schools to the voucher programs depends on the fiscal incentives: if the money does not follow the student, then voucher programs have little impact on performance in public schools. Third, she finds that with voucher programs, “parents are much more involved, not just in the voucher schools and the private schools, but even in the public schools...because parents are making more active choices.”

Solutions From Within the System. While voucher programs are intended to improve public school performance through increased competition with private schools, charter schools enhance competition within the public school system. Charter schools offer groups the opportunity to create and operate a public school under a contract with the local school board or other public entity. These schools are freed from some state rules and regulations in exchange for a commitment to achieve certain outcomes.

Arizona is considered one of the

leading states in the charter-school movement, with more than 250 charter schools—about 10 percent of the U.S. total. Gary Huggins discussed the state’s program, which he said has the most liberal and open charter school law in the country. Huggins pointed out that charter schools, like vouchers, are putting pressure on traditional public schools to find innovative ways to attract students.

As traditional public schools respond to competitive pressure from programs such as vouchers and charter schools, they are also called upon to reform from within through increased accountability. Accountability reform implies that there are consequences for schools and teachers, both good and bad, depending on student performance. Sandy Kress summed up the need for accountability in public schools when he said, “People feel the need to respond when they are measured; people respond when there are consequences for the measurement.”

Measurement. Many conference participants stressed the need for good information about the performance of students and schools. Kress noted, “If we don’t know where each child is in terms of their attainment...then we’re totally flying blind.” Pascal Forgione emphasized the need for a national or international standard for measuring performance, because otherwise, “once you start making progress...no one’s going to believe you.” Lieberman argued that, to be credible, tests of student performance need to come from outside the educational establishment.

Conference participants suggested that one of the most important roles for business in educational reform was in the area of measurement. Accountability is integral to the profitability of firms, and panelists agreed that business could bring its expertise in measuring success to the educational system. As Jim Adams put it, “We in business look at all things from a measurement perspective.”

How Should We Fund Education?

The conference participants agreed that school finance is a large and grow-

A recurring theme among the conference participants, regardless of their perspective on reform strategy, was the need for a mechanism to measure school successes (and failures).

Because schools transform today's students into tomorrow's skilled workers, continued progress is vital to ensure the future economic growth of our region.

ing problem for Texas. Robert Lane reminded the audience that Texas' state and local governments spend about \$19 billion annually on public schools, and \$11 billion of those funds come from taxes on business. Jill Shugart added, "The statewide student population of Texas is growing at the rate of 70,000 to 80,000 children per year. That fact alone requires the infusion of \$1.4 billion in new revenue each biennium just to maintain the same dollars per child."

Equity and local control of school finance were important issues for all three members of the school finance panel. Lane discussed the problems created by wide differences in taxable wealth across school districts. Shugart attributed Texas' equity problems to overreliance on the property tax. "Equity," she stated, "is based on the notion that children who hail from the property-poorest school districts in the state are nonetheless entitled to an adequate education." She expressed concern about local ability to finance the unequal facilities needs of Texas school districts. "Equity is not going to be achieved unless the facilities issue is factored in," she said. Taylor argued that because "the Dallas worker of tomorrow may be in Houston or Plano schools today...it may be appropriate to shift more of the [school tax] burden to the state level." However, she also emphasized, "Parents must retain choice about the level of education spending."

The structure of the school finance system also received a great deal of attention. Both Lane and Taylor stressed the need for a school finance system that does not favor one type of business over another. In particular, Lane argued against overreliance on business property taxes (which fall disproportionately on capital-intensive firms) and corporate franchise taxes (which fall disproportionately on corporations).

Finally, Taylor pointed out that the primary beneficiaries—students and their families—bear much of the cost of education under the current system. "At the high school level nationally, 55 percent of our school resources come from the students themselves in terms of the value of their time," she noted. Parents also pay school property taxes and pick

up much of the burden of taxes that originate at the business level. "No matter how much the legislature would like to argue that a tax that is nominally assigned to business is going to be borne by business," she said, "much of it actually passes through to the employees and the customers of the firm."

Conclusions

The conference focused on the problems with public education in the United States. However, the picture is not all bleak, particularly in Texas. There are definite signs of improvement. Only two other states made more progress than Texas between 1990 and 1996 on the National Assessment of Educational Progress test in eighth grade mathematics.

Because schools transform today's students into tomorrow's skilled workers, continued progress is vital to ensure the future economic growth of our region. The skilled-labor pool has been cited as one of the most important factors, if not *the* most important factor, in a firm's decision to operate in Texas.² In the words of Tom Luce, "Business really must go, and will go today, to where the skilled workers are....The fundamental challenge facing our state is that we're going to run out of skilled workers here awfully soon."

— Marci Rossell
Lori L. Taylor

Notes

¹ The details of school voucher programs vary, but essentially students are given a tuition subsidy for the private school of their choice, with for-profit and denominational schools often excluded.

² For a further discussion, see the article, "Silicon Prairie," in the May/June 1997 issue of *Southwest Economy*.

STOCK MARKET FUNDAMENTALS

October. This is one of the peculiarly dangerous months to speculate in stocks in. The others are July, January, September, April, November, May, March, June, December, August, and February.

—Mark Twain,
Pudd'nhead Wilson

RECENT DEVELOPMENTS IN the stock market have attracted intense interest from individual investors and policymakers alike. The meteoric ascent of stock prices over the past two years has generated concern about whether prices are justified by the so-called fundamentals or whether they represent a speculative bubble. This concern grew considerably on October 27 when the Dow Jones industrial average fell 7 percent—the 12th largest one-day decline on record. Although the market has since stabilized, investor and policymaker concern apparently has not. Investors worry that if prices are a bubble and it bursts, their recent gains will evaporate. Policymakers worry about the market's effect on the economy and how to respond if any correction becomes a full-fledged bear market.

This article steps back from the market's recent day-to-day gyrations and puts the current bull market in historical and cross-country perspective. It also analyzes the major long-term determinants of stock prices and how well those fundamentals explain current market prices.

Chart 1
Recent Increases in the S&P 500 Look Spectacular On a Regular Scale...

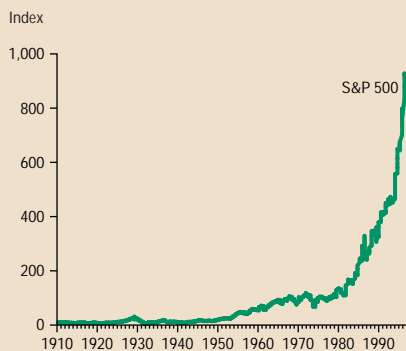
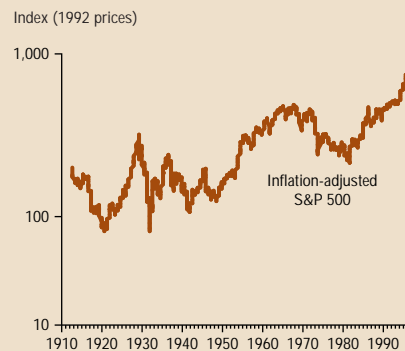


Chart 2
...But Look Less Unusual On a Log Scale and After Adjusting for Inflation



The Bull Market in Perspective

The news media and analysts often talk about the upward movement in stock prices over the past two years as if it were unprecedented. Viewed on a simple numeric scale, as in Chart 1, this rise in Standard & Poor's 500-stock index does look unprecedented. On this scale, a 5 percent rise in the index looks a lot bigger today than it did in, say, 1950, because a 5 percent rise today means a rise of almost 50 points, whereas a 5 percent rise in 1950 meant a rise of only 1 point. A more meaningful way to look at stock prices over the long term is on a logarithmic scale, on which a 5 percent rise in 1950 looks the same as a 5 percent rise today (*Chart 2*).

Viewed on a log scale, and after adjusting stock prices for inflation, the recent bull market does not look unusual at all. Chart 2 also shows that the last few years' increases are just a small part of a longer bull market that goes back to 1981, if one is willing to incorporate a number of temporary setbacks along the way. We can compare this longer term bull market with previous ones: for example, the one from 1950 to 1968 and the one from 1922 to 1929. In addition, there was an important bull market before the period shown on this chart, during roughly 1880–1910.

Table 1 summarizes some of the more salient characteristics of these four bull markets. Again, the central message is that the current bull market does not stand out from those that preceded it, in terms of either length or total return. Indeed, the current market ranks behind the other three in terms of real annual average return. The table also shows that these bull markets have occurred in different profit growth and real interest rate environments. For example, both profit growth and real interest rates were lower during the 1950–68 bull market than they have been in the current one.

Nor does the current U.S. bull market stand out in comparison with those in

Table 1
Bull Markets in U.S. History

	1880–1910	1922–29	1950–68	1981–97
Length (years)	30.0	7.75	19.0	15.75
Real return*	14.2	19.9	14.0	13.9
Real GDP growth*	4.0	6.0	4.2	2.8
Real profit growth*	N.A.	6.0	4.9	5.8
Real interest rates	3.7	4.5	1.6	5.6

* Average annual growth rates.

SOURCE: Federal Reserve Board.

The current bull market does not stand out from those that preceded it...nor does [it] stand out in comparison with those in other countries.

Table 2
U.S. and Foreign Stock Markets, 1981–97

	U.S.	Germany	U.K.	Japan
Real market index*	9.9	11.7	7.3	4.0
Real GDP growth*	2.8	2.9	2.5	2.2
Real profit growth*	5.8	4.0	5.0	2.7
Real interest rates	5.6	5.2	5.9	4.2

*Average annual growth rates.

SOURCES: Federal Reserve Board; Bank of England; Bank of Japan; Deutsche Bundesbank.

other countries. Table 2 shows that over the life of the current U.S. bull market, real price appreciation in the U.K. and German stock markets has come close to or exceeded our own. The major exception is the Japanese stock market, which suffered a severe asset price bubble that burst in 1990 and from which the economy has yet to recover. But at least compared with the U.K. and Germany, the United States does not appear unique.

All bull markets, of course, end at some point. Frequently, as with the 1880–1910 and 1950–68 markets, they end as a result of external shocks—war in the first case, stagflation in the second. In 1929, however, the market collapsed because it had overreached itself, and speculative excess led to stock prices unjustified by the fundamentals. The question is, Where are prices relative to fundamentals today?

A Fundamentals-Based Model

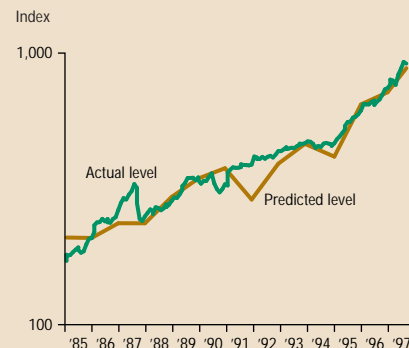
A traditional discounted earnings model can be used to determine the extent to which the fundamentals justify the level of stock prices. This model assumes that investors value a firm's stock only as much as they value the firm's present and future earnings. The value of the discounted expected earnings stream, which should equal the current price of the stock, has two components. The first is the forecasted future earnings stream itself. The second is the interest rate used to discount forecasted earnings streams. This discount rate is the default-free real rate of interest—represented by the long-term government bond rate—plus an equity risk premium, which is the extra return investors require for

holding risky stocks.

This model can be used to determine a “fundamental” price for the S&P 500, using three factors: forecasted earnings, the real interest rate on Treasury bonds and the equity risk premium. As a measure of future earnings streams for each company in the S&P 500, I use the consensus forecast for long-term profit growth (three to five years out) of I/B/E/S International Inc. For the discount rate I use the real 10-year bond yield as the riskless rate of interest, plus an estimated constant risk premium on equity. I use the model to calculate a predicted S&P 500 price for the period 1984–97.

Chart 3 plots this predicted price on a log scale against the actual S&P 500 price. As of October 31, the discrepancy between the two was about 3 percent. Given the imprecision inherent in all stock market models, this difference does not appear large enough to support claims of substantial overvaluation. Additionally, over most of the period the predicted price tracks the actual price quite closely, except for two peri-

Chart 3
Predicted Versus Actual Levels of S&P 500 Using Long-Term Earnings Forecasts



ods when the actual price was substantially above that predicted by fundamentals. The first was in mid-1987, when the actual price was about 30 percent above the predicted price, providing evidence that market prices were unjustified by profit forecasts and therefore constituted a bubble. The market itself came to believe that, and corrections in October 1987 brought actual prices down to the level predicted by the model.

The second period was 1991–92, when the economy was in its recession trough and actual prices were about 25 percent above those predicted by fundamentals. In this case, it was the analysts who were wrong about the strength of the recovery, not the market, and their profit forecasts were revised up sharply in 1993. As a result, predicted prices rose to the level of actual prices in 1993.

The main message from the model is that unlike 1987, current market prices are not built on air but appear to be based on actual current discount rates and profit expectations. The question this analysis begs, of course, is how realistic these profit expectations are. Stock market bulls and bears have different answers.

Bulls point to the recent strong profit growth of U.S. companies as evidence of the “new paradigm” economy, in which technological innovation and globalization of product and labor markets present vast opportunities to improve efficiency, increase productivity, lower production costs and ultimately generate stronger profits. These trends are aided by improved economic policy-making by the Federal Reserve and the government, which has resulted in lower federal budget deficits and lower inflation.

Bulls argue that these forces will continue to improve productivity and profits, and point to a number of striking trends. First, improvements in the production of computer power over the past 15 years have been immense. Second, the opening of the formerly closed economies of China, Russia and India will ultimately introduce more than 1 billion low-cost laborers and almost as many potential middle-class consumers onto world markets. These develop-

ments, bulls contend, cannot fail to vastly increase profit opportunities for companies worldwide.

Bears view these changes as evolutionary, not revolutionary. They see the recent strong profit growth as the result of other, temporary factors that may soon run their course. Thus, they are much less confident about future profit growth now that we are in the mature stage of a business cycle.

Are Analysts’ Profit Expectations Realistic?

In evaluating the bulls’ and bears’ arguments, it’s important to note that company analysts’ current expectations for profit growth over the next three to five years *are* bullish. Analysts expect S&P 500 companies to average earnings per share (EPS) growth of almost 13 percent annually for the next three to five years. How realistic are these expectations? Table 3 compares analysts’ long-term EPS forecast with EPS growth during 1981–97 and 1991–97, and with a separate forecast by DRI/McGraw-Hill Inc., a macroeconomic forecaster. While profits have surged by more than 17 percent annually since 1991, over the entire bull market their growth has been much more subdued. One reason, of course, is that 1991–97 represents the recovery from a recession trough—profit growth should be faster during this period than over the entire business cycle. Company analysts are currently forecasting future profit growth closer

The main message from the model is that...current market prices...appear to be based on actual current discount rates and profit expectations. The question this analysis begs...is how realistic these profit expectations are.

Table 3
S&P 500 EPS Growth
In Perspective

	Annual growth rates
1981–97	6.7
1991–97	17.5
Current forecasts:	
Company analysts	12.9
Macroeconomic forecaster	6.0

SOURCES: I/B/E/S International Inc.; DRI/McGraw-Hill Inc.

Table 4
Accuracy of Analysts' Long-Term Earnings per Share Growth Forecasts

	Analysts' forecasts	Actual growth in next four years
1984	12.5	9.3
1986	11.3	10.6
1988	11.0	-5.3
1990	11.7	8.9
1992	12.0	19.4

SOURCES: I/B/E/S International Inc.; DRI/McGraw-Hill Inc.

to this rate than to the pace since 1981.

It's also informative to compare the analysts' forecasts with that of DRI/McGraw-Hill. The difference illustrates that "bottom-up" forecasts of S&P 500 profit growth, which build up from individual company forecasts, are almost always more optimistic than "top-down" forecasts, which are derived from forecasts of GDP growth and other macroeconomic aggregates. At first glance, neither method seems inherently superior. Bottom-up forecasts, such as those from I/B/E/S, might benefit from specific company knowledge that macroeconomic forecasters, such as DRI, do not have. On the other hand, bottom-up forecasters might assume that the individual company they are analyzing will make the next technological or market breakthrough. If only one company in the industry will benefit from the next breakthrough, but each analyst assumes that the company he or she researches will be the one to do so, then their aggregated forecasts will inflate aggregate profit growth. Thus, bottom-up forecasts might be subject to errors that make them too optimistic.

Table 4 presents evidence on the accuracy of analysts' previous long-term forecasts for EPS growth. It compares forecasts of three to five years of S&P 500 EPS growth with the S&P 500's actual EPS growth over the subsequent four years. Table 4 suggests that analysts' forecasts have generally been too optimistic, except for the period 1992-96, when they were substantially too pessimistic. This could result from analysts not foreseeing the recovery in 1992, or it could (as bulls might argue) be the result of their being surprised by

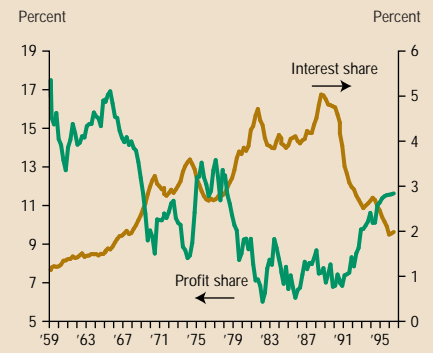
the profit growth arising from technological innovations. Overall, however, analysts' forecasting record is decidedly mixed, with some tendency toward overoptimism.

In addition, bears are concerned that the strong profit growth over the past few years is due primarily to temporary or special factors, some of which have largely run their course. For example, financial-sector profit growth has been very strong, but this, bears argue, primarily results from restructuring activity by banks and other financial institutions that cannot continue indefinitely.

Chart 4 shows nonfinancial firms' total profits and net interest payments as a share of nonfinancial-sector GDP. Note that the increase in the interest share in the early 1980s—a decade of high corporate debt and high interest rates—coincides with a fall in profit share. And the marked fall in the interest share in the 1990s coincides with the recovery of the profit share. Bears claim that the future boost to profits from this source may be limited, since both deleveraging activity and declining market interest rates appear to have ended.

Bulls respond that it is a mistake to look at aggregate profits for the economy as a whole, since investors are pricing S&P 500 companies' earnings, not the earnings of the entire economy. S&P 500 companies are the ones most affected by the new-era forces of technological innovation and global trade. As shown in Table 5, the S&P 500 has a much greater weight of companies in innovative, high-tech, high-profit growth sectors than the economy as a whole. For example, technology-sector firms constitute more than 15 percent of the S&P 500 but only 3 percent of the aggregate economy, and they have experienced annual EPS growth of more than 40 percent since 1992.

Chart 4
Profit and Interest Share of Nonfinancial Firms as a Percent of Nonfinancial GDP



SOURCE: Federal Reserve Board.

The BottomLine

What's the bottom line on the stock market? A simple model of stock price valuation suggests that if the market is overvalued relative to current discount rates and profit expectations, it is not overvalued by much. Thus, the current situation differs from that of 1987, when prices rose about 30 percent above those justified by profit forecasts and discount rates. However, the profit forecasts on which the model is based do look very bullish for this stage of the business cycle, and there is good reason to suspect that these expectations may go unrealized. If that happens, then stock prices would ultimately have to decline.

The wild card is when the new-era forces, which include a monetary policy environment that prevents rising inflation, will begin ratcheting up productivity and profits. Probably the only sure thing about the stock market debate is that the argument between the bulls and bears will continue to rage.

—Stephen D. Prowse

Table 5
Profit Growth by Sector

Sector	Percent of S&P 500*	Percent of economy*	Annual EPS growth**
Technology	15.7	3.0	41.7
Financials	15.9	6.5	21.6

*In 1997. **Average 1992-97.

SOURCES: Federal Reserve Board; Wall Street Journal, Sept. 22, 1997, p. A1.

Exchange Rates: Fixed, Pegged, or Flex? Should We Care?

IT HAS BEEN ALMOST three years since the devaluation of the Mexican peso in December 1994. At that time, the doomsayers predicted the end of the world for Mexico. And how is Mexico's economy doing these days? Alive and well, thank you. In fact, it's booming—just like the economy of Argentina, another country doomsayers had predicted would have collapsed by now. As noted in an earlier issue of *Southwest Economy* (November/December 1996), Argentina was the Latin American country that suffered the greatest contagion effect from the Mexican crisis.

The doomsayers were followed by the usual “Monday morning quarterbacks,” to quote the expression that Dallas Fed President Robert D. McTeer, Jr. uses to describe the amazing amount of ex post facto wisdom elicited by the Mexican devaluation of the peso. After the crisis, self-appointed experts made all kinds of recommendations about the exchange rate policies that would take both countries out of the woods forever. Not surprisingly, proponents of flexible exchange rates argued that Mexico would have never gotten into the crisis in the first place if it had had a flexible exchange rate instead of the pegged one implemented five years prior to the crisis. By the same token, they argued that Argentina would have suffered a milder form of “tequila effect”—or escaped it altogether—if it had had a flexible exchange rate instead of the rigid currency-board mechanism adopted in 1991. According to these views, flexible exchange rates were the only way out of the slump for Mexico and Argentina. Thus, they blessed Mexico's decision to move to a flexible exchange rate regime and predicted that Argentina, which decided to keep its currency-board system, was doomed to failure.

This prediction, however, did not materialize, as is apparent in Chart 1. The chart plots quarterly rates of GDP growth for Mexico and Argentina right after the devaluation of the Mexican peso in December 1994. Keeping in mind that the effects of the devaluation reached Argentina about one quarter later than Mexico, we compare Mexico's GDP growth in any given quarter after the devaluation with Argentina's GDP growth in the *subsequent* quarter. Alignment of growth rates in this way reveals a striking similarity in the recession–recovery pattern of both countries. In the analysis that follows, we take the view that the recent economic experiences of Argentina and Mexico are very close to the controlled laboratory experiments that economists crave, and envy in other sciences.

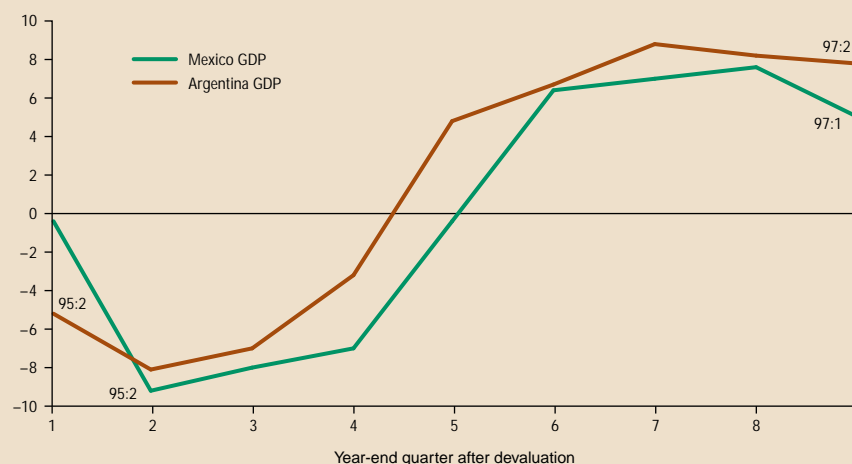
The two countries are alike in many dimensions, but responded with almost opposite policies to basically the same speculative attack against their curren-

cies. Mexico devalued; Argentina did not. Mexico bailed out its financial system; Argentina did not (in fact, it let 25 percent of its banks go belly up). Mexico engaged in “sterilization” policies during the crisis; that is, it tried to keep the money supply from falling as the capital outflows tended to dry up liquidity. Argentina, instead, let the money supply contract an astonishing 20 percent in three months, the same percentage by which the money supply contracted during the Great Depression in the United States over three *years*. Yet, despite the almost opposite monetary policies pursued by the two countries, they faced the same fate: a similar recession followed the speculative attack against their currencies (*Chart 1*).

The differences in economic policies and the commonality of outcomes do not stop there, however. As mentioned above, Mexico stopped following a pegged exchange rate after the crisis and instead adopted a flexible exchange rate.

Chart 1
Recession–Recovery Patterns in Argentina and Mexico after Peso Devaluation

Percent growth over same quarter of previous year



NOTE: First observation for Argentina corresponds to second quarter of 1995, for Mexico to the first quarter of 1995.



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Beyond the Border

Argentina, by contrast, continued implementing a fixed exchange rate policy in its most extreme form: a currency-board system. Yet, despite these different policies, the chart shows that both countries have recovered at about the same brisk pace. And there are no signs that the recovery will fizzle out any time soon in either country; in fact, markets seem to be bullish about both of them.

What can we conclude from all this? Perhaps that there is very little that exchange rate regimes (whether flexible, fixed, or pegged) can do to prevent economic crises and recessions, and, conversely, that there is little exchange rate management can do to boost economic activity. In fact, while our "controlled experiment" interpretation of the data in Chart 1 is admittedly rather casual, it is not without some support from well-established economic theory. A number of respected scholars, including Helpman (1981) and Auernheimer (1987), have argued that the choice of exchange rate regime is not all that important for the growth performance of the economy. According to these theories, what matters most is "real" factors, not "nominal" ones. Low inflation, fiscal policies such as liberalization of trade and financial intermediation, and free-market reforms are much more important determinants of growth and economic fluctuations than is the particular monetary instrument used by the central bank to achieve (or destroy) price stability.

To see this from the perspective of a policymaker confused as to what to do, consider once more the view that Argentina would have escaped the recession if it had provided more liquidity to banks in the course of the speculative attack. Mexico did exactly that, yet its recession was as intense as Argentina's. Likewise, consider the advice, heard equally often, that Mexico's road to recovery would be smoother and faster if it were to adopt a currency-board system like Argentina's. Mexico, with its flexible exchange rate, is growing at about the same pace as Argentina with

its fixed exchange rate. Meanwhile, doomsayers in the flexible exchange rate camp believed that Argentina could not possibly recover from the recession unless it adopted a flexible exchange rate regime. Yet, Argentina is growing almost as fast, if not faster, than flexible exchange rate Mexico. In each case, the dynamics of output, as predicted by theory, seems to have been invariant to the choice of exchange rate regime.

On these grounds, the recent experiences of Argentina and Mexico (and of Southeast Asian countries, for readers familiar with the crisis triggered by the devaluation of the Thai baht beginning July 2 of this year) suggest to policymakers that speculative attacks, with or without devaluations, will come and go and that exchange rate management may do little about them. Policymakers might be better off, therefore, concentrating their energies in controlling "real" factors rather than in experimenting with different varieties of monetary voodoo. Doing the right things about real factors—sound fiscal policies, low inflation, free-market reforms, free trade, free and strong financial systems—will, in the end, be the only effective way to put speculators in retreat. That is what Chile did many years ago, and it paid off. This is what Mexico and Argentina started to do not long ago and have kept doing despite the recent crisis. There is no reason to think that their efforts will not pay off as handsomely as the same approach did in Chile.

—Carlos E. J. M. Zarazaga

References

Helpman, Elhanan (1981), "An Exploration in the Theory of Exchange-Rate Regimes," *Journal of Political Economy* 89 (October): 865–90.

Auernheimer, Leonardo (1987), "On the Outcome of Inconsistent Programs Under Exchange Rate and Monetary Rules," *Journal of Monetary Economics* 19 (March): 279–305.

Regional Update

TEXAS LED THE Eleventh District in employment growth over the past 12 months, adding wage and salary jobs at a 4.5 percent annual rate, about double the U.S. growth rate over the same period. Texas' growth was broad based. In-migration of firms and job seekers, as well as expansions of existing firms, fed construction employment. Profitable energy prices boosted employment in the oil and gas extraction industries. Continued growth in trucking and warehousing contributed to job growth of the transportation industries. Improvements in the Mexican economy added manufacturing and trade jobs.

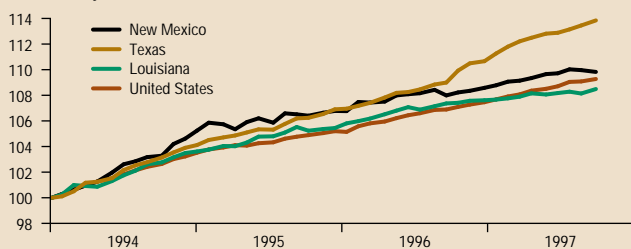
Employment growth in the Eleventh District increased in the third quarter, after slightly slower growth in the second quarter. Texas led the District states with an annualized growth rate of 3.5 percent in the third quarter, followed by Louisiana at 1.2 percent and New Mexico at less than 1 percent.

The Texas Leading Index rose strongly in September on the heels of July and August increases, signaling more of the same. However, there continue to be signs of strain from labor market tightness. Personnel supply services employment rose at a 21 percent annual rate in September, as employers continue to report difficulty hiring and retaining qualified workers. The Texas seasonally adjusted unemployment rate fell to 5.3 percent in September, tying December 1996 as the lowest unemployment rate since 1981. Excluding the border area, Texas unemployment is 4.7 percent, slightly lower than the U.S. rate in September. Some business contacts report accelerated growth of service sector salaries and inability to meet demand due to insufficient labor resources. However, widespread price increases have not yet occurred as a result of these pressures.

—Sheila Dolmas

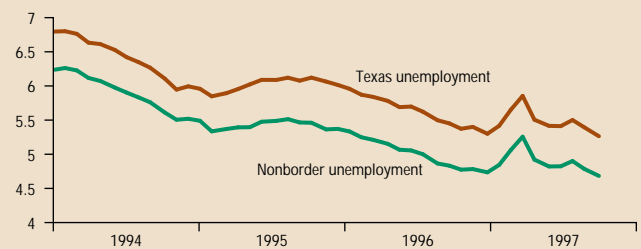
Total Nonfarm Employment

Index, January 1994 = 100



Unemployment

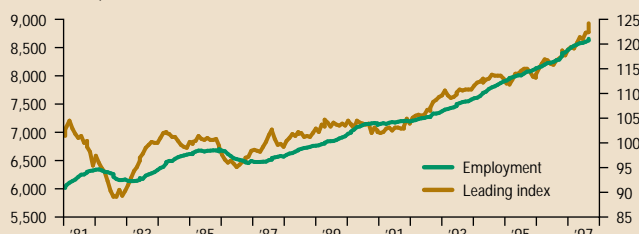
Percent



Texas Leading Index and Nonfarm Employment

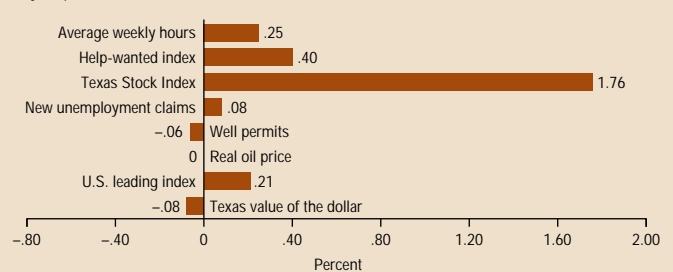
Thousands of persons

Index, 1987 = 100



Net Contributions of Components to Change in Leading Index

July–September 1997



Regional Economic Indicators

Texas employment*

Total nonfarm employment*

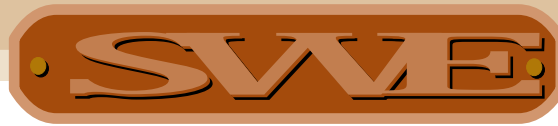
	Texas Leading Index	TIPI total	Texas employment*				Private service-producing	Total nonfarm employment*		
			Mining	Construction	Manufacturing	Government		Texas	Louisiana	New Mexico
9/97	124.2	127.6	165.6	467.7	1,083.8	1,476.6	5,462.3	8,656.0	1,834.2	706.5
8/97	122.4	127.3	165.4	465.9	1,082.4	1,473.7	5,438.7	8,626.1	1,828.3	707.4
7/97	122.3	127.3	165.7	463.9	1,078.7	1,468.2	5,426.2	8,602.7	1,830.7	707.8
6/97	121.0	127.0	164.7	464.9	1,078.2	1,467.8	5,407.0	8,582.6	1,828.9	705.8
5/97	121.4	125.5	163.8	463.2	1,077.6	1,471.6	5,401.2	8,577.4	1,827.0	705.4
4/97	120.2	124.7	163.6	458.1	1,076.4	1,470.0	5,384.8	8,552.9	1,828.5	703.4
3/97	119.1	124.6	163.0	455.1	1,073.5	1,468.8	5,371.4	8,531.8	1,824.1	702.1
2/97	119.4	124.1	162.6	455.8	1,070.1	1,467.2	5,344.6	8,500.3	1,821.9	701.6
1/97	118.9	124.3	161.5	446.9	1,067.4	1,466.7	5,317.5	8,460.0	1,820.3	699.8
12/96	117.7	124.0	159.3	444.2	1,066.1	1,464.8	5,279.5	8,413.9	1,819.4	698.5
11/96	118.7	123.8	158.8	445.7	1,065.4	1,460.3	5,270.9	8,401.1	1,818.7	697.0
10/96	117.6	123.3	157.9	442.6	1,061.7	1,456.3	5,239.4	8,357.9	1,816.0	696.2

* in thousands

Further Information on the Data

For more information on employment data, see "Reassessing Texas Employment Growth" (*Southwest Economy*, July/August 1993). For TIPI, see "The Texas Industrial Production Index" (Dallas Fed *Economic Review*, November 1989). For the Texas Leading Index and its components, see "The Texas Index of Leading Indicators: A Revision and Further Evaluation" (Dallas Fed *Economic Review*, July 1990).

Online economic data and articles are available on the Dallas Fed's Internet Web site, www.dallasfed.org.



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Has Long-Run Profitability Risen in the 1990s? by John V. Duca

An analysis of the recent rebound in nonfinancial corporate profitability, as measured by after-tax profits as a share of output.

Intellectual Property Rights and Product Effectiveness by Stephen P. A. Brown and William C. Gruben

Recent economic literature concludes that an invention-importing country, where domestic invention is scarce or nonexistent, may reduce its welfare and, in some cases, world welfare, by protecting intellectual property developed elsewhere. The authors use economic theory to show that such a conclusion may not be fully warranted for products such as antibiotics and pesticides, whose effectiveness diminishes with cumulative use.

Is the Business Cycle of Argentina "Different"? by Finn E. Kydland and Carlos E. J. M. Zarazaga

The authors present business-cycle facts for Argentina, following as closely as possible the empirical methodology and statistics other studies have used to characterize U.S. and European business cycles.



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