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The Changing Value of Higher Education

". . . the heralded decline in the economic value of higher education in the United States is not a unique North American phenomenon, but rather a general development throughout the developed world," according to NBER Research Associate, **Richard B. Freeman** in *Working Paper No. 820,* **The Changing Economic Value of Higher Education in Developed Economies.** Examining data for a dozen countries on earnings, unemployment, and occupations of college graduates, Freeman suggests that the widespread decline of the 1960s and 1970s in the premium to the educated reflects a shift in the market for college graduates resulting from the growth of college and university systems in a number of countries.

Freeman looks first at wages of college graduates relative to nongraduates. In the United States, the relative advantage of college graduates declined from 1969–74 and remained fairly stable thereafter. The drop in relative income was largest for younger workers and for those with doctoral degrees.

In Australia (1969–79), there was a similar trend, except that older graduates suffered relatively more than younger graduates. The relative earnings of college graduates in Canada also fell from 1969–78, but the 24–34-year-olds fared better than their American or Australian counterparts.

In the United Kingdom, there was a uniform and large drop in the relative earnings of college graduates between 1968 and 1974, then a modest rise in their relative position through 1978. The pattern of decline in Japan, beginning in the mid-1950s and continuing through the early 1970s, was of a similar magnitude to that of the English-speaking countries. As in the United States, United Kingdom, and Canada, the younger Japanese suffered relatively more than the older graduates.

For France in the period 1969–79, Freeman observes a marked fall in the income advantage of executives and managers over employees and manual workers, and a slightly less dramatic drop in the earnings advantage of technical workers over manual workers. Italian and Danish college graduates also experienced a decline in their relative earnings in the 1970s. Finally, German statistics on the wages of technical employees with various qualifications show a sizable drop for the highest relative to the lowest group, beginning in the 1960s and continuing into the 1970s.

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In summary, the relative earnings of highly educated workers, or those in occupations dominated by the highly educated, fell sharply in the 1970s in English-speaking countries, Japan, and Western Europe. In most of the countries, "the bulk of the decline occurred in the early part of the decade, with the position of graduates more or less stabilizing towards the end of the 1970s," Freeman notes.

What happened to other indicators of the relative position of college graduates, such as unemployment,

during the decade? Freeman observes that, in the United States, the proportion of new college graduates who sought and obtained professional employment dropped from 73 percent over the 1962–68 period to 44 percent in 1969–79. The evidence suggests a similar pattern may have occurred for Canada, with the unemployment rate for college graduates rising from less than 2 percent to 4.1 percent in 1971, moderating to 3.4 percent in 1977.

In the United Kingdom, the number of June college graduates who were still seeking work in December was 3 percent in 1962 and 11 percent in 1979. In Japan, the proportion of college graduates in professional and technical jobs dropped in 1960–79; in Belgium, the proportion of unemployment compensation recipients with university educations tripled from 1971–79.

From 1975–79, Danish graduates of arts and sciences programs, and academics, had higher-than-average unemployment. Over the entire decade of the 1970s, Italian university graduates more than tripled their share of unemployment (0.7 to 2.6 percent), French professionals and executives were increasingly unemployed, and German scientific and technical workers experienced an 80 percent increase in unemployment. Freeman notes, though, that unemployment among nongraduates increased more than graduate unemployment throughout these countries.

One reason for the deteriorating position of college graduates in the labor market of the 1970s may have been their increased supply. The baby-boom generation's sheer numbers, coupled with an increasing trend toward enrollment in higher education, led to a doubling, or tripling in some countries, of the number of persons entering universities. In the United States, the ratio of college graduates to high school graduates in the 25–34 age group rose 50 percent from 1970–76; Japan also experienced a 50 percent increase in the ratio of new college graduates to new high school graduates over roughly that same period. As the supply of college graduates increased, so did the demand for them in the labor market, but at declining rates over time, requiring a reduction in the premium for the highly educated workers to obtain employment.

Moreover, the labor market's willingness to shift to less educated workers exceeded young people's willingness to forgo a college education; that fact, coupled with a supply of college graduates that exceeded the demand for them, potentially explains the observed decline in the premium to higher education.

Freeman considers another explanation for the declining premium: that trade unions and governments worked to maintain the real position of manual workers in the 1970s, a period of slow growth of real earnings worldwide. However, he does not find convincing evidence for that theory.

Based on his analysis of the 1970s, Freeman speculates in his conclusion that "the 1980s will see a better market for graduates but not a return of the pre-1970s economic advantage."

Issues in the Taxation of Foreign Source Income

The international operations of U.S. corporations account for one-fifth of their total profits and one-fourth of their total investments. How these operations are measured and taxed is thus crucial both to the firms and to the U.S. government. In *NBER Working Paper No. 798,* **Issues in the Taxation of Foreign Source Income, Daniel J. Frisch** compares the current tax treatment of U.S. multinational corporations with nine alternative plans and finds that shifting from a foreign tax credit to a deduction for foreign taxes paid would have the greatest effect on U.S. tax revenues.

Frisch uses 1972 as the base year for his study. Then, as now, multinationals were allowed a foreign tax credit against their U.S. corporate tax liability. There is an *overall limitation* on the amount of that credit, equal to 46 percent of foreign income. That is, if a firm operates in more than one foreign country, it pools the foreign taxes it pays. If the sum of those taxes is less than 46 percent, the foreign tax credit against taxes is set at 46 percent of foreign income.

For U.S. tax purposes, the firm's income is measured at "arm's length"; that is, as if domestic and foreign activities were completely independent and could be measured (or estimated) separately. Moreover, the U.S. corporate tax law has a deferral provision: profits earned abroad by foreign subsidiaries of U.S. firms are included in taxable income only if they are repatriated to the parent country as dividends. If the profits are retained abroad, they are not included in worldwide income (unless or until the subsidiary is dissolved). According to Frisch, "repealing deferral would have increased taxable foreign source income of U.S. firms by 56 percent," in 1972 figures.

Frisch considers nine alternatives to the 1972 system. First, the foreign tax credit could be subject to a per-country (rather than overall) limitation: a separate foreign tax credit for each country where the firm does business would be calculated, and their sum used to offset the U.S. tax liability.

Second, a deduction for foreign taxes paid could replace the current credit system. Third, the U.S. government could consider a territorial system: there would be no attempt to collect taxes on income earned from activities abroad.

Instead of deferring foreign profits until repatriated, the IRS could tax firms as if 100 percent of their foreign profits were repatriated. A fifth alternative would be to consolidate foreign subsidiaries with the U.S. parent for tax purposes.

Instead of the arm's-length system of measuring income, firms could use a shares-allocation basis. They would estimate what portion of their overall activities were foreign and apply that percentage to their

total income each year. The shares-allocation system might be adopted worldwide, or used only by the United States.

Finally, Frisch considers as alternatives the IRS "861 regulations" governing the treatment of R and D expenses and other "head-office" charges in the foreign tax credit. They were adopted in 1977, and the baseline year for his study was 1972.

Frisch examines each of the alternatives under two sets of assumptions: (1) as though there were no change in the firms' behavior; and (2) assuming a behavioral response by the firms to the tax change, in their location of investment decisions. His results are expressed relative to the 1972 figures.

Imposing per-country limitations on the foreign tax credit has little effect if the firms do not alter their behavior: foreign tax credits are reduced, and U.S. taxes increase by $70 million. With a behavioral response built in, marginal tax rates faced by the firms will be unchanged or increased, and the total tax liabilities of the firms increase $68 million.

Eliminating the deferral provision by the consolidation (of subsidiaries) method would raise U.S. tax revenues by $344 million, or total tax payments by the firm by $257 million with a behavioral response. The complete payout method would increase U.S. tax revenues by $354 million, or total tax payments by the firm by $249 million, assuming a behavioral response.

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A shift to the territorial approach to taxing corporate income could cause a drop in U.S. taxes of $815 million. If the firm changes its behavior in relation to the new approach, U.S. tax revenues will still fall by this amount, and foreign tax payments will rise by $40 million.

"Dismantling the foreign tax credit system in favor of a deduction would be an important change in U.S. tax policy toward international income," Frisch finds. Without a behavioral response, U.S. tax revenues would rise $1.366 billion; with a response by firms, the U.S. would receive an additional $1.314 billion and total tax payments would rise $1.146 billion.

A worldwide move to shares allocation of income could cause U.S. tax receipts to increase by $2.387 billion and foreign tax receipts to fall by $1.842 billion. If firms adapt their behavior accordingly, U.S. tax receipts increase slightly less, $2.353 billion, and foreign tax receipts fall slightly more, by $1.845 billion.

If only the United States adopted shares allocation, and there were no behavioral response by firms, U.S. tax liabilities would rise $2.059 billion. "In fact," Frisch states, "this reform would cause a larger change in total tax liabilities of the firms than any other reform simulated." Assuming a behavioral response, U.S. tax revenues would rise $1.37 billion.

A shift to the IRS 861 regulations would cause an increase of total tax liabilities ranging from $755 million to $921 million, depending upon the particular regulation in use and the firm's response to it.

In sum, if no change in firm behavior is assumed, the largest increases in tax revenues are produced by a deduction for foreign taxes paid and a shift to the shares-allocation approach. If the latter is adopted worldwide, the distribution of tax revenues would be affected more than the total burden on firms.

Taking behavioral responses into account, Frisch concludes that "the nine reform proposals can change investment incentives in complex ways. The result is that overseas investments of U.S. firms can respond by large amounts. Substituting a deduction for the foreign tax credit and instituting a shares-allocation scheme without coordination would have the largest effects."

Inflation and Corporate Equities

A new study of the effect of inflation on stock prices, *NBER Working Paper No. 824,* by **Lawrence H. Summers,** indicates that the interaction of inflation and corporate taxes was responsible for about half of the underperformance of the stock market during the 1970s. The mean real return on stocks from 1926 through 1978 was 8.7 percent, but the rate of return from 1970 through 1978 was minus 0.001 percent a year. Summers's calculations, reported in **Inflation and the Valuation of Corporate Equities,** suggest that the effect of inflation on corporate tax liabilities accounted for roughly 40 percentage points of the 80-point shortfall in stock returns during the 1970–78 period.

The negative relationship between stock-market returns and both expected and unexpected inflation has been widely documented in recent years. Those findings have directly contradicted conventional financial theory, which holds that stocks should be an effective hedge against inflation because they represent claims on real assets. Indeed, higher inflation should cause stock prices to rise in real terms to the extent that corporations are net debtors. The actual negative relationship between inflation and stock returns raises questions about the efficiency of the market, since it appears that investors are not responding rationally to underlying economic realities.

In his study, Summers contrasts two competing explanations of the inflation-stock-return phenomenon by examining the performances of 1200 firms over the 16 years from 1963 through 1978. This cross-sectional approach is important because the two theories give opposing predictions about which companies should suffer most from rising inflation.

One theory, the "inflation-illusion" hypothesis, holds that investors cannot see through nominal accounting statements to real results. It depends crucially on the assumption that investors fail to recognize that only real interest costs, and not nominal interest payments, should be treated as expenses in determining real profits. Thus, it predicts that unlevered companies would outperform highly levered ones in a period of rising inflation. It also suggests that companies using FIFO inventory accounting (which gives rise to phantom inventory profits) and ones that have large depreciation charges (which decline in real terms as inflation heats up) would do comparatively better when inflation and expectations of inflation are on the rise.

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The second theory, the "tax-effects" hypothesis, holds that inflation hurts stock returns because it raises the effective tax rate on real profits. The tax-effects theory also predicts that the relative performances of different companies will be exactly opposite of what the inflation-illusion theory implies. Companies on FIFO will fare worse than others because they have to pay taxes on the phantom profits. Similarly, companies with large depreciation write-offs do badly because the real value of the deductions falls. And highly leveraged companies should do comparatively well because the real value of their debt falls.

Summers bases his comparison of the two hypotheses on the assumption that the value of a firm represents the present value of its future dividends. Returns in any given period have two components—the rate of return required by investors, and any change in the value of the firm that results from changes in expectations about future returns. The principal effect of inflation on values and returns should depend on revisions in expectations about future inflation, rather than unexpected inflation in the current period.

Summers first estimates the effect of a 1-percentage-point increase in long-run expected inflation on the 30 Dow industrial companies, based on the impacts of FIFO, historic-cost depreciation, and the deduction of nominal interest payments. Under the tax-effects hypothesis, the results are mostly negative, ranging from a 10.6 percent decline in the value of Chrysler to a 9.7 percent increase in the value of International Harvester. The inflation-illusion theory indicates that the values of nearly all the Dow companies would rise, not fall.

In examining the relative results for the 1200 companies over the 1963–78 period, Summers uses five different estimates of expected inflation. Under all five measures of expectations of inflation, firms using FIFO suffer from an increase in anticipated inflation. The sizes of the coefficients indicate that the market fully recognizes the effects of FIFO on future taxes. Estimates of the coefficients on net debt are all strongly positive, which also is consistent with the tax-effects theory and counter to the inflation-illusion theory.

The one ambiguous result involves depreciation. For the entire 16-year period, the coefficients for depreciation are negative under some measures of anticipated inflation, but positive under others. However, the coefficients become uniformly negative during the 1970s. Summers suspects that investors gradually became more attuned to the impact of inflation on depreciation allowances as inflation became more of a problem. AE

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