Commentaries

Shyam Sunder

Spavins and LeGrange agree that there is a need for better and more comparable empirical work to determine who has made how much money and whether or not it is too much. If we can assume that the income and the cash flows reported by various firms in their financial statements can be taken at their face value, the only remaining question is whether the money made by pipeline companies is too much in terms of some fair return standard.

How is that standard to be determined? Spavins and LeGrange agree that a return standard should be specified in terms of the total capital invested—that is, whether it is the equity capital or borrowed capital, the amount of money that a firm has made should be determined as a proportion of the total investment of the firm.

In both papers, the return on total capital has been calculated, and Spavins' results are somewhat higher. The rate of return for the pipeline companies, according to Spavins, is 13 percent, compared with a median of 10.8 percent for other industries. According to Mr. LeGrange, the average rate of return for pipeline companies is 9.5 percent, compared with an overall industry average of 9.9 percent—figures that are much closer together.

On the face of it, one might conclude that there is some discrepancy in the data; fortunately, both papers have been based on the same data, and it is possible to reconcile the two numbers. I do not see any basic difference in these numbers.

The key, of course, is the adjustment for leverage. LeGrange computed his rates of return after taking out the effect of leverage; he added to the net income available to shareholders the interest paid on · borrowed capital. That interest payment was adjusted for tax savings,

so he has used net income plus after-tax interest, divided by total capital invested as the appropriate rate. This rate has taken out the effect of leverage and reduced all the data of all firms within the pipeline industry and across the industries to a comparable basis after adjusting it for differences in leverage.

Spavins has not carried out that adjustment in his paper. He has chosen to compute the return on total capital without carrying out the leverage adjustment. The effect of the leverage adjustment is not really very important because a comparison of a fair return standard across firms and across industries will need an appropriate adjustment for risk anyway.

There are two main components of risk we have to to consider. One part of the risk is the business risk of the company—the nature of the business the firm is in. The second part of the risk is the leverage. If we compare LeGrange's numbers, we have to worry only about the business risk of the firm because the leverage risk has already been taken out of those numbers. When we compare the numbers prepared by Spavins, we have to consider the total risk of these firms, which combines both the business risk and the leverage risk.

The basic question, then, is, What is to be regarded as a fair return on an industry whose risk is different from the risk of others?

LeGrange has provided some evidence on comparison of one measure—one empirical measure of risk—between the oil pipeline industry and the utility industry. He has shown that that particular measure of risk is much higher for the pipeline industry. The measure is a variance for returns on total investment. It is much higher for the pipeline industry than it is for the utility industry.

Now, one might quibble over this measure of risk versus another measure of risk, but that is really no problem. We can work with three or four or five different measures of risk and see whether, after risk adjustments have been made, pipelines have made more money or less money than other industries.

The question is, How should the risk adjustment be made? I suppose the best way of doing this would be to compute the rate of return for various industries, then compute the risk of various industries, and plot them on a chart. In the relationships across industries between risk and return, we could see where the pipeline industry stands. If the oil pipeline industries stand out either on the high side or on the low side, then we will have some ground for saying that after adjustment for risk— that is, after risk differentials have been considered—this industry is making too much or too little money.

Unfortunately, that part of the analysis has not been carried out in either paper. LeGrange's paper does show that this particular measure of risk is higher for the oil pipeline industry, and the rates of return for the oil pipeline industry are higher than for the utilities; but how much higher should the return be for this kind of differential and risk? That question can be answered by either graphical or regression analysis of risk and return across industries. I don't really see much of a problem in doing that analysis.

On the other hand, if we use the measure of returns used by Spavins, we have to use the risk measure appropriate to that rate of return, and, of course, that rate of return is much more volatile for the pipeline industry than is LeGrange's rate of return. The fact that they have used somewhat different measures of rate of return will not cause any problems once the appropriate adjustment for risk has been made.

A second problem in comparing the rate of return across firms and across industries is that all these data and analyses are based on accounting rates of return. Now, of course, we know that businessmen do not make their investment decisions on the basis of accounting rates of return. They would probably carry out discounted present value analysis, compute the present value of the investment or the economic (internal) rate of return.

Table 9 of Spavins' paper gives the accounting rates of return for more than seventy firms. The firms at the top of this list with very high rates of return tend to be the firms that are older and relatively well established. The firms at the bottom of the list with very low rates of return are the ones that are relatively new. They are all small.

Why is that so? Of course, this is largely a result of the way accounting rates of return behave, because once the firm has matured, its properties have depreciated by a considerable amount so the denominator in calculating the rate of return is smaller and the rate of return is higher.

This arbitrary effect of the maturity of the firm on the rate of return can be eliminated if the comparisons are made on the basis of the internal rate of return of these firms. Internal rate of return requires additional data about the current value of the fixed assets of the firm which usually are not available. Fortunately for the oil pipelines, we do have those data available. And for the past two years, since the SEC imposed additional disclosure requirements on replacement value of fixed assets and inventories, we do have those data available for at least the larger U.S. corporations also.

Those data could form the basis of comparing the internal rate of return of the pipeline firms with the other industry firms. If such a

comparison were made, we could probably settle the argument about who has made how much money in a more objective manner.

David J. Teece

As I see it, there are basically three issues in these two papers where there is some level of either explicit or implicit disagreement. One is the regulated rate of return—Is it too high, or is it too low, or, basically, are economic rents being captured through the existing tariff structure? That is one central issue. Another issue is the pipeline undersizing issue which has already been discussed. And there is a third issue that I want to address briefly, also implicit in Spavins's paper, namely the role of vertical integration. In particular, to what extent is vertical integration a device to circumvent regulation and therefore does it have pernicious effects.

Let's briefly turn to the rate of return discussion. Flexner drew a monopoly power explanation from those numbers. I did not find Spavins making that claim in his paper, nor do I think he would want to make one without first seeing if risk could explain the difference that exists.

It is also fair to point out that there is greater competition in pipelines than in other utilities, and that entry is not regulated, and, of course, that affects the level of business risk. There appears to be greater business risk in the pipeline industry than in other utilities.

Another issue relates to vertical integration. Mr. Spavins is questioning whether the regulated return from pipelines is too high, but one might also question whether it is too low. Consider the fact that many pipelines are owned by refiners. The explanation I heard this morning from some participants was that the reason for vertical integration into pipelines is that the major companies do not want to share the monopoly rents associated with pipeline ownership, and so will deny business to independents. An alternative hypothesis is that at existing regulated rates of return, there is insufficient incentive for entry by non-vertically-integrated firms. If the regulated rate of return was below the competitive level, then one way a pipeline could be made viable is by providing some kind of throughput guarantee which reduces the risk for the pipeline company. In this regard, examining the earnings variability of pipelines will understate risk if throughput guarantees are in place, since some of the risk is being carried by the throughput provider. Another way in which pipelines could be made viable in this circumstance is by directly leaning the pipeline project against the financial structure of the parent through loan guarantees and the like. However,