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Defining a Unitary Business

Can California tax corporate income commonly deemed to be earned in another country? Yes, says the U.S. Supreme Court in *Container Corporation* v. *Franchise Tax Board,* if that income is generated by affiliated firms engaged in a "unitary business" operating in both nations. In *NBER Working Paper No. 1125,* **Defining a Unitary Business: An Economist's View,** Research Associate **Charles E. McLure, Jr.,** discusses exactly what constitutes a unitary business and concludes by framing a three-tier test for individual cases.

If a business involves firms operating in a number of states, its total income must be divided somehow among the states that may tax it. States commonly apply formulas to apportion corporate income among themselves. But an important question remains: the income of what? Simple separate accounting could be applied to isolate the income of each firm; some states use this method because they respect the legal distinction between separately incorporated firms. But separate accounting does not recognize that some parts of the business may depend on and contribute to other parts. Where firms are highly interdependent, they must be treated as a single unitary business. In extreme cases, such as *Container,* firms incorporated in foreign countries and operating totally outside the United States are combined with their domestic affiliates. Thus, says McLure, "a unitary business exists when separate accounting cannot satisfactorily isolate the profits of individual firms."

What sort of economic interrelations might link two or more affiliated firms so closely that separate accounting could not divide their joint income satisfactorily? If there is a substantial volume of transactions among the firms, they may be able to manipulate the prices, fees, and charges for the goods and services they transfer in such a way that more income is attributed to states with low (or no) taxes and less income to states with high taxes. Particularly if one or more of the products being transferred does not have an independently verifiable price (also called an arm's-length price), an accurate audit of the firms' transfer prices is impossible. In such a case, the states involved would have to consider taxing a portion of the combined income of the affiliated firms. "Unitary combination is generally appropriate," says McLure, "if the volume of interaffiliate transactions in goods and services with no readily determined value is substantial." Finally, if savings in transactions costs are possible or if economies in production can be achieved by buying from an affiliated firm, businesses are likely to take advantage of them. Where this occurs it may be conceptually impossible to determine the separate incomes of the firms. A finding of a unitary business is thus appropriate if there is complete vertical integration among firms. That is, "economic interdependence is so great that even if uncontrolled prices exist, their use may not adequately reflect the contributions of the component parts of the entire unitary business."

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Economic unity is not limited to cases in which goods and services are transferred among affiliated firms, as the Court noted in *Container.* Separate accounting may be inadequate where there is hori-

zontal interdependence; that is, where there are interrelations between affiliated firms but one is *not* the customer of the other. Horizontal interdependence may involve the conjunction of economies of scale or scope and the difficulties of transferring proprietary information. McLure tells us that economies of scope "exist when the cost of producing two or more products jointly is less than the sum of the costs of producing them separately. They arise from the sharing or joint use of inputs. . . ." An important example is a technological breakthrough that has a variety of applications. Since it is often difficult to communicate the value of information without divulging the information itself, new technologies are often kept within groups of affiliated firms, rather than being marketed. Where this happens it will generally be impossible to isolate the incomes of firms sharing the information.

Horizontal interdependence may also be a by-product of closely related demand for firms' products, such as for flashlights and batteries. This type of interdependence is often consciously nurtured via advertising that builds brand consciousness. Or, firms may produce products that are good substitutes, as in the case of cartels. Firms may also be horizontally related if they are able to share risks, thus allowing their total expected income to be greater than the sum of its individual components would be, for a given amount of risk taking.

The first test for a unitary business that McLure suggests is that of common control, or absence of autonomy. "Common ownership is usually, but not always, indicative of common control," he notes. The autonomy of affiliated firms, or divisions within firms, to respond to market prices is crucial. "Either centralization of important decisions or significant adjustments in pricing signals should thus be considered prima facie evidence that a unitary business exists."

If affiliated firms are commonly controlled, McLure would move to the second test: forms of economic interdependence that make isolation of profits of affiliated firms impossible. Such interdependence includes manipulation of transfer pricing, vertical integration, important shared costs, and economies of scale and scope.

The third and final test is substantiality. McLure elaborates, "For shared costs to justify a finding of unity, the costs must be substantial enough that how they are allocated between firms could seriously affect the calculation of profits of the various corporate entities sharing them." The same principle applies to horizontal interdependence and to intercorporate transactions. "If transactions between affiliated firms are so insignificant or the conceivable range of transfer prices is so small that no imaginable amount of manipulation could seriously affect the division of income via separate accounting, unitary combination should not be required," he concludes.

Right-to-Work Laws and Unionization

It is often argued that the lower extent of unionization in the South in the United States is the result of right-to-work laws prevalent in that region. These laws prevent unions from enforcing contracts that require workers to join or financially support a labor union as a condition of employment. In *NBER Working Paper No. 1136,* **Right-to-Work Laws and the Extent of Unionization,** Research Associate **Henry S. Farber** finds that isn't the case. Rather, his research supports the thesis that these laws and the low degree of unionization merely reflect preexisting preferences against unions. Workers apparently prefer nonunion jobs.

As of 1976, right-to-work laws were in force in 19 states nationwide, including 10 of the 16 southern states (plus the District of Columbia). If one looks at the proportion of the workforce unionized in a sample of (nonmanagerial and nonsales) workers outside the construction industry, it is clear that there is a lower level of unionization in the South (19 percent) than outside the South (35 percent) independent of the presence or absence of right-to-work laws. It is also clear that the extent of unionization is lower in right-to-work states (19 percent) than in non-right-to-work states (35 percent) independent of the region. After accounting for the presence or absence of right-to-work laws, the figures show further that in states *with* right-to-work laws, the extent of unionization is lower in the southern states (16 percent) than in the nonsouthern states (25 percent). A similar result emerges in non-right-to-work states. This suggests, says Farber, that while right-to-work laws may account for part of the South's lower extent of unionization, there must be other factors within that region that contribute to that region's lower extent of unionization.

Farber tests three possible explanations for the correlation between these laws and lower unionization. He finds no evidence for the first of these: that right-to-work laws cause the union a "free rider" problem that handicaps their ability to sign up members. A "free rider" works in a unionized facility and gets the benefits of union bargaining and representation but does not join the union, pay dues, nor otherwise support the union. So, this thesis continues, unions will have less incentive and financial resources to attempt to organize some workplaces in right-to-work states.

Nor does he find much support for a second related explanation: that the right-to-work laws weaken

unions by preventing them from requiring all workers on union jobs to become members. These nonmembers are not subject to union discipline and thus the union cannot be sure they will participate in a strike or other job action. So the union's bargaining position is weakened and its attraction to workers lessened.

His evidence, however, does support a third explanation: that these laws exist only where there is public and political sentiment (or taste) unfavorable to unionization. So there is less worker demand for union representation, with the laws having no independent effect.

To choose among these explanations, Farber looks at several factors. First, he separates variation in the extent of unionization into variation in the desire for union representation and variation in the ability of interested workers to find union jobs. He finds that, taking account of regional differences, workers in right-to-work states are less likely to desire a union job. But after accounting for right-to-work laws, there is no difference by region in a worker's desire for a union job.

Further, after accounting for right-to-work laws, workers in the South who desire union jobs are less likely than similar workers outside the South to be able to find them. But after controlling for region, workers who desire union jobs in states with right-to-work laws do not differ from similar workers in other states in their ability to find union jobs.

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The final factor Farber examines is the difference between union and nonunion wages. He finds that this difference is about 3 percent larger in right-to-work states than elsewhere. Farber concludes from all of this evidence that, while the demand for union jobs is lower in right-to-work states, the supply of union jobs relative to demand is no more constrained in right-to-work states than elsewhere. He finds that "there is no causal link between right-to-work laws and the extent of unionization" and that the lower exent of unionization in right-to-work states merely reflects preferences against union representation. This leaves unresolved the question of why the extent of unionization is lower in the South, but the implication is, Farber writes, that "union organization is more difficult and expensive [in the South] than elsewhere," perhaps because of greater employer resistance or other factors. DF

Determination of Exchange Rates

New research into exchange rate determination by NBER Research Associate **William H. Branson** strongly suggests that policy reactions by central banks have important short-run effects. In *NBER Working Paper No. 1135,* **A Model of Exchange Rate Determination with Policy Reaction: Evidence from the Monthly Data,** Branson presents findings that are consistent with the popular notion that central banks use foreign exchange intervention to "lean against the wind" when they believe rates are changing too swiftly, or in other ways that they find uncongenial.

Branson's data show that the types of policy responses vary from one country to another. In the United States, for instance, the Federal Reserve sets monetary policy with domestic considerations foremost. The market, in turn, looks to variations in money growth and interest rates and sets the exchange rate in reaction to those changes. The Fed occasionally tries to dampen abrupt exchange rate movements by intervening in the foreign exchange market. The intervention, however, ordinarily is "sterilized" with offsetting open-market transactions so that it does not alter money growth. The Japanese behave in much the same way, setting monetary policy mainly in line with domestic goals. As in the United States, this moves the exchange rate, but the Japanese attempt to neutralize this effect through sterilized intervention more than the United States does.

Britain and Germany, in contrast, behave much differently. Movements in the dollar and yen rates, caused partly by fundamentals and partly by policy, are mirrored instantly in the pound and deutschemark rates. This brings defensive policy reactions from the British and Germans, in the forms of interest rate changes and largely sterilized intervention in foreign exchange. In other words, Branson's data suggest a scenario often complained of in Europe—domestically oriented policies in the United States and Japan are transmitted to Britain and Germany via the exchange rate and force modifications in their policies.

An extensive literature developed in the 1970s on the theory of the market determination of exchange rates. However, exchange rates have not floated freely since the end of the Bretton Woods system. Central banks have regularly intervened to manage and manipulates rates. Most descriptions of exchange rate policy have been "literary," in the sense that they have not been integrated with formal theories. Branson departs from most of the past literature by incorporating policy into a theoretical model of exchange

rate determination. He then examines monthly data from the 1970s in order to draw hypotheses about policy behavior.

Branson first lays out a model of the determination of exchange rates that includes rational expectations. In the model, rates are affected by unanticipated changes in money growth, the current account balance, and relative prices. The exchange rate initially jumps in response to news about a change in one of the variables and then moves along a "saddle path" to a new equilibrium level.

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Consider the case of an unanticipated increase in money growth. If prices do not change immediately in response to the added money in the economy, the unexpected money growth causes the exchange rate to jump upward—and the currency to depreciate. The exchange rate gradually declines after the initial jump until it reaches a new equilibrium that is higher than the level before the increase in money growth. The currency appreciates, but not all the way back to its old level. Thus, the exchange rate "overshoots" and then settles back to the new equilibrium.

If prices rise proportionately with the increase in money growth, the amount of currency depreciation depends on the substitutability of money, domestic bonds, and foreign bonds. With an instant price reaction, the initial change in the exchange rate can either overshoot or undershoot the new equilibrium. When the economy experiences a real disturbance, such as a change in consumer tastes or, say, an oil discovery, the exchange rate undershoots and then moves along the saddle path.

Ample evidence exists that central banks in the United States, Japan, Britain, and Germany all try to moderate initial jumps in exchange rates by leaning against the wind. Monetary authorities basically can affect the exchange rate in two ways. If events cause a currency to depreciate, the central bank can sell domestic bonds, thereby reducing money growth and moderating the drop in the currency. Alternatively, it can sell foreign bonds. A smaller sale of foreign bonds will achieve the same result as a larger sale of domestic ones, so it is a more efficient form of intervention; it takes a smaller change in monetary policy to obtain the same result. In practice, the preferred action has been to intervene in the foreign asset market (sell foreign bonds from reserves), but to sterilize that action by simultaneously buying domestic bonds. This leaves monetary policy essentially unchanged while reducing the short-term swing in exchange rates.

If Branson's model is correct, unanticipated changes in exchange rates should be correlated with unexpected changes in money growth and/or foreign services. Branson compares unanticipated monthly changes in exchange rates with unexpected changes in money, prices, short-term interest rates, reserves, and current account balances for the four countries from 1971 through 1980. In the United States, it appears that money growth drives the exchange rate. The results for Japan suggest that money and the current account balance determine changes in the exchange rate. Japan also shows evidence of more sterilized exchange market intervention than the United States.

The variables for Britain indicate that the Bank of England alters M3 growth and interest rates in response to exchange rate fluctuations. For Germany there is a very strong correlation between the exchange rate and relative prices, but Branson concludes that it is unclear whether the exchange rate is affecting relative prices or vice-versa. A negative correlation between reserves and the exchange rate shows that Germany leans against the wind, while an insignificant correlation between reserves and money growth indicates that it, too, engages in sterilized intervention. AE

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