Debt, Folklore, and Cross-Country Differences in Financial Structure

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Germany and Japan are countries where, lore has it, companies enjoy much closer ties to banks than in countries such as the U.K. and U.S., where relationships with capital suppliers are more at arm’s length. As a result, it is argued, Japanese and German companies can borrow more and are shielded from the tyrannical short-termism of the market. Michael Porter of Harvard Business School, for instance, has suggested that organizations that do not have these relationships are at a competitive disadvantage that threatens the long-term growth of their economies.¹ But are they?

As companies increasingly compete in a global marketplace, questions such as these become important, and political efforts “to do something” become more urgent. What can academic research tell us? We start by describing why the ability to borrow more might be a source of advantage, go on to investigate whether enterprises in these countries do borrow more, and end by presenting some new evidence on whether this is a source of advantage.

THE ADVANTAGE OF DEBT

In a path-breaking article published in the late 1950s, Nobel laureates Franco Modigliani and Merton Miller demonstrated that if a company’s investment policy is taken as given, then in an ideal world—a world with no taxes, complete and credible disclosure of all information, and no transactions costs associated with raising money or going bankrupt—the extent of debt in a company’s capital structure should not affect firm value.

Before the muttering about ivory tower economists gets too loud, let us explain why this M & M “capital structure irrelevance” proposition makes sense. When a company issues “cheap” debt, say at 6%, instead of “costly” equity, with a cost of, say, 17%, the cost of financing is not simply the coupon rate the company pays on the new debt. It is also the additional rate of return demanded by existing equity investors because their equity is now riskier. And, when you factor this additional cost into the analysis, the company’s weighted average cost of financing is the same as if you issued “costly” equity instead.

There are, however, warts in the real world that may make debt financing advantageous—though to a much lesser extent than suggested by the conventional argument that debt is “cheap” and equity “costly.” Modigliani and Miller’s work helps us focus on what these are. First, changing capital structure (the mix of debt and equity) could affect the taxes a company and its investors pay and so affect its value. Second, it will affect the probability of incurring the transactions costs associated with bankruptcy, or raising new equity. And third, it can affect the company’s investment policy.

Taxes

Think of the future cash flows from the investments the company has made as a pie. The taxes the organization pays on its income and the taxes its investors pay on their personal dividend and interest income are the slice of the pie that belongs to the government. Firm value is the rest.

The government, in its wisdom, has declared that certain kinds of claims issued by the business are tax-advantaged. For example, debt is tax-advantaged at the corporate level in the U.S. because interest is paid out of before-tax earnings while dividends are paid out of after-tax earnings. Even after accounting

for the taxes that investors pay on their personal income, debt is typically tax-advantaged with respect to equity in the G-7 countries (with the possible exception of Germany). The ability to borrow more reduces the slice the government gets and acts, in effect, as a tax break.

**Transactions Costs**

As a company loads up on debt, the tax benefits of additional debt decrease—since there is less and less additional income to shield from the government—while the costs increase. The costs are generally thought of as the costs of bankruptcy.

Note that the event of bankruptcy itself does not affect firm value. In an ideal world, if a company cannot pay its debts, the equity holders simply give up their claims and transfer the keys to the premises to the debt holders. This should not affect the value of the company’s assets or, what is the same thing, the value of its debt and equity.

In practice, however, bankruptcy can hurt asset values. Lawyers, of course, take their cut. More important, customers stay away because of concerns that the enterprise might skimp on the quality of its products, assets are sold at fire-sale prices, and talented employees leave for more secure organizations. For these reasons, too much debt is bad for companies that rely on intangible or specialized assets such as customer confidence, ideas, or people.

In addition, it is useful to preserve the ability to borrow because there are transactions costs of raising equity at short notice. Since equity is the residual claim, it is much more sensitive than debt to changes in firm value. As a result, when organizations want to raise equity, the market is often not ready for it. Investors typically view equity issuances as “bad news”; the announcement of an issue is taken as a sign that management is not confident about the enterprise’s ability to service additional debt, or that it intends to share impending losses with new investors.

Debt, as a fixed claim, is much less sensitive to impending bad news about company value and is thus much easier to issue without sending an adverse signal. This is another reason why companies do not borrow as much as warranted by the tax advantage of debt: they are preserving financial “slack”—the ability to borrow so as to take advantage of unexpected investment opportunities or respond to unexpected competitive threats.

**Investment Policy**

Modigliani and Miller take the investment policy of the company as given. Too much debt, however, can distort investments and reduce firm value. One need look no further than the savings and loan crisis in the U.S. or Maxwell’s travails in the U.K. to understand that when an organization is on the verge of defaulting, owners or managers may want to gamble through unprofitable but risky investments. Managers have nothing to lose because, if they do nothing, they get fired anyway. Another possible distortion is that managers may simply stop investing when faced with too much debt since the revenues from investment will go largely to pay off the debt while the costs of raising the funding are borne by all claimants, especially equity.

Too little debt can also be bad. In mature industries, managers who are not disciplined by the need to service debt can fritter away excess cash on unprofitable investments. The purpose of many of the leveraged buyouts in the U.S. in the 1980s was to squeeze cash out of fat, complacent companies with limited opportunities for profitable growth.

**REEXAMINING THE FOLKLORE**

The conventional wisdom says that enterprises in “bank-oriented” economies, such as Germany and Japan, enjoy close ties with financial institutions. These institutions stand by the companies when they are close to financial distress, and they also exercise some control over investment policy to make sure it does not go awry. As a result, the costs associated with debt—of bankruptcy and distorted investment—fall away while the benefits—the tax advantage and the lower sensitivity to firm value—remain. Companies in these countries can allegedly borrow more, and add more value by doing so, thus enjoying a competitive advantage over organizations in more market-oriented countries such as the U.K. and the U.S.

Let us now look at the data and see how much of this lore is true.

**What Is Debt in Practice?**

We face an immediate problem: all debt is not the same. Short-term debt is much more onerous to service than long-term debt, since both interest and principal have to be repaid in the short run (recall
how the short-term Tesobonos precipitated the Mexican “Tequila” crisis in 1994). Secured lenders have much less incentive to bail out a business than unsecured lenders. Creditor rights are not the same in all countries, and this makes comparisons between countries extremely difficult.

Consider the balance sheet (shown in Table 1) of a representative large German enterprise, that of “Deutschland AG” (which is constructed using the averages for a large number of large German companies at the end of 1991), and compare it with the balance sheet of a representative U.S. company, USA Inc (constructed in the same fashion for a sample of large U.S. firms). If “other liabilities” are viewed as forms of debt and leverage is the ratio of total book liabilities to total assets, then Deutschland appears much more highly leveraged than its U.S. counterpart (73% against 58%). But if we measure leverage as the ratio of debt to total capital (where capital is the sum of debt plus equity), the two companies are virtually at the same level (38% versus 37%). Finally, if the measure is coverage (the ratio of operating profits divided by interest expenses), then Deutschland appears much less leveraged than USA (6.8 times versus 4.0).

So, are German companies more or less leveraged than U.S. organizations? The answer depends on why we are asking the question.

If we want to know if the company is likely to go bankrupt, and how much value will be lost if it does, we should look at a modified version of coverage (for example, one that adds short-term debt in the denominator and cash and liquid peripheral assets in the numerator) while also considering the country’s bankruptcy laws and the possibilities for out-of-court-settlement. A modified coverage ratio is also the right measure if we want to ask whether debt puts sufficient constraints on management’s ability to overinvest.

But if we want to know, as customers, whether we should have long-term confidence in a business, we should probably look at the ratio of debt to total capital. And, if we want to know a company’s capacity to take advantage of sudden opportunities, we should look at its untapped lines of credit, the capital markets in which it has established a borrowing history, the relationships it has with its banks and suppliers, and even the debt capacity of the assets created by the opportunity. Here, it is the enterprise’s potential leverage rather than its current leverage that is of interest.

We also have to make accounting adjustments in order to make comparisons of organizations across countries. For example, both funded and unfunded pension liabilities are on the balance sheet in Germany; in the U.S. only the latter are recorded.


The numbers in the table are averages from a large number of German and U.S. firms found on the Global Vantage Database.

### TABLE 1 - BALANCE SHEETS FOR NON-FINANCIAL FIRMS IN 1991

<table>
<thead>
<tr>
<th>ASSETS</th>
<th>USA</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash and Short-Term Investments</td>
<td>11.2</td>
<td>8.8</td>
</tr>
<tr>
<td>Account Receivable/Debtors</td>
<td>17.8</td>
<td>26.9</td>
</tr>
<tr>
<td>Inventories</td>
<td>16.1</td>
<td>23.6</td>
</tr>
<tr>
<td>Current Assets-Other</td>
<td>2.9</td>
<td>0.1</td>
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<tr>
<td>Current Assets -Total</td>
<td>48.0</td>
<td>59.4</td>
</tr>
<tr>
<td>Fixed Assets (Tangible)</td>
<td>36.3</td>
<td>32.7</td>
</tr>
<tr>
<td>Investments and Advances</td>
<td>4.5</td>
<td>4.8</td>
</tr>
<tr>
<td>Intangible Assets</td>
<td>7.6</td>
<td>2.4</td>
</tr>
<tr>
<td>Assets -Other</td>
<td>5.8</td>
<td>0.7</td>
</tr>
<tr>
<td>Assets -Total</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LIABILITIES</th>
<th>USA</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt in Current Liabilities</td>
<td>7.4</td>
<td>9.9</td>
</tr>
<tr>
<td>Accounts Payable/Creditors</td>
<td>15.0</td>
<td>11.5</td>
</tr>
<tr>
<td>Current Liabilities -Other</td>
<td>11.0</td>
<td>8.7</td>
</tr>
<tr>
<td>Current Liabilities -Total</td>
<td>33.4</td>
<td>30.0</td>
</tr>
<tr>
<td>Deferred Taxes</td>
<td>3.2</td>
<td>0.8</td>
</tr>
<tr>
<td>Long Term Debt</td>
<td>23.3</td>
<td>9.8</td>
</tr>
<tr>
<td>Minority Interest</td>
<td>0.6</td>
<td>1.6</td>
</tr>
<tr>
<td>Reserves -Untaxed</td>
<td>0.0</td>
<td>1.7</td>
</tr>
<tr>
<td>Liabilities -Other</td>
<td>5.8</td>
<td>28.7</td>
</tr>
<tr>
<td>Liabilities -Total</td>
<td>66.1</td>
<td>72.0</td>
</tr>
<tr>
<td>Shareholders Equity</td>
<td>34.1</td>
<td>28.0</td>
</tr>
<tr>
<td>Total Liabilities and Shareholders Equity</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Global Vantage Data Base; “What do we know about capital structure?” Rajan and Zingales.
Contrary to the received wisdom, our research suggests that German companies are in fact significantly less leveraged than large firms from all the other G7 countries, with the exception of the U.K.

Also, German accounting emphasizes conservatism rather than the Anglo-American ideal of presenting a “true and fair” picture. So German earnings are smoothed (which has considerable tax benefits) and secret reserves are maintained. This helps explain why “other liabilities” for Deutschland account for a massive 29% of liabilities and why Daimler Benz restated its earnings by about $2 billion when seeking a listing on the New York Stock Exchange.

Capital Structure in the G-7

Let’s now look more carefully at international differences in one indicator of leverage. Figure 1 compares debt-to-capital ratios obtained directly from the balance sheets of the big publicly traded companies in the G-7 countries and the “adjusted” debt-to-capital ratios, obtained after eliminating the significant differences in accounting practices. Note that correcting for accounting substantially changes the average leverage ratios of all the countries. But, after correcting for accounting differences, the ranking among different countries is largely unaffected no matter what measure of leverage we use, and whether we measure assets at book or market value.

The accounting-adjusted leverage ratios shown in Figure 2 are surprising if we consider the remarkable institutional differences between these countries. Despite the often-heard complaint that Japanese organizations enjoy access to low-cost debt, Japanese businesses turn out to be no more highly leveraged than companies in the U.S. And, lending support to this finding, studies of Japanese and U.S. businesses show they tend to have similar costs of capital in the long run despite large temporary differences.\(^3\)

One can speculate as to why institutional differences as great as those between the U.S. and Japan do not seem to matter much for large companies. Perhaps most such companies are able to finance cross-border in the most advantageous country. Alternatively, insti-

tutions may develop in different countries in ways that help their companies to overcome any major disadvantages of financing in the home market.

**Why the Differences?**

One can, however, make too much of similarities. Contrary to the received wisdom, our research suggests that German companies are in fact significantly less leveraged than large firms from all the other G-7 countries, with the exception of the U.K. Why are German and U.K. companies so different from the rest?

For one thing, tax codes in these two countries do not give debt a significant advantage (if indeed any at all), so enterprises have little tax incentive to lever up. Perhaps more telling, however, are important differences among countries in the protection afforded creditors. As shown in Figure 2, those countries with the strongest creditor rights—again, notably, Germany and the U.K.—are also the countries where large companies borrow the least.4 Is this just a coincidence? Or do the managements of large enterprises prefer not to borrow where the law gives creditors such strong rights? And if the latter is true, is this because managers are fearful for their own skins or because the expected loss in firm value in bankruptcy is really high when creditors can readily liquidate businesses?

**And Do the Differences Matter?**

More evidence is needed before we can draw strong conclusions. However, this raises an immediate question. Are U.K. or German companies worse off because they borrow less?

We have some data that suggest the answer is probably no. The companies one might expect to be worst hit by low borrowing are those that depend on external finance to fund investment. But large enterprises in the U.K. do not use disproportionately less external finance. In fact, when we compared businesses in the U.S., Japan, U.K., and Canada over the 1980s, U.K. organizations were second only to Japanese companies in the amount of capital they raised externally (see Figure 3). Even though they do not issue a great deal of debt, U.K. companies raised almost equal amounts from equity issuance (as compared with the U.S., for example, where net equity issuance was negative over the 1980s).

**Do Industries Need Strong Banking Systems to Grow?**

There is more telling evidence that countries with strong banking systems are not necessarily better for industries with large capital requirements. In a forthcoming paper, we ranked a variety of industries on the basis of how much external finance they used to fund investment in the United States.5 Our assumption in the paper is that the demand for external financing is driven primarily by “technological” factors, and that therefore the relative demand for capital by different industries should be reasonably constant across different countries. That is, in some industries, regardless of national setting, firms tend to spew out cash flows

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4. The data on creditor rights are obtained from Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny, “Law and Finance,” NBER working paper 5661, 1996.

almost from the start and therefore require little external financing; whereas in other industries companies require a lot of investment over a long period before they produce cash flows, and so require substantial external financing.

In conducting our study, we started by reasoning that if strong banking systems facilitate the flow of external finance, we should see industries that require a lot of external finance grow faster in countries where the bank credit-to-GDP ratio is high. And this turned out to be the case.

Then we tested a second proposition. Since banks are not the only providers of external financing, we surmised that credit from arm’s-length sources would be likely to flow more readily in countries where accounting and disclosure standards are high, and laws protecting shareholders are enforced. And, our findings confirmed that industries that require a lot of external finance also grew substantially faster in countries with high accounting standards.

As one example, let’s compare the relative growth rates of Tobacco (an industry that requires little external finance) and of Drugs and Pharmaceuticals (an industry that requires huge amounts of capital) in three different countries—and, for the sake of illustration, let’s choose Malaysia, Korea, and Chile, which are moderate-income, fast-growing countries that differ considerably in the extent of their financial development. In Malaysia, which had the highest accounting standards in this group (at the beginning of the 1980s), Drugs and Pharmaceuticals grew at a 4% higher annual real rate than Tobacco over the 1980s (the growth rate for each industry is adjusted for the worldwide growth rate of that industry). In Korea, which had “intermediate” standards, Drugs grew at average annual rate 3% higher than Tobacco. But, in Chile, which had the lowest standards among these three countries (again, at the beginning of the 1980s), Drugs grew at a 2.5% lower rate than Tobacco.

Of course, recent developments in Asia should caution us against inferring too much from this single example. But it is certainly the case that before getting entrapped in real estate and currency problems (as has happened to many developed countries), relatively transparent financial systems like Malaysia’s and Singapore’s encouraged the growth of financially dependent industries.

Presented with this evidence, we were naturally led to ask the question: What is more important for the growth of financially dependent industries—better accounting standards or a stronger banking sector? To test for the relative importance of these two factors, we included both the quality of accounting standards and the relative importance of the banking sector in a regression. The effect of differences in accounting standards dominated our results. In other words, the growth of financially dependent industries was much more strongly correlated with better accounting standards than with a strong banking system. And this in turn suggests that well-regulated markets are more than adequate substitutes for close relationships between companies and financial institutions, especially in developed countries.

CONCLUSION

Some of the popular myths about cross-country differences in financial structure do not stand up to scrutiny. In developed bank-oriented economies like Japan and Germany, large businesses do not borrow more, nor do firms appear to enjoy a comparative advantage. In fact, judging from coverage ratios, German companies (as well as U.K. companies) seem to borrow considerably less than their international competitors. We also find that, in countries where financial markets are transparent, the development of the banking sector has little additional impact on the growth of financially dependent industries. Thus, while a poorly functioning financial system can severely limit the growth of a national economy, a strong banking system and close banking relationships do not seem to be an important source of competitive advantage.

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