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Why Are Foreign Firms Listed in the U.S. Worth More?

By analyzing factors largely overlooked in traditional explanations, **Craig Doidge, G. Andrew Karolyi,** and NBER Research Associate **René Stulz** offer a new perspective on the question **Why Are Foreign Firms Listed in the U.S. Worth More?** (NBER Working Paper No. 8538). The authors note that listing a foreign firm's shares on U.S. markets is widely perceived as beneficial (cheaper cost of capital, increased shareholder base, greater liquidity, enhanced prestige). And indeed, foreign firms listed in the United States have a significantly higher valuation than foreign firms not listed in the United States, so that there is a listing premium. Why then do fewer than 10 percent of large foreign companies choose such listings? Are the firms that list here worth more in the first place, so that there is no added benefit to a listing? Or is it that managers and controlling shareholders of firms unlisted in the United States would not benefit from such listings, even when other shareholders might?

Earlier studies indicate that large foreign firms typically are controlled by large shareholders, mostly families. The controlling shareholder does not always have incentives to increase the value of the firm's equity capitalization and therefore can impose costs on the other shareholders. Instead, the controlling shareholder might find it more advantageous to obtain private benefits from control, such as appointing family members to managerial positions when outsiders could do better, entering advantageous

deals with other corporations he owns, or making investments of dubious value. The authors' study suggests that cross-listed firms are firms where the costs imposed on minority shareholders by controlling shareholders are low compared to other firms. Controlling shareholders who impose low costs on minority shareholders have the most to gain and the least to lose by listing in the United States: they have lower private benefits from control to protect and greater growth opportunities via improved access to capital markets.

Doidge, Karolyi, and Stulz gather data on the value of foreign firms from Worldscope, an online information service of the Primark division of the Thomson Financial Group. This data is then linked to national rankings established in various studies in terms of investor protection, capital market accessibility, accounting standards, and aggregate market liquidity. Using information from 1997 and focusing on companies with assets of at least \$100 million, the authors build a database of nearly 5,000 firms from 40 countries. Of

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Firms where controlling shareholders impose high costs on minority shareholders evidently see a U.S. listing as a threat to the private benefits accruing to those private controlling shareholders.

In other words, a U.S. listing probably decreases the controlling shareholders' ability to extract private benefits from control. But this is not an issue for controlling shareholders of firms whose interests are already sufficiently aligned with those of minority shareholders. In addition, a U.S. listing presumably reduces a firm's cost of outside finance because of the controlling shareholders' compliance with the greater disclosure required by U.S. regulations and the greater protection afforded investors in the United States.

these firms, 714 were cross-listed in the United States.

The authors then confirm that firms with high growth opportunities are those in which the controlling shareholders have incentives to limit extraction of private benefits from their control. More of the cash flows of these firms accrues to the providers of capital, so that growth opportunities are valued more highly for such firms. Further, these firms find a U.S. listing advantageous because it opens up broader capital markets and helps them to convince outsiders that their controlling shareholders' consumption of private benefits from control is limited. The increased valuation of growth opportunities for these firms should be even greater, the authors add, if they

are located in countries with poorer protection rights, where controlling shareholders could expropriate more.

Moreover, the run-up in a stock's price that customarily precedes a U.S. listing is further evidence in support of the authors' theory. Such a run-up, they point out, is consistent with firms acquiring growth opportunities and with controlling shareholders committing to imposing fewer costs on minority shareholders before the listing. Finally, one would expect private benefits from control to be more constrained in those firms that raise capital publicly through an exchange listing, because the U.S. listing has the strongest effect on improving protection of minority shareholders.

Next the authors address the concern that their results might be sensitive to the particular year they chose to examine. To this end, they reconstruct their entire database for 1995, applying the same criteria and data sources. The number of firms available for examination is slightly smaller here than it was in the 1997 study. Despite this, the new computation results in markedly similar findings for 1995 and 1997.

Doige, Karolyi, and Stulz acknowledge that their study leaves some issues unresolved. For example, questions remain about self-selection; that is, firms may cross-list chiefly because they have performed well. The authors attempt to control for self-

selection, but they allow that their study still might omit significant variables. In any event, they say, while the hypothesis that firms list after having done well can explain why cross-listed firms are worth more, it cannot explain why the cross-listing premium is related to investor protection in an individual firm's country. Yet another issue worthy of additional study is the proposition that the greater valuation of cross-listed companies might simply reflect the overall U.S. bull market of the 1990s. But the authors believe that the evidence nonetheless reveals an authentic premium accrues from cross-listing.

— Matt Nesvisky

Incentive Effects of HMO Contracts

Americans spend more than \$1 trillion dollars annually on health care. Because physicians play a central role in the allocation of these vast resources, financial incentives that influence physician decision-making have been the subject of high stakes litigation and intense public controversy.

Much of the attention surrounding physician incentives has focused on the contracts that managed care organizations write with the physicians in their network. Managed care organizations have become the dominant form of health insurance in the United States, based largely on the promise of controlling the cost of care through cleverly designed systems of financial and non-financial incentives.

Critics of managed care are concerned that financial incentives cause physicians to alter their treatment at the expense of quality. Proponents of managed care counter that incentives are necessary tools to control costs and that cost containment need not compromise care. Until now, no one has taken a close and detailed

look into a managed care organizations' incentive system to determine who is right. This is just what NBER Research Associates **Martin Gaynor** and **James Rebitzer**, and their co-author **Lowell Taylor** have done in their paper **Incentives in HMOs** (NBER Working Paper No. 8522).

The authors present a case study of a health maintenance organization (HMO) that wrote incentive contracts with the roughly 1,000 primary care physicians in its network.

manage chronic diseases to avoid hospital visits; 2) discouraging non-essential specialty referrals and "unnecessary" testing; and 3) reducing emergency room visits by offering patients extended office hours and more responsive answering services.

The HMO limited the effect of its cost-control bonus by imposing a "stop-loss" provision for seriously ill patients. For example, a very sick patient who incurred expenses of \$100,000 in a year would only be fac-

"The cost reduction induced by the incentives was concentrated in outpatient procedures and referrals to non-primary care physicians."

During the period of study, 1994-7, the HMO utilized the common "gatekeeper" model, in which primary care physicians are held responsible for the medical utilization costs incurred by their patients. The incentive? If groups of primary care gatekeepers kept costs below actuarially determined target levels, they received a sizeable bonus. Physicians' strategies for reducing utilization costs included: 1) teaching patients to better

tored in for a maximum of \$15,000 of a physician's annual utilization costs. Thus, the provision removes incentives to withhold care from the sickest patients. Equally important, in 1997, the final year of the study, the HMO also introduced financial incentives linking bonus payments to certain quality targets.

The authors estimate that a typical physician in the network gained ten cents in income for every one

dollar reduction in medical utilization costs. This incentive appears overall to have caused a 5 percent reduction in utilization costs, leading to total annual savings of more than \$3 million. Consistent with the effect of the HMO's stop-loss provisions, financial incentives had little or no effect on in-hospital costs. Instead, the cost reduction induced by the incentives was concentrated in outpatient procedures and referrals to non-primary care physicians.

Analysis of the "quality" incentives suggests that physicians respond to financial incentives linked to measures of quality just as they do to incentives linked to cost-containment. Indeed, physician groups that were best at keeping costs below "target" levels were also best at hitting their

quality targets. However, this finding does not mean that low-cost physicians necessarily provided higher quality care. The quality measures used by the HMO, while standard in the industry, focus on preventive care practices, such as the percentage of immunized children and women with recent mammograms. The authors caution that although their findings lead them to believe that incentives have an impact on achieving the target quality measures, the overall impact on the quality of care is uncertain. It is possible that physicians are responding to the HMO's incentives by producing higher measured quality and shirking on aspects of quality that aren't measured. Nonetheless, these findings raise the possibility that properly designed incentive systems

needn't produce a reduction in quality.

Overall, the results of the study offer some comfort to both critics and supporters of HMOs. Physicians' clinical decisions do indeed differ from those they would choose in the absence of incentives. At the same time, these same incentives have a measurable effect in controlling costs. Perhaps more importantly, it seems that devices such as "stop-loss" provisions and "incentives for quality" may prove helpful in assuring the quality of care. The authors conclude that the incentive contracts HMOs write with their physicians are powerful management tools, whose impact likely depends on the details of their implementation.

— Tracy Certo

Tax Rates and Tax Evasion

Higher tax rates provoke tax evasion. In **Tax Rates and Tax Evasion: Evidence from "Missing Imports" in China** (NBER Working Paper No. 8551), **Raymond Fisman** and **Shang-Jin Wei** capture this phenomenon in some detail when they look at how importers in China responded to high tariff rates by engaging in a rash of evasive behaviors. They find the reaction in that country to be so intense that "tax increases may even produce a reduction rather than an increase in tax revenues."

Fisman and Wei were interested in fleshing out a widely-held notion — that higher tax rates will encourage greater evasion — with a study that could assess the magnitude of the effect. So they decided to examine detailed statistics on a range of goods exported from Hong Kong to China, paying specific attention to the value and quantity reported by Hong Kong versus what was reported by China.

In general, import taxes are based on the value and category code

assigned to particular goods. (For example, an export category code might refer to a four-door passenger car, a certain type of steel, or a computer chip.) What Fisman and Wei document is that, in industries characterized by higher taxes and tariffs, importers fight back by fudging val-

ues when rates reach a certain threshold, they rebel: "[a]s tax rates rise above the median level of 34 percent, the extent of evasion rises dramatically," the authors assert.

Fisman and Wei believe their approach to studying the relationship between tax increases and tax evasion

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ues and category codes for goods coming in from Hong Kong. "We conclude that there are widespread practices of underreporting unit value of the imports and mislabeling higher-taxed products as lower taxed products," they state.

Moreover, the extent of evasion that they document is very large. Using data from 1998, they find that on average a 1 percent increase in the tax rate results in a 3 percent increase in evasion. Fisman and Wei observe that importers in China are willing to tolerate "relatively low tax rates." But

— comparing export documentations to import declarations — "can be applied to other countries as well." In addition to providing hard data on the "behavior response of tax evasion to tax rates," they believe a multi-country study "could provide a more objective measure of the laxity of the rule of law across countries, in contrast to the subjective, perception-based measures of corruption and rule of law now popular in empirical studies."

— Matthew Davis

Hospital Ownership Affects Heart Attack Care

The long-standing mix of for-profit, nonprofit, and publicly-owned hospitals in the United States has led to an extensive debate over the relative merits of the three ownership forms. On one hand, the financial rewards inherent in for-profit ownership might provide incentives for hospitals to contain costs and respond effectively to patients' needs. On the other hand, because it is difficult for patients and society to evaluate quality in markets for health care, the opportunity to earn profits might lead hospitals to take advantage of patients or otherwise "cut corners."

In **The Effects of Hospital Ownership on Medical Productivity** (NBER Working Paper No. 8537), NBER Research Associates **Daniel Kessler** and **Mark McClellan** examine the effects of hospital ownership and other characteristics of hospital markets on hospitals' productivity. The authors analyze data on the medical expenditures, mortality, and rates of cardiac complications for the vast majority of non-rural elderly Medicare beneficiaries hospitalized for new heart attacks (acute myocardial infarction, or AMI) over the 1985-96 period. They find that areas with a presence of for-profit hospitals have approximately 2.4 percent lower levels of hospital expenditures per patient, but virtually the same patient health outcomes.

The authors conclude that this is likely caused by the spillover effects of for-profit hospitals on their nonprofit

and public counterparts: the competition from for-profit hospitals may limit the nonprofits' ability to behave inefficiently. The bulk of this 2.4 percent savings in expenditures is achieved when the for-profit presence increases from near zero to only a

substantial presence of teaching hospitals, divided by the decreased probability that the patient will die within one year which is attributable to the presence of those teaching hospitals, yields an expenditure-to-benefit ratio of approximately \$59,000 per year of

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small fraction of admissions in the area. Additional penetration of for-profits to higher market shares leads to sharply declining additional savings. Furthermore, the authors show that approximately half of the total expenditure savings achieved by the penetration of for-profit hospitals comes about through reductions in Medicare's area hospital labor cost index, an intuitively plausible mechanism through which spillovers would occur.

The authors also find that other characteristics of hospital markets affect expenditures and outcomes. Patients from areas with a substantial presence of multi-hospital systems have slightly less costly care, without experiencing any worse outcomes.

Conversely, patients from areas with a substantial presence of teaching hospitals receive slightly more costly care, but experience significantly better health outcomes. Using their estimates of these effects, the authors find that the additional treatment for AMI delivered in areas with a sub-

stantial presence of teaching hospitals, divided by the decreased probability that the patient will die within one year which is attributable to the presence of those teaching hospitals, yields an expenditure-to-benefit ratio of approximately \$59,000 per year of

life saved — with no significant increase in cardiac complications rates. This indicates that the additional survivors are not in markedly worse health. The authors caution that they only evaluate the effects of hospital ownership on one facet of health care markets: hospital productivity. Other studies find that ownership may affect important social and economic outcomes, such as hospitals' provision of uncompensated or charity care, or the impact of Medicare's complex regulated price system. Furthermore, they only evaluate the effects of ownership for one illness and one patient population; the effects may be different in other settings. Finally, they acknowledge that their conclusions about the effects of ownership are necessarily limited by the incompleteness of their measures of health outcomes, which may fail to capture fully all of the health consequences of differences in medical care.

— David R. Francis

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