



What is the International Dimension of International Finance?

RICHARD A. BREALEY^{1*}, IAN A. COOPER² and EVI KAPLANIS³

¹*London Business School and Bank of England, Threadneedle Street, London EC2R 8AH, E-mail: brealey@bankofengland.co.uk*

²*London Business School, Sussex Place, Regent's Park, London NW1 4SA, England, Fax: +44-171-262-5050; E-mail: icooper@lbs.ac.uk*

³*London Business School, E-mail: ekaplanis@lbs.ac.uk*

1. Introduction

What is the international dimension of international finance? Is the distinguishing feature the fact that countries have different currencies, or is it the presence of other market imperfections such as capital flow restrictions that induce investor and corporate behaviour that depend on domicile?

This paper is a review of some current issues in international finance and attempts to distinguish between the effects on asset prices of foreign exchange and market imperfections. The issue is an important one because it has implications for cross-border valuation, listings, and mergers and acquisitions.

We proceed as follows. We first discuss the debate on international asset pricing and the extent to which markets are integrated or segmented. We then summarise the evidence on the structure of international equity returns and the apparent risk reduction from international diversification. This raises the question, "If the gains from international diversification are so great, why do investors hold predominantly domestic portfolios?" One explanation focuses on the costs to international investment and we therefore review the implications of such costs for equilibrium returns and the cost of capital for international investment.

If the purpose of international diversification is to acquire exposure to cash flows that are generated overseas, then foreign direct investment should provide an alternative source of diversification for domestic shareholders. However, the evidence on the diversification benefits provided to shareholders of multinational firms suggests that the domicile of a firm is not simply a matter of the country in which its cash flows arise but also of the country in which its shareholders congregate.

* Author for correspondence.

Table 1. Summary of international asset pricing models with integrated markets

Model	Assumptions	Implications for portfolios. Investors hold:	Implications for asset pricing:
Grauer, Litzenberger, Stehle (1976)	PPP holds	World equity market portfolio	Real CAPM
Solnik (1974a), Sercu (1980)	PPP deviations with no inflation uncertainty	World market equity portfolio plus currency-hedge portfolio of risk-free assets	Nominal CAPM
Adler and Dumas (1983)	PPP deviations with inflation uncertainty	Universal log portfolio plus hedge portfolio that includes equities	Asset pricing with equity and inflation risk premia

2. Are International Financial Markets Integrated?

For many people the key dimension of international finance is obvious: international finance involves currencies and this makes it different from domestic finance. But Grauer, Litzenberger and Stehle (1976) (GLS) showed that, if international capital markets are completely integrated, then international finance is, in all important respects, just like domestic finance. The same asset pricing relationships hold and the same corporate finance decision rules are optimal. In this case, while international finance does involve currency rates, these rates are simply another set of relative prices and are, in principle, no more or less important than any other set of relative prices.

GLS assumed purchasing power parity and therefore abstracted from foreign exchange risk. Not surprisingly, therefore they arrived at a model that is effectively identical to the domestic CAPM, but with a world index instead of a domestic index. But one can still have integrated market with foreign exchange risk. For example, in the models of Solnik (1974a) and Sercu (1980) currency risk can be perfectly hedged with a portfolio of risk-free assets, so that all investors continue to hold the world market portfolio. The required rate of return on a security hedged against exchange risks is then given by the traditional nominal CAPM. Adler and Dumas (1983) extended this model to allow for inflation and currency risk. They showed that there continues to be a single international CAPM that is universal for all companies irrespective of their domicile. However, it includes an equity risk premium and an inflation risk premium. The assumptions and implications of these alternative asset pricing models are summarised in Table 1.

The most important implication of these models is that expected returns on international assets are priced by a single international asset pricing model, so that expected returns are independent of the domicile of the company. Black (1974) assumed no inflation or currency risk but introduced costs in the form of taxes that differentiate domestic from foreign investment. In this case international capital markets are no longer integrated, so that international finance becomes potentially very different from domestic finance.

Many researchers have conducted tests of international financial integration using models of expected returns to test whether actual financial market returns are consistent with integration. The results are inconclusive. Some researchers find integrated international capital markets, others find evidence of segmentation.¹ For instance, Errunza and Losq (1985) test an integrated model against the alternative of a model that assumes mild segmentation of international capital markets where some investors are restricted as to the securities that they can hold. The required return of the ineligible securities is then different from the return that the standard CAPM would suggest. They report that "The overall results are not statistically inconsistent with theoretical expectations and thus lend tentative support to the mild segmentation hypothesis". The inconclusive nature of tests of international asset pricing models probably reflects the fact that tests using *ex-post* returns as proxies for *ex-ante* returns have low power (Summers (1986)). So it has proved difficult to resolve in this way the fundamental question of international finance, regarding the integration or segmentation of financial markets.

Other tests, such as Hietala (1989) and Stulz and Wasserfallen (1995), look more directly at the impact of specific restrictions on the integration of particular security prices and returns. For example, Stulz and Wasserfallen (1995) develop a model for foreign equity restrictions and examine empirically their price effects using Swiss data. They find significant effects of specific international market imperfections on the pricing of equities that are affected by the restrictions. Thus different markets appear to be segmented to different degrees and in different ways at different times. If that is the case, attempts to provide a general answer to the question of international capital market segmentation or integration are unlikely to be fruitful.

Instead of providing a general test of the impact of international integration on asset prices, it may be productive to focus on indirect tests of integration. Since the question of international integration is likely to be multidimensional, such tests might be expected to shed light on aspects of international finance that tests of international asset pricing may miss. An understanding of these more detailed dimensions of the international nature of the financial environment in which companies operate is important in dealing correctly with issues in corporate finance.

¹ See, for example, Bekaert (1995), Bekaert and Harvey (1994), Campbell and Hamao (1992), Chen and Knez (1993), Errunza, Losq and Padmanabhan (1992), Jorion and Schwartz (1986), Korajczyk and Viallet (1989), and Wheatley (1998).

3. The Correlation Structure of International Stock Returns

There is a substantial body of work documenting the gains from international portfolio diversification. Early work includes Grubel and Fadner (1971), Agmon (1972), Lessard (1974), Solnik (1974b), Grauer and Hakansson (1987), and Kaplanis and Schaefer (1987). The evidence of significant country factors suggests that international diversification can provide major reductions in portfolio risk. For example, Solnik (1974b) showed that a U.S. investor could reduce risk by 57 percent by holding a diversified international portfolio rather than the domestic market portfolio.

A number of more recent articles including Erb, Harvey and Viskanta (1994), Longin and Solnik (1995), Solnik, Bourcelle and Le Fur (1996), examine the evolution of the correlation structure of international equity returns. Solnik, Bourcelle and Le Fur (1996) find that correlations between international returns have increased only slightly over the period between 1958 and 1995 even though the operations of companies have become much more international. De Santis and Gerard (1997) and Ang and Bekaert (1999) examine international asset pricing and portfolio diversification with time varying risk. Their evidence suggests that although severe market declines are more highly correlated than normal market moves, there have still been significant ex-ante benefits to international diversification for the last two decades.

4. Home Bias

If markets have been more highly correlated at times of large shocks, the diversification benefits of international investment may have been exaggerated. Nevertheless, the apparent benefit to international diversification by shareholders does not sit well with the observation that investor equity portfolios are poorly diversified across different national markets, and instead are heavily concentrated in domestic markets. For example, Table 2 shows the investment in domestic equities as a proportion of total holdings for a sample of developed countries. This 'home bias' puzzle has been discussed by Cooper and Kaplanis (1986), and French and Poterba (1991)).

Home bias has been variously explained in terms of a desire to hedge against some local risk factor such as domestic inflation (Adler and Dumas (1983)), direct costs such as withholding taxes or transaction costs (Black (1974)), various institutional restrictions, information costs, and behavioral explanations such as the choice of benchmarks or differences in degrees of optimism.

If the home bias is explained by hedging, then international capital markets could be integrated despite the home bias. Any of the other explanations implies segmented markets. Cooper and Kaplanis (1994) test and reject the inflation hedging explanation for the home bias. Thus, on their analysis examination of portfolio holdings suggests that we need to invoke models which involve some degree of segmentation.

Table II. Home bias in equity portfolios (1993)

Country	Market capitalisation as as % of total (1)	% of equity in domestic stocks (2)	Home bias % (2-1)
Canada	3	84	81
France	4	92	88
Germany	3	78	75
Italy	2	92	90
Japan	33	92	59
Netherlands	1	51	50
Switzerland	2	66	64
UK	10	69	59
USA	42	95	53
Total	100		

Source: Cooper and Kaplanis (1995).

The source of the segmentation is a difficult issue to resolve. There are certainly deadweight costs to cross-border investment, but these do not seem large enough to explain the extent of the home bias. There are also indications that informational asymmetries may be important. For example, Kang and Stulz (1997) show that patterns of international ownership of shares are consistent with foreigners holding the shares of larger firms, about which they have more information. Brennan and Cao (1997) show that foreign investors exhibit trend-following trading patterns that are typically associated with relatively uninformed investors. Huberman (1997) examines the geographic distribution of the shareholders of the US Regional Bell Operating Companies and finds regional concentration resembling home country bias.

No one has yet measured whether these apparent informational effects are large enough to explain the extent of the home bias. A rough indication of how large the informational disadvantage would have to be to explain the whole of the effect can be obtained by considering a symmetric two-country model. Suppose that each index has a standard deviation of 20% per annum and the correlation is 0.5. Each country has the same expected return. Suppose that each investor exhibits a complete home bias and simply holds his own market portfolio. With symmetric information each investor would view the other market as having an incremental portfolio risk equal to half his home market with the same expected return. To make his portfolio optimal he would have to believe that his informational disadvantage fully offsets this diversification benefit. The informational disadvantage would have to double his subjective standard deviation of the foreign market to make his holding of no foreign assets optimal.

There is another problem with the information-based explanation of the home bias. There are many index vehicles through which the informational disadvantage can be largely avoided. Institutional investors in particular can hold country index funds or index futures combined with cash. Both these deliver a return that avoids many of the institutional disadvantages associated with holding individual foreign equities. The use of index futures and cash is particularly efficient because the cash can be held in domestic currency, giving a portfolio that is similar to a hedged equity index portfolio. An explanation of why funds do not exploit this opportunity might be that some funds are not permitted to hold index futures in this way. This simply pushes the explanation for the home bias back to another level. Given the advantages to international diversification achieved in this way, why are some funds not permitted to do it?

So there appears to be no single explanation which satisfactorily accounts for the whole of the home bias. The explanation is probably a combination of the various causes listed above. We discuss below the implications for corporate finance of the different causes.

5. Home Bias and Equilibrium Returns

We have suggested that one possible cause of this home bias is that there are 'costs' to investing across international borders. We call these 'access costs'. To analyse the effect of access costs on equilibrium returns Cooper and Kaplanis (1999) have used an extended version of the model given in Stulz (1981).

In the model, these access costs depend on the investor, his country of domicile, the company and the company's domicile. When the access costs for foreign investors to hold a company's shares are low, the company ends up with an international shareholder base. One can think of this type of company as a large company with relatively low information asymmetries between foreign and domestic investors. We call such companies "globally financed companies". For other companies (presumably smaller companies) it may be more costly for foreigners to hold the shares, and therefore these shares will be held by domestic investors. We call these "locally financed companies". This differentiation between large and small companies is similar to the same distinction in a different context in Merton (1987).

Expected returns for globally financed firms are given in the model by:

$$\mu_G = r_F + \alpha_w \beta_w + \bar{C}$$

where μ_G is the required return on a globally financed firm; r_F , is the global riskless rate; α_w , is a price of risk; β_w , is the beta measured against the world index; $\bar{C}$, is the weighted average access cost for investors holding the firm's equity.

So the cost of capital for globally financed firms consists of three components. The first is the global riskless rate. The second is a risk premium proportional to the global beta of the firm. The last is an average cost for investors of holding the

shares of the firm. This is a wealth-weighted average of the access costs incurred by global investors in holding the shares of the firm.

For a locally financed firm the required return is:

$$\mu_L = r_F + \hat{C} + \sum_k \alpha_{Fk} \beta_{Fk} + \alpha_L \beta^L$$

where μ_L , is the required return on a locally financed firm; $\hat{C}$, is an average access cost term;² α_{Fk} , is the price of factor k risk; β_{Fk} , is the loading of the share on the k th global factor; α_L , is the price of local market risk; β^L , is the local market beta measured orthogonal to global factors.

The global factors are the factors that span the returns of the global firms. The part of local risk that matters is the part that is orthogonal to the global factors.

This model has several important implications:

- Diversification of shareholders by firms is as important as diversification of portfolios by shareholders (globally financed companies have different costs of capital from locally financed companies).
- Even if shareholders are diversified and firms have a diverse set of shareholders, the costs to foreign shareholders of holding a company's shares can still play a significant role. Thus even globally financed companies should be concerned about access costs for their foreign shareholders.
- A firm can influence its shareholder base primarily through its access costs. Whether a firm is globally or locally financed is determined endogenously.

6. Access Costs and Corporate Investment Decisions

As with any investment decision, the international corporate investment decision consists of balancing benefits and costs. The cost of capital for international investment should reflect the incremental risk that is added to investors' portfolios by the investment. Relative to domestic investment, the analysis of this risk is complicated by the segmentation of international markets and the resulting home bias. There is also the issue of how the risk characteristics of the investment will be affected by the foreign ownership.

An analysis of the first of these issues is given in Cooper and Kaplanis (1994). This shows how the incremental cost of capital for an international investment depends on the beta of the incremental asset relative to the portfolios of the shareholders of the investing company. These portfolios reflect the costs to cross-border investment. So, ultimately, the incremental required return for a corporate investment depends on the extent to which it avoids cross-border investment costs for

² $\hat{C}$ is a rather complicated weighted average.

shareholders. On the other hand, the expected return for the investment will depend on the extent to which the company faces a competitive disadvantage when investing in a foreign market. So the net desirability of international investment depends on whether corporate or portfolio investment is the most efficient vehicle to achieve international diversification.

Consider the choice of a discount rate for an international project. When faced by this issue, companies commonly make the extreme assumption of either full integration or complete segmentation of international financial markets. However, the issue is more complicated when markets are partially segmented, for in this case the discount rate depends on the domicile of the corporation and that of its shareholders. Specifically, the company needs to know:

- Who are the shareholders – are they domiciled locally or overseas?
- What are the access costs for the overseas investors?
- Are shareholder portfolios globally diversified?

7. Access Costs and the Structure of International Returns

We have suggested that the prevalence of home bias in investment portfolios may be evidence of costs to international investment and that these costs may drive a wedge between the equilibrium returns on different markets. As we explain later, if access costs lead to market segmentation, they could also affect the covariance structure of returns. Conversely, by examining the covariance structure we may gain some clues as to the source of the costs.

An important question here is how far the covariance structure of equity returns relates to the structure of the operating cash flows or is induced by partial segmentation in the financial markets. A number of papers investigate whether gains from international diversification are due to differences in industrial structure across countries. Roll (1992) finds that industrial structure can explain part of the variation. On the other hand, Heston and Rouwenhorst (1994) and Griffin and Karolyi (1998) find that industrial composition explains very little of the variation in country index returns. So there appears to be a potential puzzle about the relationship between the activity mix of corporations and the international structure of returns.

Several studies have provided evidence that stocks may move more closely with their local market than one would expect simply from the nature of the assets that they hold or the business they conduct. For example, Jacquillat and Solnik (1978) examined the covariance structure of a sample of multinational equities from nine countries. A multiple regression of the returns from each stock on the returns from the nine national markets indicated that the average beta of the stock against the market of domicile was 1.02, while the average beta against the other national markets was 0.01. The authors concluded that investment in a selection

of stocks of multinational firms provided less international diversification than one might have expected simply from the nature of their business.³ Similarly Brewer (1981) finds that there is no difference in the risk-return relationship between US multinationals and domestic companies. Rowland and Tesar (1998) examine the diversification potential of multinational firms and find that, in most countries and in most time periods, there is weak evidence that multinationals provide some international diversification.

There is, however, other evidence that the covariance structure depends at least in part on the countries in which the firm does business. For example, Agmon and Lessard (1977) regressed returns of a sample of U.S. stocks on the U.S. index and on the component of the world index that was not explained by U.S. market returns. The U.S. market betas averaged 0.98 for the firms with the lowest proportion of foreign sales and 0.91 for those with the highest proportion. Conversely, the world beta averaged 0.18 for the firms with the lowest foreign sales and 0.44 for those with the highest foreign sales.⁴

The Jacquillat-Solnik and Agmon-Lessard papers both refer to periods in which there were extensive restrictions on capital flows. But there are some more recent bits of evidence that the structure of returns may be influenced significantly by market segmentation. For example, Froot and Dabora (1996) examine the stock prices of three pairs of "Siamese twin" companies (the two Unilever's, Royal Dutch and Shell, and SmithKline Beecham A and E shares) which are traded largely in different national markets. They argue that, though the cash flows on each pair of stocks are identical, the stocks comove more closely with the market in which they are principally traded.

Further evidence that the covariance structure of returns is affected by the country of domicile is provided by U.S. closed-end funds. Bonser-Neal et al. (1990) and Bailey and Lim (1992) have documented a relationship between the stock returns on closed-end country funds and the market returns of the country in which the stocks are traded.⁵ The former, for example, report an average correlation of 0.42 between the returns of U.S.-listed country funds and the U.S. market, whereas the correlation with the returns of the corresponding foreign market index was only 0.22. Similarly, Bodurtha, Kim and Lee (1995) report a correlation of 0.38 between changes in the premium over net asset value and the returns on a U.S. market index. Similar results are reported by Bekaert and Urias (1996) and Hardouvelis, La Porta and Wizman (1993).

Thus, while the empirical evidence on international portfolio investment suggests that there are significant diversification benefits, the results on corporate diversification are not so clear-cut. Multinational corporations and multinational

³ Other studies of the international diversification services provided by the stocks of multinational firms include Yang, Wansley and Lane (1985), Fatemi (1984), Agmon and Lessard (1981 and 1977), and Senchack and Beedles (1980).

⁴ For an interesting discussion of the interpretation of this evidence, see Adler (1981).

⁵ See also Chang, Eun and Kodolny (1993).

equity funds provide a more limited diversification effect than the location of their cash flows would suggest. One possible explanation for this surprising result is offered by the model of Campbell and Mei (1993).

Campbell and Mei show that the covariance of an asset's returns with the returns on the market portfolio can be broken into three components associated with changing expectations of future cash flows, real interest rates and expected future excess returns. Their empirical estimates lead them to conclude that the covariances of expected excess-returns with the market are typically much larger in absolute value than the covariance of cash flows with the market. Thus, it appears that a high proportion of the covariance of returns within a country is due to common changes in discount rates rather than to the comovement of the cash flows.

The Campbell-Mei finding concerns a single equity market. The covariance of the return to an individual equity with a foreign stock index will depend on the extent to which shocks to cash flows, real interest rates, and expected excess returns are correlated between countries. A theoretical model of an international covariance decomposition along the lines of Campbell and Mei requires, therefore, a model of the way that expected returns are related internationally.

One extreme would be that international equities are fully integrated and behave essentially as a single market. In this case, we might expect that the component of an equity return that is caused by a shock to its expected excess returns will be independent of the market in which it is listed. However, we argued earlier that international equity markets appear to be, at least partially, segmented from each other. Such segmentation may result in expected return factors in different markets that are specific to the market and do not represent global factors. For instance, suppose that investors in one country become more risk averse (perhaps as a result of a reduction in wealth) and demand a higher premium for holding risky assets. This will result in a common decline in the price of locally traded stocks and, depending on the portfolio shifts that are forced on investors in other countries, a smaller adjustment in the prices of internationally traded stocks and of the other countries' locally traded stocks. Thus changes in risk aversion that are country specific will induce common price adjustments in locally traded stocks that are not highly correlated with changes in expected returns on other markets. If expected excess returns depend in this way on the firm's domicile and Campbell and Mei are correct in their suggestion that a large part of stock comovement is due to shifts in the expected excess return, then country factors in stock returns may depend as much on the firm's domicile as on the countries in which the firm does business.

This raises an interesting question of what is meant by the location of an international firm. There are various dimensions of location that are relevant to international finance: location of activities, location of listing, location of trading of shares, location of domicile, and location of shareholders. It is an unresolved question which of these drives the behaviour of international share prices. The location of activities appears to have an effect, but not as great as might be expected. The location of domicile and primary listing seems to be important and the Froot

and Dabora evidence suggests that the location of trading is also important. So it appears that even the apparently simple question of location is complicated and, like the question of segmentation, no single model captures all the relevant effects.

8. Attempts to Reduce Cross-border Portfolio Costs: 1. Cross-listing

If home bias reflects the costs of overseas portfolio diversification, investors should welcome any corporate actions that help to reduce these costs. We now turn to two issues in international corporate finance: cross-listing and international mergers.

In segmented markets the value of a company that is traded on two exchanges will be affected by the reduction in the capital market access costs afforded by the dual listing. So the value impact of cross-listing will be a function of the reduction in the access costs for the second market and the proportional impact this has on the overall access costs. Since the source of the deadweight costs of foreign investment is ill-defined, it is difficult to know *a priori* whether the costs will, or will not, be reduced by foreign listing. If the costs are partly those of trading in a foreign market, then they may be mitigated by an overseas listing, which therefore should be associated with a shift in the covariance structure and possibly with an immediate price adjustment.

Most studies of foreign listings have focused on the mean price adjustment and variance around the effective date of cross-listings. The results of these studies are largely inconclusive, though on balance there are weak indications of positive abnormal returns pre-listing and negative abnormal returns afterwards.⁶ This may suggest that the effects on cost are small or the benefits are captured by the exchanges in the form of the listing fee. In a recent study, Miller (1999) examined the price impact on announcement date for 181 firms across 35 countries. He found positive abnormal returns around the announcement date, providing evidence that firms benefit from cross-listings. He also found significant differences in the stock price reactions that are related to barriers to capital flows. For example, abnormal returns are largest for listing on major US exchanges than on OTC "pink sheets". Miller's results also suggest that indirect barriers such as liquidity, disclosure and investor recognition may outweigh the barriers due to capital flows restrictions. Therefore, the cost of capital may be reduced by cross-listing if the informational/disclosure costs are reduced. This reduction would depend on the firm's domicile that would relate to the level of informational costs and the type of cross-listing that would determine the extent of disclosure.

Several studies of foreign listings have looked at the effect on the variance of returns, but the only analysis to look at the covariance is Urias (1994). Urias examines the issuance of ADRs by seven Chilean and six Venezuelan companies. The results, however, are inconclusive. In the case of the Chilean ADRs the stock's

⁶ See, for example, Lee (1991), Howe and Kelm (1987), Lau, Diltz and Apilado (1994), Alexander, Eun and Janakiraman (1988), Jayaraman, Shastri and Tandon (1992), Foerster and Karolyi (1993), and Sundaram and Logue (1996).

exposure to the US factor increases in six cases and its exposure to the Chile factor decreases in five cases. In the case of the Venezuelan ADRs the exposure to the U.S. factor declines in all cases and the exposure to the Venezuelan factor declines in four out of six cases.

More direct evidence on the effect of changes in the costs of overseas investing is provided by the case study by Loderer and Jacobs (1995) of Nestlé's merger of its registered and bearer stock. Although the dividend payments on the two classes of shares were identical, Nestlé had restricted ownership of the registered stock to Swiss investors and this constraint had raised the required return on registered stock and reduced its price. The removal of the ownership restriction in 1988 reduced the marginal cost to foreigners of owning Nestlé shares and resulted in a sharp increase in the price of registered stock and a decline in that of bearer stock.

9. Attempts to Reduce Cross-border Portfolio Costs: 2. International Mergers

International mergers involve a more extreme change than cross-listings, for they affect both the way that assets are managed and the domicile of the firm that is taken over.

Several studies have reported that the abnormal returns for the target companies tend to be higher in cross-border mergers than in domestic mergers (see, for example, Harris and Ravenscraft (1991), and Swenson (1993)). These results are difficult to interpret both because the synergies may be different in the two types of merger and because the effects of the change in domicile for the target company are unpredictable. If international capital markets are not fully integrated, there will be an initial adjustment in portfolio holdings of the target stock. This effect could either raise or lower the value of the acquired firm (Black (1974), Cooper and Kaplanis (1994)). If the acquisition is of a locally traded company by a company whose shares are globally traded, there will, on average, be an initial fall in the required return, and a commensurate rise in value. Conversely, if an internationally traded stock becomes only locally traded, there will be an initial fall in price. Where the stock's status is unchanged (for example, a locally traded stock remains only locally traded), price may either rise or fall. So the effects are ambiguous unless we have information on the firm's shareholders.

A more interesting hypothesis would be to consider the effect on the discount rates and the covariance structure of returns when there is market segmentation. If a cross-border merger simply involves a combination of the two firm's cash flows and the rates at which these flows are discounted are unchanged, then the covariance structure of the stock returns should be unaffected. In other words, the sensitivity of the returns of the merged firm's stock to national market returns should be the same as that of a portfolio of the stocks of the two separate firms. There are two principal reasons that the factor loadings may change as a result of the merger. Cross-border mergers may affect the aggregate cash flow stream of the two firms.

For example, the acquirer may divert production to its home country or may change its output such that the variance of cash flows increases in the home country. Such moves could be expected to induce a change in the exposure of the stock of the combined firm to country factors. However, it seems unlikely that that shifts in these cash flow exposures would be rapidly apparent or would be systematic in their effect. We suggest that a more likely source of systematic changes in factor loadings would be that the merger results in a shift in investor clienteles and thereby causes the stock of the merged firm to move more closely with the returns of the acquirer's national market.

A preliminary study by Brealey, Cooper and Kaplanis (1998) examines the effect of cross-border mergers on the covariance structure of equity returns for a sample of 74 mergers. The principal finding is that the effect of the merger is to cause the returns to load more heavily on the market of the acquiring firm and less heavily on the market of the target. For example, for 39% of the companies in their sample the beta of the combined company against the target's market index decreased and the beta against the acquirer market index increased after the announcement of the merger. This is significantly higher than 25% proportion of the null hypothesis. This result is consistent with the market segmentation hypothesis and with the evidence that returns of multinational companies do not fully reflect the international mix of their operations. It raises interesting questions about how to estimate the incremental contribution of the risk of a cross-border acquisition. If the risk characteristics of the acquired company change as a result of the acquisition, then its contribution to the risk of the shareholders of the acquiring company cannot be measured by its risk as a stand-alone company. So this result, combined with the results on the share price behavior of international companies, adds another level of complexity to international capital budgeting and valuation even beyond the usual question of whether international capital markets are integrated or segmented.

10. Summary and Conclusions

We observed at the beginning of this paper that the distinguishing feature of international finance is not simply that countries have different currencies but that international markets are also differentiated by withholding taxes or transaction costs, various institutional restrictions, information costs, and behavioural influences such as the benchmarks for measuring fund performance.

Corporate financial decisions would be relatively straightforward if international markets were either completely integrated or segmented. Empirical evidence, however, suggests that markets are partially segmented and it is this that complicates the analysis. The fundamental issues of international corporate finance are complex. They involve various dimensions of what it means to be international:

- whether a company's operations are internationally diversified

- whether share price behaviour reflects the international diversification of operations
- the size and nature of the costs of foreign corporate investment
- whether the company has shareholders from many countries or just from its domestic country
- whether its shareholders hold internationally diversified portfolios
- the size and nature of the costs of cross-border portfolio investment
- mechanisms to reduce the costs of cross-border portfolio investment

Answering these questions involves an understanding of where the costs to international investment arise and what we therefore mean by a company's domicile. We suggested that insights into these issues may be provided by an analysis of the effects of cross-border listings and mergers and acquisitions.

Our discussion of access costs also led us to raise a further important question: Does market segmentation affect the covariance structure of returns? We summarised a number of indications that changes in discount rates may be country-dependent. Thus, actions that firms may take to reduce their access costs (such as cross-border listings or acquisitions) can also change the risk characteristics of the stocks.

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