

Comments on
“The Impact of Globalisation on the Equity Cost of Capital”
by Gikas Hardouvelis, Dimitrios Malliaropoulos and Richard Priestley

General Comments

Harvouvelis, Malliaropoulos, and Priestley (HMP) undertake an interesting and important exercise: to determine how European economic integration has altered the contributions of local (country) and global (EU) risk factors to the expected excess equity returns in six countries across ten industrial sectors. They do this in the context of a model of evolving economic integration, where the degree of integration over time is measured by the forward interest rate differential between each of five countries and Germany. Their goal is to examine the effect of integration on the equity cost of capital. While some of their results may be a bit puzzling, overall they are indeed impressive and for a number of sectors point to a sizeable decline in the EU cost of capital. My job is to look critically at their analysis while applauding their efforts.

First the question of what is meant by “integration”. How we interpret their empirical results hangs importantly on how they define integration/globalization. Their definition of “globalization” is “a change in the regulatory environment that removes barriers to free trade and a process of increased stock market integration in which the pricing of local stocks is increasingly dominated by international risk factors.” HMP argue that earlier event studies measuring the impact of “liberalization” on the cost of equity capital found relatively little impact. They criticize these studies on the basis of the measurement of the timing and anticipation of liberalization, the discreteness of the jump from segmented to integrated markets, as well as the measure of the cost of capital. What is needed, they argue, is a conditional asset pricing model of partially integrated markets. Well enough. Note, however, that the measure of integration used in their model is not specifically related to integration resulting from the decline in European investment barriers. Their time-varying measure of integration is a function of the forward interest rate differential - that is, market expectations of whether a country would adopt a single European currency. This may be only weakly related to the actual timing of the fall of cross-country portfolio investment barriers. We must recognize that monetary integration is not the same as financial integration. The US and Canada can be said to be very closely financially integrated even though they do not share the same currency or central bank. Thus, their model is in fact addressing the impact of *monetary integration* on the cost of capital in Europe, not *financial integration* determined by specific changes in financial regulations, standards, and customs. The calendar of European monetary integration and financial integration do not perfectly overlap. Timing is everything in the interpretation of the results of this interesting paper.

Hypothesis and Methodology

Why is this an important distinction? If our measure of "integration" is a monetary measure, we need to ask how the adoption of a common currency can influence the equity cost of capital. Defining the equity cost of capital as the sum of the risk free rate and the equity price premium, HMP suggest the impact of "economic and monetary integration in Europe" will, via the convergence in short-term interest rates, have a direct effect that lowers the risk free rate. The "indirect effect" on the cost of capital comes about from a decline in the equity risk premium. Here comes the leap of faith. Their specific argument is that "this effect is due to the gradual abolition of barriers to intra-EU investments and the launch of the common currency". But these two factors are separate and distinct contributions and should not be lumped together in the cloud formation "integration".

It is not immediately obvious how a common currency reduces the equity risk premium. More on that in a moment. The removal of regulatory investment barriers could indeed reduce the equity risk premium. But the time-evolving measure of integration used to weight "local risk" and "global risk" is not dependent on the decline in cross-border restraints on investment. It is a function of expectations of a country's participation in monetary union. Thus one has to assume either that expectations of monetary union captured by the forward interest rate differential are somehow related to (expected future) declines in investment barriers (eg., the decline in pension fund cross-border portfolio investment restrictions) or that expectations of monetary union somehow directly reduce the equity risk premium. In short, there is a fundamental question of how the equity risk premium is changing in the run-up to the adoption of a common currency.

Let's touch briefly on the question of how a common currency might reduce the equity risk premium. Recall the story of the so-called "equity premium puzzle", the fact that over long periods of time, stock returns are considerably higher than returns on short-term government securities. Intertemporal consumption theory would suggest that the equity premium should be high if stock returns are strongly correlated with consumption growth, that is, if stocks are not a good hedge of consumption risk (Cochran (2001)). The puzzle is that consumption growth is in fact not highly correlated with the return on equity. For many countries, real consumption growth is quite stable. Then why does equity have such a high return over the risk free rate? The standard answer is that investors must be extremely risk averse. Is it possible that expectations of monetary integration in Europe helped to reduce the degree of investor risk aversion?

Evidence suggests that the equity risk premium in Europe is both high and varies significantly across countries (Campbell (2001)). It is possible that during the 1990s the gradual move to a common currency during a period of declining cross-border investment barriers reduced the degree of investor risk aversion and the equity premium. But this is not the argument that HMP use. They may be somewhat faulted for not laying out more sharply just how their notion of integration reduces the equity risk premium. They are certainly correct that there could be a convergence in the cost of equity capital across countries for a given sector as the "degree of market integration" rises. But the question is how to appropriately measure the degree of market integration in order to weight the two Betas in the construction of the expected excess return.

The empirical results obtained by HMP, reviewed below, suggest that much of the convergence (average dispersion of cost of capital within a sector) in the equity cost of capital in across European countries (Figure 3) appeared to take place between mid-1996 and end-1997. Similarly for the "saving in cost of capital" in individual sectors (Figure 1). However, until recently, institutional change with respect to cross-border financial investment in Europe has been rather gradual and holdings of foreign equity modest (Davis and Steil (2000)). The Financial Times recently reported that pension funds in Austria, Denmark, Finland, France, Norway, Portugal, and Spain invest less than 5 percent or less in foreign equities. William M. Mercer, Inc., the author of "The European Pension Fund Managers Guide", also notes the "slow trend" in European equity investment in foreign markets. The 2001/2002 edition of this guide lends some support to HMP'S argument regarding a greater European appetite for foreign equity. However, it is only in the last two years that there has been a significant shift by pension funds from domestic to Eurozone equities, with the number of domestic equity mandates falling by 60 percent. Thus the institutional and behavioural adjustments which might affect cross-border equity flows in Europe do not seem to be entirely consistent with the timing of the decline in the measured cost of capital. Admittedly, it is not obvious exactly *when* we should expect the cost of equity capital to decline in response to the removal of investment barriers. It could occur before or after financial liberalization. This could blunt the force of our criticism.

Comments on Results

The empirical results obtained by HMP are interesting and encouraging but also a bit puzzling. What makes their results so appealing is their use of cross-country and cross-sector data and the finding that out of ten sectors only one does not reveal a decline in the average cost of equity capital over the sample period. In many cases the local "beta" is larger than the global (EU) beta, as we would expect. However, it is also true that in a good number of cases the difference is not that large and in two sectors the global beta is larger than the local beta in half the cases. No reason is given for the very low integration parameter obtained for Italy. Some institutional detail on the integration process would have been helpful, but again we note that the integration parameter is picking up expectations of monetary integration, not financial integration.

It is encouraging to see that the contribution of global risk to total expected return is on average in the 30 percent range but close to unity by the end of the sample period. However, it is difficult to understand the one exception to the decline in the cost of equity capital, Germany. In each of the ten sectors it is seen to rise. For this country the cumulative effect of integration across sectors is an increase in the cost of capital of 2.08 percentage points, hardly trivial given an average equity market premium of 6.18 percent over the period 1973-1998. The convergence tests are also a bit puzzling, showing cross-country convergence in the cost of capital within sectors but for France and Germany an increase in divergence of the cost of capital across sectors. A final puzzle is the time profile of the decline in average cross-country dispersion in the cost of capital (within a sector) compared with the time profile of the cross-sectoral dispersion (within a country), seen in Figures 3 and 4. The cross-country dispersion declines dramatically between mid-1996 and end-1997, some time before monetary

union. However, through 1997 and 1998 cross-sectoral dispersion of the cost of capital was rising. How can one explain less cross-country dispersion but greater cross-sectoral dispersion in the cost of capital two years before monetary union?

Is it possible that the cross-sectoral dispersion of the cost of capital is more related to short-term cyclical conditions than the cross-country dispersion?

Comments on Interpretation

HMP conclude by suggesting that "the increase in portfolio diversification across EU countries has led to increased risk sharing among EU investors and, hence, to a decrease in diversifiable risk." With the exception of one country, Germany, and one sector, information technology, there appears to have been a "significant reduction in the cost of equity". While their results are indeed impressive, this conclusion would be more palatable if they provided some evidence that there has been a sizable potential or actual increase in intra-EU equity portfolio diversification. To my knowledge, much of the diversification in EU portfolios during the second half of the 1990s was not with EU equities but with US stocks. For example, in 2000, of the \$175 billion of net foreign purchases of US corporate equity, Europe accounted for 94 percent, and for 70 percent of US corporate bonds. Removing the UK and Switzerland, Europe still made up 59 percent of net foreign purchases of US stocks in 2000. Were EU countries really integrating among themselves during the 1990s? A comparison of purchases by Euro-adoption countries of US and EU equities in recent years could be insightful.

We might also want to gaze sceptically at Figures 1 and 2 showing the cumulative average saving in the ten sectors' cost of capital. These show a sharp decline in the cost of capital for several sectors around 1997. HMP attribute this to the convergence in European bond yields and the satisfaction of the Maastricht EMU entry criteria. An alternative explanation is that the cost of capital in Europe during the second half of the 1990s was strongly influenced by the behaviour of US equities. Using daily data on equity prices, Bernard and Bisignano (2000) conduct Granger causality test for a "Nasdaq effect" for the period January 1995 to October 2000. They found strong evidence of "one-way causality" from the US Nasdaq market to equity markets in France and Germany. Using variance decompositions for the period January 1994 - June 1997 and July 1997 - April 2000, they also found a large increase in the variance of equity price innovations in France and Italy attributable to movements of the US S&P equity price index. It would be interesting to see how the addition of the US equity price index to equation (1) and the estimation of a third "beta" would alter their results. This may also be justified given the number of cross-listings of European shares on the New York Stock exchange during the 1990s. A further suggestion would be to add the United Kingdom to the countries covered in their study. This would help to determine whether the measure of time-varying equity market integration is different for a European country which did not adopt the Euro.

The few reservations I have with respect to the HMP paper are prompted more by their interesting and impressive results, in comparison with competing literature, than with any flaws in their methodology or execution. Financial integration should indeed lead to convergence in the equity cost of capital across countries. I do question, however, if, after some initial "stock adjustment" (their direct effect), monetary union plays a big role in bringing this convergence about. The US and Canada still have separate currencies and independent central banks, yet because of few restraints on cross-border portfolio investment and cross-listing shares, the cost of capital in the two countries appears to be quite similar (Ando, Hancock, and Sawchuk (1997)). And this has occurred despite substantial movement in the US-Canadian real exchange rate.

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