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103

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WITHOUT THE COMMON CURRENCY

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- The costs of euro membership have been a topic of lively political debate in recent years, and they have received ample media attention. In contrast, numerical estimates on the benefits of the euro have been practically non-existent.
- While the corporate benefits of the euro have been widely documented in the academic literature, the practical value of those publications has suffered from their technical complexity.
- Several experts have linked the fast growth of corporate bond markets in Europe since 1999 to the introduction of the euro. With growing arm's length credit markets in Europe, companies' access to financing has improved significantly.
- Companies from countries with small and unstable legacy currencies, such as Finland, have benefited comparably more from the widened financial markets.
- The cost savings due to the lowered cost of debt are non-trivial. For a set of large Finnish companies alone, the narrowing spread between their interest expenses and those of their German counterparties has resulted in after-tax cost savings of over €400 million each year.
- Sweden, Norway, and Denmark may have received some free-rider benefits while staying outside the currency union. However, it is difficult to estimate whether such benefits would have been obtainable had Finland chosen to keep its own currency.
- Reductions in the cost of financing should increase companies' ability to invest, and thus these savings are likely to have multiplicative effects on the economy for years to come.

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The Finnish Institute of International Affairs

The ongoing euro crisis has provoked mounting criticism against the common currency, with some commentators even calling for abandonment of the euro. However, experts in finance and economics are quite unanimous in their support for the euro. Perhaps because some of the benefits of the euro are difficult to communicate to the general public, estimates of those benefits are absent from the current debate. In contrast, the costs of the euro, especially in the form of current aid packages, have exact price tags attached to them, as they are part of the political discussion around Europe. In this paper, I highlight some of the corporate finance literature on the effects of the introduction of the euro, with a special focus on the development of the corporate bond market in Europe, and its effects. I also attempt to estimate the monetary benefits to Finnish companies that are attributable to the improved access to bond financing enjoyed by Finnish companies.

The introduction of the euro was a one-of-a-kind event in global economic history. The euro linked together a number of already developed financial markets and brought a new currency into the market place. At the time of the euro's introduction, the noted expected corporate benefits of the new common currency included increased market integration of both the stock markets and the bond markets, and the removal of exchange rate risk within the common currency area. During the 12 years since the birth of the euro, researchers have studied these effects, and today, numerous studies provide evidence of these benefits.

Reduced foreign exchange risk

As the euro has made foreign exchange transactions between legacy currencies a thing of the past, one would expect to see a marked reduction in the sensitivity of the stock returns of European companies to exchange rate fluctuations. Several research teams have considered changes in the foreign exchange risk faced by European companies before and after the euro.¹ Evidence is surprisingly mixed. S.M. Bartram and G.A. Karolyi report only minor reductions in the foreign exchange risk of European companies, while their results point out that the market risk of

those companies has decreased significantly.² Bris et al. view this as evidence of the foreign exchange risk becoming a more integral and inseparable part of systematic risk.³ In contrast to Bartram and Karolyi, who use a trade-weighted foreign exchange index in their study, Muller and Verschoor study the sensitivity of European companies to individual currencies, and report a marked reduction in the foreign exchange risk of European companies, especially where exposure to the dollar and the pound are concerned.⁴

Any reductions in uncertainty about companies' future cash flows should increase their ability to invest and therefore grow. It is easy to argue that from the foreign exchange risk viewpoint, the impact of the introduction of the euro on Finnish companies has been significant. For transactions within the eurozone, the foreign exchange risk has effectively been removed, as exporting companies and their foreign customers use the same operating currency. The risk has also been significantly reduced for trade transactions with companies outside the euro area.

The euro is arguably more stable and predictable than the Finnish markka was, and given the developed markets in euro hedging instruments, it is also easier and more cost-efficient for companies to insure their transactions against adverse foreign exchange fluctuations, should they choose to do so. Furthermore, outside the eurozone, customers are more likely to accept the euro as the invoicing currency than the markka, which will obviously further reduce foreign exchange risk, thereby increasing the competitiveness of Finnish exporters.

1 Most studies define foreign exchange risk as the variation in companies' value, attributable to exchange rate fluctuation.

2 Bartram, S.M., and G.A. Karolyi, 2006, "The impact of the introduction of the Euro on foreign exchange rate risk exposures", *Journal of Empirical Finance* 13, 519-549. Market risk, or systematic risk, is the part of company value fluctuation that is connected to market-wide effects and general economic conditions. In contrast to company-specific risk, market risk cannot be diversified away from a stock portfolio.

3 Bris, A., Y. Koskinen, and M. Nilsson, 2006, "The real effects of the euro: Evidence from corporate investments", *Review of Finance* 10, 1-37.

4 Muller A., and W.F. Verschoor, 2006, "European foreign exchange risk exposure", *European Financial Management* 12, 195-220.

Lower cost of financing

The above-mentioned decrease in market risk documented by Bartram and Karolyi and others is certain to reduce the cost of equity for euro area companies. Indeed, Hardouvelis et al. report a reduction in the cost of equity, attributable to the introduction of the euro.⁵ They find a reduced cost of equity in five of the six euro countries included in their study, with Germany being the only exception. The magnitude of change in the cost of equity varies from 0.85% for Spain to 1.96% for France. For EU countries that are not part of the EMU, Hardouvelis et al. find a smaller and statistically insignificant reduction in the cost of equity. In more capital-intensive industries such as General Industries and Resources, the reduction is over 2% across Europe.

Such changes in the cost of equity financing should have a very significant impact on companies' ability to invest, which should further enhance their market value. Namely, reductions in the cost of equity lower companies' overall financing costs, which in turn lower their hurdle rates to invest, which further widen the set of feasible projects for a company. Indeed, researchers have reported increases in corporate valuations⁶ and investments⁷ attributable to the euro. Both studies report a particularly large effect for countries that suffered a currency crisis in the early 1990s – Finland obviously being part of that group. Increases in corporate valuations and investments may well be caused by the reported reductions in the cost of capital, which includes reductions in the cost of both equity and debt financing.⁸

Birth of corporate bond markets

In this study, I concentrate on the effect that the euro has had on the cost of corporate debt. Corporate

bond markets offer companies an alternative to bank financing, which has traditionally been the dominant source of debt financing in Europe.

The corporate bond market works much like the market for Government issued debt. Corporate bond issuers are companies that issue publicly traded debt securities. Unlike sovereign debt, which is often considered to be virtually free of default risk (with some exceptions, such as the recent episode in the euro area), corporate bonds contain both interest rate risk and default risk. Corporate bond markets play a very important role in some markets. For example, De Fiore and Uhlig estimate that the ratio of bank financing to bond financing in the U.S. in 1997–2003 was 0.74, indicating that well over half of the entire corporate borrowing in the country came in the form of bond financing.⁹ Regulation of the corporate bond market resembles that of the stock market. The issues are registered with the authorities, just like common stocks, and they are traded on the secondary market under similar exchange regulations.

The corporate bond market is an area where market integration upon euro introduction has produced perhaps the most visible results. While only the largest European companies were able to raise funding from the bond market prior to 1999, the European corporate bond market has grown rapidly since the introduction of the euro, both in depth and scope. The euro has thus broadened the financing choices available for euro-area companies by allowing them to substitute traditional bank financing with arm's length debt financing from the bond market.¹⁰ The effect should be particularly significant for companies from smaller euro countries such as Finland, as in those countries the corporate bond markets in legacy currencies were extremely limited in scope. Pagano and von Thadden report that bond financing

5 Hardouvelis, G.A., D. Malliaropulos, and R. Priestley, 2007, "The impact of EMU on the equity cost of capital", *Journal of International Money and Finance* 26, 305–327.

6 Bris, A., Y. Koskinen, and M. Nilsson, 2009, "The euro and corporate valuations", *Review of Financial Studies* 22, 3171–3209.

7 Bris, A., Y. Koskinen, and M. Nilsson, 2006, "The real effects of the euro: Evidence from corporate investments", *Review of Finance* 10, 1–37.

8 Bris, A., Y. Koskinen, and M. Nilsson, 2011, "The euro and corporate financing", Bank of Finland Discussion Paper 6 – 2011.

9 De Fiore, F., and H. Uhlig, 2005, "Bank finance versus bond finance – What explains the differences between US and Europe?", ECB working paper no. 547, November 2005. In contrast, De Fiore and Uhlig report the same ratio for the euro area to be 7.3. In other words, for every bond euro borrowed, there were 7.3 euros borrowed from financial institutions during their sample period.

10 Rajan, R., and L. Zingales, 2003, "Banks and markets: The changing character of European finance", NBER working paper no. 9595.

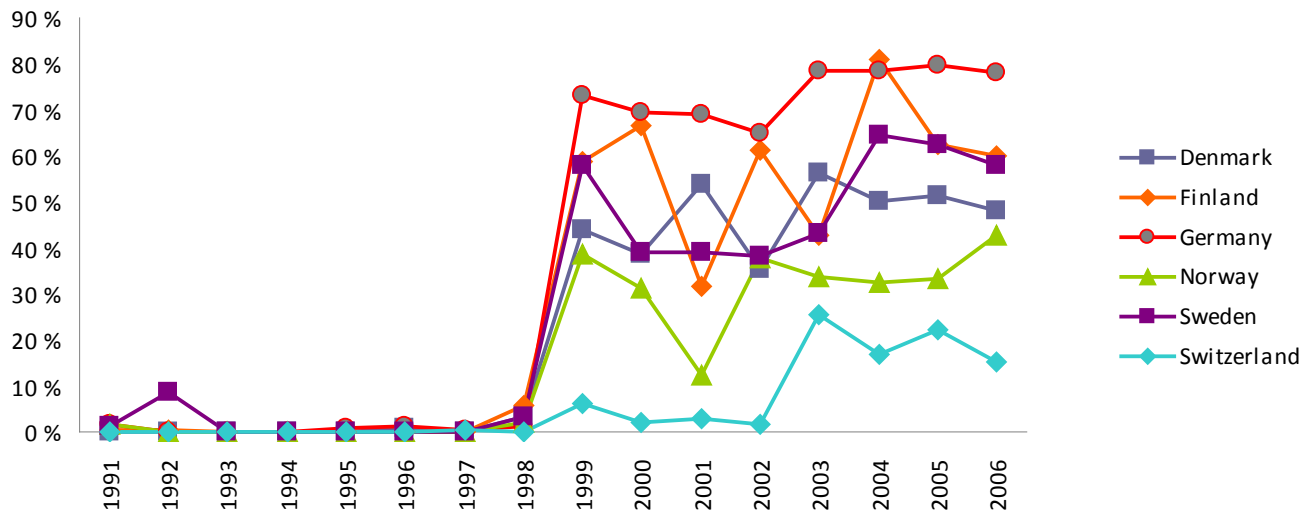


Figure 1A: Proportion of corporate bonds issued in euros by country

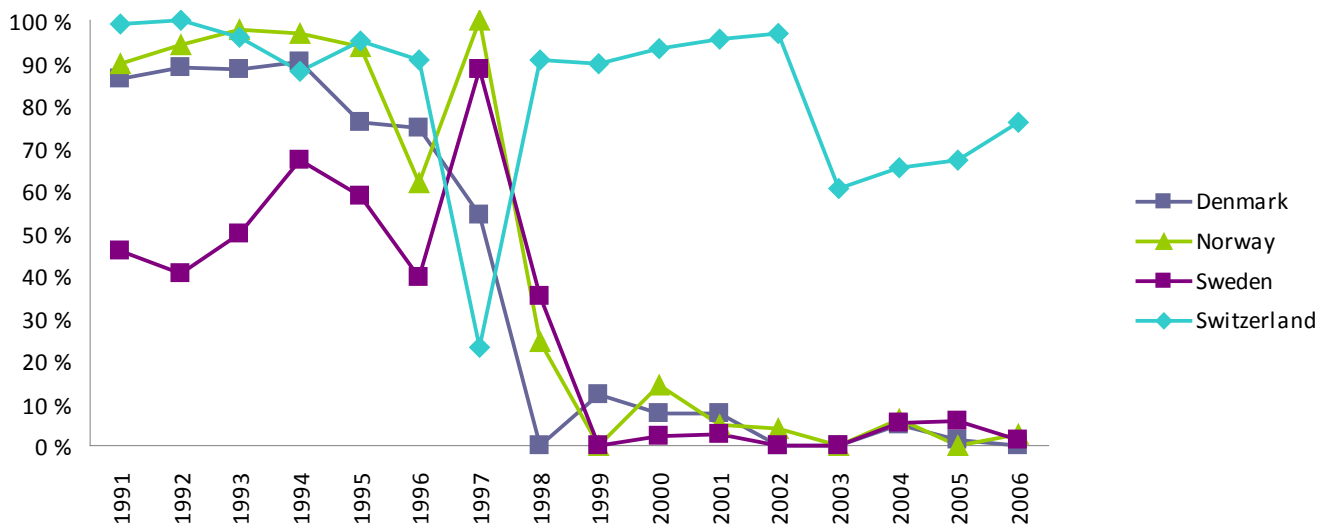


Figure 1B: Proportion of corporate bonds issued in home currency by country

has become available to smaller companies and those with lower credit ratings.¹¹ These findings chime well with the original expectations. For example, Willem F. Duisenberg, the President of the ECB at the time, spoke on those expectations on June 14, 1999. The enlarged common currency area has also brought about increased competition for the issuance process, which has reduced issuance costs significantly.

What are the more precise channels through which the cost of debt may have decreased for euro area companies? I have argued before that companies should be better able to match the structure of their

liabilities with that of their assets when they have access to bond financing. Traditionally, companies in Europe have relied on debt financing from local banks. Bank financing tends to be floating rate debt, and it therefore exposes companies to interest rate risk – especially those companies whose cash inflows do not vary with interest rates.¹² With bonds, companies can, among many factors, adjust the pattern of their interest cash flows in various ways. It is common

11 Pagano, M., and E.-L. von Thadden, 2004, “The European bond markets under EMU”, CEPR working paper no. 4779.

12 Companies can use derivatives such as interest rate swaps to adjust their interest rate risk from that of the original debt contract. However, American companies rarely adjust their interest rate risk after issuance. In Europe, new issues affect companies’ interest rate risk even after controlling for the effect of the swap market.

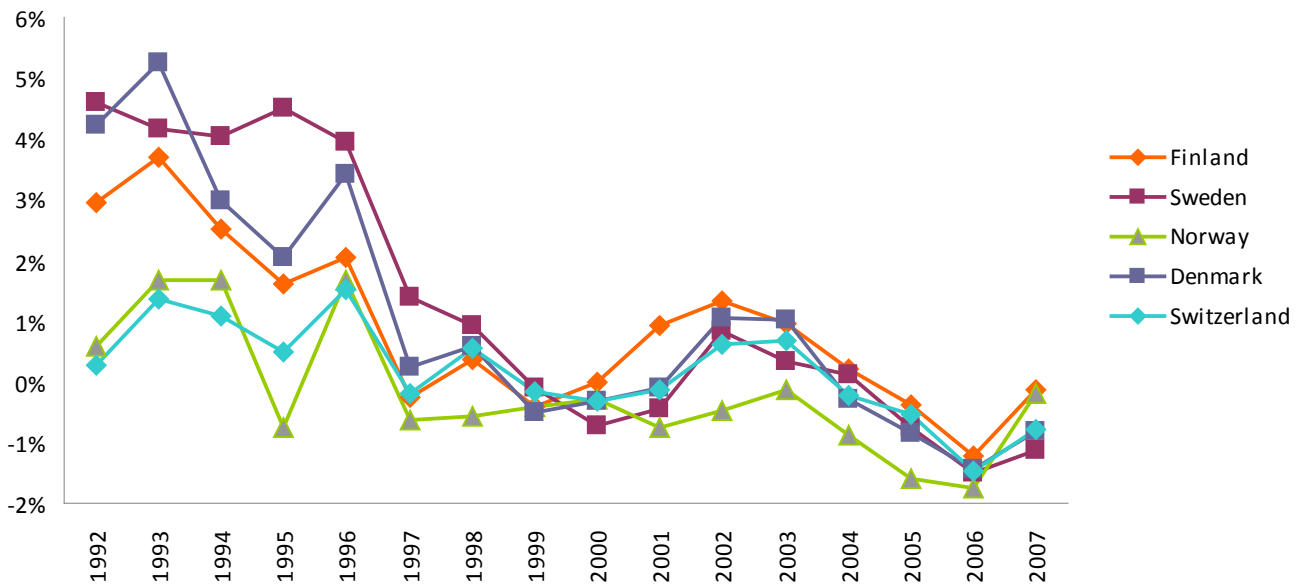


Figure 2A: Spread in median cost of debt over German companies

for bonds to have a fixed coupon rate that is paid throughout the life of the bond, which can be up to 30 years. Corporate bonds can also be issued with zero coupons, meaning that the entire interest on the loan is paid at maturity. When companies are able to access more “tailor-made” financing packages, the resulting gain in efficiency should lower the cost of financing.

The popularity of the euro outside the eurozone

In addition to the demand-side effects, the supply of debt financing has also experienced a shift in Europe. Lane reports a worldwide increase in demand for euro-denominated debt issues.¹³ As the euro is favoured by investors in corporate debt instruments, it should obviously lead to reduced financing costs in the common currency. This effect should be largest for companies from countries with small legacy currencies, such as Finland.

The attractiveness of the euro as an issuance currency is demonstrated by its popularity even outside the eurozone. Figures 1A and 1B illustrate the choice of currency denomination by corporate issuers from various countries. The data originate from the SDC New Issues database. Figure 1A indicates the use of the euro (or ECU prior to the euro) as the financing currency. Euro-denominated debt has also become

widely adopted outside the eurozone, even in Switzerland, where developed financial markets in local currency have existed for a long time.

The euro has replaced the home currency as the most popular financing currency, as indicated by Figure 1B. With the exception of Switzerland, home currency bond issuance has become negligible since the introduction of the euro.

To make a rough estimate of the benefits to Finnish companies in the form of reduced cost of debt, I analyze the evolution of the spread of estimated cost of debt between Finnish and German companies from 1992 until 2007 in Figure 2A. The estimation was made by computing the median value of interest expenses/total debt for all publicly traded companies included in the Worldscope database for each country. For comparison, I provide a similar statistic for Sweden, Norway, Denmark, and Switzerland as well. Interestingly, while Norway and Switzerland do not experience any significant changes over the time period, the reduction in the cost of debt is clearly visible for companies from Finland, Sweden, and Denmark. This suggests that Sweden and Denmark have been able to reap some of the benefits of the euro, while staying outside the currency union.¹⁴

If we treat the first years of Figure 2A as abnormal due to the recovery period from the Finnish banking

13 Lane, P.R., 2008, “EMU and Financial Integration”, IHS Discussion Paper No. 272.

14 See also Figure 1A above.

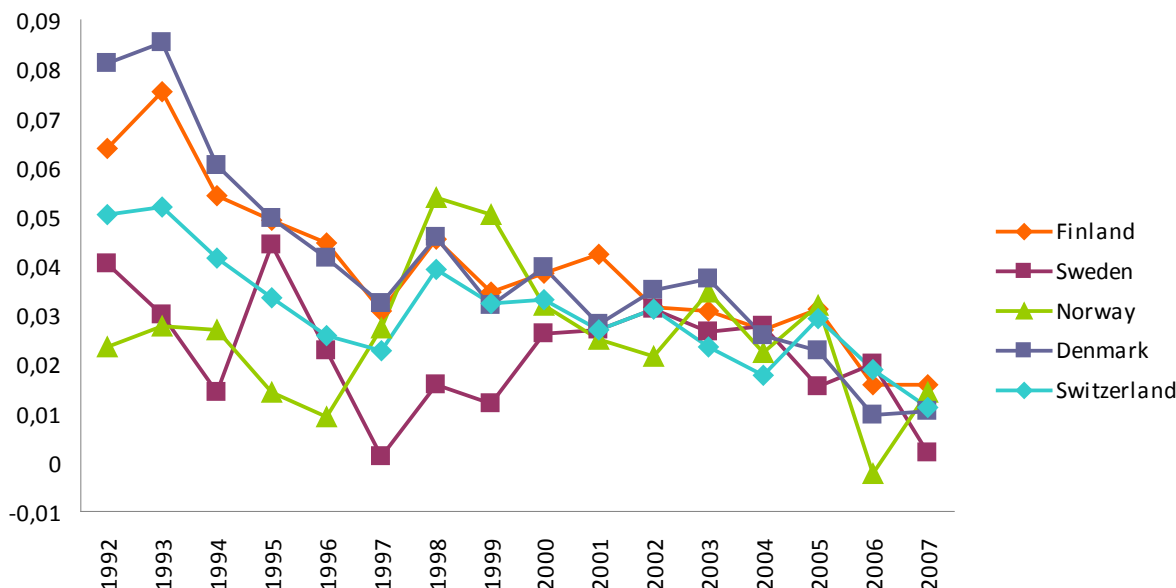


Figure 2B: Spread in median cost of debt over German companies – balanced panel

crisis, one could estimate based on the Figure that the spread between Finnish and German companies has narrowed from about 2% in 1996 to around zero in more recent years. Between 1999 and 2007, the Finnish companies in the *Worldscope* database had a grand total of debt between €28.9 billion in 2000 and €42.4 billion in 2007.

Since interest expenses are tax deductible, the entire 2% savings in the cost of debt would not accrue to the companies.¹⁵ By using the 26% corporate tax rate, we could arrive at an estimate of $(1-26\%)(2\%) = 1.48\%$ in savings in corporate borrowing. Using the high and the low points of total debt by Finnish companies during the euro era, we could then estimate that the annual after-tax savings have been between €428 million and €629 million. These estimates only take into account savings due to the cost of debt, and overlook savings in the cost of equity, which could be of a similar magnitude given the Hardouvelis et al. findings mentioned above. They are also limited to savings accruing to those companies that are available in the *Worldscope* database with a sufficient history of accounting information (since 1999, the number of Finnish companies in the sample has varied by year between 57 and 63).

As already noted, the pattern for Finland resembles that for the non-euro countries of Sweden and

Denmark. One could posit that these countries have reaped free-rider benefits from the euro. The Danish currency is pegged to the euro, which would obviously not be possible if the euro did not exist. As indicated in Figures 1A and 1B, over half of the corporate bond issues from those countries are denominated by the euro, while home-currency issuance has ceased almost completely since 1999. It is therefore quite clear that the euro has played a role in the reduction in financing costs in those countries as well.

The observed pattern in Figure 2A could be caused by new companies entering the market, and thus affecting the median value only in the latter part of the Figure. In order to alleviate the concern, I include in Figure 2B a balanced panel of only those companies for each country that are in the *Worldscope* database for the entire sample period.

The biggest difference between Figures 2A and 2B relates to Sweden – no apparent trend exists in Figure 2B. In other words, the apparent free-rider benefits for Sweden, indicated in Figure 2A, diminish in a more controlled comparison. However, for Finland and Denmark, a clear downward trend is present. Leaving the banking crisis years aside, the spread between the Finnish and German median cost of debt was generally between 4% and 5% in the 1990s, and decreased to 1% to 3% in the 2000s. The magnitude of the reduction in the spread is thus similar to that suggested by Figure 2A.

¹⁵ Obviously, the part that would not accrue to companies would contribute to tax revenues and thus benefit the nation.

Could Finland have been a successful free rider?

What would have happened to Finnish companies and their cost of debt if Finland had decided to keep the markka in 1999? It is difficult to say whether Finland would have also been able to free-ride and gain similar benefits without adopting the euro. Even during the markka era, some Finnish companies used foreign currencies, such as the Deutsche Mark, the Pound, and the Dollar, as their issuance currencies. Issuing debt in a foreign currency gives rise to foreign exchange risk, unless the company has predictable cash inflows in the same foreign currency, and can thus match the inflows and the outflows.

The largest Finnish companies had access to international bond markets prior to the euro, and many of them had foreign currency-denominated cash flows to match outflows. For those companies, the euro has not made a big difference when it comes to debt issuance. However, as reported by Pagano and von Thadden and more recently by Déléze and Korkeamäki¹⁶, the biggest gains from corporate bond market growth have accrued to smaller, financially constrained companies. If the latter had been able to deal with issuing in foreign currencies, then perhaps a reduction in the cost of debt would have occurred for Finnish companies, even if the country had kept the markka. However, the big question is whether the corporate bond market would have grown to its current depth and width with a narrower eurozone. The presence of Finland in the EMU is likely to have a negligible marginal effect on the evolution of the market, but the more countries that pursue the free-rider benefits, the smaller those benefits should be.

We should keep in mind that the analysis presented in Figure 2B indicates that while for Finland and Denmark the reduction in the cost of debt is apparent also for companies that are in the study sample throughout the entire sample period, for Sweden, the older companies do not seem to have experienced changes in their cost of debt. Also, as mentioned above, Hardouvelis et al. report that savings in the cost of equity appear to be concentrated in the EMU countries, so on the equity side, no significant free-rider benefits are identified.

16 Déléze, F., and T. Korkeamäki, 2011, "Interest rate risk management with debt issues: Evidence from a natural experience", Hanken School of Economics working paper.

Concluding remarks

Experts have provided evidence of reductions in foreign exchange risk, the market risk of equity, and subsequently the cost of equity. My own analysis suggests that Finnish companies' cost of debt has experienced a significant reduction when compared to German companies' cost of debt. This observed reduction is consistent with the hypothesis that as the euro has improved companies' access to bond financing, this wider access to debt financing has affected the cost of debt. The simple estimates above suggest that Finnish publicly traded companies have enjoyed total cost savings in the region of hundreds of millions of euros. There is obviously no reason to believe that these savings would be limited to the large publicly traded companies covered by the Worldscope database. One would expect these savings in financing costs, paired with reductions in the cost of equity, to have a significant effect on the competitiveness of Finnish companies.

I speculate that some of the reductions in the cost of debt could have accrued to Finnish companies even if the country had decided to stay outside the currency union. However, those free-rider benefits would have been sensitive to the currency composition of cash flows for individual companies. Any savings due to reductions in foreign exchange risk would have likely been lost if Finland had stayed outside the euro.

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