What effects is EMU having on the euro area and its member countries?
16 – 17 June 2005, Frankfurt am Main

Session III:
Financial integration

Discussant:

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EUROPEAN CENTRAL BANK

Financial Integration Session: The Impact of the Euro on Financial Markets

By L. Cappiello, P. Hartmann, P. Hordahl, A. Kadareja & S. Manganelli

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Agenda

- Market Integration
  - Financial vs Economic Integration
  - Segmentation and barriers to capital flows
  - Measuring Integration
- Additional Evidence from Equity Markets Returns
  - ***Ehling, Gerard and de Roon, 2005.***
- Evidence from International Portfolio Choice
  - ***De Santis and Gerard, 2005***
- Concluding Comments

Market Integration

A: Financial Integration:

The price of risk is the same across borders.

Investments with identical risks yield identical rewards, irrespective of their location

B: Economic Integration

Increased linkages and interdependences of economic activities across borders.

Risk defined in terms of global/regional factors rather than local factors

Market Segmentation and Barriers to Capital Flows

A: Segmentation:

Investors invest mostly in domestic markets.

Explicit barriers: legal restrictions, taxes, ...
Implicit barriers: risk, information, costs, ...

B: EMU and investment flows

Intra-EMU currency risk

Exchange and transaction costs

Transparency & information costs

Exposure and reward to regional rather than to local risk factors

Measuring Integration

A: Mean returns and the price of risk:

Only gobal risk is priced and its price is identical across all markets*, irrespective of investor or asset location*

B: Returns co-movements (correlation & volatility)

Higher co-movements are consistent with increased economic and/or financial integration

C: Exposure to Local & Global risk factors

Increased fraction of total risk linked to global/regional risk factors

D: Investors Portfolio Decisions

Changes in home bias, and increased investments in assets from countries with lower costs in term of risk, information or transactions

International Diversification in the Euro-zone: The Increasing Riskiness of Industry Portfolios

Esther Eiling, ***Tilburg University***

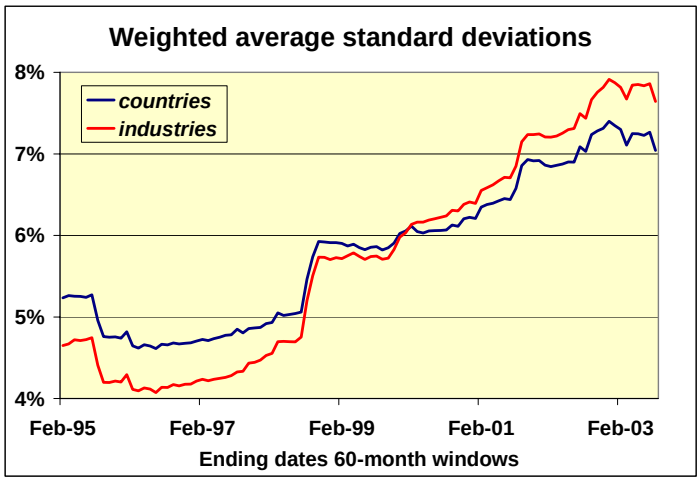
Bruno Gerard, ***Norwegian School of Management BI, and Tilburg University***

Frans de Roon, ***Tilburg University***

Data

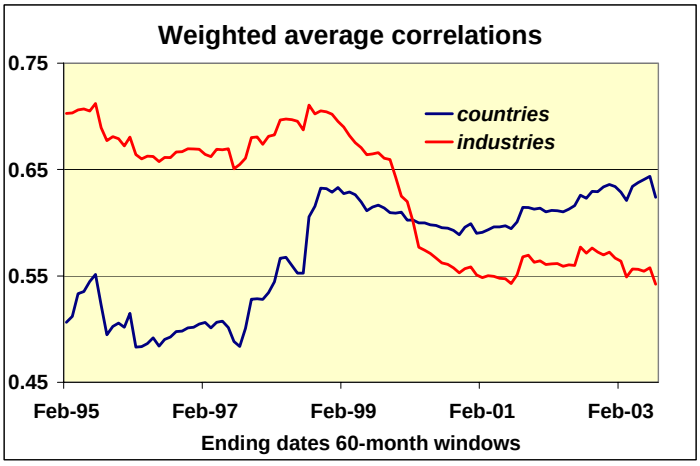
- 11 Euro-countries equity index portfolios and 10 Euro-zone regional industry portfolios
- Monthly data from April 1990 to September 2003: 162 observations
- Three sub-samples:
  - Pre-convergence period: April 1990 to December 1994
  - Convergence period: February 1995 to December 1998
  - Euro period: February 1999 to September 2003
- 60-month rolling windows

Equity Returns Total Risk in the EMU



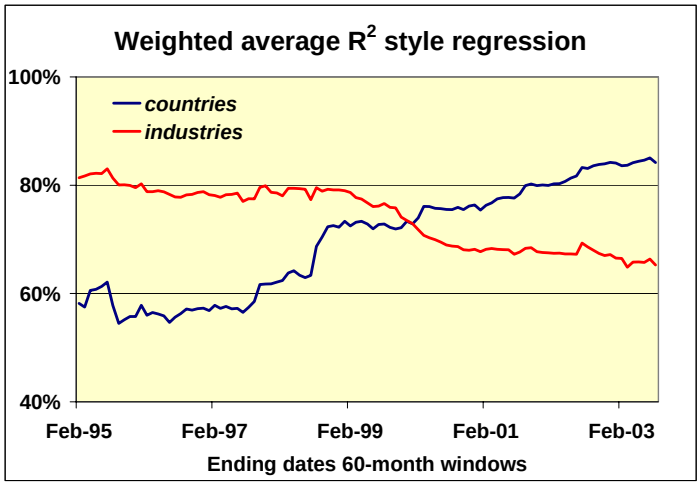
Time series of the cross sectional average across countries or regional industry portfolios of the previous 60-months returns stand. Deviation in percent per month

Equity Returns Average Correlation



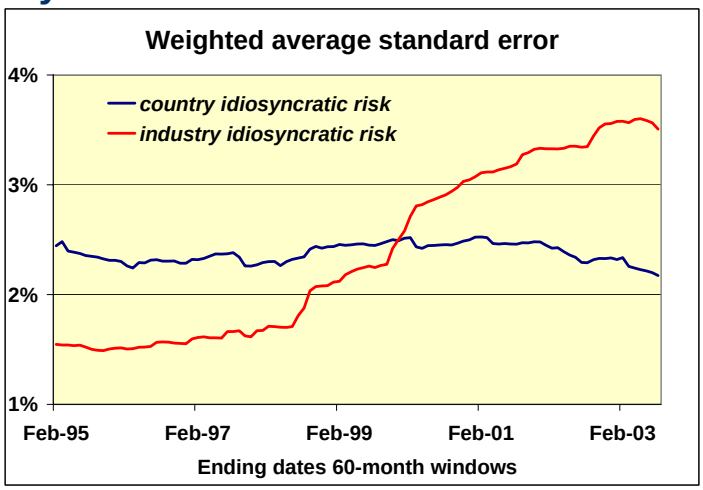
Time series of the cross sectional average across countries or regional industry portfolios of the previous 60-months returns pairwise correlation

Systematic Risk as Percentage of Total Risk



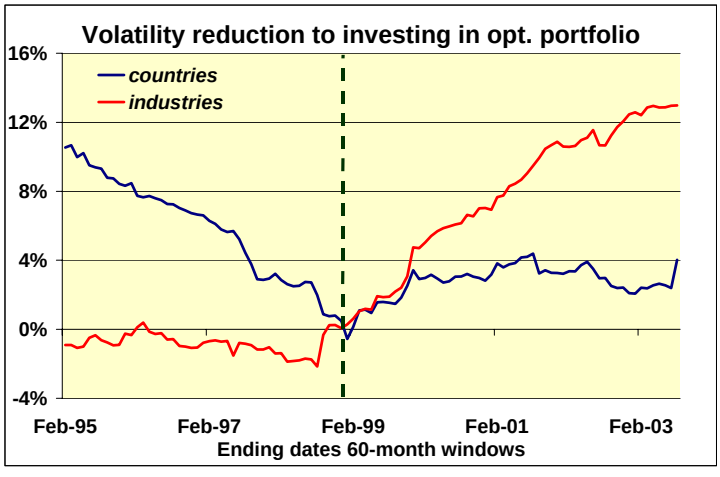
Time series of the cross sectional average of the R^2 of style regressions of countries on regional industry portfolios and of regional industry portfolios on country indices

Equity Returns Total Diversifiable Risk



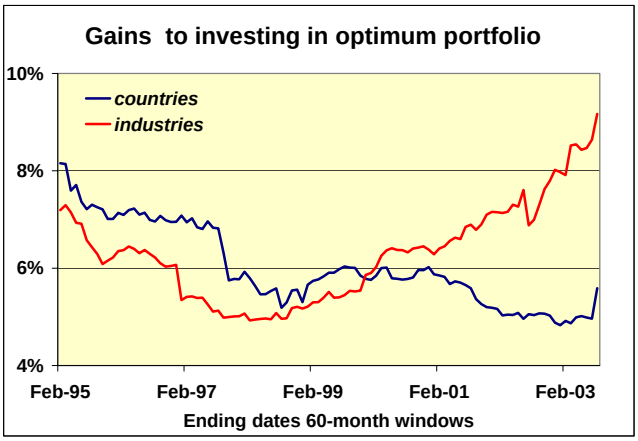
Time series of the cross sectional average of the s.e. of style regressions of countries on regional industry portfolios and of regional industry portfolios on country indices, in % per month

Euro-zone Diversification Benefits: Risk Reduction



Time series of the difference of the cross-sectional average of the volatility of countries or of regional industry portfolios minus the optimal portfolio volatility, as a percentage of average volatility

Euro-zone Diversification Benefits: Return Enhancement



Time series of the difference between the optimal portfolio Sharpe ratio and the cross-sectional average of the Sharpe ratio of countries or of regional industry portfolios, multiplied by the cross sectional average volatility of industries or countries, in annualized percentage return

Conclusions – Equity Markets

- Evidence consistent with increased market integration (co-movements/interdepence):
  - Increased correlations betwen country equity market portfolios
  - Increased fraction of regional systematic component in total country equity risk
  - Decreased benefits of cross-country diversification
- Evidence consistent with decrease in trading costs:
  - Increased volatility of regional industry portfolios
  - Decreased fraction of regional systematic component in total regional industry portfolio risk
  - Increased idiosyncratic risk of industry portfolios
- Increased importance (and benefits) of cross-industry diversification

International Portfolio Choice and the European Monetary Union

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Bruno Gerard, ***Norwegian School of Management BI, and Tilburg University***

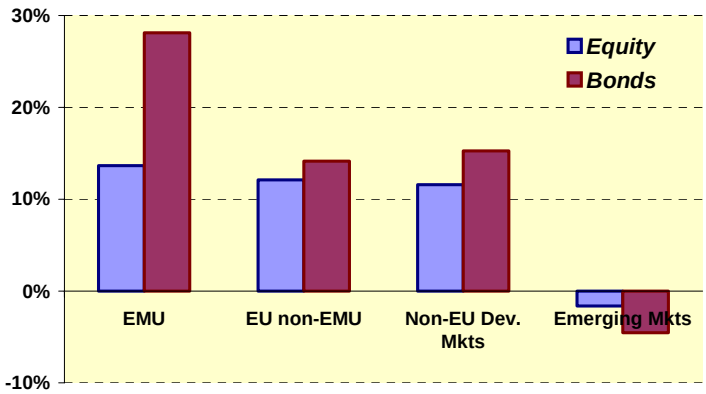
Data

- IMF CPIS Database **"Portfolio Investment: Coordinated Portfolio Investment Survey (CPIS)"**
- All participating countries provide a breakdown of their portfolio of foreign investment assets by the country of residency of the non-resident issuer
  - 30 participating countries in 1997, (but not Germany)
  - 235 countries in 2001 and after (includes Germany)
  - For 3 asset classes: equity, long-term fixed income and money market
- Focus on foreign portfolio shares and change thereof
  - For the original 30 countries plus Germany (complement IMF data with Bundesbank data)
  - From Dec. 1997 to Dec. 2001– from 1 year *before* to 3 year *after* the launch of the Euro.

What do we do?

- Changes in home bias
  - **Within the Euro-zone**
  - Across the world
- Changes in foreign portfolio allocations to EMU assets
  - **Within the Euro-zone**
  - Across the world
- Determinants of international equity and bond portfolio rebalancing from 1997 to 2001
  - **Role of EMU**
  - Rational portfolio motives
  - Information asymmetry & barriers to entry

Decline in Home Bias from 1997 to 2001



Source: IMF CPIS & Authors calculations.

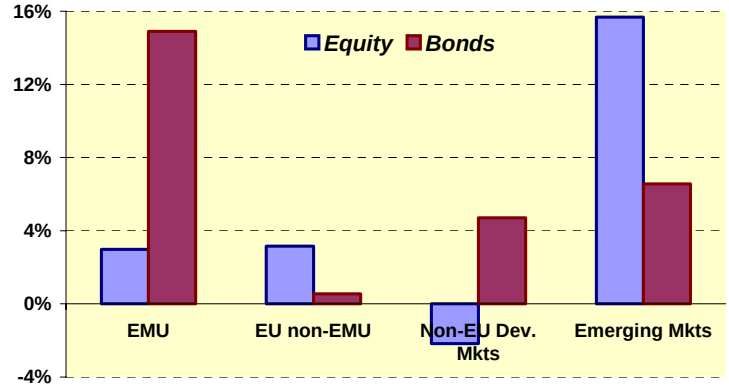
Average absolute reduction in the level of estimated home bias between 1997 and 2001 for country groups. Home bias is estimated as the optimal minus the actual share of foreign asset in a given country's total portfolio.

Decline in Home Bias from 1997 to 2001

1997-2001 Changes in Home Bias	Equity Portfolio	Bond Portfolio
Overall Average	0.092 ***	0.148 ***
Non-EMU Mkts	0.070 ***	0.082 ***
EMU Mkts	0.136 ***	0.281 ***
Diff. (EMU, Non-EMU)	0.066 **	0.200 ***
Emerging Mkts	-0.017	-0.046
Dev. Non-EMU Mkts	0.117 ***	0.150 ***
EMU Mkts	0.136 ***	0.281 ***
Diff. (EMU, Dev. Non-EMU)	0.019 *	0.131 ***

Average reduction in the level of estimated home bias between 1997 and 2001 for country groups. Home bias is estimated as the optimal minus the actual share of foreign asset in a country's total portfolio.

Changes in Share of EMU Assets from 1997 to 2001



Source: IMF CPIS & Authors calculations

Average increase in share of EMU asset in country total foreign portfolio by asset class between 1997 and 2001 for country groups.

Changes in Share of EMU Assets from 1997 to 2001

1997-2001 Changes in EMU asset Allocation	Equity Portfolio	Bond Portfolio
Overall Average	0.042 **	0.081 ***
Non-EMU Mkts	0.049 ***	0.047 ***
EMU Mkts	0.030 **	0.149 ***
Diff. (EMU, Non-EMU)	-0.019	0.102 ***
Emerging Mkts	0.157 ***	0.066 ***
Dev. Non-EMU Mkts	-0.009	0.037 **
EMU Mkts	0.030 *	0.149 ***
Diff. (EMU, Dev. Non-EMU)	0.039 **	0.112 ***

Average increase in share of EMU asset in country total foreign portfolio by asset class between 1997 and 2001 for country groups.

Changes in Individual Assets Portfolio Weight from 1997 to 2001, adjusted for Realized Ret.

Explanatory Variable			Equity Portfolio	Bond Portfolio
Constant			-0.004	-0.004
Investing	in	from		
	EMU	non-EMU	0.004 *	0.014 ***
	EMU	EMU	0.017 ***	0.027 ***
	UK	non-EMU	-0.009	0.027 ***
	UK	EMU	0.034 *	-0.038 ***
Home bias 97			0.008	-0.006
Recvng cntry underweight 97			0.236 ***	0.350 ***
Diversification Benefits				
Asset risk, Fully Hedged			16.74 ***	168.61 ***
Intra EMU Curr. Risk			0.012 ***	-0.238
Extra EMU Curr. Risk			0.017	-0.152
Adj.R^2			0.433	0.227
Sample size			667	639

Findings – Portfolio Decisions

- Significant decrease in home bias (HB) across all countries from 1997 to 2001:
  - Larger decrease in HB for bond than for equity portfolios.
  - Larger decrease in HB for EMU than for non-EMU countries.
- Significant increase in holdings of EMU assets:
  - Larger increase for bond than for equity assets.
  - Larger increase for EMU than for non-EMU investors.
- Beyond the EMU effect, the strongest determinants of changes in international portfolio allocations are
  - Expected diversification benefits.
  - Initial underweight or overweight.

Conclusions – Portfolio Decisions

- EMU adoption
  - Improves financial risk sharing in Euro-zone
  - Increase financial integration
- Stronger effect of EMU adoption for bond than equity markets.
  - Bond portfolio returns more affected by
    - Transaction costs.
    - Currency risk
- Rational portfolio motives (diversification, under or overweight) are main drivers of aggregate international portfolio rebalancing.

In Fine

- Impact of the EMU on financial markets:

  Evidence of increased financial market integration and decreased trading costs

  – Increased co-movements across Euro-zone equity and fixed income markets
  – Increased allocations to EMU assets across all international investors
  – Significant lager re-allocation to EMU assets by Euro-zone investors

- But would want to know more about:
  – Changes in exposures to regional vs local risk factors
  – Impact of EMU on portfolio flows.
  – Link between EMU, international trade and portfolio flows.