

This PDF is a selection from a published volume from the National Bureau of Economic Research

Volume Title: NBER International Seminar on Macroeconomics 2009

Volume Author/Editor: Lucrezia Reichlin and Kenneth West, organizers

Volume Publisher: University of Chicago Press

Volume ISBN: 0-226-70750-4 (paper)

Volume URL: <http://www.nber.org/books/reic09-1>

Conference Dates: June 12-13, 2009

Publication Date: June 2010

Chapter Title: Comment on "Free Flows, Limited Diversification: Openness and the Fall and Rise of Stock Market Correlations, 1890-2001"

Chapter Author: Huw Pill

Chapter URL: <http://www.nber.org/chapters/c11904>

Chapter pages in book: 40 - 47

---

## Comment

*Huw Pill, European Central Bank*

We live in an era of financial globalization. Yet we are not the first to do so. In an oft-quoted passage from *The Economic Consequences of the Peace*—indeed, a passage that Dennis Quinn and Hans-Joachim Voth quote in their paper “Free Flow, Limited Diversification: Openness and the Fall and Risk of Stock Market Correlations, 1890–2001”—J. M. Keynes (1920, 11) famously describes how, prior to the First World War, an investor could already “adventure his wealth in the natural resources and new enterprises of any quarter of the world” through a deep and integrated international capital market. By contrast, scholars of the global economy at midcentury have characterized national markets as “insular” (McKinnon 1981), with countries shielded from the impact of global financial developments by an extensive system of administrative controls on the cross-border flow of capital, even as international trade was progressively liberalized.

What can we learn from such historical variation in capital account openness about the role of financial forces in shaping the behavior of the global economy? How did the integrated international capital market at the turn of the nineteenth and twentieth centuries shape domestic financial institutions and markets? At midcentury, were controls on cross-border capital movements an impediment to economic and financial development? Or did they help stabilize economies subject to financial shocks?

These are the important questions that Quinn and Voth address. At a time when the efficiency of financial markets and the desirability of capital account openness are again being called into question, it is all the more important that we learn the correct lessons of history.

### I. Contribution of the Quinn and Voth Paper

Against this background, Quinn and Voth’s paper contains three main elements. First, the authors construct a new panel data set for measures

of capital account openness and equity market returns. In particular, they extend the already rich work of Quinn (1997) in two dimensions: the cross section is widened to 16 countries and the time series lengthened to the late nineteenth century. Developing new data series, especially of a historical character, is an important—if often neglected and undervalued—contribution to the literature: all the more so on this occasion, as it permits comparison between the two periods of financial globalization.

Second, Quinn and Voth establish a positive correlation between, on the one hand, their measure of capital account openness and, on the other, the cross-country comovement of monthly equity returns. In exploiting the panel structure of their data, this correlation derives from pairwise measures of bilateral relationships between countries—a topic to which I will return in some detail.

Finally, on the basis of their empirical results, Quinn and Voth make two claims. First, they argue that the extensive literature on the potential benefits of international portfolio diversification has overstated its case. More specifically, they conclude that those cross-border investments that would, in principle, have been desirable on a risk/return basis were in fact not feasible owing to the restrictions implied by capital controls.

Second, they claim that the “liberalization of capital accounts was a major *causal* factor behind growing return correlations” in equity markets across countries (emphasis added). In other words, they introduce a structural interpretation of the correlation they have revealed in the data and, on this basis, make statements about behavior.

There is much to admire in this paper, not least the painstaking work that has been required to construct the new data series. Yet, while one can be sympathetic to the final conclusions drawn, some scepticism should be retained about whether the evidence offered by Quinn and Voth provides hard—rather than merely suggestive—evidence in support of their main conclusions.

In developing this perspective on the paper, the remainder of these comments develop two themes: Conceptually, how should the international capital market be characterized? And how can the analysis of bilateral relationships central to the empirical work of the paper be deepened?

## II. The International Capital Market: Web versus Hub-and-Spoke

Quinn and Voth view the international capital market as a dense “web” of bilateral connections between distinct national markets (see the stylized characterization in the left panel of fig. 1). This perspective underlies their

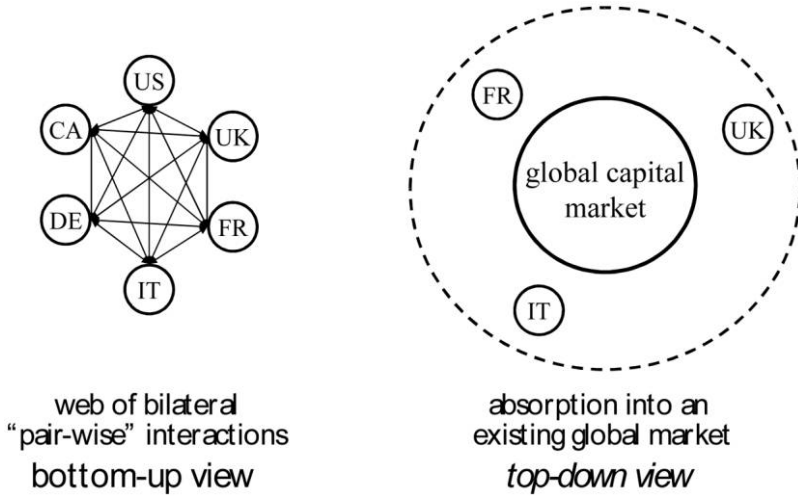


Fig. 1. Web versus hub-and-spoke view of international capital markets

pairwise approach to empirical work. In such a context, capital account liberalization is characterized, at least in principle, as an easing of restrictions on cross-border investment flows between a specific country pair.

Is such a framework the appropriate way in which to address the questions posed by the paper? I have some doubts. An alternative approach would model the international capital market as a unified “hub”; individual countries connect to this hub via a single “spoke” (see the right panel of fig. 1). In such a context, capital account liberalization would be measured by the ease with which transactions can flow through this spoke. Complete integration would imply the radius of the hub increasing to encompass national markets.

Why might such an alternative approach be preferable? At a minimum, it better captures the small open economy character of most of the countries included in the panel data. Moreover, it sits more easily with some structural features of international financial markets. For example, the development of the Euromarkets in the 1960s took place precisely because they operated outside national jurisdictions. The Euromarkets thus represented precisely such a pool of “global” capital, into which individual countries could dip as controls permitted. Even at times when financial flows were more heavily controlled (e.g., in the 1940s and 1950s, with even current account convertibility heavily circumscribed), one could nonetheless view the U.S. markets as representing the de facto international capital market. Supported by the machinery

of Bretton Woods, American markets in this period exhibited overwhelming dominance in terms of capitalization, depth, and liquidity.<sup>1</sup>

More fundamentally, adopting the hub-and-spoke approach sits better with an attempt to draw behavioral conclusions from the data. In considering the impact of increasing capital account openness, it is only in such a hub-and-spoke framework that one can straightforwardly employ structural models of asset pricing. Evaluation of whether observed patterns of asset returns are consistent with the implications of such models then informs understanding of behavior. Taking the capital asset pricing model as an example, one can evaluate whether the pricing of securities in one country reflects the correlation of the returns on those securities with the return on the global market portfolio.

By contrast, there is no theoretical model of how pairwise correlations of equity returns should evolve as bilateral restrictions on cross-border investment flows are relaxed. More specifically, it is unclear why less restricted capital transactions between two countries would necessarily imply a higher bilateral correlation of monthly equity returns.

One would not expect the return on Microsoft and General Motors shares to move in lockstep at a monthly frequency, even though few would doubt that the market between the two is highly integrated. Nor would one interpret the higher correlation between the returns on GM and Ford shares to imply that the market for them is better integrated than that between GM and Microsoft. Applying this logic to the country analysis presented in this paper raises questions about Quinn and Voth's interpretation of their results.

In open economy macroeconomics, it is often useful—as a thought experiment—to consider the implications of viewing the world as a single economy, that is, to adopt the “top-down” approach implicit in the hub-and-spoke view of the international capital market rather than the “bottom-up” view embodied in the web of bilateral interactions model.

On this basis, one would *not* expect perfect global capital market integration to lead to unit correlations of the monthly returns on various subindices—be they sectoral or national—of the global market portfolio. Such a thought experiment raises concerns about whether the correlations revealed by Quinn and Voth can be attributed the structural interpretation they wish to assign.

Indeed, the historical record rather supports this view. It is striking that cross-country equity return correlations reported by Quinn and Voth are much lower in the late nineteenth century than in the late twentieth century, even though the degree of capital account openness appears comparable.

Of course, the paper carefully introduces a large number of control variables into the panel analysis. Such exercises offer a first, tentative step toward addressing the critique offered above. Yet, by their nature, including these variables cannot control for all the possible channels of interrelationship between capital account openness and equity market correlations. Very quickly, one can think of other plausible channels: capital account openness might discipline macroeconomic policies leading to less idiosyncratic national equity risk premia; capital account openness might force domestic financial liberalization and thus change the depth, liquidity, and behavior of national markets.

All in all, the empirical work presented by Quinn and Voth offers convincing evidence of correlation, but little evidence of causation. While I agree with the authors that the opening of capital markets has led to some convergence of equity returns, I do not find the evidence presented in this paper convincing in that regard.

### III. Deepening the Pairwise Analysis

That having been said, the pairwise analysis presented in the paper does allow a rich set of “stylized facts” to be developed. But this potential is not exploited to the full. I therefore offer a few further remarks on how the pairwise analysis could be deepened.

The pairwise approach quickly generates a large amount of data: for example, the number of observations rises proportionally to the square of the number of countries. Degrees of freedom are therefore abundant. Yet one can question the extent to which these additional observations really add information.

Such an approach treats all pairwise interactions the same. This is difficult to justify: few would argue that the bilateral relationship between Germany and the United States is comparable in importance to that between Spain and New Zealand. This should at least be recognized.

Moreover, Quinn and Voth construct their pairwise measure of capital account openness by averaging the two national measures. These national measures are constructed on the basis of an overall assessment of the specific country’s openness to international investment inflows and outflows. This approach is subject to several critiques.

First, by taking an average measure, the exercise ignores which of the capital account restrictions will be binding on the marginal investor, whose behavior one would expect to be the driver of overall return behavior. For example, in considering investment flows from Britain to France, the binding constraint would be the more restrictive of controls

on outflow from Britain and inflows to France (and vice versa). More formally (where  $Q$  measures the restrictiveness of capital controls), the arbitrage between returns in Britain and France ought to be governed by a pairwise specific index of the form

$$Q_{UK/FR}^* = \min[\max(Q_{UK \rightarrow FR}^{\text{outward}}, Q_{UK \rightarrow FR}^{\text{inward}}), \max(Q_{FR \rightarrow UK}^{\text{inward}}, Q_{FR \rightarrow UK}^{\text{outward}})],$$

which—as is apparent from the complicated formulation—may not be well correlated with the simple average of the two national capital openness indices.

Second, the national indices are constructed on the basis of an overall assessment of openness, not of the specifics of the pairwise regulations. Of course, this would not matter if the capital account regulations were applied uniformly across all other countries (i.e., akin to the application of most favored nation status in the trade literature). They would also not matter if the impact of country-specific regulations were arbitrated away by bypassing flows through third countries. Yet, if either form of argumentation held sway, one would wonder why the hub-and-spoke model of the international capital market were not employed in the exercise. The benefits of pairwise information would be modest at best. The discussion developed in the previous section arises again.

However, as Quinn and Voth reveal in their case study of the interaction between Britain and France, in fact there *has* been substantial discrimination across countries in the application of capital controls. The International Monetary Fund documentation quoted in the paper refers to the sterling area, within which the British authorities applied a different capital account regime from that imposed on transactions with other countries. Earlier parts of the time series encompass imperial relations among some of the countries studied, which are also likely to have led to different capital account regimes. Membership of the European Union is another example of potential for differential treatment in some respects. Ideally, the pairwise measures of capital account openness should be “tailor-made” for the specifics of the individual bilateral regimes, and these promise to add additional information and provide for better insights.

Of course, it is an unenviable task to collect all the information necessary to construct such a detailed data set of country pair regulations. One can ask for only so much! At the same time, some caution should be exercised in the light of this critique. To abuse a phrase much loved by economists, there is no such thing as a free lunch. Pursuing the pairwise approach must be justified by the existence of additional information

in the pairwise data. Some scepticism must exist as to whether such information is there, at least as regards the capital account openness index.

That having been said, one potential advantage of the pairwise approach is the possibility to include other control variables in the panel regressions and thus generate further interesting stylized facts worthy of greater study, even if these are not amenable to an immediate structural interpretation. An obvious candidate neglected by the current paper is the exchange rate. Exchange rate regimes between countries show considerable variation, both through time and across bilateral country pairs. Establishing whether the comovement of equity returns is influenced by exchange rate regime would be a helpful complementary exercise.

Moreover, it would shed further light on the potential benefits of international portfolio diversification. By using equity returns expressed in U.S. dollars, Quinn and Voth mimic the existing literature in adopting a U.S.-centric view. The use of the pairwise in principle allows for a more symmetric view: not only considering the benefits to an American investor concerned with dollar returns, but also assessing the opportunities available to a British investor concerned with sterling returns. Extending this line of thinking to its logical conclusion, one would naturally argue that investors should be concerned with their risk/return profiles in real terms, implying that national price indices (among other factors) should also be included in the exercise.

In sum, once viewed as a vehicle for establishing a rich set of stylized facts about the historical evolution of the global capital market, the panel data set of pairwise measures of equity return correlations and capital controls offers many possibilities that are not exploited in the current paper.

#### **IV. Concluding Remarks**

Quinn and Voth have made an important contribution in focusing our attention on the historical behavior of the global capital market. They have constructed a rich data set, which promises to be a fruitful resource for further work. The ambition of the exercise presented in the paper is to be applauded, even if some of the claims made remain unsubstantiated in my view.

On the one hand, the richness of the pairwise approach to data analysis presented in the paper offers the potential for many insights to be developed. Yet, on the other hand, the application of this pairwise approach to the question raised in this paper appears to be an overcomplication. A more direct and structural approach to investigating the causal relationships



between capital market integration and equity return correlations seems warranted.

## Endnotes

The views expressed in this discussion are those of the author and do not necessarily reflect the opinion of the European Central Bank or the Eurosystem.

1. Indeed, viewing the U.S. return as the global market return is precisely the approach adopted by the literature on international portfolio diversification, to which Quinn and Voth refer.

## References

- Keynes, J. M. 1920. *The Economic Consequences of the Peace*. New York: Harcourt Brace.
- McKinnon, R. I. 1981. "The Exchange Rate and Macroeconomic Policy." *Journal of Economic Literature* 19:531–57.
- Quinn, D. 1997. "The Correlates of Change in International Financial Regulation." *American Political Science Review* 91:531–51.