General Discussion*

Alexandra Lai and Chris D'Souza responded to a number of issues raised by Varouj Aivazian. While Lai agreed with Aivazian that banks exist for intermediation because there are transactions costs, she stressed that this is a portfolio-optimization problem, constrained over five banking activities, that the banks undertake in response to transactions or intermediation costs. Lai argued that the market index might not be an appropriate measure of the benchmark portfolio, because banks are restricted to activities in their portfolio-allocation decision. D'Souza agreed with Aivazian on better measures of the expectations-formulation mechanism and acknowledged endogeneity problems associated with the model. Lai agreed that there is a need to describe systematically the theoretical link between results of inefficiency in diversification and the underlying problems, but found a lack of literature on the subject matter.

Aivazian responded that he is sympathetic to the notion that modelling requires restrictive assumptions. He was concerned, however, about using the mean standard deviation approach, which imposes restrictions on the bank's objective function and may not properly model the portfolio-allocation mechanism, and the resulting inefficiency may be an artifact of this restriction.

In response to comments by Charles Freedman, Lai briefly described costs associated with diversification, which could have a positive impact on risk. Theoretical explanations found in the diversification literature include

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agency problems between managers and shareholders, managerial risk aversion, and inefficiency of internal capital markets.

Claudio Borio expressed reservations about the comparability of book and market value data and concern particularly over the short sample period. Furthermore, with respect to geographical diversification, Borio pointed out that a distinction should be drawn between branching out into new areas and moving to new activities, which may affect risk, as opposed to simply being diversified or concentrated. Borio agreed with Aivazian's opinion that the authors should rethink how the efficient frontier is calculated, given that the optimal portfolio returns and variances depend on the activities left out.

John Helliwell made a suggestion to divide the sample into two and to see whether the properties measured in the first part of the sample are predictive of the properties of the second. D'Souza agreed that the exercise would be worthwhile, but the short sample period of the available data precluded this. Angela Redish suggested that the results might be time period specific.

Lawrence Schembri questioned why scale did not have a positive effect on efficiency and whether this was an unusual finding. Lai replied that studies on U.S. banks have revealed a positive relationship between scale and efficiency. Redish conjectured that this finding could be the result of a lack of variation in the size of the five Canadian banks under study, and Lai concurred.

Kevin Stiroh agreed with the comments of Calmès that endogeneity is a concern and explained how collinearity was handled in the paper, and he put forward alternatives to deal with the issue. Finally, he was interested in the reason for a negative covariance between non-interest income and net interest income in Canada, which is the opposite of the U.S. experience.

In response to Lai's concerns about the relevance of the return on equity variable, Stiroh indicated that the same results held when using return on assets as an alternative performance measure. Sean O'Connor observed data and measurement issues, which may not allow for the strong conclusions set forth in the paper. Scott Hendry referred to the shortness of the sample period and put forward a number of questions on measurement issues. Borio also raised the issue of measurement problems resulting from not dividing bank activities by business lines. Stiroh acknowledged that data limitation was one of the challenges in this type of analysis.

D'Souza wondered why financial holding companies are moving into these activities when they do not have a comparative advantage, and he asked whether asset markets are doing a more efficient job in bearing these risks. Stiroh replied that this question remains open and merits further investigation. Freedman mentioned that firms prefer to be in progressive

businesses rather than in declining ones. Stiroh added to this by noting that preliminary evidence suggests that the situation is not necessarily in the interests of the shareholders.

In response to Kevin Clinton's comments, Stiroh pointed out that, ideally, one would like to measure risk-adjusted rate of return by business line and agreed that capital requirements would have to play a large role in why banks might go into activities that are risky in order to maintain their real risk profile (leverage). Gerald Goldstein pointed out that by aggregating different activities, one is effectively aggregating across different volatilities. Stiroh recognized this, but did not consider it a major concern.

Tiff Macklem was curious to know the audience reaction when Stiroh presented a similar paper at a conference of bankers. Stiroh replied that when he presented the paper to a conference held by the Chicago Fed for a group of community bankers, he received opposite reactions—some bankers did not believe the results, while others asserted that this was their reason for being "plain-vanilla" bankers.