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Scale and scope economies at large banks: Including off-balance sheet products and regulatory effects (1984–1991)

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Abstract

This paper examines the impact of the risk-based capital (RBC) requirements on bank cost efficiencies. We take into consideration both on- and off-balance sheet (OBS) products and allow product mixes to differ across banks and to vary over time. Our empirical results suggest that the cost structures of large banks are significantly different during the pre-RBC and post-RBC periods. That is, the RBC change seemed to reduce the optimal bank size that achieves maximum scale and scope economies, so that some of the large banks that previously were efficient became too large and inefficient. The results suggest that regulations that encourage large banks to expand their production and product mixes any further will likely result in a less efficient banking industry.

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1. Introduction

There have been increasing concerns that regulatory restrictions may be limiting scale and scope economies, and therefore competitiveness, of the US banking

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industry. While steps are being taken toward easing interstate branching restrictions, new regulations are being implemented/considered to ensure the safety and soundness of the US banking industry.

Starting in the mid-1980s, an important change in product mix, especially at large banks, has been the explosive growth of bank off-balance sheet (OBS) activities particularly derivatives. [1] The risks associated with OBS activities attracted regulatory attention since they were imposing costs on the public (increasing FDIC liabilities) that were not formerly charged to the banks. This may have caused banks to expand to a potentially inefficient level of use of OBS activities.

The risk-based capital (RBC) requirements were approved in July, 1988 and implemented effective December, 1990 to require banks to hold more capital to support their risky and OBS activities. On the one hand, by charging banks a higher (correct) price for imposing risks to deposit insurance in this regard, we may expect banks to adjust their product mixes to a level that is closer to a socially optimal level. On the other hand, the RBC requirements are in effect a 'regulatory tax' that may discourage OBS production and result in a less efficient banking industry because scale and scope economies may not be fully exploited and banks may operate at a smaller than an optimal efficient size. [2]

Several previous studies have attempted to analyze cost efficiencies in the banking industry – however, their results have been mixed and inconclusive. [3] Our objective is to fill important gaps in existing research by examining the impact of the mid-1980's OBS growth, the effects of recent RBC requirements and related product-mix changes on the cost structure of large banks.

This paper builds upon two previous studies. The first, Hunter and Timme (1991) study the impact of technological changes on bank cost efficiencies using data for large banks over the period 1980–1986. However, they did not examine OBS activities. [4] The second study, Jagtiani et al. (1995) incorporate all OBS activities in their study. But, they use data for the quarter ending December 1988 and implicitly assume a proportionate change in outputs (as most other studies do).

[1] As of December 1992, the notional amount of OBS derivatives was 9.6, 8.6, and 7.6 times total assets at Bankers Trust, J.P. Morgan, and Chemical Bank respectively (source: Sheshunoff Information Services, Inc.).

[2] The RBC requirements may be considered regulatory tax on some activities (such as OBS activities) and subsidy for others (such as investments in government securities and mortgage loans). This may cause banks to switch their product mixes in order to avoid regulatory tax and to maximize regulatory subsidy, and could result in a cost-inefficient level or mix of production.

[3] Recent studies include Shaffer (1993), Glass and McKillop (1992), Gropper (1991), Le Compte and Smith (1990), and Mester (1990). For further discussion regarding the mixed results, see Berger and Humphrey (1990), Humphrey (1990), and Berger et al. (1993).

[4] Their exclusion of OBS products can be justified as follows. Money center banks, which are the most active participants in OBS markets, are excluded from their sample. In addition, bank OBS just started to grow during their sampling period, and continued to grow dramatically thereafter.