

# Competition versus efficiency: What drives franchise values in European banking? <sup>☆</sup>

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## Abstract

This paper investigates how stock market investors perceive the impact of market structure and efficiency on the long-run performance potential of European banks. To that end, a modified Tobin's  $Q$  ratio is introduced as a measure of bank franchise value. This measure is applied to discriminate between the market structure and efficient-structure hypotheses in a coherent forward-looking framework, in which differences in banks' horizontal and vertical differentiation strategies are controlled for. The results show that banks with better management or production technologies possess a long-run competitive advantage. In addition, bank market concentration does not affect all banks equally. Only the banks with a large market share in a concentrated market are able to generate non-competitive rents. The paper further documents that the forward-looking, long-run perspective and the noise-adjustment of the performance measure overcome most of the drawbacks associated with testing these hypotheses in a multi-country set-up. Finally, notwithstanding the international expansion of bank activities, the harmonization of regulation and the macroeconomic convergence in the European Union (EU15), we still find that country-specific macroeconomic variables have a significant impact on bank performance. The findings indicate that there is a trade-off between competition and stability that should be taken into account when assessing mergers or acquisitions. © 2007 Elsevier B.V. All rights reserved.

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## 1. Introduction

The European banking sector has been characterized by a number of profound changes over the last two decades. On the one hand, advances in technology, financial liberal-

ization, the ongoing economic and regulatory integration and the introduction of the Euro should increase the degree of competition and efficiency in the European banking sector. On the other hand, the wave of bank mergers and acquisitions, which has reduced the number of competitors significantly, may produce the opposite effect. Furthermore, the impact of regulatory initiatives aimed at increasing diversification of financial activities is theoretically unclear. Consequently, the combined net result of these changes on banks' long-run performance is uncertain.

Many banking studies, using different methodologies, have tried to quantify the overall impact of changes in market structure and bank efficiency on bank performance (see e.g. Berger, 1995; Corvoisier and Gropp, 2002; Vander Vennet, 2002). This paper uses a stock market-based valuation metric to investigate the effect of competition and

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efficiency on banks' franchise values. In addition, we also control for the degree of horizontal (product mix) and vertical (quality) differentiation. We test these relationships simultaneously in a coherent forward-looking empirical framework on a database of listed European banks. Hence, we are able to assess the factors that influence banks' stock market performance in European countries.

Our contribution to the literature is threefold. First, most banking studies ignore that it may take time for the effects of competition and efficiency to materialize. Our approach differs from the bank competition literature by investigating the competition–performance relationship using a longer-term concept of firm rents, namely the franchise value of a bank. The franchise value is the present value of the current and future profits that a bank is expected to earn as a going concern. When contrasting the estimation results obtained when using a short-run accounting measure instead of a long-run market-based performance measure, we observe multiple differences in the factors that drive bank performance. By comparing our results to those reported in Vander Vennet (2002), we conclude that the difference between our baseline results and papers using accounting profits can be attributed to the forward-looking performance measure rather than a bias created by the sample composition.<sup>3</sup>

Second, our long-run performance measure is based on two concepts, i.e. Tobin's  $Q$  ratio and market value inefficiency (Hughes et al., 1999). The former is proxied by the ratio of a bank's market value to its book value, which has traditionally been used as a measure of bank franchise value. The latter is obtained using a stochastic frontier methodology which allows decomposing the difference between actual performance and potential performance in an inefficiency and noise component. We document that correcting for noise is both statistically and economically relevant (especially in multi-country studies).

Third, we control for time-varying country-specific differences in banks' long-term valuation. Next to analyzing the impact of concentration, we verify the impact of macroeconomic conditions and differences in regulation on bank performance. Whereas bank-specific variables can explain 11.7% of the variation in bank performance, the country-specific drivers explain more than 30% of the variation. In particular, most of the explained variation in the banks' valuation is due to the Hirschmann–Herfindahl index of concentration and the macroeconomic variables, rather than the regulatory variables. On the one hand, this is indicative for the fact that banks operating in the European Union share to a large extent a common regulation.

On the other hand, the importance of the local economic environment in determining banks' valuations indicates that the European banking industry is not yet fully integrated.

From a policy perspective it is important to have a solid understanding of the effects of competition and efficiency on bank behavior. Knowledge of the essential drivers of bank profits is important for antitrust authorities, who are looking for algorithms to assess the trade-off between the value-enhancing effects of mergers and acquisitions and their potentially negative impact on competition. The relative-market power hypothesis and the structure-conduct-performance paradigm claim that mergers could be motivated by the ability to affect prices unfavorably for customers (thereby eroding consumer surplus) and to increase margins. The efficient-structure hypotheses, in contrast, state that mergers and acquisitions improve overall welfare. Hence, they call for different actions by the competition authorities, both at the national level and at the level of the European Commission, which is responsible for merger and competition cases with an EU dimension. Moreover, regulators are interested in the sources of financial instability and mechanisms to avoid it. An analysis of the determinants of franchise values can yield further insight in the sources of financial instability<sup>4</sup> and helps supervisors and regulators in judging which actions are optimal.

In the next section, we elaborate on the hypotheses of interest (Section 2.1). We also discuss why and how they should be tested in a forward-looking framework. We describe the construction of the dataset in Section 2.2. In Section 2.3, we introduce our method to measure a bank's franchise value. We show how inefficiency and noise in market valuation can be disentangled and find that both concepts are significantly present. Section 3.1 presents the methodologies to estimate the relationships between franchise value, competition and efficiency. Our analysis of the impact of market share, concentration and efficiency on long-run performance yields new empirical results and has implications for the relative importance of the underlying drivers of competition in (European) banking (Section 3.2). In Section 3.3 we investigate the relationships between macroeconomic variables, differences in regulation and supervision and banks' franchise values. We devote Section 4 to document the importance of controlling for noise in market valuation and using a long-run performance measure rather than accounting profits. Finally, Section 5 summarizes the main conclusions and draws some policy implications.

<sup>3</sup> Vander Vennet (2002) examines the impact of market structure and efficiency variables on European banks' performance. However, he uses accounting profits, covers the period 1995–1996 and includes both listed and unlisted banks. Using our sample period and composition, we obtain similar results when using accounting profits (return on equity). Hence, limiting the analysis to the set of listed banks seems not to affect the conclusions when using similar profitability measures.

<sup>4</sup> Since the seminal paper by Keeley (1990), many economists have examined, both theoretically and empirically, the relationship between the franchise value of a bank, risk taking by banks and financial stability. However, little empirical evidence exists on the determinants of the franchise value itself. In this paper we shed some light on the bank-, market- or country-related factors that influence the market value of a bank.

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