Journal of Banking & Finance 37 (2013) 3669–3680

Contents lists available at SciVerse ScienceDirect

Journal of Banking & Finance

journal homepage: www.elsevier.com/locate/jbf

Investment horizon, risk, and compensation in the banking industry

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ARTICLE INFO

Article history:
Received 31 July 2011
Accepted 14 May 2013
Available online 6 June 2013

JEL classification:
M41
M43
G20
J33

Keywords:
Investment horizon
Compensation
Risk
Performance
Clawback problem

ABSTRACT

This paper examines the relation between the investment horizon of banks and their CEO compensation, and its consequences for risk and performance. We find that banks with short-term investment intensity pay more cash bonus, exhibit higher risk and perform more poorly than banks with longer-term investment intensity. This evidence is broadly consistent with the view that short-term means of compensation encouraged a short-term investment focus, which in turn led to both higher risk and resulted in poorer performance, culminating in the sub-prime crisis. The inverse risk-performance relation suggests pay schemes were incongruent with shareholders' interest. Moreover, pay arrangements used in banks prior to the subprime crisis exposed banks to the ex-post settling up problem (the clawback problem).

"... *Gamblers broke the banks*" (Lionel Barber, Financial Times, 2008).

1. Introduction

The subprime crisis has brought bankers' compensation practices under close public and political scrutiny. A common argument has been that compensation encouraged risk-taking and short-term focus to the detriment of shareholders and, perhaps ironically, bankers themselves (Fahlenbrach and Stulz, 2010). Bankers seem to agree that the short-term focus in compensation is to blame, at least in part. For example, the Institute of International Finance (2009) presents survey results in which bankers admit compensation schemes encouraged high risk-taking with little regard to the ultimate success of their investments.[1] Notwithstanding these claims, research on the link between bank investment strategies and compensation is yet sparse.

We attempt to provide evidence that is relevant for this issue by investigating the link between bank CEO cash bonus, investment horizon, performance, and risk. Cash bonus is a short-term form of compensation and thus is expected to be aligned with the intensity of a bank's short-term investment horizon. However, because the outcome of short-term positions are often unpredictable in nature, they are expected to be positively related to risk. To the extent that cash compensation is paid upfront for risk-increasing positions, the bank is exposed to the possibility that it will not be able to claw back compensation, when expected cash flows fail to materialize.[2] Furthermore, if bankers invest in short-term risky assets to benefit themselves at the expense of shareholders, we would not expect to find a positive relation between short-term investment horizon and bank performance. Overall, therefore, if the above mentioned criticism is borne out by the data, we would expect higher cash bonuses to lead to higher intensity of short-term positions, with the latter in turn leading to higher risk, but not better performance. To the extent that carrying out a business strategy that focuses on short-term risky investment is subsequently rewarded,

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[1] See also, for example, Buttonwood–The bonus racket (The Economist, 21 January 2009).

[2] As Leone et al. (2006) highlight, the ex-post settling up problem does not exist with equity-based compensation.

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http://dx.doi.org/10.1016/j.jbankfin.2013.05.021

we also expect to find a feedback loop from short-term investment horizon to cash bonus.

We capture a bank's investment horizon by reference to its composition of assets on the balance sheet. Specifically, we exploit the fact that accounting rules under SFAS No. 115 Accounting for Certain Investments in Debt and Equity Securities (FASB, 1993), require banks to provide balance sheet information about asset types that distinguishes between short-term, and longer-term investments. Thus, a bank's balance sheet reflects management intention with respect to the investment-horizon and the nature of the underlying asset types. In particular, short-term positions, which are typically classified as trading assets, reflect an investment strategy whose purpose is to benefit from short-term changes in market prices. Many view this as a speculative activity whose aim is to time the market (e.g., Stickney et al., 2010, p. 573). In contrast, loans, available-for-sale (AFS), and held-to-maturity (HTM) investments represent a longer-term strategy, where often the primary goal is to benefit from contractual cash flows.

Earlier literature provides mixed evidence regarding the link between the composition of bank assets and resultant risk, in particular with respect to trading assets versus loans (e.g., Morgan, 2002; Flannery et al., 2004). Moreover, this literature is silent on the link between asset composition and compensation, and is inconclusive as to whether compensation in banks motivates greater risk-taking (Houston and James, 1995; Brewer et al., 2004). More recently, DeYoung et al. (2013) provide evidence that pertains to CEO compensation, risk, and lines-of-business in US banks. Their results indicate that high wealth incentives in large banks induced risk-taking during the 1995–2006 period. They also show that these incentives led large banks to invest in private MBS securities more than commercial securities, and that private MBS securities are positively related to risk. Their evidence particularly suggests there was a shift in compensation arrangements to encourage risk-taking following the enactment of the Gramm-Leach-Bliley Financial Modernization Act of 1999 (FMA). The DeYoung et al.'s (2013) evidence is broadly consistent with recent anecdotal evidence (Bebchuk et al., 2010), and that the pre-crisis years had witnessed a dramatic shift in banking activities towards loan securitization, proprietary and speculative trading, especially in derivatives. Stout (2011) attributes this shift to the Commodities Futures Modernization Act of 2000 (CFMA).[3]

We collect data on US banks for the period 1994–2010. We operationalize the concept of short-term investment horizon as the fraction of trading assets to the total of trading assets, AFS, HTM and loans. The larger this fraction, the greater is a bank's short-term investment intensity (or, alternatively, the shorter is its investment horizon). Using a system of simultaneous equations to control for the endogeneity in the relation between firm risk, compensation, and investment patterns, we find that past cash bonuses (as a proportion of total compensation), and current short-term investment intensity, are positively related. We additionally find evidence supporting a feedback loop from short-term investment intensity to cash bonuses. Moreover, short-term investment intensity exhibits positive association with the volatility of stock prices, but a negative association with current performance, especially during the crisis period of 2007–2008. Our results are strongest for the years 2001–2007 (the years FMA and CFMA were in full swing), and are robust if we eliminate banks that do not hold short horizon investments. They are also robust to a large number of covariates previously identified to be related to compensation related incentives, firm risk, and investment patterns.

[3] It is unclear whether the evidence on the shift in compensation provided in DeYoung et al. (2013) can be safely attributed to FMA rather than CFMA. But it seems that in the late 1990s and early 2000s there were two main legal changes that may have prompted these changes.

In additional analyses we find that the source of risk/return caused by short-term investments is mainly due to investments in debt and foreign securities, and treasuries. In contrast, longer term investments such as AFS, HTM, and loans are negatively related to risk, and unrelated to profitability. In robustness tests we also explore whether investment mix is positively related to equity-based compensation, where we find that short-term investment intensity is negatively related to the proportion of equity pay. That short-term investment horizon is positively (negatively) related to cash (equity) compensation further underlines the severity of the clawback problem.

In summary, the evidence presented here is consistent with the notion that compensation in banks encouraged short-term speculative investments while creating the potential for the ex-post settling up problem. These investments resulted in greater risk, without delivering better performance. This seems consistent with short-term risk-seeking strategies and compensation-based incentives for CEOs to shift away from long-term less risky investments. It is also consistent with banks shifting attention away from traditional loans to more lucrative forms of investment, which resulted in the financial crisis of 2007–2008 (Bernanke, 2010).

In assessing these conclusions it is worthwhile to note that in a recent paper Fahlenbrach and Stulz (2010) argue that if CEOs anticipated the losses in the recent crisis, they likely reduced their equity stakes to avoid forthcoming losses. Contrary to case-based evidence provided by Bebchuk et al. (2010), and evidence reported by DeYoung et al. (2013), they find little evidence of such pre-emptive strategy in their sample. The inference from Fahlenbrach and Stulz (2010) is consistent with the view that CEOs' pay incentives were not corrupting their risk-taking behavior. Rather, it was their misjudgement of market conditions. In contrast, our findings suggest that, notwithstanding their equity stakes, linking short-term positions to upfront cash payments likely cushioned CEOs' exposure to the subsequent loss events.

We contribute to the literature in a number of ways. Together with DeYoung et al. (2013), our paper is among the first to link strategic business policy decision with compensation, risk and performance. Our focus is on the link between investment horizons and compensation horizons, with a particular interest in short-termism in banks. We are motivated by the financial crisis and whether short-term compensation horizons contributed to the financial crisis. On a broader level, we contribute to the literature on accounting disclosures for financial instruments (e.g., Barth, 1994; Nelson, 1996). In particular, recently Riedl and Serafeim (2011) show that the properties of inputs used to measure investments under SFAS 157 Fair Value Measurements (FASB, 2006) influence a firm's beta. Specifically, they find that more opaque inputs are positively related to higher betas. We add to this literature by showing that SFAS 115 classification of financial assets into short-to long-term holdings is associated with risk and performance.

The paper is organized as follows. Section 2 provides the necessary institutional background. It also develops our research questions in light of prior literature relevant to our study. In Section 3 we describe the data and sample composition as well as the research design. The empirical findings are reported in Section 4; in Section 5 we perform some additional sensitivity and robustness analyses. Section 6 concludes.

2. Relevant background and literature

2.1. Structural change in the US banking industry and the origins of the credit crisis

A major structural shift in US banking activities took place during the 1990s. It involved relaxation and erosion of regulatory