Recent cases of interbank rate manipulation revealed systemic drawbacks in benchmark interest rate setting processes. Besides the high-profile financial scandals, there is evidence that some of the EU member states, with less advanced financial markets and a small number of dominant banks, experienced serious market distortions related to severe inefficiency or even outright manipulation of benchmark rates in their local interbank markets. One case in point is controversy surrounding sharp rises in VILIBOR (Vilnius interbank offered rate) rates to economically unjustified levels during the global financial crisis. By conservative estimates, bank client losses linked to allegedly ungrounded rises in VILIBOR rates during the crisis exceed EUR300 million.

The procedure of setting VILIBOR rates is quite standard and shares essential features with the EURIBOR setting process. The rate setting rules are legally defined by the Resolution of the Board of the Bank of Lithuania, and the process is administered by the Bank of Lithuania. VILIBOR is the average interbank offered rate, at which banks submitting quotes are ready and willing to lend to other banks. The list of banks submitting VILIBOR quotes currently consists of five banks, which are most active in the interbank market (prior to procedural changes instituted in 2013, the list consisted of *at least* five banks and the largest and the smallest quotes were excluded from VILIBOR calculation).

The problems with VILIBOR setting procedure stem from lack of adequate safeguards that would ensure that VILIBOR rates fairly and objectively reflect interbank market conditions at all times. First of all, there is no code of conduct for banks submitting quotes and no explicit obligations to submit quotes reflecting objective market conditions rather than subjective preferences. A potential conflict of interests is further aggravated by the fact that, unlike in the case of EURIBOR setting process, banks submit quotes reflecting their own willingness to lend and not that of a hypothetical prime bank. In principle, a bank can submit arbitrary and exorbitant VILIBOR quotes (say, 20% or 50%) and justify them by its unwillingness to lend to other banks. The only envisaged sanction for such misquotes could be a temporary suspension from the VILIBOR setting panel of banks. Furthermore, banks are not required by the regulator to establish objective, well-documented and consistent over time policies of setting individual VILIBOR quotes. The abovementioned flaws in the VILIBOR setting process essentially give banks submitting quotes a carte blanche to pursue their strategic goals instead of being a part of a genuine price discovery process.

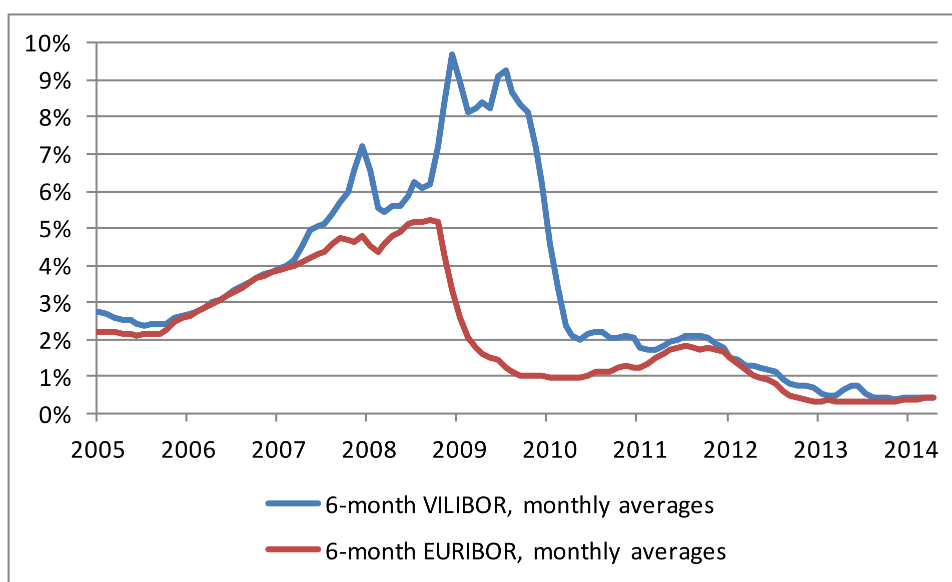
There are also a number of economic reasons why VILIBOR rate setting process cannot ensure an objective price discovery. The Lithuanian interbank market is very shallow, and there is very little or no actual interbank lending for all but the shortest maturities. The banking sector in Lithuania is dominated by Scandinavian-owned banks pursuing quite similar business and funding models, thus their strategic preferences with regard to interest rate levels are generally well aligned even in the absence of any cartel agreements. Given that VILIBOR quotes are non-binding, not backed by actual transactions and are essentially allowed to be set for the benefit of a quote-submitting bank, there is no reason to assume that economic forces of supply and demand can bring the price level (i.e. interest rates) to the competitive equilibrium. In the small and not sufficiently advanced financial market there are no actual arbitrage opportunities, and neither can the resource-constrained Bank of Lithuania (acting under the currency board arrangement) effectively intervene in the money market and meaningfully influence interest rate levels.

Banks submitting VILIBOR quotes face a clear conflict of interests. On the one hand, their non-binding VILIBOR quotes might or might not affect terms of unsecured interbank lending, which generally constitutes less than one percent of bank assets, thus any mispricing of VILIBOR rates has a limited financial impact in this regard. On the other hand, the quotes affect banks' interest receivable from the (much larger in size) portfolio of loans to the nonfinancial sector, since a significant fraction of bank loans to the nonfinancial sector (primarily litas-denominated floating interest rate loans) are contractually linked to official VILIBOR rates. Therefore, a sustained overstatement of individual VILIBOR quotes results in unfair

bank profiting at the expense of their nonprofessional and uninformed clients. Moreover, in the context of elevated risks to the stability of the litas-euro peg prior to and during the financial crisis, banks had obvious incentives to overstate VILIBOR rates in order to force their existing borrowers to switch from litas- to euro-denominated loans thereby forcing them to assume exchange rate risks from banks and reducing potential devaluation-related bank losses.

The above arguments help to explain the actual sharp increases in VILIBOR rates and their apparent inconsistency with other risk indicators prior to and during the financial crisis. Given very small differences in litas- and euro-denominated loan rates, households and firms favoured litas-denominated loans in 2005 and 2006. This led to a rising share of litas-denominated loans in the bank loan portfolio, which peaked at 50% in 2007. Even though bank FX positions remained largely balanced, banks were apparently willing to reduce their exposures to exchange rate risks amid rising overheating pressures. As a result, VILIBOR rates started to disconnect from commensurate EURIBOR rates in early 2007 (see Figure 1). The difference soared with the onset of the global financial crisis, with rates moving in opposite directions. By mid-2009, the difference between 6-month VILIBOR and EURIBOR rates reached the peak of above 8 percentage points. This difference basically evaporated by end-2010 and by that time the share of litas-denominated loans in total bank lending to nonfinancial sector was cut in half to 26%.

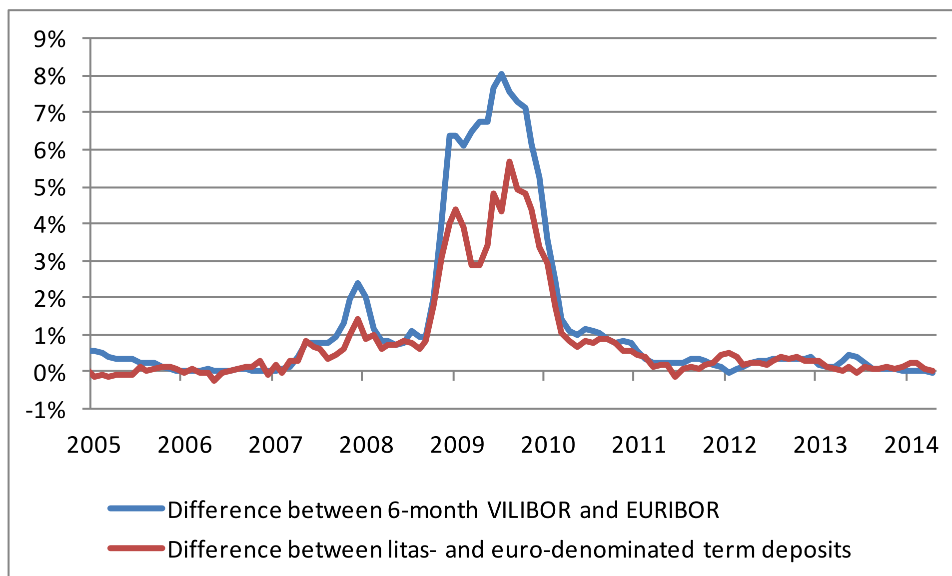
Figure 1. VILIBOR and EURIBOR dynamics



In the light of insufficiently precise definition of VILIBOR rates, it is not quite clear which risk premium these indicators should include. Arguably they should include exchange rate risk premium, yet the spread between litas- and euro-denominated four-year government bonds available in the market at the time was 3-4 percentage points lower as compared to the difference between 6-month VILIBOR and EURIBOR rates. The remaining difference could be attributed to rising liquidity risks but in fact throughout the crisis banks maintained strong and rising liquidity buffers, outstanding deposits reached record levels and parent banks started to withdraw quite large amounts of "excess liquidity" from the Lithuanian banking system. In general, actual bank funding costs remained at considerably lower levels than suggested by VILIBOR rates in late 2008 and 2009. Another interesting perspective to evaluate VILIBOR rates during this period is to note that the spread between 6-month VILIBOR and EURIBOR rates is usually very closely linked with the

difference between the rates of new litas- and euro-denominated term deposits, with two episodes of significant divergence in 2007 and from late 2008 to end-2009 (see Figure 2).

Figure 2. Relationship between interbank rates and term deposit rates



The discussed rises in VILIBOR rates might have affected up to LTL25 billion (more than EUR7 billion) worth of litas-denominated loans to households and businesses. Given the fact that close to 90% of these loans were with floating rates, a large number of bank clients saw very significant increases in monthly payments, which could almost double in some cases. Therefore, many clients (with loans worth about LTL6 billion) were forced to promptly switch from litas- to euro-denominated loans, with the effect of permanently raised credit margins (on average, from 1 percentage point before crisis to 3 percentage points during the crisis). Cursory calculations suggest that a temporary unjustified rise in VILIBOR rates by 3-4% may have resulted in at least LTL1 billion (EUR0.3 billion) direct losses to bank customers, accumulating further at a rate of LTL100 million per year (due to imposed permanent increases in credit margins).