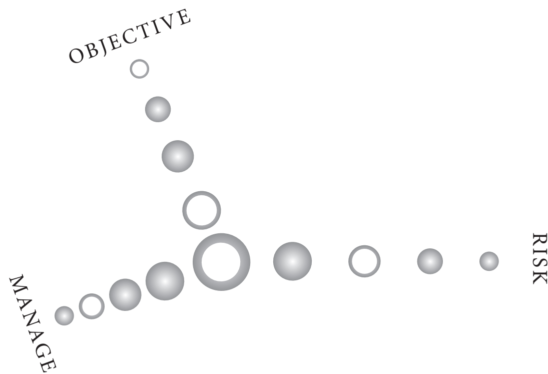

Crisis and liquidity risk management in the banking sector: Albanian case

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Abstract

The financial crisis that began in 2007 has revealed a need for a new supervisory and regulatory approach aimed at strengthening the system and containing the risk of future financial and economic disruptions. The aim of the paper is to analyze the current liquidity risk management techniques and supervisory approaches, in order to identify how both could be improved in the light of the recent market turmoil caused by the crisis and potential sources of instability directly connected with the "originate-to-distribute" business model.

A part of this paper is the analysis of the Albanian banking sector and the measures that the central bank has taken in order to manage the liquidity risk. When banks are facing troubles, authorities often engage in regulatory interventions and/ or provide capital support to rescue the bank and reduce the bank's risk taking. An unintended effect of such actions may be a reduction in bank liquidity creation, with

possible adverse consequences for the whole economy.

In this perspective, it is also investigated the effort of a regulatory authority to validate the adoption of internal models for liquidity risk management.

Key Words: Liquidity risk management, measures, Albanian Banking System, financial indicators

1 Introduction

Liquidity risk is a very important issue for the financial system. This importance was demonstrated by the latest developments in the worldwide financial markets where liquidities, their measurement and management determined the survival of the institution itself.

In this framework, the measurement of the liquidity is a very important matter even in the Albanian money market. The calculation of liquidity risk and its funding is on the focus of bankers in Albania. Currently in Albania operate 16 Commercial Banks, two of which are branches of foreign banks. Developments during 2009 presented a challenge in managing the liquidity in the system under strained liquidity situation in the global financial markets. In order to better manage the situation, Bank of Albania requested from banks daily reporting on certain elements associated with their liquidity positions, an mainly their relations with non-resident financial institutions and the daily performance of their deposits.

First, in this article will be discussed the theoretical side on principles of liquidity risk management, the early warning indicators of liquidity risk, some guidelines on risk management and continuing with the situation in Albania for the liquidity risk management, ending the paper with the conclusions.

2 Principles of liquidity risk management

Financial institution identifies, assesses and manages its liquidity risk based minimally on the following principles:

- the principle of relying, as much as possible, on sustainable financing sources;
- the principle of minimizing the differences between current and contractual maturities;
- the principle of maximizing the diversification of financing sources, by type, currency instruments, maturity, number of clients and markets;
- the principle of balanced / controlled expansion of the activities and maintenance of an adequate amount of liquid assets;

- the principle of human resources availability, for an effective liquidity risk management.

In accordance with these principles, the financial institution forecasts and monitors the inflows and outflows of funds for certain periods of time. The forecast takes into consideration all types of inflows and outflows, including off-balance-sheet inflows and outflows.

3 Early warning indicators of liquidity risk

Financial institutions should monitor external and internal factors that serve as early warning indicators of liquidity risk. These indicators will help the Management or Board of Directors of the financial institution to monitor or analyze additional problems more quickly.

Some of these indicators are the following:

- negative trends and/or heightened risk associated with a particular product and/or business line;
- rapid growth of assets, especially when funded with volatile sources (or by large creditors / depositors);
- growing concentration in assets and/or liabilities;
- significant deterioration in bank's earnings, asset quality and overall financial condition; considerable increase/decrease of net positions in selling/purchasing by currencies;
- a decrease of weighted average maturity of liabilities;
- repeated breaches of internal or regulatory limits set out for liquidity indicators;
- an aggressive increase of loan portfolio or of the number of approved loans;
- limitations or depletion of credit lines by correspondent banks;
- increase in the rate of deposits' withdrawal;
- increase in the rate of early redemptions of certificates of deposits (CDs);

External Indicators that are published by financial analysts, include:

- Negative publicity;
- Downgrade of bank credit rating;
- Stock price decline;
- Difficulties accessing longer-term funding or increase of debt cost.

Factors that contribute in the reduction of liquidity risk are:

- Strong financial condition

The best way to reduce liquidity risk is the institution's financial position to be strong and reliable to the market and ready to meet massive withdrawals of deposits. Past experiences have shown that if the financial conditions of a financial institution have declined, although having sufficient liquidity, it has been insufficient to meet withdrawals of deposits, loans closures etc.

- Stable sources of funding

Financial institutions that have access to reliable sources of financing are less likely to be vulnerable to liquidity risk, compared with those Institutions that depend on volatile funding sources. Financial institutions can obtain reliable sources of funds by seeking irrevocable credit lines, which are much more stable than the advised lines, which in case of shortage in the market, are likely to be suspended.

- Customer service

Financial institutions that depend on short-term depositors should focus on their service in order to retain these customers. If service quality is declining, management maybe faced to the fact that the deposit base is not as solid as they thought, and customers can transfer their funds to another financial institution.

- Appropriate planning of liquidity (risk management)

Liquidity planning is very important if management has chosen sustainable sources of funding or volatile ones, or if it intends to chose a number of financing sources. Liquidity planning can be accomplished in many ways and there is not a single method that is performed equally by all institutions.

If the financial institution's financial structure is very flexible and risky then the risk management system must be complex. If the financial institution faces stable and predictable flows of funds then the institution is less exposed and has no need for a complicated mechanism of risk management

- Balance sheet structure

Liquidity risk can be reduced by keeping liquidity in the asset side of the balance sheet. Management of liquid assets means management / maintenance of Cash, loans and securities, appropriate loan structuring, or sale of loans to increase liquidity. However, management must understand that the sale of assets in times of crisis does not always provide the expected returns.

4 Guidelines for risk management

An effective risk management should consist of four main processes:

- Identification of risk;
- Measurement of risk;
- Monitoring and reporting;

- Risk Control.

Senior Management must be able to identify and evaluate a preliminary source of liquidity risk carefully and accurately and within a certain time. To identify potential sources of risks, the management should identify existing risks or the previous ones, or potential risks from new businesses, laws and regulations. Senior Management must constantly monitor the sources of liquidity risk, not only for a single transaction but also for the entire portfolio.

Risk assessment system of a financial institution should cover a variety of liquidity risk sources. To select an appropriate risk measurement system for a financial institution, the executive must understand the nature and structure of financial products and transactions. Financial institutions that rely on large creditors, should have a good system of risk measurement based on which it will perform transactions.

Executive must constantly test whether the risk management process is still the one that has been in the past. For example: They can periodically review the analysis of capital flows, in order to verify whether the reports reflect the real situation in the balance sheet or off balance sheet items. Evaluation of the reporting system should be updated whenever there is a change in products or other changes.

Significant Factors for an effective risk management consist of management information systems, risk limits, internal controls, management reports and contingency plan.

- Contingency plans

Part of the liquidity management process is the preparation of a contingency plan. Contingency plan is an estimate of cash flows and a plan which provides funds by forecasting the demand for capital and identifies the available sources in the market in different situations such as in times when assets grow faster or deposits may be suddenly withdrawn. An efficient contingency plan should minimally answer these questions:

1. What is the plan of the management if faced with crisis?
2. Which method will use the management to assess fund in emergency situations?

ALCO and / or the heads of departments should review and update the contingency plan at least annually in order to ensure its efficiency.

- Determining risk limits

Board of Directors of the financial Institution and the managers of other departments should set risk limits based on the nature and the degree of acceptance of a certain level of risk. These limits should be reviewed and changed in accordance to circumstances and strategies of the institutions.

There are two main ways to determine risk limits:

—*Dynamic method:* determines the maximum level of mismatch of aggregate

cash flows at a certain point in time.

—*Static method*: sets a minimum level of liquid assets to short term liabilities ratio.

- Asset Liabilities management policy

A good management policy of Assets and Liabilities requires a good coordination between the relevant departments. This policy should specify the rights, the duties and responsibilities of decision makers regarding liquidity matters.

5 Liquidity risk management in Albania

The withdrawal of deposits during 2008 caused liquidity problems for Banks. Therefore, to increase liquidity in the market, Bank of Albania in December 2008 decided to allow banks to use up to 40% of required reserve in lek (from 20% limit set at first). Further more, following the latest developments in international (collapses of some well known international banks) and domestic market, Bank of Albania adopted regulation no. 71 dated 14.10.2009 "On the management of liquidity risk". This regulation altered the definition of liquid assets by making them more conservative and introduced the threshold of 20% for the ratio of liquid assets to current liabilities of up to one year. In December 2010, this ratio was estimated at 30.6%, of which 42.9% is in ALL, 15.6% in EUR and 23.9% in USD. The liquidity situation in foreign currency, particularly in euro needs careful monitoring. Chart 1 shows the quarterly performance of this ratio.

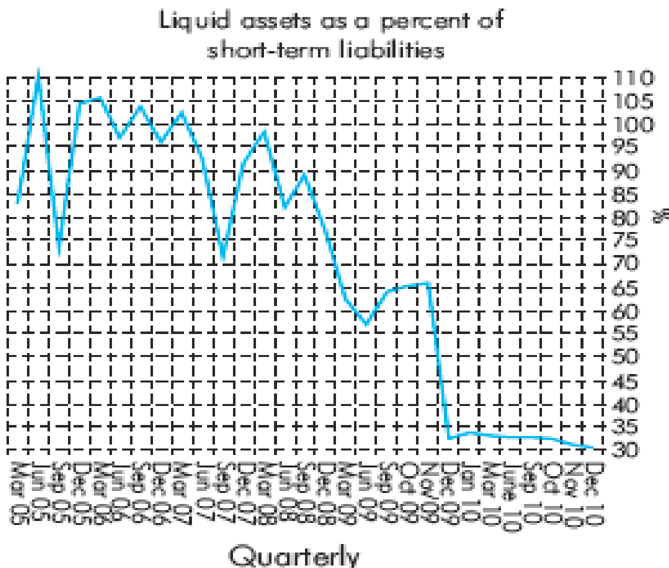

Figure 16.1 — *Quarterly Liquidity ratio. Source: Bank of Albania*

In November 2011, BOA made some new amendments to this regulation. The main changes consist in imposing liquidity ratios at 20% for lek and foreign currency separately & increasing the minimum of total liquidity ratio from 20% to 25 %. These amendments are made in line with the Basel Committee recommendations in order to bring the Albanian banking regulations closer to EU standards.

Loans / Deposits Ratio

Loan to deposit ratio improved during 2011 especially for Lek, and this was mainly due to increase in LEK lending. However this ratio in FC slightly decreased during 2011 due to the preference of banks to lend in lek rather than in foreign currency.

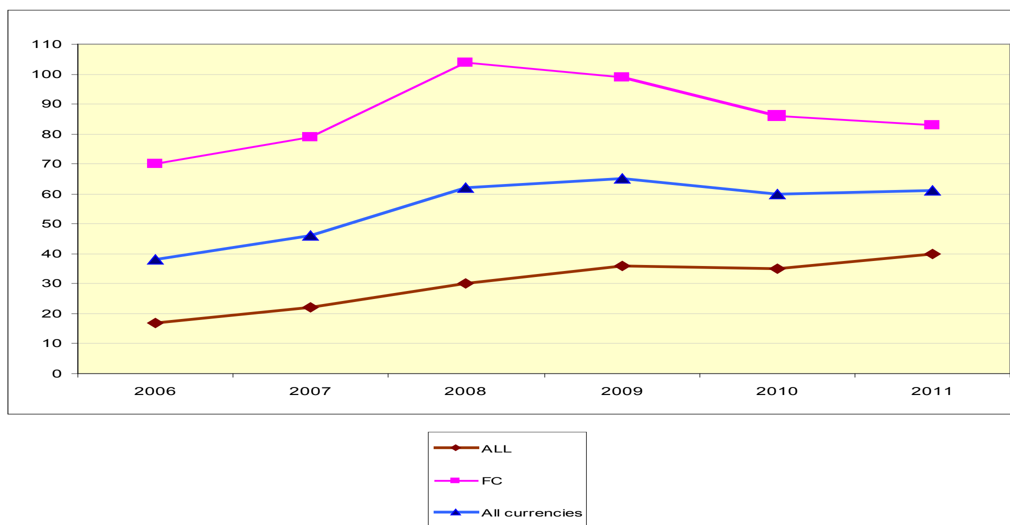

Figure 16.2 — *Loans / Deposits ratio, in total and separately in ALL and FC, 2006-2011. Source: Bank of Albania*

Chart 2. Borrowing in the interbank market or from the Bank of Albania is another way banks manage their short-term needs for liquidity. This is generally collaterized borrowing, and the type and adequacy of assets that may serve as collateral is another element that calls for monitoring in order to assess banks' capacity to meet their short-term needs for liquidity. As from January 2010, the Bank of Albania continued to inject liquidity in the interbank market. Once the banking sector's liquidity improved through the growth of deposits since early year-2009, banks' bidding for liquidity from the Bank of Albania was lower. Hence, the volume of Bank of Albania's transactions has been declining. The amount of liquidity injected at end-December 2010 was about All 13.9 billion from All 26.6 billion at end-June 2010. Throughout 2010, banks were allowed to use daily up to 40% of their required reserve in lek (from 20% decided in July 2008). These successive operations of the Bank of Albania have aided the financial system's liquidity and have smoothed the interbank market situation, thus allowing for stable interest rates in the market.

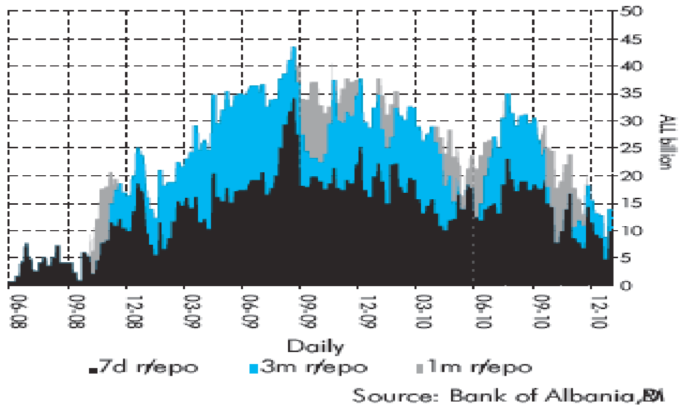

FIGURE 16.3 — *Volume of liquidity provided by the Bank of Albania in the open market.*

The structure of assets and liabilities of banking system during 2007-2010 is as follows:

TABLE 16.1 — *Main items of assets of banking system. Source: Bank of Albania (* in billions of ALL, ** in %).*

Indicator	Dec. 2007		December 2008			December 2009			December 2010		
	Sum*	Share **	Sum*	Share **	Change **	Sum*	Share **	Change **	Sum*	Share **	Change **
1. Treasury and interbank transactions	293.1	39.5	251.4	30.1	-14.2	254.3	28.7	1.2	296.2	29.9	16.5
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transactions wish Central Bank	67.1	9.0	69.2	8.3	3.3	69	708	-0.4	82.2	8.3	19.2
T-bills	127.0	17.1	107.0	12.8	-15.8	106.3	12.0	-0.7	103.0	10.4	-3.1
transactions with other banks	83.0	11.2	55.4	6.6	-33.3	58.0	6.5	4.8	91.9	9.3	58.5
2. Operations with customers (gross)	290.6	39.1	394.1	47.2	35.6	446.0	50.3	13.2	486.5	49.1	9.1
3. Security transactions	133.3	18.0	166.7	20.0	25.1	177.7	20.1	6.6	210.7	21.3	18.5
4. Other assets	9.7	1.3	8.4	1.0	-12.6	8.2	0.9	-3.5	9.1	0.9	11.7
5. Fixed assets	11.1	1.5	15.2	1.8	36.3	14.7	1.7	-3.2	13.8	1.4	-5.8
Total assets	742.3	100	834.1	100	12.4	886.3	100	6.3	990.6	100.0	11.8

The main highlights of the banking system assets in 2010 compared to 2009 are as follows:

- Increase in treasury & interbank transactions by ALL 41.9 billion or 16.5%, mainly due to the substantial increase in transactions with other banks,

credit institutions and other financial institutions by ALL 33.9 billion or 58.5%, and also with the Central Bank by ALL 13.2 billion or 19.2%;

- Increase in lending by ALL 40.9 billion or 9.1%;
- Increase in security transactions (other than the Albanian Government T-bills) by ALL 32.9 billion or 18.5%, mainly due to the increase in investment in fixed income securities by ALL 31.4 billion or 17.9%.

Table 16.2 — *Main items of liabilities of banking system. Source: Bank of Albania (* in billions of ALL, ** in %).*

Indicator	Dec. 2007		December 2008			December 2009			December 2010		
	Sum*	Share **	Sum*	Share **	Change **	Sum*	Share **	Change **	Sum*	Share **	Change **
1. Treasury and intrebank transactions	42.2	5.7	98.8	11.8	134.3	89.9	10.1	-8.9	61.2	6.2	-31.9
2. Operations with customers (gross)	621.8	83.8	633.8	76	1.9	683.8	77.2	7.9	805	81.3	17.7
3. Other liabilities	7.7	1	9.48	1.1	22.7	5.7	0.6	-40.3	7.5	0.8	32.9
4. Permanent resources	62.2	8.4	80.4	9.6	29.3	96	10.8	19.5	104.8	10.6	9.1
Total liabilities	742.3	100	834.1	100	12.4	886.3	100	6.3	990.6	100	11.8

The main highlights of the banking system assets in 2010 compared to 2009 are as follows:

- Decrease in treasury and interbank transactions by ALL 28.7 billion or 31.9%, mainly due to the decline in "T-bills and other eligible bills" by ALL 19.2 billion or 59.6%, and the decline in loans received by ALL 15.4 billion or 33.6%, while banks and financial institutions' deposits increased by ALL 6.9 billion or 106.1%;
- Operations with customers increased by ALL 121.2 billion or 17.7%, where the major contribution is provided by the increase in operations with the private sector by ALL 118.1 billion or 17.4%;
- Increase in permanent resources by ALL 8.8 billion or 9.1%.

Liquid Assets

In 2010, liquid assets grew ALL 20.9 billion (or 8.8%) to ALL 257 billion compared to ALL 245 billion at end-2009. In terms of their composition, securities have the major share, meeting the liquidity regulation criteria by about 66.5%. Current accounts and bank deposits with remaining maturity of up to seven days account for 20.5%.

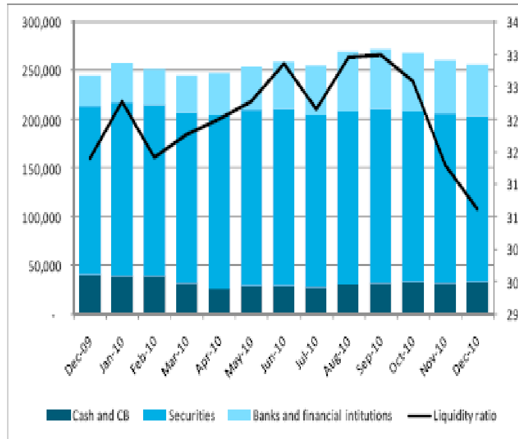


FIGURE 16.4 — *Monthly liquid assets and liquidity.*

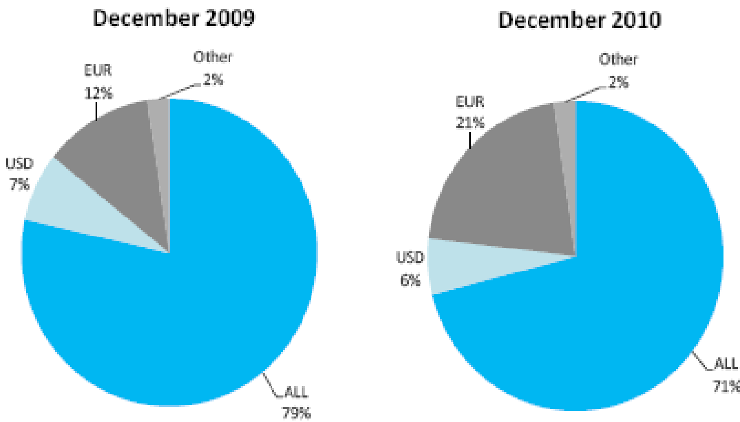
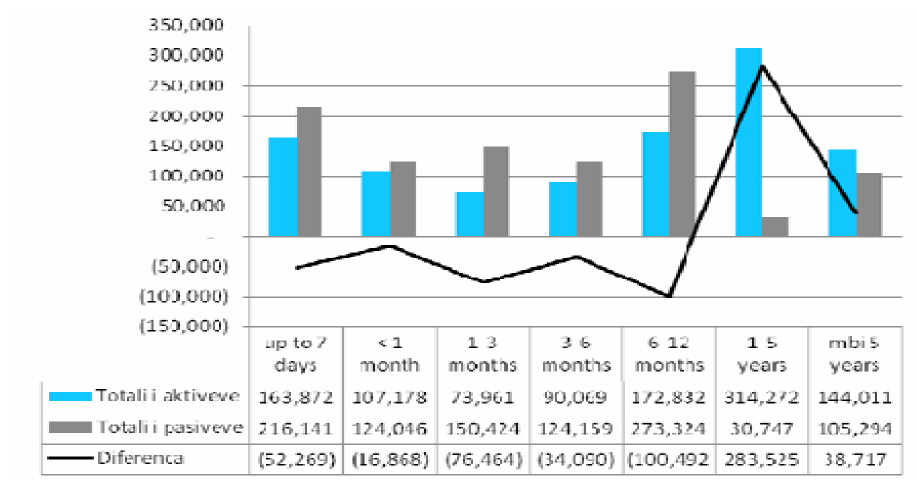


FIGURE 16.5 — *Liquid Assets by currency.*

Concerning the composition by currency, assets in the Albanian Lek have the largest share, accounting for 71% of total liquid assets, followed by EUR-denominated assets, 20.8%, and USD-denominated assets, 5.8%. This composition seems to have changed compared to the previous year, with ALL assets reducing their share in favour of EUR assets.

The gap between assets and liabilities of up to 1- and 3-month remaining maturity remains negative. At end-2010, however, it seemed to narrow compared to 2009. Gap to total assets ratio for short-term periods, albeit volatile throughout 2010, improved in December 2010 compared to end-2009.



	up to 7 days	< 1 month	1 3 months	3 6 months	6 12 months	1 5 years	mbi 5 years
Totali i aktiveve	163,872	107,178	73,961	90,069	172,832	314,272	144,011
Totali i pasiveve	216,141	124,046	150,424	124,159	273,324	30,747	105,294
Diferenca	(52,269)	(16,868)	(76,464)	(34,090)	(100,492	283,525	38,717

Figure 16.6 — *The structure of assets and liabilities by maturities.*

6 Conclusions

- As a consequence of the recent international crisis, it became necessary to review the theories in the management of liquidity risk.
- The confidence crisis that enveloped financial markets during 2008, caused a significant lack of liquidity in financial markets, dried up sources of funding for banks and had a tremendous impact on banks that relied on money market funds (wholesale).Increased perception of risk between the parties forced financial institutions to become more cautious. They began to collect and preserve liquidity, seriously damaging the functioning of the interbank market and causing the increase of interest rates for interbank lending. Many of the financial institutions faced difficulties in settling their short-term obligations. Central banks in most developed countries, adopted several programs to ease the situation. They consisted of injecting liquidity into the market by using repurchase agreements with longer term, expanding the types and maturity of securities serving as collateral, making use of some special programs for certain types of financing of debt securities.
- Liquidity is important for all banks to cover for expected and unexpected fluctuations in balance sheet and provide funds for growth. Its cost is a function of market conditions and the degree of risk, as well as the interest rate and credit risk, reflected in balance sheet of the bank.
- The main objective of liquidity risk assessment is to verify whether the management of financial institution has applied a control system which can identify, measure, monitor and manage liquidity. Liquidity Risk

assessment can be made in accordance with standards set by the Basel Committee on banking supervision.

- Identification of risk and further more its monitoring are two important steps. On the other hand, the control system of liquidity risk management must be efficient and accurately reflect the actual situation of the institution.
- Psychological factor is very important to be taken into consideration, as a result of the sensitivity of the public, informed or not, towards financial developments in the country.
- The crisis has given many precious lessons to countries worldwide, starting mainly with changing and adapting the regulatory base to the new environment created in the market.

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