David Longworth: Liquidity, liquidity, liquidity

Remarks by Mr David Longworth, Deputy Governor of the Bank of Canada, to the Investment Industry Association of Canada, Toronto, 3 October 2007.

The original speech, which contains various links to the documents mentioned, can be found on the Bank of Canada's website.

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Good evening. It's a pleasure to be here.

Sound financial investment is important to individuals, to firms, and to society as a whole. By definition, investment is forward looking, and thus our future financial well-being is shaped by the soundness of the investment decisions we make today.

History shows that sound investment requires confidence, and one of the key elements that underpin confidence is liquidity. Indeed, Governor Kevin Warsh of the Federal Reserve Board says that liquidity, is, in fact, a form of confidence.[1] The events that ensued from the U.S. subprime-mortgage crisis have tested the confidence of many investors, and raised questions about where all the liquidity – which seemed so plentiful a few months ago – has gone.

Now, one of the great things about our two official languages is that we often have several words to describe one thing – or more accurately, to distinguish between slightly different forms of one thing. We have snow, sleet, and slush – though not, I hope, until December. *Et nous avons des amis, des copains, et des camarades.* But sometimes, when it might be useful to have several words to distinguish between similar concepts, we have only one word, and that word is forced to take on several meanings. "Liquidity" is such a word – it's used to mean slightly different things in different contexts.

In my remarks this evening, I'd like to examine three concepts of liquidity that are of interest in economics and finance. The first I'll call *macroeconomic liquidity*, which has to do with "overall monetary conditions," including interest rates, credit conditions, and the growth of monetary and credit aggregates. The second is *market liquidity*, which refers to how readily one can buy or sell a financial asset without causing a significant movement in its price. A third form of liquidity that I'll be touching on very briefly is *balance sheet liquidity*, which refers broadly to the cash-like assets on the balance sheet of a firm (or household). For non-financial firms, balance sheet liquidity is often measured by the short-term liquid assets on their balance sheet. For banks, which must manage their liquidity very closely, balance sheet liquidity is reflected in a detailed breakdown, by maturity, of their assets and liabilities – especially those coming due in the short term. The ability of banks to fund themselves is often referred to as *funding liquidity*. The common element in these concepts is that liquidity is the ability to obtain cash – either by turning assets into cash on short notice or by having access to credit.

I'll focus largely on the first two concepts, macroeconomic and market liquidity. In each case, I'll suggest why liquidity matters, both in a general sense and to policy-makers, and I'll describe how it's measured. Then, I'll discuss the state of liquidity, in its various forms, both before the summer turbulence and after. I'll conclude by describing the current situation and saying a few words about the Bank of Canada's role with respect to each type of liquidity.

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[1] K. Warsh. "Market Liquidity: Definitions and Implications." Speech to the Institute of International Bankers Annual Washington Conference, in Washington, D.C., March 2007. Available at: http://www.federalreserve.gov/newsevents/speech/Warsh20070305a.htm.

Macroeconomic liquidity

As I noted earlier, I am using the term macroeconomic liquidity to refer to "overall monetary conditions."

Any economy, whether national or global, functions best when there's enough – but not too much – liquidity.

So, how much is the right amount in a national economy? The answer depends on the central bank's objectives. In Canada, our monetary policy objective is to meet the inflation target. This goal has been achieved with considerable success since the target was introduced in 1991. In general, when inflation is tending to remain on target, liquidity is adequate. If there were too much liquidity in the economy, inflation would threaten to rise above target. If there were too little, inflation would tend to fall below it. To put this same notion in different terms, the risk of having too much, or too little, liquidity in our domestic economy is essentially the same risk that is posed by future inflation being higher or lower than the target.

The key indicators of macroeconomic liquidity, in terms of price, are the policy interest rates and the term structure of interest rates paid by borrowers. In terms of quantity, the key indicators are the growth of monetary and credit aggregates and the state of credit conditions more generally. In normal times, central bankers tend to place more emphasis on interest rates than on monetary and credit measures. Nevertheless, the growth rates of monetary and credit aggregates do appear to have some explanatory power regarding the future evolution of spending and inflation, and are thus useful additional indicators of liquidity. For example, in Canada, real M1 measures help to predict near-term growth in real GDP. And the M2-family aggregates help to predict core CPI inflation one to two years ahead.[2]

One particularly important aspect of macroeconomic liquidity is the liquidity that central banks make available to the financial system on a day-to-day basis – often referred to as central bank money. In Canada, this typically comes through the provision of settlement balances in the wholesale payments system – the Large Value Transfer System (LVTS) – supplemented, when required, by open market purchase and resale agreements. The goal of this provision is to keep our key policy rate, the overnight rate, close to the target we set for it. As well, our standing liquidity facilities, made available to LVTS participants at the end of the day, provide liquidity, as required, to individual financial institutions at 25 basis points above the overnight rate.[3,4]

Finally, to get a sense of *global* macroeconomic liquidity, one can aggregate macroeconomic liquidity across countries to obtain average world real interest rates and the average growth of monetary and credit aggregates. These measures will tend to be reflected over time in the behaviour of global spending and average global inflation rates.

Global macroeconomic liquidity sets the backdrop against which we make monetary policy in Canada. This liquidity can affect the foreign demand for Canadian products and, at times, can influence the prices of Canadian imports.

A key point is that, because Canada has a flexible exchange rate regime, we can achieve the inflation target over time – *regardless* of the degree of liquidity in the global economy. This is

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2 D. Longworth. "Money in the Bank (of Canada)." Bank of Canada Technical Report No. 93, February 2003. Available at: http://www.bankofcanada.ca/en/res/tr/2003/tr93-e.html.

3 When LVTS participants are in deficit at the end of the day, and therefore need to access the standing liquidity facilities, aggregate participant deposits at the Bank of Canada will exceed the target for net settlement balances.

4 As discussed at the end of this speech, these facilities also respond to temporary difficulties in funding liquidity experienced by LVTS participants.

because such a regime allows us to have a monetary policy that is independent of other countries.

Now I'll turn to liquidity in financial markets.

Liquidity in financial markets

Market liquidity refers to the extent to which one is able to quickly and easily buy and sell financial assets in the market, without moving the price. Market liquidity captures the aspects of immediacy, breadth, depth, and resiliency in markets. Immediacy refers to the speed with which a trade of a given size and cost can be completed. Breadth, often measured by the bid/ask spread, refers to the costs of providing liquidity. Depth refers to the maximum size of a trade for any given bid/ask spread. Resiliency refers to how quickly prices revert to fundamental values after a large transaction.

Generally speaking, the more liquid the market, the better. But there is an important caveat – if market participants come to expect that market liquidity will always be ample, and they acquire assets with the assumption that they can liquidate their positions quickly and at fairly predictable prices, they may end up taking on more risk than has been factored into the purchase price. And this could sow the seeds of a nasty correction in the event of a shock and a rapid decline in market liquidity. That said, liquidity is the lifeblood of markets.

Over the past 50 years, and particularly in the past 10 to 15 years, we've seen a significant trend increase in liquidity in financial markets around the world, including the markets for bonds and other fixed-income products, and those for equities, derivatives, foreign exchange, and commodities.

What gave rise to this increase in market liquidity?

First, there have been structural factors in markets themselves. The appearance of new players, the introduction of new financial instruments, and advances in technology have all added to the liquidity of financial markets. New participants, such as hedge funds, have become active in many financial markets, thus introducing new capital into these markets, adding to their liquidity. Financial innovation, typically enabled by technology, has often supported the liquidity of financial markets. The growth of electronic trading systems and innovation in back-office systems have lowered trading costs and increased price transparency and competition, and, in the end, resulted in greater liquidity.

In addition to these structural factors, two other significant long-term developments have underpinned the growth of liquidity in financial markets. First, efficiency gains in the financial sector, better inventory management, and better macro policy – including monetary policy – resulted in what has come to be called the "Great Moderation," which was a significant reduction in the variability of output, inflation, and long-term interest rates across most G-7 countries, starting in the mid-1980s.[5] And this moderation has, in turn, contributed to the liquidity of financial markets by reducing some of the fundamental sources of financial volatility and risk. Second, globalization has resulted in more liquid financial markets. Globalization has significantly increased international capital flows, since many emerging-market countries have relaxed their capital controls. Globalization has also helped to spread financial innovation, in part through the operations of large international banks.

This increase in market liquidity has generally been beneficial. It has tended to place downward pressure on volatility – prices have typically become less sensitive to large transactions and usually absorb news more easily.

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[5] D. Longworth. "Inflation and the Macroeconomy: Changes from the 1980s to the 1990s." Bank of Canada Review, Spring 2002. Available at: http://www.bankofcanada.ca/en/review/2002/r02-3-ea.html.

So that's a look at macroeconomic and market liquidity. Now I'd like to provide a snapshot of the liquidity situation before the summer turbulence.

Liquidity before the summer turbulence

Let me start with the state of macroeconomic liquidity.

For several years, the world economy has been characterized by ample liquidity. In comparison with historic norms, long-term real interest rates have been low, and money and credit have grown fairly quickly in most G-7 countries and in such emerging-market countries as China and India. The major reason for the unusually low long-term real interest rates appears to be a high level of desired savings relative to desired investment. Interestingly, despite ample (or perhaps overly ample) global liquidity – which historically has led to rising inflation – inflation has been fairly well contained around the globe. Central banks have been keeping their eyes on inflation and have not hesitated to raise policy rates as required.

Parenthetically, I would add that a number of other developments – developments that did not really contribute to global macroeconomic liquidity – may have left the impression that there was a "wall of liquidity" out there. These developments include the rapid growth, in real terms, of the global economy; an increase in the ratio of financial assets to GDP; increases in corporate holdings of cash; growth in many of the major "real-money accounts," such as pension funds, central bank reserves, and sovereign wealth funds; the ongoing reinvestment of fixed-income assets that come to maturity; and the payouts that occur when firms are acquired. Against a backdrop of low real interest rates, much of this money was involved in a "search for yield," and, in this search, the prices of risky assets were bid up.

The situation in Canada before August was similar to the global one – that is, it was marked by ample macroeconomic liquidity. Indeed, the Bank of Canada's July *Monetary Policy Report Update* noted that there were upward pressures on inflation, and that the growth of household and business credit, as well as the growth of monetary aggregates, was robust. We therefore raised the policy interest rate to 4.5 per cent and expressed the view that "some modest further increase in the overnight rate" might be required to bring inflation back to target over the medium term.

As for market liquidity, it had generally been growing over the past few years. Bid/ask spreads were narrow, and volatility was low in foreign exchange markets and in equity and fixed-income markets. Shocks, when they occurred, were contained – that is to say, they didn't spread widely across markets – and episodes of volatility subsided fairly quickly.

And shocks did occur. Four episodes come to mind: the May 2005 downgrade of Ford and GM debt; the sell-off of risky assets in May and June of 2006; the collapse of the American hedge fund, Amaranth Advisors, in September of 2006; and finally, the "flight to quality" in February of this year.

These episodes were apt to be costly for those directly affected and reminded investors that investments pose risks, and that prudence requires that these risks be understood and managed. Overall, however, because these episodes were well contained and of short duration, they may have left investors too complacent, and therefore contributed to postponing an overdue repricing of risk. Indeed, central banks, including the Bank of Canada, had for some time identified the possibility of "a significant price reversal in riskier assets."[6]

Let me now describe how the late summer turbulence in financial markets affected various forms of liquidity.

6 This phrase is taken from the Bank of Canada's December 2005 *Financial System Review*, p 4.

How recent events in financial markets have affected liquidity

Throughout the year, delinquency rates and foreclosures associated with subprime mortgages in the United States have been rising. These mortgages have, over the years, been increasingly repackaged, or securitized, into asset-backed securities (ABSs) such as residential mortgage-backed securities (RMBSs). More recently, these RMBSs, along with other assets and ABSs, have been further repackaged into other structured products, such as collateralized debt obligations (CDOs) and asset-backed commercial paper (ABCP). Because the magnitude of the delinquencies and foreclosures was unexpected, it is not surprising that we have seen a repricing of many assets with exposure to the U.S. subprime-mortgage market.

The subsequent downgrade by credit agencies of many CDO tranches – especially those that included U.S. subprime mortgages – made market participants aware of the risk inherent in these products, and also made them realize that credit risk more broadly may not have been priced appropriately. So, to the extent that the repricing of credit risk that we have seen in recent months has, in fact, been a renormalization of the value of risk, these events are to be welcomed.

Many of these structured products lack transparency – particularly those backed by other structured or securitized products, such as ABCP backed by CDOs. It is often difficult for investors to determine the underlying assets that ultimately provide the cash flow for these products – and, therefore, to determine their direct exposures. While securitization helps disperse risk to those more willing to bear it, it can also obscure to the investor in which instruments and with which actual and potential counterparties the ultimate risk resides. Because of this lack of transparency, uncertainty among market participants began to build in early August, and perceptions of counterparty risk rose. Bid/ask spreads widened, market depth diminished, and market liquidity evaporated.

As events unfolded around the world, the rate on overnight collateralized transactions in Canada moved above the target overnight rate in the second week of August. This market response was not unique to Canada. The overnight interbank rates in the United States and Europe also moved above the respective target policy rates and became very volatile.

As a result, central banks, including the Bank of Canada, moved quickly to provide significant amounts of liquidity to their financial systems in the form of central bank money, which, as I noted earlier, is a key aspect of macroeconomic liquidity. Shortly after mid-August, conditions in the Canadian overnight market began to improve. From that time until the recent technical pressure, stemming partly from month-end payment flows, the Bank of Canada had not had to intervene intraday: total settlement balances had steadily decreased, and the overnight rate had remained slightly below target.

After all that has occurred over the past two months, it would seem that the most pronounced impact – aside from major, ongoing concerns regarding the structured-product market – has been an increase in the spreads in money markets – whether in ABCP, corporate paper, or bankers' acceptances – of most industrialized countries. Market liquidity in these particular markets has not returned to its former state. While short-term funding for banks was always accessible through the money market, we went through a period in which it was very difficult to obtain funding beyond a week or two. Perceptions of increased counterparty risk, combined with precautionary hoarding of funds by financial institutions, helped to create that situation. This precautionary behaviour has occurred because financial institutions are uncertain about the extent of their potential exposure to ABCP (which they will have to take back on to their balance sheets, since they are the sponsors or liquidity providers), or to the financing of previous leveraged buyout transactions.

In the past couple of weeks, however, there have been an increasing number of transactions at longer terms in world money markets, including the Canadian market for bankers' acceptances, and spreads have narrowed somewhat. However, liquidity in money markets is still quite limited in Canada and abroad.

The situation in money markets contrasts with that in other markets, such as spot foreign exchange and equity markets, where repricing has occurred and market liquidity has returned. These markets are functioning reasonably well. Liquidity in corporate bond markets is somewhere between these two situations, with highly rated firms having little difficulty accessing market funding (though at higher spreads than before August), while access for low-rated firms is significantly constrained.

I would now like to turn to the current situation. In particular, I will look at the Bank of Canada's role for each type of liquidity.

The current situation and the Bank of Canada's role

With respect to the provision of central bank liquidity to the financial system, let me stress that the Bank's goal continues to be to keep the overnight interest rate close to its target. We will continue to monitor the situation in the overnight market and adjust settlement balances and undertake open market purchase and resale operations as necessary, as we have done in recent days in response to upward technical pressure. This pressure does not appear to be linked to changes in the rest of the money market.

With respect to *overall* domestic macroeconomic liquidity, we set the overnight interest rate to keep inflation near its 2 per cent target over the medium term. Our next fixed announcement date is 16 October. Between now and then, we will be reviewing all the relevant factors affecting the inflation projection. At the time of our last announcement, we noted that there are significant upside and downside risks to the outlook for inflation. On the upside, there is a possibility that household demand in Canada could be stronger than anticipated, while on the downside, the ongoing adjustment in the U.S. housing sector could be more severe than anticipated and could spill over to the U.S. economy more broadly. Recently, the Canadian dollar has moved sharply above the trading range assumed in the July *Monetary Policy Report Update*, and we need to look at the causes of this strengthening, should it persist. And, as always, we need to assess the effect of movements in the exchange rate on the balance of aggregate demand and supply in the Canadian economy. In addition, there is uncertainty about the extent and duration of the tightening of credit conditions in Canada and, hence, about the tempering effect this will have on the growth of domestic demand. As I noted earlier, the Bank monitors Canadian credit conditions closely, and we will be looking at the level of interest rates paid by households and firms, as well as at any changes in the availability of credit granted to them for spending on goods and services. Over the summer, credit spreads rose all along the term structure, but, because of significant declines in risk-free rates, increases in the level of interest rates paid by firms are largely confined to short-term maturities, where credit spreads have risen the most.

With respect to the direct participants in the Large Value Transfer System, Canada's wholesale payments system, the Bank of Canada's Standing Liquidity Facilities are available at the end of each day, on an overnight basis, for individual institutions that have a shortfall in their settlement balances because of temporary difficulties with their funding liquidity.

Many observers have asked whether there is more that the Bank of Canada could be doing to deal with the market liquidity situation in money markets, as well as the funding liquidity situation of banks. We have been asking ourselves the same question. While it is true that many term money market spreads remain abnormally wide, the market is functioning. There have been increasing numbers of term money market transactions, and spreads are beginning to narrow. In these circumstances, there does not appear to be anything that the Bank of Canada could usefully do to improve the functioning of this market.

Indeed, the best contribution the Bank of Canada can make in this situation is to keep inflation low and stable by maintaining macroeconomic liquidity at an appropriate level, and to keep the overnight interest rate close to its target. With these conditions in place, market liquidity should be restored, over time, through the operation of normal market forces. A helpful backdrop is the overall strength of the Canadian economy, supported by a high level of balance-sheet liquidity in Canadian non-financial corporations.

Conclusion

Liquidity is essential to the well-functioning of both the real economy and financial markets.

The Bank of Canada carefully monitors and analyzes liquidity in all its guises as part of our ongoing assessment of the economy and the financial system. Throughout this most recent period of financial market stress, the Bank has paid particular attention to both the *nature* and the *adequacy* of liquidity – in the macroeconomy, in financial markets, and in balance sheets.

We will continue to monitor events as they unfold, and we will take appropriate policy actions as required.