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The Office of the Superintendent of Financial Institutions has established two minimum standards: the leverage ratio described in the Leverage Requirements Guideline, and the risk-based capital ratio.

Canada, as a member of the Basel Committee on Banking Supervision,

This domestic guidance is based on the Basel II and III frameworks.

Leverage Requirements Guideline: It is a 20 page document with 65 items. I have outlined the most important information to provide a general understanding of how the system works.

<http://www.osfi-bsif.gc.ca/Eng/fi-if/rg-ro/gdn-ort/gl-ld/Pages/LR19.aspx>

Calculation of leverage requirements:

5. **Leverage ratio = Capital Measure/Exposure Measure**

6. Beginning in Q1 2015, institutions will be expected to maintain a **leverage ratio that meets or exceeds 3% at all times.**

Capital Measure:

10. **The capital measure used for the leverage ratio is the all-in Tier 1 capital of the institution as defined in Chapter 2 of the CAR Guideline.**

Tier 1 capital consists of:

Common Equity Tier 1 capital (prior to regulatory adjustments) consists of the sum of the following elements:

Common shares issued by the institution that meet the criteria for classification as common shares for regulatory purposes. For an institution that is a federal credit union, references to “common shares” in this Guideline also refer to “membership shares” as defined in 79.1(1) of the Bank Act and other instruments recognised as Common Equity Tier 1 capital under this Guideline.

Retained earnings – includes net interest income

Accumulated other comprehensive income and other disclosed reserves -Other comprehensive income includes unrealized [gains and losses](#) on certain types of investments

Common shares issued by consolidated subsidiaries of the institution and held by third parties that meet the criteria for inclusion in Common Equity Tier 1 capital. See sections 2.1.1.2 and 2.1.1.3 for the relevant criteria;

Dividends are removed from Common Equity Tier 1 in accordance with applicable accounting standards

Additional Tier 1 capital:

Instruments issued by the institution that meet the criteria for inclusion in Additional Tier 1 capital.

Surplus (share premium) resulting from the issue of instruments included in Additional Tier 1 capital

Instruments issued by consolidated subsidiaries of the institution and held by third parties that meet the criteria for inclusion in Additional Tier 1 capital and are not included in Common Equity Tier 1

For further detail see Capital Adequacy Requirements (CAR), which includes 80 main headings and 217 sub headings, go directly to Chapter 2 for definition of Capital.

http://www.osfi-bsif.gc.ca/Eng/fi-if/rg-ro/gdn-ort/gl-ld/Pages/CAR18_index.aspx

Exposure Measure:

An institution's total exposure measure is the sum of the following exposures:

(a) on balance sheet exposures; (b) derivative exposures; (c) securities financing transaction (SFT) exposures; and (d) off-balance sheet (OBS) items.

There are a further 15 pages and 52 items with multiply sub headings that explain the details of the above exposures in the guideline.

Risk-Based Capital Ratio:

1.5. Calculation of OSFI minimum capital requirements

28. Institutions are expected to meet minimum risk-based capital requirements for exposure to credit risk, operational risk and, where they have significant trading activity, market risk. Total risk-weighted assets are determined by multiplying the capital requirements for market risk and operational risk by 12.5 and adding the resulting figures to risk-weighted assets for credit risk. **The capital ratios are calculated by dividing regulatory capital by total risk-weighted assets.** The three important ratios consist of common equity tier 1, tier 1 and total capital and are calculated as follows:

$$\text{Risk Based Capital Ratios} = \frac{\text{Capital}}{\text{Credit RWA}_{\text{Standardized}} + 1.06 \times \text{Credit RWA}_{\text{IRB}} + 12.5 \times \text{Operational Risk} + 12.5 \times \text{Market Risk}}$$

Where:

Capital

= Common equity tier 1 (CET1), tier 1 capital, or total capital as set out in Chapter 2.

Credit RWA_{Standardized}

= Risk-weighted assets for credit risk is determined using the Standardized approach in Chapters 3 and 7.

Credit RWA_{IRB}

= Risk-weighted assets for credit risk is determined using the Internal Ratings Based (IRB) approaches in Chapters 6 and 7. **All risk components are calculated internally within a [financial institution](#).**

Operational Risk

= The operational risk capital is calculated using one of the approaches in Chapter 8.

Market Risk

= The market risk capital charge uses one or a combination of the standardized or internal models approaches set out in Chapter 9.

1.6.1 Capital Conservation Buffer

31. The capital conservation buffer is designed to avoid breaches of minimum capital requirements. Outside of periods of stress, institutions should hold buffers of capital above the regulatory minimums. Should buffers be drawn down, institutions should implement a capital restoration plan for rebuilding buffers within a reasonable timeframe or, where the breach is expected to be corrected promptly, a plan that provides assurance that the capital conservation buffer recovery is not temporary. The capital restoration plan should be discussed with OSFI. There are a range of actions that can be taken to rebuild buffers including reducing discretionary distributions of earnings. This could include reducing dividend payments, share-buy-backs and to the extent they are discretionary, staff bonus payments. Institutions may also choose to raise new capital from the private sector as an alternative to conserving internally generated capital. [BCBS June 2011 par 122, 123, 124]
32. Greater efforts should be made to rebuild buffers the more they have been depleted. In the absence of raising capital in the private sector, the share of earnings retained by institutions for the purpose of rebuilding capital buffers should increase the nearer that actual capital levels are to minimum capital requirements. [BCBS June 2011 par 125]
33. It is not acceptable for institutions which have depleted their capital buffers to use future predictions of recovery as justification for maintaining generous distributions to shareholders, other capital providers and employees. These stakeholders, rather than depositors, must bear the risk that recovery will not be forthcoming. [BCBS June 2011 par 126]
34. The capital conservation buffer establishes a safeguard above the minimum capital requirements and can only be met with Common Equity Tier 1 capital. The capital conservation

buffer is being phased-in between 2016 and 2019 and when fully transitioned the buffer is 2.5% of risk weighted assets. Institutions should maintain the minimum Common Equity Tier 1 capital ratio, Tier 1 capital ratio and Total capital ratio plus the capital conservation buffer. [BCBS June 2011 par 129, 130

Table 2: Capital conservation buffer – effective Q1 each year

	2013	2014	2015	2016	2017	2018	2019
Capital conservation buffer				0.625%	1.25%	1.875%	2.50%
Minimum capital ratios including the applicable capital conservation buffer							
Common equity tier 1 (CET1)	3.5%	4.0%	4.5%	5.125%	5.75%	6.375%	7.0%
Tier 1 capital	4.5%	5.5%	6.0%	6.625%	7.25%	7.875%	8.5%
Total capital	8.0%	8.0%	8.0%	8.625%	9.25%	9.875%	10.5%

Capital Requirements do not fully Constrain Bank Lending

Capital requirements do not fully constrain bank lending for several reasons. First, banks profit through charging interest on loans. Any profits (net interest income) that are retained increase shareholder equity, and therefore capital. This higher capital allows a bank to further increase its lending, which, providing the loans are repaid, will lead to further increases in profits and shareholder capital. As long as a bank's lending is profitable (such as in a boom) this cycle will be able to continue.

Second, banks are able to raise additional capital through new share issues. During boom periods, banks' profits tend to be high, and this leads to higher dividends and an increase in the price of banks' shares. Consequently banks will face little difficulty increasing their capital during boom times.

Third, banks can also engage in a process known as “securitization”. If you sell off, or securitize your accounts receivable, they become a cash asset on your balance sheet and do not increase your liabilities, thereby increasing capital.

Fourth, “Internal Based Ratings Approach” banks determine for themselves what risk is acceptable.

And **Research** initiated by Basil Moore in 1979 and continued through years 1983, 88, 97, and 2001 was corroborated by numerous researchers including Kydland and Prescott, 1990. What they all **concluded** was that commercial banks extend credit first and then go looking for reserves later. So there is no reason to doubt that the process has changed, especially given the time lags between money creation through the issuance of loans and the reporting of those transactions.

Regulation

There is a Leverage Requirements Return Report that must be completed on a quarterly fiscal basis and filed within 30 days of fiscal quarter end. This return provides the leverage ratio of the reporting institution, as well as details of the calculation. There are 70 items in the report that need to be completed.

As you can surmise Bankers have ample opportunity to manipulate numbers and because a bank is a business it must always seek ways to maximize profits, regulation is an absolute must.

Elizabeth Warren once said: “Complexity is the handmaiden of deception”

Make Markets be Markets Conference (3 March 2010), New York City.

My suggestions for macroeconomic students:

I think the two most important things that students should know is that; One, privately owned commercial banks have been given the right to create money through the issuance of loans by the government of Canada. Two, the money supply is mainly determined by a banks willingness to extend loans or in other words create new digital money and a borrower accepting that loan and incurring a debt to the bank.

-and maybe to some degree how it affects the macro economy.

In addition to the items mentioned in the email there should be some mention of digital money as it is the most dominant form of money currently in circulation. Also I believe one of the best chapters in the textbook was on fiscal policy chapter 7.

The Principles of Macroeconomics, Sayre/Morris, 8th edition

1. Page 260: section 8.2: What Constitutes Money?

In the second paragraph ("In the next chapter, we will see that the Bank of Canada needs to control the supply of money to the economy") The Bank of Canada indirectly controls the money supply by setting

the overnight lending rate (policy rate), which is what commercial banks charge each other for overnight loans, which affects all other interest rates. Higher interest rates generally mean less money available for the economy and vice versa. The Bank of Canada is also the sole distributor of new currency (bank notes) and it only does it at the behest of commercial banks.

2. Page 263: The Canadian Banking System

In the second paragraph while acknowledging the Bank Act does not specify how much commercial banks need to hold in reserve, it states that they still maintain a target reserve ratio it should read a desired cash reserve ratio. Commercial banks only hold as much cash as they think they need for their day to day business.

In compliance with the 1991 Bank Act, the statutory requirement on chartered banks to hold reserves against certain of their deposit liabilities was reduced to zero in July 1994. Which means commercial banks are no longer required to hold any reserves against customer deposits. In fact if you look at balance sheets of any of the chartered banks you won't find any reference to a reserve account.

3. Page 264:

Last paragraph implies that we survived the financial crises of 2007-2008 relatively unscathed because our banking regulations did not allow extreme risk taking as compared to elsewhere in the world, which is false. This was a talking point with Stephen Harper our then prime minister and Jim Flaherty our then minister of Finance. At the same time that they were bragging about how sound our financial system was Canadian banks were being bailed out to the tune of 114 billion dollars between 2008 and 2010. The government was very careful in calling it "*liquidity support*" rather than a bailout.

4. Page 265: section 8.3: The Creation Of Money By The Banking System

Learning Objective 3 asks you to explain how a small amount of cash can support many loans and create more money.

The creation of digital money is not dependent on the amount of cash a bank has on hand.

5. Page 265: Balance sheet of Saymor Bank Ltd.

This fictitious example is meant to simplify and replicate the balance sheet of a commercial bank and does a pretty good job except one thing. You probably already know what that is by now, there are no listed reserve accounts however the term can be used interchangeably with whatever a bank chooses to call its cash balance. In the case of the CIBC you would see cash and deposits with banks, and this has no bearing on how much digital money a bank can create.

6. Page 266 - 270: The Money Multiplier

Those with this textbook or any other Macroeconomic textbook will most likely have an explanation of how the money multiplier theoretically works so I will not include any excerpts here. Again, this is not how the money creation process currently works.

7. Page 87:

Banks are not just financial intermediaries.

In the circular flow of income the textbook implies that savings are necessary for investment to the business sector, this is only true when speaking about capital investment or when people pool money in a fund and then invest. However commercial banks do not lend out savings they create brand new digital money in the process of making a loan (refer money myth #1).

8. Page 280:

The supply of money excluding cash (which is less than 2.4% of money in circulation today, the rest is digital) **is not determined by the Bank of Canada.** The money supply or credit is determined by a commercial bank's willingness to create the money and a borrower willing to accept the loan. To better understand how money is leveraged up see: http://www.osfi-bsif.gc.ca/Eng/fi-if/rg-ro/gdn-ort/gld/Pages/CAR18_index.aspx

9. Page 281:

The Bank of Canada does not set the money supply and it is dependent on interest rates, the opposite of what is claimed in the textbook. Basically the higher the interest rates the less people will want to take on new debt and more likely they will want to resolve existing debts, hence a shrinking money supply. The lower the interest rate creates a reversal of the process.

If we ever hope to have a banking and financial system that benefits the majority of people and not just the financial elites at the top there must be a Royal Commission into our monetary system so that we can lay bare the flaws and look at new ways of doing business.

