

EnpRisk - Lecture Notes Week 12

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1 Financial Stability and Entrepreneurial Risk

The link between financial stability and business development is because we believe that financial stability is a precondition for sustainable economic growth.

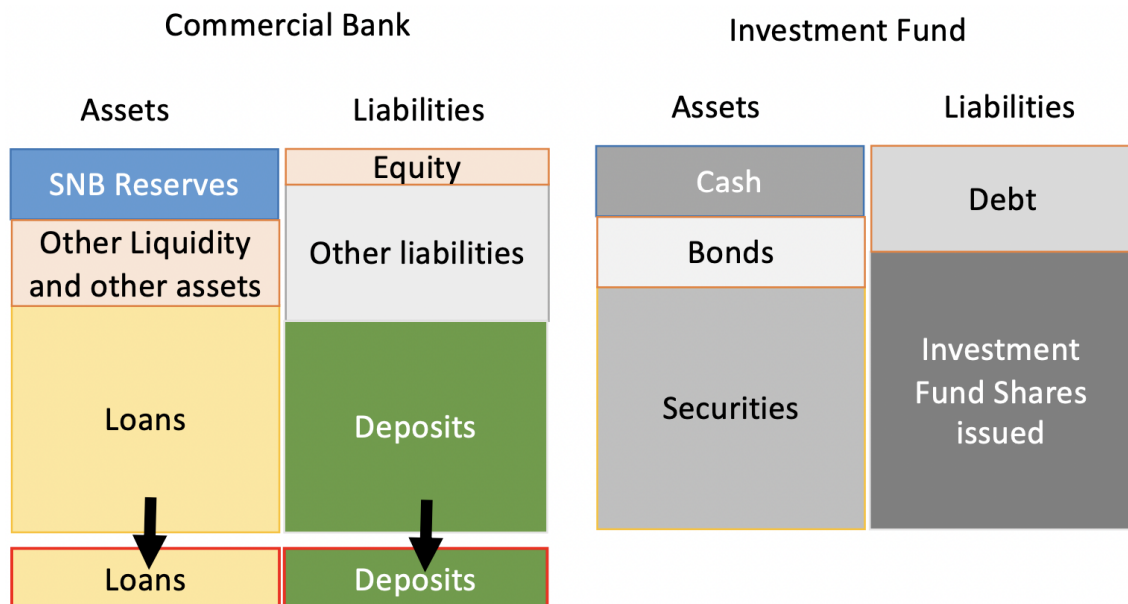
A stable and well-functioning financial system exists to serve us all. It enables the efficient allocation of resources, so that businesses can exploit productive opportunities and households can meet their needs. It allows the risks incurred in the course of generating economic growth to be shared.

Macro-prudential policy should be targeted to provide a net benefit to the overall economy.

1.1 Where does money come from?

Many people think of money as a special thing that has value because it is scarce or because everyone believes in it.

Money is a financial claim, backed by debt! Banks do not store money. Deposits are a bank's liability backed by (risky) long-term assets.



It is essential to know exactly in which legal form your assets are held to be able to assess the risks of losing all or part of it. Example: In the event of bankruptcy, crypto assets held by the exchange could be considered property of the bankruptcy proceedings and customers could be treated as unsecured creditors. An unsecured creditor would be one of the last to be paid in any bankruptcy and last in line for claims.

Three principles to answer almost any macrofinancial question:

For every financial debt, there is a financial assets The sum over all financial assets and liability is always zero. The sum of real assets (machines etc.) can be positive.

Follow the money Money creation for consumption or certain government spending can increase inflation (consumer price index). Money creation for speculative financial activities can drive asset prices temporarily while leaving the consumer prices largely unaffected.

Look at the system as a whole Not everyone can save. Companies, households and the state can only be net savers in Switzerland (in the financial sense) because foreign countries are in debt.

1.2 How the financial system has changed over the last decades

1.2.1 Great Mortgaging

Following some motivation do disaggregate credit:

- Economic development/growth: Neither consumption credit nor household mortgage are directly linked to productivity growth in the way that loans to non-financial firms are. Empirical financial-development literature often neglected disaggregation of credit.
- Inequality in wealth and income: Growth of bank credit can reduce income inequality if reducing investment barriers. In advanced economies, financialization/growth of Finance, Insurance and Real Estate (FIRE) sector and lending to asset markets can increase inequalities.
- Financial stability: Conditional on having a recession, stronger credit growth predicts deeper recessions. Household credit increases probability of crisis.

In Switzerland, 90% of loans are mortgages, i.e. secured by real estate. Yet textbooks typically say that banks examine and pool the risk of entrepreneurs' business models. Globally, the volume of mortgages is also growing strongly compared to GDP, while non-mortgage corporate loans are growing less strongly.

In advanced economies (AEs), increase in mortgage credit has positive effect on business credit in short-run, and less significant negative effect in medium-run. Increase in mortgage credit has a negative effect on GDP. Firm investment in intangible assets increases, therefore banks might reallocate towards real estate and liquid assets.

1.2.2 Rise of Non-banks

The **non-bank financial intermediation (NBFI)** sector is a broad measure of all non-bank financial entities, composed of all financial institutions that are non central banks, banks or public financial institutions. Originally, they were called *shadow banks* to describe borrowing and lending outside the regulated banking system.

NBFI assets increased over the last 20 years. They mainly consist of pension funds, investment funds, money market funds, insurance corporations etc.

An example is the American International Group (AIG) which in 2007 looked more like a bank than like an insurance firm, and almost failed as a result of two large bets on real estate:

1. AIG life insurance lends out their assets against cash (security lending), and invests the rest in risky assets linked to real estate. The security borrower can give the assets back and claim the cash within 1 day!
2. AIG sold insurance on real-estate-backed derivatives.

AIG's reliability became more "bank-like" and subject to rollover risk at the same time that its assets became more opaque and illiquid, and again more bank-like, increasing its vulnerability to a shock.

Can pension funds increase or trigger instability? In theory, asset allocation of PFs can contribute to asset bubbles and the failure of PFs to pay pensioners could for example trigger instability via lowering household income and associated loan-to-income ratios. The empiric view is shown in the following table:

Indicator	Data	Implication
Coverage ratio	Market value of assets / liabilities is >100% for many private-sector pension funds	Looks good, but the widely used indicator might be misleading: what if low interest rates and capital gains hide structural challenges?
ALM cash flows	Often no data on traditional asset-liability management (ALM) metric	Data would help to understand resilience
Global macro metrics	"Net worth has tripled since 2000, but the increase mainly reflects valuation gains [...], rather than investment in productive assets [...]" (McKinsey 2021)	Raises red flag, since a capital-based pension scheme only works if «the capital stock of the national economy would grow , from whose yields one could then pay the pension in the year 20XX» (Flassbeck 2012)

Actor	Textbook/historical purpose	Today's purpose
Central bank	Price stability through (business) credit channel, market sets long-term rates	Price stability via foreign/domestic QE; investment similar to private actors; control of long-term rates
Banks	Profit via Schumpeterian growth	Profit through secured lending (mortgages, SFT)
Pension Funds	Next gen. real capital formation	Capital gains via equity and real estate investments
Inv. Funds /Other	Profit via real capital financing	Various, increasingly «financialized» purposes
Financial markets	Efficient allocation of scarce capital via «fundamental» valuations	Asset manager (AM) capitalism (financial capital abundance, «herding» valuations, AMs' equity holdings increasingly important for corporates)

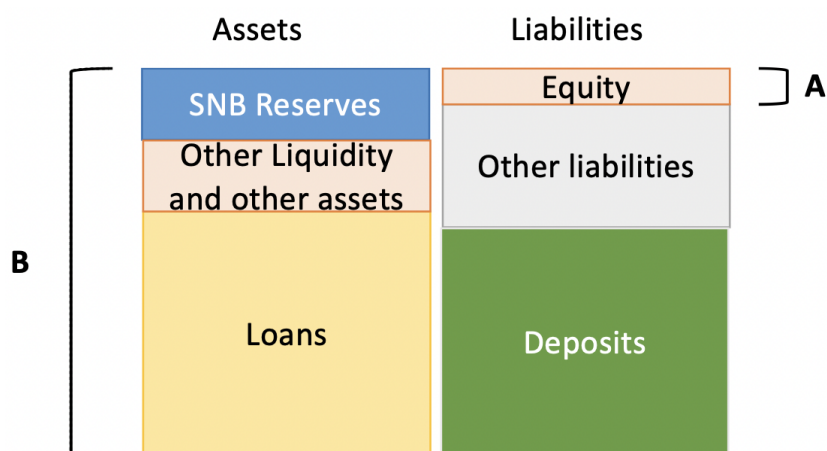
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Increases instability?	Small probability because real and financial world aligned	Non-negligible probability of contributing to decoupling between real and financial world
Impact on entrepreneurs?	The entrepreneur who makes the best use of real economic resources receives money and is rewarded.	The entrepreneur who rides the financial waves best can potentially make more money than by focusing on real resource allocation.

1.3 Fit for purpose or zero risk society?

1.3.1 Risk-weighted Approach to Banking Regulation

Let us focus on how much **capital** a bank can/should have. One way to limit this is with the **leverage ratio**: It's the bank's equity A divided by the bank's total assets B and must be $\geq 3\%$. It's a simple measure as a backstop against excessive leverage. However, it may provide an incentive to proceed to risk shifting.



Another approach is the **risk-weighted approach**. The idea is as follows: define a lower bound to the ratio between a bank's capital and a weighted sum of its assets, whereby a higher weight is attached to

riskier assets. But: it's difficult to measure the risk weights due to inherent opaqueness of bank activities. A bank can calculate the risk weights using:

- *SA* = standardized approach
- *IRB* = international ratings-based approach where banks use internal models to calculate the risk

$$\text{Risk Weighted Assets (RWA)} = \text{Exposure} \times \text{risk-weight}$$

$$\text{Required capital} = 8\% \text{ of RWA}$$

In Switzerland, for example, the following risk weights apply under the standardized approach:

- 75% for small firms without real estate collateral if total counterparty exposure does not exceed CHF 1.5 million or 1% of all retail positions, 100% otherwise.
- 34% (75%, 100%) for residential real estate with a loan-to-value (LTV) below 67% (below 80%, above 80%)

In general, mortgages receive, compared to firm loans, low risk weights.

1.3.2 Macroprudential Supervision of NBFIs

Policy instrument	Micropru effect	Macropru effect	Micro = macro?
Capital buffers	The higher the buffer of an entity, the more shocks can be absorbed	The higher the sum of all buffers, the greater the systemic resilience	Yes
Liquidity buffers	Individually, more HQLA reduces liquidity risk ceteris paribus	Depending on the type of HQLA, systemic risk may persist/ increase	Depends
Less credit risk via collateral	The more collateral a single loan has, the smaller the credit risk	Liquidity risk might persist/increase; feedbacks with collateral value itself can cause/support systemic bubbles	No
Increasing coverage ratios	Individually, a pension fund becomes more resilient	Possibly higher risk and higher ratios via market-valuation and asset feedbacks	No