

# Macroeconomics project flashcard



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## MBA 6410 Project Part 1 The Financial Accelerator and the Flight to Quality

One puzzle that has long plagued business cycle analysis is the existence of large fluctuations in aggregate economic activity that arise from what seem to be small shocks. This anomaly is what motivated the research into the financial accelerator. The financial accelerator is a possible explanation for these disproportional fluctuations.

Changes in the credit market amplify and spread the initial shocks. This is explanation fits particularly well when firms and households are overextended or highly leveraged.

This credit-market amplification of economic shocks is the result of reduced access to borrowed funds. Using the principal-agent approach to credit markets, the financial accelerator builds on the ideas of imperfect information. Studies on the economics of imperfect information have provided three basic points that establish a foundation for the financial accelerator.

First, finance from external sources is more expensive than financing internally, unless the external finance is fully backed by collateral. This higher cost of external funds reflects the losses that will be incurred due to the unevenness of information.

Second, the cost of external financing has a negative relationship to a borrower's net worth. Finally, a drop in a borrower's net worth, increases the cost of borrowing (increases the premium on external finance), increases the amount of external financing required, and reduces the borrower's production and spending. From this framework we learn that a dollar outside

the firm is worth less than a dollar inside the firm due to the agency cost of lending. Borrowers must compensate lenders for their expected costs of determining credit-worthiness.

We also learn that a fall in net worth both increases the agency premium (the cost of borrowing) and decreases the borrower's spending and production. The gist of the financial accelerator is that fluctuations in the net worth of borrowers lead to fluctuations in real activity. In practice, when a firm's balance sheet or income statement weakens, they drift into violation of financial ratio requirements. Falling asset values reduce a firm's ability to post collateral. Both of these situations have a direct effect on the firm's access to credit and the interest rate it must pay.

The financial accelerator builds upon itself.

For example, a decline in productivity lowers cash flows and reduces the ability of a firm to finance projects internally. This increases the cost of investment. The fall in investment spending reduces economic activity and cash flows in future periods, and so on.

These effects are stronger the deeper an economy is in a recession. The effects of the financial accelerator are also amplified when internal financing is low to begin with. When factors of production are used as collateral for new loans, shocks lower the value of that collateral and further tighten borrowing constraints and reduce spending.

This fall in spending further reduces the value of assets, leading to another round of decreased borrowing and spending.

The effects of the financial accelerator also apply to banks. Because banks borrow most of the funds they lend or invest, a drop in bank capital may restrict the size of the bank's operations by raising its cost of funds through regulatory limits. Households are also impacted by the accelerator. Major purchases, such as housing, are linked to the state of household balance sheets through down payments, income requirements, and up-front transaction costs.

Related to the financial accelerator is the flight to quality. When the agency costs of lending begin to be too high, lenders invest a greater share of their savings in safer alternatives. When the financial accelerator is in effect, credit flows away from borrowers who are more subject to agency costs. This is evidenced by the finding that the share of bank loans that are above prime (riskier with harder-to-monitor borrowers) drops in a recession.

Smaller borrowers are more likely to be expected to post collateral than larger, more established borrowers.

The flight to quality also affects the real economy. Investment is very sensitive to cash flow for firms that are most likely to be credit constrained. Studies have also shown that, for firms subject to credit-market constraints, employment, R&D spending, and inventory investment are affected by an economic downturn.

The primary principle of the financial accelerator suggests two main ideas. First, borrowers facing relatively high agency costs in credit markets will bear the brunt of economic downturns (flight to quality).

And second, reduced spending, production, and investment by borrowers with high agency costs will worsen the effects of recessionary shocks. The Financial Accelerator in a Quantitative Business Cycle Framework Economic authors as far back as Fisher and Keynes have posited that credit-market conditions play a central role in the transmission of cyclical economic fluctuations. According to this theory, deteriorating credit-market conditions – marked by increases in insolvency and bankruptcy, rising debt burdens, falling asset prices, and bank failures – are not merely a reflection of the real economy.

They are, in and of themselves, major factors contributing to the depression of an economy.

By adding credit-market conditions to the standard economic models, the ability of these models to explain fluctuations is strengthened. Based on the data, friction in the credit-market can magnify both real and nominal shocks to the economy. Including credit-markets in standard economic models also shows that various balance sheet factors such as cash flow and leverage significantly influence investment spending.

It is the dynamics of the credit market that cause it to have such a significant amplification impact on economic variables. One key factor of the credit market is the imbalance of information in the borrower-lender relationship.

The major problems that occur within the credit market are due to increased imbalance in the information. This problem is transferred to the economy as a whole because credit crises increase the real cost of lending money and

reduce the efficiency of the lending process. Borrowing becomes more expensive and more difficult.

The financial accelerator is the mechanism by which the functions of the credit market work to spread and amplify shocks in the macroeconomy. The key to this process is the link between the “ external finance premium” (the difference between the cost of funds raised externally and the opportunity cost of funds internal to the firm) and the net worth of potential borrowers (the borrowers’ liquid assets plus collateral value of illiquid assets less outstanding obligations).

These factors are inversely related. As a borrower’s net worth falls, the external finance premium rises.

This negative relationship comes into being because, when borrowers have little wealth to contribute to financing a project, the potential for conflicting interests between the borrowers and the lenders is greater. The lenders must be compensated for higher agency costs by a larger premium.

Because the net worth of borrowers follows the direction of the business cycle, the external finance premium is countercyclical. This enhances swings in borrowing and thus in investment, spending, and production. In short, when contractions in the economy cause borrowers’ net worth to drop, the external agency premium rises.

The higher agency premium leads to reductions in borrowing, investment, and spending, which lead to further contractions in the economy and greater reductions in net worth.

It is a vicious cycle. Epilogue of Allan Greenspan, *The Age of Turbulence: Adventures in a New World* According to Mr. Greenspan, a significant contributor to the current economic downturn was indifference toward risk. The main manifestation of this indifference in the current situation was the subprime mortgage industry. If subprime mortgages had not been the culprit, however, some other financial product would have stepped in to take their place.

It doesn't seem that the large financial institutions that have suffered as a result of this crisis were ignorant to the risk involved in some of their investments. The former CEO of Citigroup indicated that unless they played along with the trends, they would lose market share. So, they decided to gamble by adding to their risky positions with the hope that they could sell them before the collapse. It seemed that there was no end to the expansion of the economy, so people began to accept greater risk. While the timing of the economic shock came as a surprise to many, the idea that it would eventually occur was not a novel one.

The end of the cold war, the nearly universal abandonment of central planning economies in favor of market economics, and the infusion of hundreds of billions of people into the labor forces across the globe increased competition and caused inflation to drop.

This drop came on top of earlier declines due to monetary restraint. Aided by this low inflation, the growth of developing countries was more than double that of the developed world. Because the people in these emerging markets – including China – save more of their incomes than do the people of

developed nations, the rise in “ saving propensities” overwhelmed the financial markets.

Planned global capital investments did not keep pace with the saving surge.

Consequently, nominal and real long-term interest rates fell around the world. The decline in interest rates drove asset prices (like housing prices) considerably higher. The market value of stocks, bonds, residential and commercial real estate, home mortgages, etc. outpaced the growth in global domestic income.

Because they were now flush with cash, investors reached out for lower-grade, higher-yielding assets. An area of attention for the new investments was very-high-yielding securities based on US subprime mortgage loans.

The risk on these securities seemed low because delinquencies and foreclosures had been deceptively low during the housing boom. Everyone from hedge funds to pension funds to banks wanted these securities. The increased demand for subprime loans caused subprime lenders to make more loans with often excessively lax terms. Mortgages were available with no down payment and no documentation of income.

The failure to properly price the risk of these securities contributed to the current crisis. The collapse of the subprime mortgage market was the final key to the perfect storm.

When investors realized that some commercial paper was backed by subprime mortgage assets, they indiscriminately dumped all varieties of short term asset-backed commercial paper in favor of US treasury bills. Banks



balance sheets were already burdened by financing corporate mergers, were unable to sell the debt due to sudden uncertainty in the financial climate.

This caused the banks to hold back any further financing. The troubles in the housing market only started with the subprime collapse. Since summer 2006, an excess of approximately 600, 000 vacant single-family homes has developed.

The excessive supply of homes has driven down housing prices.

Nearly 20% of outstanding home mortgages exceed the market value of the property financed. This factor has created a surge in foreclosures, which are a problem for everyone involved. This crisis is marked by its impact on both the banking and securities markets because both markets now draw considerably from the same sources of funds. For much of the 20th century, the banking market relied mainly on savers' deposits (which were federally insured) for their funding while securities firms relied on investors for short-term funds.

The population of “ passive” savers has been declining for years so banks now depend on the same investors who patronize securities firms.

This relationship caused banks to run into trouble when the securities markets did. Banks are finding it increasingly difficult to obtain funding. In the wake of the current economic situation, bank investors insist on financial equivalents to secure, old-fashioned deposits. Banks will be expected to issue securities that they must hold until maturity.

Banks usually steer clear of this type of debt, but they may have no choice.

### The Sum of All Fears

The current economic downturn is unique. It isn't necessarily something that hasn't been seen before; it is everything we have seen before in one package. There is the bursting of the real estate bubble (like Japan in the late 1980s), a wave of bank runs (comparable to the 1930s, but this run is on the shadow banks), a liquidity trap (again, like Japan), and a disruption in international capital flows (much like what happened in Asia in the 1990s).

The housing bubble started deflating in late 2005, but home prices were still on the rise. This is due to the nature of home pricing.

Prices for homes are based on the prices of similar homes in the area that have sold in the recent past. Prices do not start dropping until it is obvious to the seller that they are not going to receive the original asking price. By the middle of 2007, house prices were down 3%. By the middle of 2008, prices had fallen more than 15%. Even though the decline in prices wasn't sudden, it still undermined the assumptions upon which the subprime lending market had been built. Subprime lenders and borrowers assumed that house prices would constantly increase.