**Slide Show Notes**

**Banking Regulation**

The term "central bank" is used in the context of three different functions.

* Monetary Authority: The previous module on international payments and the IMF emphasized the role of a monetary authority, which issues a legally required currency and is responsible for making sure residents of its territory have access to other currencies (foreign exchange — FX) to make cross-border payments. Since issuing a currency usually means crediting commercial banks' reserve accounts in the central bank, there is naturally a close connection between the monetary authority and the central bank. For example, the Hong Kong Monetary Authority combines both functions, with one executive director for banking oversight and a second executive director for managing the currency.
* Bank Regulator: Regulation and support services to commercial banks is what gives "the central bank" its name. Regulation means granting (and revoking) licenses to businesses that want to operate as commercial banks, setting requirements for their operations, and supervising and auditing them to verify compliance. Support services can include holding commercial banks' required reserves (maybe paying interest on them), supplying banks with physical currency (notes and coins), "clearing" checks drawn by one bank's customer on another bank's customer, and managing deposit insurance programs.
* Government Treasury: Managing the government's money is the government's "treasury" function. It's common for governments to have accounts in the same central bank that holds commercial banks' reserves. The authority to put money into and take money out of the government's accounts is usually not in the central bank's hands, however, so the central bank's role is just mechanical support. When the government wants to borrow money, it's usually done by a government treasury office that is probably in a "Ministry of Finance" rather than in the central bank. Government borrowing is kept separate from the central bank to allow monetary policy to be implemented independently of fiscal policy.

The various tasks involved in all these roles are institutionally organized in a variety of ways in different countries.

This module is about the second of the above three roles: banking regulation and supervision.

International cooperation on banking regulation, which is a central bank function, is institutionalized separately from cooperation on international payments, which relates to the monetary authority function. The international organization that this module highlights is not the IMF, but rather the BIS.

The course's previous module on international payments noted that BOP crises affect commercial banks by threatening to cut off their access to FX (or to raise FX's price). The other way around is also possible: malfunctioning of the commercial bank sector can trigger financial crises that affect international payments.

For example, the U.S. liquidity crisis of 2007-2008 started for internal reasons but threatened to cause international payments problems in many countries. So, the U.S. central bank (the Fed) temporarily made large amounts of funds available to other central banks around the world to increase their FX reserves.

A basic characteristic of the banking business is that banks profit from using "leverage." From the point of view of the banks' customers, however, a more leveraged bank is riskier because it is more likely to fail and to take customers' money with it. One goal for public policy is therefore to ensure that the amount of leverage that banks use is a reasonable balance between these two opposing interests.

"Leverage" refers to the fact that banks can make a large volume of loans (which they profit from) while only using a small amount of their own money (their capital). At an abstract level, a bank doesn't need ANY resources to make a loan, so long as the borrower doesn't take the money out of the bank but keeps it on deposit instead. And indeed, people and firms generally do keep the money that the banks lend them in those same banks in order to make transactions using the banks' payments systems and to gain some interest in the meantime. (See the [appendix](#MoneyCreationAnnex) at the end of these notes for a longer explanation.)

But things can go wrong. For example, borrowers are sometimes unable to repay. If a bank has losses on its loans, then it won't be able to meet its obligations to its account holders unless the bank has available some capital of its own to make up the difference. Losses decrease the bank's capital, just as profits increase it.

But giving the bank a capital base is an expense for the banks' owners, so they try to minimize it. On the other hand, minimizing banks' capital makes banks riskier, so there is a public interest in the banks not having too little capital, which has led public authorities to require banks to have capital equal to at least a minimum percentage of the banks' obligations.

Still, even though banks have some capital on reserve, most of the loans that banks make correspond, as assets, to accounts of "other people's money" (OPM), which are liabilities. That's leverage. (Without capital it would be infinite leverage — positive loans in the numerator, zero capital in the denominator — but it's not infinite because of the minimum capital requirements.)

Leverage is illustrated on the next slide by the length of the line that has the blocks at its two ends. The line is the lever. A longer line (more leverage) allows a smaller block at the far end of the line (bankers' capital) to lift a larger block (loans and investments made by the bank), which is what generates the bank's revenue.

The bigger the leverage ratio, the bigger the return on the owners' capital investment.

This slide's graphic tries to illustrate the concept of financial leverage

Banks' vulnerability to loss also comes from "term transformation" (or "maturity transformation"): borrowing short-term to lend long-term. Why do banks do this? Because the cost they pay for short-term money is (usually) less than the cost they receive from borrowers for long-term loans. So, by means of term transformation, banks "buy low and sell high."

Term transformation's risk to banks is that interest rates may rise, in which case the bank must pay more to retain deposits, while the rate of interest on its longer-term loans remains fixed, meaning that the bank's interest payments rise above its interest receipts. This is called "financial risk." (The risk that borrowers will not repay as expected is called "business risk.")

An extreme risk to depositors can arise when a bank's losses exceed bank owners' investment in the bank. At that point, the bank owners have nothing left to lose: any further losses come at the depositors' expense. The owners' usual need to balance risk and reward is gone, so that it is rational for the owners to go ahead with business deals that previously would have been too risky, or even deals that are corrupt: kickbacks that owners get personally for making additional bad loans at depositors' expense. The risk to depositors in this situation is the result of what is called "moral hazard," although it also depends on regulatory neglect, since regulators should notice that losses have eroded capital and force the bank owners to pay in more capital or cease operations.

Moral hazard bit with a vengeance in the U.S. savings-and-loan (S&L) scandal in the late 1980s, mostly in the southwestern U.S. Based on the amount of the USG's outlays to bail out cheated depositors, that scandal was apparently the world's biggest financial failure ever. Part of the depositors' (and ultimately, the USG's) losses stemmed from kickbacks to bankers from borrowers who had no intention to repay and who conspired with bankers to steal depositors' money. Losses mounted up as much as they did because the USG at the time didn't believe in regulation.

Government regulation of banks comes into the picture because one side of the banking transaction is composed of many small depositors who have no way of knowing what a bank's management is like — until it's too late.

In contrast, banks and their corporate borrowers are in a more equal relationship. Banks hire specialists to monitor corporate borrowers, and they constrain borrowers with contract terms that make loans more secure. Individual depositors can scarcely discipline a bank this way.

On behalf of the small depositors, therefore, the government balances the privilege of a bank license, which gives the banker the privilege of using OPM, with standards for how the bank will use it. This slide lists six types of measures.

The S&L scandal was empowered by the USG's decision to neglect to regulate the S&Ls ("*laissez faire*").

How does banking regulation apply to cross-border banking?

First, note that banks cross borders in two ways, to the extent allowed by regulation.

* One way is to buy or establish a separate bank in a foreign country.
* Another is to establish a branch of the home bank in a foreign country.

While a subsidiary that is a separate bank can provide the full range of banking services in the foreign country, it does not have the same access to the parent bank's resources as a branch does, except by arm's-length borrowing on commercial terms.

A branch, on the other hand, represents all the parent bank's resources, although it may not be licensed by the foreign country to conduct the full range of banking services. In particular, branches may not be licensed to conduct consumer banking (as opposed to corporate banking).

So, a parent bank that mainly wants to provide services to its multinational corporate customers in a foreign country may prefer to establish a branch.

In any case, cross-border banking is mainly for corporate customers.

The two options — subsidiary *vs.* branch — also differ in terms of who is responsible when something goes wrong. All a branch's losses are losses to the parent bank, while the losses of a separate bank only affect investors up to the amount of their investments in the subsidiary. (The parent bank's investment in a subsidiary would be much less than the parent's whole capital.)

Finally, a branch is potentially regulated differently than a full-fledged but foreign-owned bank, both by the home regulator and by the foreign regulator.

Challenges for bank regulation that result specifically from cross-border bank structures are listed in this slide.

Reserve Requirements: With respect to differences between countries' reserve requirements, the "eurodollar" phenomenon illustrates their impact. In the 1950s, European banks could attract much-wanted USD deposits thanks to regulations that allowed them to (a) denominate deposits in USD, and (b) set aside lower reserves than were required for U.S. banks, which allowed them to offer higher interest rates on deposits. (European banks thus shared the additional profits they got from higher leverage.) As a result, a firm with a USD bank account in New York could deposit a check in London, get a USD bank account in London instead of in New York, and gain more interest. The London USD account was termed "eurodollars."

This technique became very popular, grew to a large size, was adopted outside Europe (for example, in the Bahamas and so forth), and was applied to other currencies (for example, the yen — "euroyen").

The point is that banking activity gravitates to where requirements are lower, putting pressure on regulators in all jurisdictions to compete on allowing lower requirements and thus more risk.

Deposit Insurance: Deposit insurance is a way of bolstering confidence in consumer banking, but it is hard to adapt to corporate and interbank accounts. Since a large part of cross-border banking consists of interbank deposits, cross-border banking isn't stabilized by deposit insurance the way local consumer banking is.

Assigning Regulatory Responsibility: With interbank deposits being so prevalent in cross-border banking, the health of one country's banks can be affected by another country's banks that hold their deposits but that are not regulated by the first country. Also, an industry that is financed by branches of foreign banks will be affected by problems in the foreign banking sector that is not regulated by the industry's home government. A branch is considered part of the parent bank in consolidated bookkeeping, but the home regulator may not have much knowledge about a branch that is not in its territory: will the regulator's inspectors travel across the world to conduct on-site inspection in all its home banks' branches?

Central Bank Financial Support: There may be doubt over whether the cross-border banks can depend on emergency financial support from either their home central bank or the foreign country's central bank.

In sum, cross-border banking has potential problems that call for sovereigns to establish understandings, cooperation, and institutions for cross-border regulation and support.

A leading organization that sovereigns use to help them cooperate on banking is the Bank for International Settlements. This slide provides some basic organizational information.

The BIS has played various roles since its founding in 1930. Currently, an important role is hosting bodies that negotiate agreements on international standards for regulating banks and other types of financial institutions.

When the BIS was founded in 1930, there was no IMF but there was a need for central banks to coordinate on payments and foreign exchange (FX) reserves. One specific type of payment was government-to-government reparations from the 1914-1918 war.

In the 1930s, the economic depression resulted in loss of export markets and thus in international payments problems. The BIS served as the forum for Europe's central banks to try to coordinate on FX reserve issues.

After 1945, the BIS facilitated the European central banks' creation of the European Payments Union and provided FX reserve management services in the context of its members' participation in the new IMF system created at Bretton Woods.

In the 1970s, the challenge for industrialized countries' central banks changed from defending the quantity of FX reserves to reacting to the impacts on their banking systems and their economies of unstable fluctuations in the prices of FX (exchange rates). The "Basel Process," named after the location of the BIS, dealt with risks to banking from the banks' potential losses from speculating in FX prices.

The long-term reaction of Europe's central banks to greater financial instability after 1971 was a sustained effort to re-stabilize their currencies. The BIS hosted the "Committee of Governors" of the European central banks who, in a decades-long process, devised the European Monetary Union. That committee evolved into today's European Central Bank, the monetary authority of the euro currency, whose offices are in Frankfurt (not Basel).

On a global scale, the "Basel Process" continues to work on international standards for all countries to adopt on banking regulation.

The Basel Process of multilateral cooperation on bank regulation standards is managed by the "Basel Committee on Banking Supervision," which is hosted by the BIS. The Committee sets "Basel" standards that are recommended minima for adoption by countries' central banks. Legal adoption and the timing of implementation are issues for individual countries to consider.

Basel standards have gradually expanded their coverage and tightened their requirements, trying to keep up with experience about the sources of instability in banking.

The first set of standards was issued in 1975 and is known by the name "Concordat," a French word meaning "agreement." The Concordat basically addressed the traditional cross-border regulatory challenges identified above (in slide 9).

In 1988, the standards known as "Basel I" tackled the delicate issue of "capital adequacy." Although adopting minimum capital standards makes banks more stable and safer for their customers and counterparties, it lowers banks' leverage and costs them money.

Basel I emphasized measures dealing with the risk from loans. It also got into the risk of banks losing money from trading FX and stocks.

Basel II, in 2004, pushed Basel I further — after hard negotiations. Leverage was further restricted, risks of loss from trading "derivatives" (new kinds of securities) were recognized as justifying regulatory limitations on trading, and books of cross-border banks were consolidated to get a more complete, accurate measure of risks.

Basel III responded to the 2007-2008 liquidity crisis with some new standards that would apply in serious crises. "Countercyclical" capital requirements refer to making banks restrict leverage further when credit is growing faster. Special liquidity requirements were defined for limited periods when banks were under unusually heavy stress.

Contemporary financial institutions are highly leveraged and interconnected, and thus they depend on the ability of other financial institutions to extend them credit. Trouble in the institutions that supply them with finance means that they may have trouble too.

So, cooperation on financial sector regulation has steadily broadened beyond just banking to all types of financial institutions.

A comprehensive "Financial Stability Board" (FSB) was established in 1999, within the BIS, to ensure that all parts of the financial sector would be covered by minimum international standards for national regulation.

The FSB is a small organization, governed by a "Plenary" of heavy hitters whose main role is their power to convoke regulatory authorities from the main industrial economies.

Besides the BIS and the initiatives that it hosts, I'll mention two related topics:

* Measures against money laundering (and "terrorist finance").
* Clarifying what the G-20, the G-7, and the G-10 are.

To lead international cooperation in "Anti-Money Laundering" (AML) measures, the "Financial Action Task Force" (FATF) was established in 1989 by the G-7. FATF is a small organization with 37 country members and 30 staff, hosted by the OECD in Paris.

FATF's main outputs are (1) its 40 recommendations for national policies and (2) its procedure for declaring countries or territories "non-cooperative" regarding AML policy implementation.

FATF itself doesn't supply assistance or levy penalties: that is left to its members.

For governments, FATF starts from the basics, that money laundering *per se* should be illegal. Without this, an activity that generates money might be illegal (the "predicate crime") without the subsequent laundering of the money being illegal.

Each country should also have a focal point for implementing AML, referred to generically as a "financial intelligence unit" (FIU). The USG calls its FIU "FinCEN," the Financial Crimes Enforcement Network.

FATF also emphasizes the need for transparency in asset ownership, so that money laundering can't be hidden from law enforcement.

In addition to banks, various other types of firms are considered "sensitive" because experience has shown that they have frequently been used for money laundering. Gambling casinos and luxury real estate are two examples.

Consider also the case of a restaurant. It handles a lot of cash, so why not put cash from a crime into a restaurant's bank account and say it was received from customers? It's hard to prove that it wasn't.

Sensitive firms are signaled by FATF as "Designated" Non-Financial Businesses and Professions.

FATF's recommendations are that national policy require banks and designated firms to "know your customer" (KYC) to be able to judge that there is a legitimate source for customers' money. Also, they should keep records, report certain transactions (for example, cash transactions over a threshold), and report any suspicious transactions to the national FIU.

An internationally relevant FATF recommendation is that banks have a KYC policy with respect to their correspondent banks in other countries. That is, a bank needs to know if its correspondent bank has adequate AML practices.

International organizations have been grappling with the relatively harsh impacts that FATF's standards, and the enforcement actions of members like the USG, have had on developing countries. Financial reporting may not be considered as dependable in small developing countries. Also, FATF members like the USG have felt free to characterize violent political conflict in those countries as "terrorism." For various reasons, therefore, industrialized countries' financial institutions may feel exposed to sanctions for not being able to guarantee conformity with FATF's standards when they deal with banks in developing countries.

This risk of sanctions has had a chilling effect on cross-border payments between banks in FATF member countries and their correspondent banks in developing countries. There is a fear that, if a developing-country bank is found to have non-conforming clients, then the industrial-country bank that handles that bank's transactions will be found at fault. FATF has tried to reassure banks that they won't, but it's hard to be sure.

So, for markets that don't generate much profit in the first place, the risk of FATF problems may not be worth it and it's safer for an industrialized country's bank to simply drop the correspondent relationship. Countries in the Caribbean that depended on USD transactions were at one time substantially affected, including for family and NGO transactions. With some effort, the potential problem seems to have been addressed.

On the G-7, the G-10, and the G-20: see the slides below. Generally, these are unstructured groups that have no fixed standards regarding membership, meetings, or topics.

The G-7 got its start largely thanks to the financial instability of the 1970s. Since 1999, however, it largely passed the financial portfolio on to the G-20 and has become a mainly geopolitical summit.

The G-20 is now the principal consultative mechanism for new global initiatives on finance and financial institutions. Its formation and importance were underlined by the series of exchange-rate crises of the 1990s.

Every year, more or less, one country volunteers to be the G-20's "chair" and invites the other members to its territory for a meeting.

The G-10 is different: it was the group of countries who agreed in 1962 to lend to the IMF under an arrangement called the "General Arrangements to Borrow." This arose because the size of international payments for financial speculation outgrew the IMF's quotas and required a new source of funding for the IMF's support to be quantitatively adequate for payments crises.

As mentioned in the course's module on International Payments, IMF borrowing has expanded under new agreements since 1962, so the General Arrangements to Borrow have been replaced, the number of countries that have arrangements to lend to the IMF has expanded, and the concept of the G-10 in its original sense has become just historical.

**Appendix: Banks Create Money by Lending**

A friend is talking with Dave and says I'm just $1,000 short of having enough money to buy some extra land that I could really use for my farm. Dave says no problem I will give you the thousand dollars as a loan. They agree on the terms of the loan and an interest rate, and Dave gives his friend a checkbook and says just write a check to the seller of the land for a thousand dollars and have him bring the check to me.

So, the seller brings the check to Dave and Dave says great, that thousand-dollar account of my friend now belongs to you. Here's a checkbook. Anything you need to buy, just give people a check on this account and I'll pay them (by giving them an account).

Whenever anyone comes back to Dave with a check, he says the same thing and before long he has a lot of different people with accounts that all correspond to payments they've received for real goods and services, with the payments being checks on accounts the buyers have with Dave.

(By the way, Dave might give the borrowers banknotes instead of checkbooks. Banknotes are like printed checks except that instead of writing in any amount they are printed with a fixed amount, like five dollars — a five-dollar bill. Also, instead of the payee being whoever you write the check to, the payee is whoever has possession of the banknote — the "bearer". In that respect, a banknote is like a check made out to "cash.")

Whether Dave disburses loans by giving people checkbooks or banknotes, he does it starting out with nothing, no money, no gold, no reserves, no capital. The liabilities represented by the accounts he creates cost him nothing. (The services he provides do have costs — time spent receiving and making payments, bookkeeping, printing checks and banknotes, etc.) And yet he's receiving interest on the loans. Everything's fine for Dave so long as everyone is content to leave their money with him.

Indeed, once accounts with Dave become popular, people might deposit other money with Dave in return for having an account that they can use to make payments safely and conveniently. "Other" money means things like gold and silver coins or accounts in other banks.

Would people be content to leave their money with Dave? Well, maybe Dave is a rich guy, and everybody figures that he's good for it. Historically, "Dave" would likely have been an established merchant.

If people do leave their money with Dave, he can go on to make more and more loans and receive more and more interest. There is no natural limit except the economy's demand for funding. Dave doesn't need to "find" more money to make more loans: he just makes loans the same way he did for his friend, by telling lenders they have an account with him.

To appreciate the value of the service that Dave is providing, you would have to experience a situation without that service: in other words, without money. For example, in the early 1800s in Indiana, there wasn't that much money around. People had things — grain and hogs that they had raised — but how could they buy other things that they couldn't produce themselves? It's not that easy to barter live hogs for coffee, salt, iron tools and so forth. People needed to have money to shop efficiently for those things, so they needed to sell their hogs for money. But did anyone else have money to buy hogs with? Where was that money going to come from?

The situation in those days was that there was never enough of it: gold and silver coins were always in short supply and commerce was difficult. Much of the money that did exist came from people like Dave who created it out of thin air by crediting people with accounts. That's banking.

Being able to create money out of thin air has its good points and bad points. On the good side, it means that a banker can always make loans when customers need them.

On the not-so-good side, it means that people are dependent on the banker. What if Dave issues some banknotes to himself, uses them to buy gold, and then just walks away? (Do you suppose anyone would actually do something so dishonest? And then do it again somewhere else?)

Also, what if you want to move from Indiana to Illinois (the way the 22-year-old Abraham Lincoln did) and you want to take your money with you? What if you show up in Illinois with the checkbook and banknotes that Dave gave you, but no one there has ever heard of Dave and won't sell you anything for them?

You need something to take with you to Illinois that you can spend there. (Taking grain or hogs a long distance would be a lot of trouble.) One possibility is that Dave might be known to at least one banker in Illinois and can give you a "letter of credit" to that banker, which you can carry to Illinois and use to open an account there. It's like Dave had an account with that banker and sells you that account in return for closing your account at Dave's bank. Another possibility is that you use your account with Dave to buy an outside form of money that is widely recognized: gold or silver coins, or bank notes from a big Philadelphia or New York City bank that does business nationally.

It would be nice if Dave would keep a reserve of things like that — things that you can use as money anywhere. If you could be sure that he had sufficient reserves like that, you would feel better about keeping your account with him or even depositing other money with him. Of course, it's an expense for Dave to put gold and silver into the bank.

By the early 1800s, the history of the banking activities that the paragraphs above describe in a casual way was already centuries old and had been institutionalized based on hard experience. Issuing banknotes to the public or creating money out of thin air in general was considered a public service but also a privilege that was controlled by requiring banks to get charters from the government and by making sure that a banker like Dave put some widely accepted money — his "capital" — into the bank's reserve to make sure that he shared the risks of banking problems.

The amount of capital Dave must put up, as a portion of the volume of accounts Dave's bank can have, determines the bank's leverage. Zero capital implies infinite leverage; the higher the required capital the less the leverage and the less are the bank's profits.