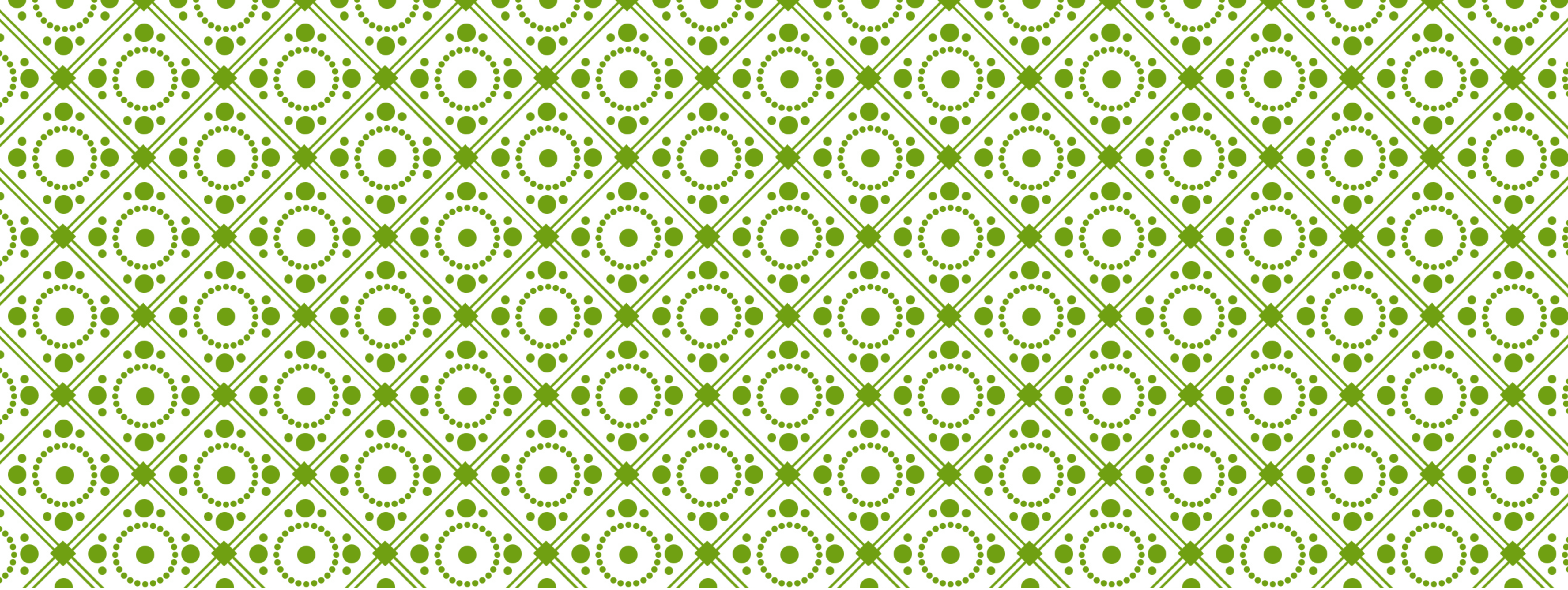

MONEY CREATION: THE FED, CENTRAL BANKING AND OUR ECONOMY

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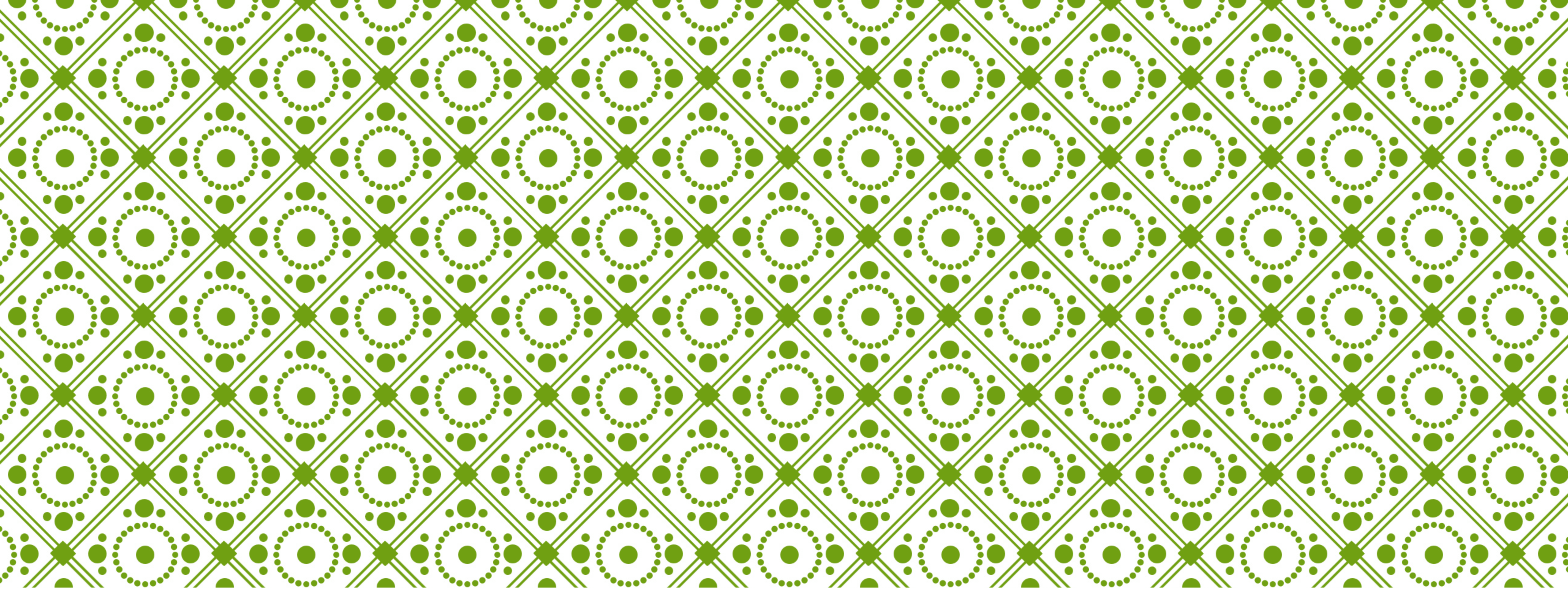


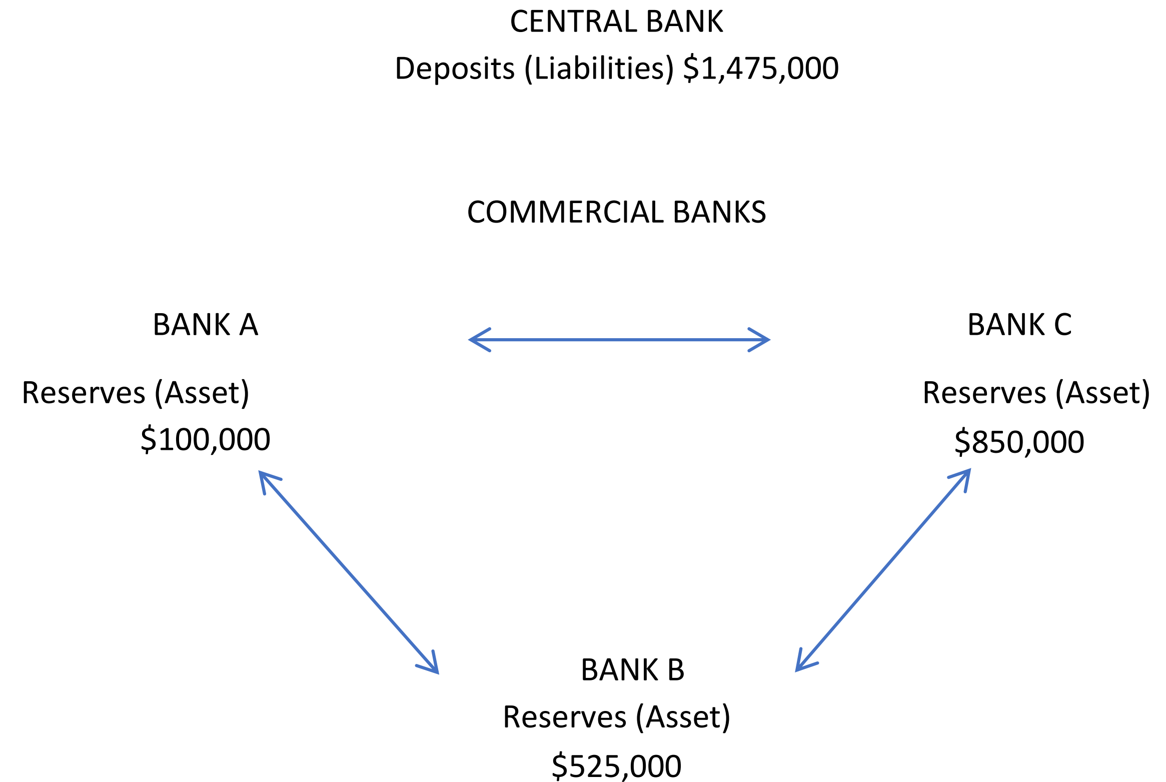
GOVERNMENT

THE FEDERAL RESERVE

- Created by the Federal Reserve Act of 1913
- Made of 12 regional banks and 25 branches
- Lead by a 7 member panel known as the Board of Governors
- Acts as the bank of the US Treasury
- The Fed is able to carry out monetary policies without governmental approval, but is subject to Congressional oversight

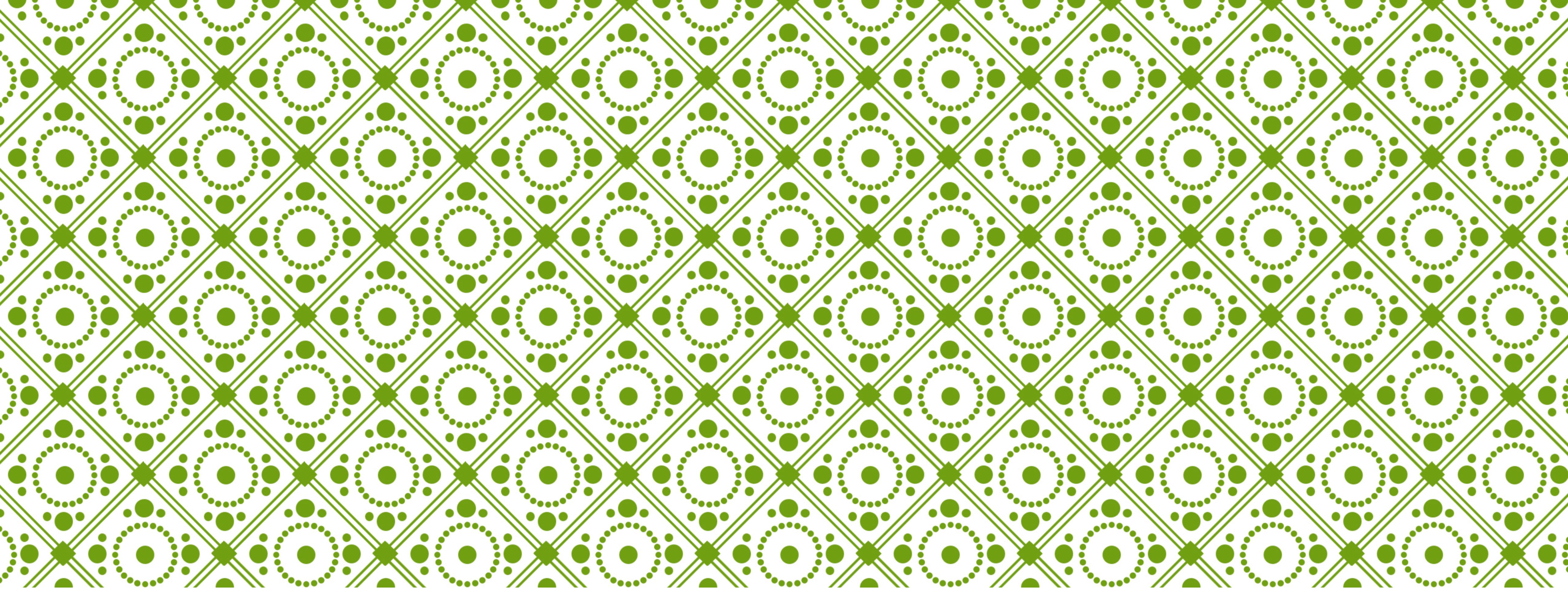
THE ROLE OF THE FEDERAL RESERVE

- Each bank maintains its reserves on the asset side of their balance sheet, this then shows as a liability on the central bank's balance sheet.
- The central bank is responsible for managing the reserve pool among banks and managing Open Market Operations.
- Critical role of oversight of the Federal Open Market Committee, also communicates with Congress and provides updates on the health of the economy



THE ROLE OF THE US TREASURY DEPARTMENT

- Created by an act of congress in 1789
- Responsible for managing the nation's money
- The IRS is under this umbrella
- Also under this umbrella is the US Bureau of Engraving and Printing and the US Mint
- Working together the Fed and the Treasury carry out their respective duties to promote economic health
- Seigniorage is the term used to describe the profitable sale of raw currency from the Fed to the banking system



BANKS

BANK FUNCTIONS

- Banks act as depositories, accepting deposits from customers for safekeeping and providing cash back to customers on demand.
- Banks also supply credit to customers, lending funds to those seeking to borrow and then profiting from the interest and fees associated with the loans.

BANK REGULATION AND OVERSIGHT

- The Bank for International Settlements
  - Commonly known as the central bank for central bankers
  - Formed in 1930, based in Basel, Switzerland
  - Stable advisor and resource in monetary and economic matters
  - Basel conventions have produced rules and regulations such as the Tier I, Tier II, and Tier III Capital Ratios. These ratios prevent a bank from allowing their portfolio of risk-weighted assets to become too large. This is important because if a significant portion of those loans defaulted, the loss could wipe out the entire capital bank.
  - The BIS established a system of checks and balances that promote global economic stability

BANK RESERVE REQUIREMENTS

- The Banking Act of 1935 allowed the FOMC to set reserve requirements
- Most transactions now take the form of internet banking, money does not physically change hands.
- Generally, banks are required to maintain about 10% of total deposits as reserves.
  - This can be in the form of vault cash on hand and amounts on deposit at the Federal Reserve Bank.

TWO KINDS OF MONEY

- Base Money-
  - Physical currency and bank reserves
  - Small percentage of the total money supply
  - Also know as *outside money* or *high powered money*
  - Created by the Federal Reserve under government authority

- Bank Money-
  - Created in the private sector
  - Exists in the form of credit which is issued when banks make loans.
  - Also known as *inside money*
  - Think of it as electronic funds or purchasing power

MONEY CREATION

THE TRUTH ABOUT DEPOSITS AND LENDING

- The Money Multiplier Theory
  - A loan is created when a bank receives a deposit from a customer
  - If a customer deposits $1000 into Bank A that has a reserve requirement of 10%, the bank would hold $100 and have $900 available for lending. A borrower would then take a loan of $900 and use it to make a purchase of a new car. The $900 is then deposited into the seller's bank, Bank B, who also has a reserve requirement of 10%. Bank B then holds $90 and has $810 available for lending. This continues on until a terminal point is reached.
- Banks lend based on customer demand and qualified credit
  - Banks accept deposits and provide loans
  - Banks do not lend deposits
  - The bank does not have to have "loanable funds" to make a new loan.
  - The bank then ensures that they meet reserve requirements after the fact, it does not impact lending.

  - If a customer who applies for a loan meets the bank's credit approval requirements:
    - The loan is recorded on the bank's balance sheet with a debit to a loan-receivable account and a credit to the customer's deposit account.

LOAN EXAMPLE

Customer John Doe applies for a loan of $30,000 to purchase a new car. The bank approves the loan. The bank's summary balance sheet just prior to making the loan looks like this:

	Debits	Credits
Assets		
Loans Receivable	$1,000,000	
Cash / Reserves	200,000	
Total Assets	$1,200,000	
Liabilities & Capital		
Customer Deposits		$1,050,000
Capital		150,000
Total Liabilities and Capital		$1,200,000

The transaction will be recorded with this entry:

	Debit	Credit
Loan Receivable-John Doe	$30,000	
Deposit Account – John Doe		$30,000

The bank's summary balance sheet will then look like this:

	Debits	Credits
Assets		
Loans Receivable	$1,030,000	
Cash / Reserves	200,000	
Total Assets	$1,230,000	
Liabilities & Capital		
Customer Deposits		$1,080,000
Capital		150,000
Total Liabilities and Capital		$1,230,000

You can see the only balances that changed were the loans receivable and the customers deposits. Cash and Reserves did not change hands at all.

Adding to the money supply requires the creation of a new asset, and the money supply will contract as it is destroyed (customer pays off the loan)

MECHANICS

ROLE OF THE CENTRAL BANK

What happens if a bank falls short of its required reserves?

- If a bank has excess reserves on hand, it can put that money to work earning interest by lending its excess reserves to a bank that needs reserves to meets its 10 percent requirement.
- If one bank has excess reserves and another needs to borrow to meets its reserve requirements, the net result is a shift from the reserve account at the Fed held by the former to the reserve account of the latter. No physical dollars actually change hands. It simply comes down to journal entries.
- Each bank maintains its reserves on the assets side of its balance sheet. Conversely, that account shows up as a liability on the central bank's balance sheet.
- Liabilities of the central bank are made up of: reserve accounts attributed to individual banks, the US Treasury's deposit account, and currency in circulation.

ADJUSTING THE SIZE OF THE RESERVE POOL

The primary mechanism in the Fed's toolkit is *open market operations*, which is the term given to the purchase and sale of Treasury securities by the central bank.

- Carried out by the Federal Open Market Committee (FOMC)
- If more reserves are needed, the FOMC authorizes purchases of treasury securities.
- Treasury securities are also sold when needed.

BUDGET DEFICITS AND FINANCING GOV DEBT

- How does the Treasury finance government deficits?
  - Treasury bills (short-term)
  - Bonds (longer-term maturities)

- Primary Dealers use an auction format to get Treasury securities to market
  - If the market perceives that the government is spending too much and issuing more securities to finance that spending, they will demand a higher yield and pay a lower price for the securities

CONTROLLING LENDING

Bank Capital-

- Think of a bank's capital as the cushion that protects it in the event of a decline in the value of its assets. If the bank was liquidated and all liabilities were satisfied, the capital is the amount of assets that would remain.

- However, if a bank has too much risk outstanding relative to its capital, it is jeopardizing its overall health and teetering toward possible insolvency.

- Assuming customer credit risk is being responsibly evaluated and managed, it is capital and leverage ratios, and not reserve requirements, that keep check on how rapidly a bank expands its loan portfolio.

INFLATION

- Federal Funds Rate: the interest rate that lending institutions charge to borrow reserves from each other.
- Interest on Reserves: Legislation passed by Congress in 2006 authorized the Federal Reserve to begin paying interest to commercial banks on excess reserve balances.
- Federal Reserve Board uses these to target a rate at which the system will achieve the ideal balance to encourage moderate inflation, but not so much that it will become overheated and allow inflation to grow unchecked.
- We do need a moderate bit of inflation because without it the economy would suffer from stagnation. A thriving economy will naturally evolve with a touch of inflation-a sign of increased productivity- as it moves forward. A healthy rate of inflation is evidentiary of an economy that is accomplishing more with fewer resources, thereby increasing GDP.
- Milton Friedman stated that "inflation is always and everywhere a monetary phenomenon". He also proposed the theory that too much money will create inflation, and too little will create deflation. He developed the *K-percent rule* as a way to describe the rate that the money supply should grow in line with the GDP each year to create a stable economy.

CROWDING OUT

- An increase in government spending results in a corresponding decrease in spending and investments in the private sector.
- This can be due to an expansionary fiscal policy or a reduction in tax revenues, creating a deficit and leading to government borrowing.
- When the economy is operating at capacity and growing, any increase in deficit spending that leads to government borrowing could result in competition with the private sector for goods, services, or investors.

LAYERS OF MONEY SUPPLY

- M0-Monetary base, includes cash in circulation and reserve accounts at the central bank.
- M2- All notes and coins in circulation, cash equivalents, and cash accounts except for time deposits of $100,000 or more.
- M3 and M4- large long-term deposits and institutional funds.
- Historically, M2 x 1.6 = GDP, meaning each dollar was spent approximately 1.6 times in that year. This also means that the Monetary Velocity for that year is 1.6.
- Economists keep an eye on the *capacity utilization rate*, as a predictor of inflation.

OTHER

CAN THE US GO BANKRUPT?

- The Treasury issues its own currency, if more funds are required more securities are issued
- Most securities are rolled into new ones at maturity
- The Treasury can obtain direct funding from the Fed if necessary
- The government will not run out of money unless it chooses to do so
- Focus on the efficiency of the government's spending more than the dollar amount

DUAL MANDATE

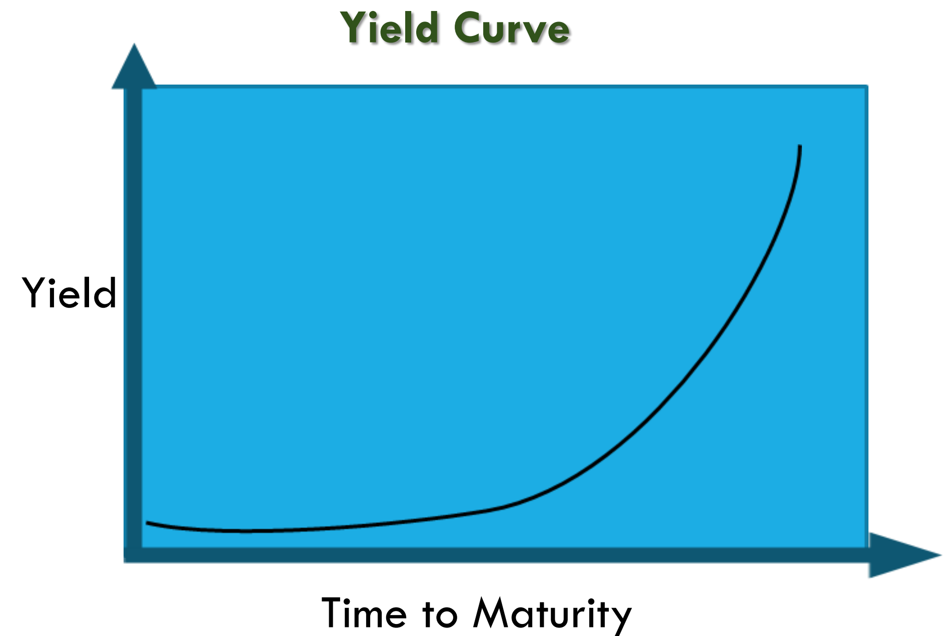
- Stable Inflation
  - Refers to monetary inflation and price/asset inflation
  - Any market is subject to asset bubbles
  - Price/Earnings (P/E) Ratio
  - Roughly 2% Target
- Low, Stable Unemployment
  - Unemployment is a lagging economic indicator
  - *Unemployment rate* and *labor-force participation rate* can be viewed in tandem
  - Roughly 3-5% Target

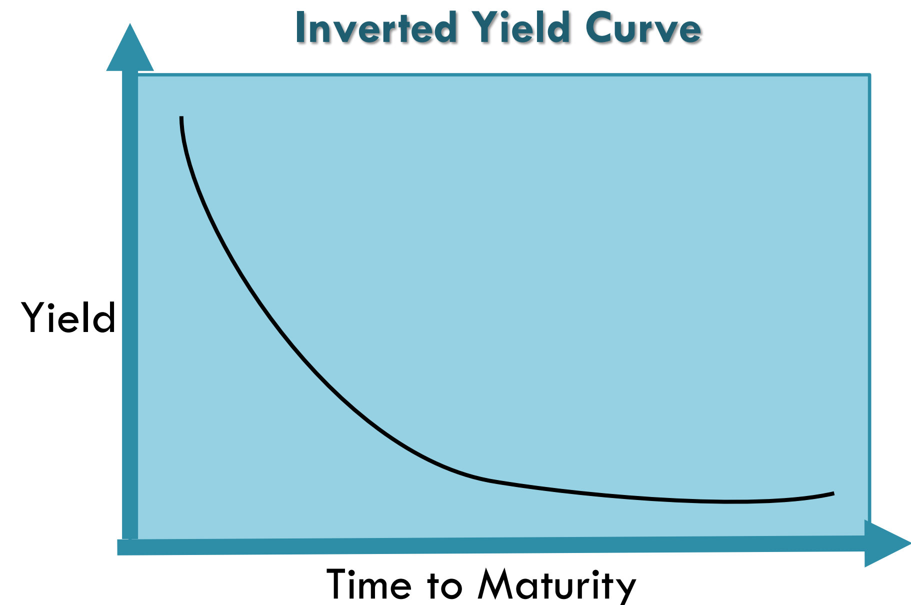
  - Also known as the *natural/neutral rate*, and is the level at which optimum growth can occur.

YIELD CURVE

- In a standard yield curve there is a positive relationship between the yield of the security and the time it takes to mature.
  - This means that a 2-year bond would not have as high of a yield as a 10-year bond.

- Interest rates for long-term securities drop below interest rates for short-term securities creating an inverted yield curve.
  - Indicates that investors and consumers are losing confidence in the economy.





CASH MOVES AMONG 3 BUCKETS

ASSET BUBBLES

- Asset Bubbles can be more detrimental to the overall economy than price inflation.
  - When prices for a particular asset are bid upward, borrowers are able to borrow more and more creating artificial values that are unsustainable. At a certain point, borrowers can not support the high loan payments and falling collateral values will not meet the bank loan to value ratio.

Examples

2008 Housing Crisis

Loose lending standards and low interest rates allowed more borrowers to qualify for loans, compounded by subprime mortgages and mortgage-backed securities. Too many homes in foreclosure created lower market values for all homes in the area, putting these loans under water.

Joseph Kennedy's Shoe Shine

Based on stock trading tips from a shine boy, Kennedy was able to anticipate a downward spiral in the stock market. He was able to sell his stocks prior to the crash of 1929 and purchase distress stocks after values sank.

Tokyo Worth More Than All of California

After WW2 Japan rebounded, almost too well. This caused a rapid increase in asset values. Once the bubble burst, the economy suffered and consumers lost confidence.

WHAT DRIVES AMERICA AND THE ECONOMY?

- Diverse population
- Input: Accounting Entries
- Engine: The Banking System
- Output: Money
- Supply Side Economics
- Accounting is noble and valuable to society