The Financial Forest
An Analogy
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The Natural Financial Forest

A natural forest is a complex web of plants, animals, and energy flows. The financial system also is a complex web, composed of financial components and money flows. In a natural forest, symbiosis of the many parts contributes to a greater whole than what those parts would manifest singularly. The same would occur in the Financial Forest.

This analogy correlates the elements of a real forest with the Financial Forest as follows:

- Largest trees = the largest multi-national banks
- Smaller trees = regional banks, local banks, and large corporations
- Forest shrubs and bushes = mom and pop businesses and small corporations
- Leaves on all trees and shrubs = all employees plus owners of all private (non-public) businesses
- Water flows = money flows
- Seeds and nuts = commodities such as copper and corn, manufactured goods
- Rain = government spending into the economy
- Evaporation = taxes paid to the government
- Squirrels = trucks and freight trains
- Birds = airplanes
- Aquifer below the forest = credit source
- Mycelium = the pathways for electronic payment transfer
- Rot in living plants = debt

The soil of a real forest contains billions of miles of mycelia. Mycelia is the vegetative part of a fungus or fungus-like bacterial colony, consisting of a mass of long, branching, thread-like, filaments. What we think of as mushrooms are to mycelia what flowers are to a bush. In the forest, the mycelium (plural of mycelia) interacts with the roots of all forest plants – trees, shrubs, bushes, etc. Mycelium have been shown to pass nutrients from one plant to another through their root systems, such as from shrub to tree or shrub to shrub.

In the Financial Forest, mycelium transport water (money). Mycelium connect banks to government, banks to other banks, banks to businesses, as well as banks to individuals.

In the Natural Financial Forest, rain falls through government spending programs. The rain typically falls unevenly in the forest into specific industries. For example, rain falls on the forest section containing the defense industry to support building armaments for protecting the forest. Rain falls dispersed throughout the forest into the construction industry for building infrastructure, such as roads and bridges, and to build public structures such as administrative buildings and parks. All of these facilitate commerce, and thus benefit the entire forest. Rain falls onto the educational system to facilitate education and innovation, and thus growth of the forest.

When the Natural Financial Forest is functioning effectively in a strictly capitalist system, the rain spreads from the industries and businesses receiving it for building forest infrastructure, services, education, etc., to employees, and from there, flows into the local forest economy. This stimulates forest activity at all levels, allowing the forest to grow in a healthy manner. Some of this water returns to the government as evaporation (taxes), which would be rained back into the forest through spending programs.

In this forest, the government can create and then provide more rain to the forest than the amount of moisture collected through evaporation. In fact, as the forest grows, more rain is needed to ensure the forest has a stable amount of water for all its plants. All forest participants can save excess water, storing it in their "water savings account".

The plants of the forest produce seeds and nuts that are the "fruits of the labor" of the businesses and individuals engaged in the forest. These seeds and nuts are transported about the forest by squirrels and birds to be used by businesses and individuals to their benefit, thus raising the living standard throughout the forest as well as facilitating manufacturing, commerce, and the ability to trade with overseas forests.

Rain also falls directly on the largest trees where it can be piped (loaned) to the smaller banking trees. This water piped to the smaller banking trees is spread (loaned) to trees and shrubs throughout the forest via the mycelium. Participants of the forest can save their excess water in the banking trees, and this water can be loaned back into the forest to stimulate forest growth (business development).

Over time, the plants in the forest (businesses and individuals) pay back these loans with more water than they were provided (i.e. pay interest on the loan). This extra water would need to be captured/earned by their business activity or labor. NOTE: water to pay the interest on the loan was not provided by the original rain, so at some point, the government would need to create more rain or reduce the evaporation rate (taxes), otherwise the entire forest economy would begin to see a shortage of water as the water needed to pay interest increases over time.

During a water shortage, the amount of water compared to the total amount of nuts, seeds, trees, and shrubs shrinks. This causes deflation of prices. The water shortage could show up in all the forest equally, but typically shows up in certain sections of the forest and would be seen as a drop in price of, for example, grain or energy. In this natural financial forest, government's role is to ensure rainfall is balanced with evaporation to keep the appropriate amount of water in the system to maintain stable prices and interest rates.

If too much water builds up in the forest, then the forest becomes saturated and prices rise (inflation occurs) since there is now more water available for each nut, seed, tree, or shrub. In this case, the government needs to either reduce the amount of rain, or extract more evaporation to restore price levels. In the Natural Financial Forest, it is difficult to keep inflation in check because politicians, in an effort to ensure reelection, typically create more rain and reduce evaporation, which keeps forest participants happy.

To keep politicians from raining too much water into the forest, the value of water is pegged to the price of something that is limited in amount and whose amount cannot be easily increased. That 'something' is normally gold (although in some cultures it has been silver, seashells, or other physical items limited in availability).

In the Natural Financial Forest, gold is used for trade with other forests (countries). The limited amount of gold owned by the forest government places a brake on the amount of water that can be rained, because excess rain devalues each drop of the forest's rain such that other forests will give less gold in exchange for receipt of that forest's water. The role of gold in the system is to ensure value is maintained for the forest's water.

Far below the surface of the forest soil lies a large aquifer (credit source). Whenever credit is created in the forest, it draws water from the aquifer to be used above the surface providing water to the plants (loans to corporations, businesses and individuals). Removal of water from the aquifer leaves it with a water shortage. In the Financial Forest, only the trees designated as banks have roots long enough to reach the aquifer.

In the Natural Financial Forest, the banking trees are not allowed to withdraw water from the aquifer. Banking trees can only loan water they hold, which would be extra rain piped to them by the government or water deposited by forest residents. They are not allowed to loan water they do not already have (i.e. they are not allowed to create credit, as is done in a fractionalized reserve banking system).

In the Natural Financial Forest, the mycelium connects all components of the forest via their roots, allowing water to flow smoothly between banks, corporations, and small businesses. The leaves of the plants (employees plus small business owners) collect water over time, saving it for their retirement. Upon retirement, these leaves fall to the forest floor and gradually spend their saved water back into the forest to be absorbed and used by forest members.

In the Natural Financial Forest, the rain created by the government is not borrowed from any other entity. It is simply created by the government and dropped into the economy. No water is removed from the aquifer and therefore, no water debt is owed to the aquifer.

IMPORTANT NOTE: Our current global financial system does **NOT** function like the Natural Financial Forest described here. Instead, we function with a "Central Bank Financial Forest" system.

The Central Bank Financial Forest

Unlike the Natural Financial Forest, the Central Bank Financial Forest has a very large pump that pumps water out of the aquifer. This pump can feed water to the government or to the largest trees (banks), or to both. This pump is called the central bank [for the USA, this is the Federal Reserve (Fed)].

The water entering the Central Bank Financial Forest comes from two sources, rain – as in the Natural Financial Forest - and from the aquifer via the pump. Rain still falls on the forest, originating from forest evaporation. However, if the government wants to directly provide more water to the forest than can be collected through evaporation, water must be drawn by the pump from the aquifer and loaned to the government. In the Central Bank Financial Forest, the government does not create rain (print money) in excess of evaporation (the exception is minting of gold and silver coins). Instead, it borrows all water needed in excess of evaporation from the pump, and then spreads it throughout the forest. When the government borrows water from the aquifer as provided by the pump, a deficit is created in the water balance of the entire ecosystem (this is called government deficit spending).

There is no cost to the pump for taking water from the aquifer, other than paying its employees (The Fed is allowed to print money at no cost. Furthermore, the Fed does not actually print paper money or mint coins. Instead, it simply presses numbers on a computer terminal, creating money electronically by making ledger entries.)

To offset water it borrows from the pump, the government issues a water IOU (in the form of a Treasury Bill, Bond, or Note). This IOU represents the government's debt to the pump and ultimately to the aquifer. The government sells this water IOU to anyone in the forest or in overseas financial forests willing to buy it. The IOU can be sold back to the pump in return for newly withdrawn water from the aquifer, although this is preferably avoided because it leads to excess water in the forest (creates inflation).

Anyone buying a government IOU (bond) holds an interest in the water drawn from the aquifer. The IOU's value is determined by the confidence purchasers have in the stability of the government and, as a reflection, in the integrity of the forest's water (currency). The total amount of water loaned over time to the government by the pump comprises the total amount of water withdrawn from the aquifer (total federal debt).

If forests in other lands are willing to buy these IOUs, they can trade them for nuts and seeds traded across borders. (That is, use the Treasury bills, i.e., debt of one country, to trade goods and services between countries. This is the case with the US dollar, which is currently the world's reserve currency. It explains why the US can indefinitely hold trade imbalances with other countries - the USA sells Treasury debt to other countries to use as global currency in return for goods purchased.)

Any water the government pays to the pump as interest on its loaned water is, by law, given back to the government by the pump. If the government pays back the borrowed water to the pump, that water is returned to the aquifer and the government's water debt is reduced. If the government cannot repay the loaned water and instead continues to borrow more water, then the aquifer becomes further depleted (federal debt increases).

The pump also can loan water from the aquifer directly to the largest trees (major banks). These trees have direct piping connections to the smaller banking trees. Through the mycelium, those smaller banking trees further loan water to all members of the forest, including corporations, small businesses, and individuals.

In the Central Bank Financial Forest, all banking trees are allowed to loan more water than borrowed from the largest trees. Typically, they are allowed to loan almost 10 times the amount of water they hold (This is known as fractional reserve banking. For an explanation see Why Banks Don't Need Your Money to Make Loans).

Banking trees do this by withdrawing water from the aquifer since, unlike all other participants in the Central Bank Financial Forest, the roots of all banking trees can reach the aquifer (i.e. they can create debt-based money simply by making ledger entries on a computer keyboard). In this process, they are able to provide more water to the forest than would be possible by loaning only the amount of rain they hold as savings or that was borrowed from the pump.

This extra water drawn from the aquifer allows the forest to grow rapidly because water can be quickly withdrawn from the aquifer by many banking trees acting at once. This can lead to flooding the forest,

especially when interest rates set on water loans is too low for current forest output and growth. In contrast, the government can only increase the rain (spur forest growth) by borrowing water from the pump (an action that is restricted politically by the stated desire to keep the federal debt under control).

All borrowed water creates a debt for the borrower. In the financial forest, this debt manifests as rot in the tree, shrub, or leaf (and government) borrowing the water. All trees and shrubs retain their health by minimizing rot. As long as the borrowing tree or shrub has more saved water than rot, it continues to live.

If a tree or shrub reaches the point where the amount of rot exceeds the value of the amount of saved water plus the value of the tree or shrub's stored seeds, the tree or shrub dies and topples over (goes bankrupt), thrusting most of its roots into the air. Toppling over breaks its connection with most of the mycelium to which it was connected. When this happens in a healthy capitalist forest, its creditors suck any remaining water and harvest any stored seeds and fruits in an attempt to offset their losses. After that, what is left of the rotted tree or shrub decays into the forest floor.

In an oligarchy-controlled capitalist forest (also referred to as crony-capitalist, which is basically what we have today), when bankruptcies occur, the pump all-to-often feeds water to creditors with close relations to the pump, to cover their losses. The pump, sometimes in collusion with the government, only saves teetering trees if they are the largest in the forest (Too-Big-To-Fail mantra). The pump never saves shrubs and bushes in this manner. They are allowed to die from excess rot with no bailout.

Since all banking trees can remove water from the aquifer, it can be difficult to control where the extra water from loan creation goes in the forest. This can lead to imbalances of water in certain sectors of the forest economy if the pump has been too liberal in providing water or has held interest rates too low (the pump sets interest rates), which stimulates more borrowing of water from the aquifer. This excess water can saturate those sectors (i.e., cause price inflation or valuation bubbles. Examples would be inflated stock market prices, commodity prices, or housing prices.)

As the forest grows from addition of aquifer water, the aquifer becomes even more depleted, more water is held in the forest, a greater debt of water is owed to the aquifer, and rot grows throughout the forest.

Workers in the financial forest, through productive labor, could save extra water above what is needed to meet their living requirements. If this extra water is loaned to a worker's friend, the friend can spend that water into the forest economy to build his or her business. If the business is successful, the friend will pay the worker a percentage of the amount of the water loaned (pay interest on the loan), along with the total original amount of water.

If the friend's business fails, the worker will lose all or a fraction of the loaned water that has not yet been repaid. This type of peer-to-peer loan has no effect on the aquifer since no water was withdrawn from the aquifer and, unlike the banking trees, individuals are not allowed to create 10 times the amount of their excess water through loan creation. Forest plants and workers can only loan the extra water they actually possess.

There is one exception to this rule of money creation by forest residents. In the Central Bank Financial Forest, money is automatically created any time forest residents swipe their credit card. As their name implies, credit cards create credit by drawing water (via the bank associated with the credit card

company) from the aquifer and leave the user with a debt for water owed to the banking tree/credit card company while at the same time injecting newly-made water into the forest through payment for purchases.

Water loans from a banking tree are handled differently than peer-to-peer. If the loanee completely pays back the banking tree all the original water from the loan plus the interest on the loan, the banking tree collects nearly ten times the amount of water it held prior to creating the original loan for the water. The banking tree can now make new water loans against its increased water reserve level, which is roughly the amount of water paid from the loan minus the banking tree's costs of doing business.

If a loan made by a banking tree fails, the remaining balance of water from that loan returns to the aquifer and the borrowing tree or shrub becomes structurally damaged and may even topple over. The banking tree loses the opportunity to collect the outstanding balance of water and interest owed, but it does not actually lose water as long as it had previously collected back on the loan (through principal or interest payments), an amount of water in excess of the 10% of water reserve needed for the banking tree to have made the loan in the first place, plus its costs of doing business, such as personnel wages, rent, etc. (This is the reason why a bank can sell a foreclosed house for a fraction [usually 15%-20%] of market value – the bank does not need to make up for the money created when the loan was generated. The bank makes most of its money off interest on the loan. It is not in the business of buying and selling houses. Note that as of March 2020, the 10% reserve requirement was reduced to 0%.)

The pump's major mandate is to support the banking trees with loaned water. Its secondary role is to regulate the banking trees. However, instead of cutting down rotten banking trees (i.e., perform the regulatory function), the pump typically feeds the largest banking trees whatever amount of water they need to offset their rot. (This is what happened in the 2008 financial crisis and happened again during the coronavirus-triggered financial crisis, only with much greater money printing.)

The pump can serve a viable role in the Forest Financial system if it serves all forest participants equally. Trouble brews, however, when the pump serves only the largest forest trees and allows drought to occur in the rest of the forest (which was the cause for the stock market rise following the March 2020 coronavirus crash, while at the same time the greatest US unemployment and corporate bankruptcies in history were occurring due to the pandemic). Over the past ten years, there has been a nearly perfect correlation between the amount of water created by the pump and the valuation of the stock market.

In the 2008-2009 financial crisis, prices crashed in the inflated housing market. This crash exposed a lot of rot in the banking trees, threatening collapse of many of the largest banking trees. One of the largest banking trees (Lehman Brothers) collapsed due to excess rot. The pump chose not to feed that specific bank the needed amount of water to keep it alive. Its collapse exerted great strain on all the large banking trees when their piping connections to Lehman's broke. A large infusion of aquifer water from the pump (ultimately, trillions of dollars) was provided to the banking trees in the USA forest, as well as to overseas forests, to stabilize the global banking sector.

At the same time some sectors, particularly the housing mortgage sector, of the forest drained water back to the aquifer as they experienced failed loans and bankruptcies. Most of the water injected by the pump was held by the banking trees to overcome their rot. In general, the water injected by the pump was not loaned into the forest.

However, trillions of dollars' worth of new water found its way to the stock market since the wealthy were the primary recipients of the trillions of water newly pumped from the aquifer. Thus, inflation primarily only occurred in stock prices. Consumer prices did not inflate as significantly during the water injection because the general public received very little of the new water provided by the pump and its banking tree associates. Exceptions arose in health care and higher education, but those increases were more tied to structural reasons than to excess water.

After 2009, the largest banking trees were tied together by strong zip lines (financial derivatives, which are contracts between two or more parties that basically serve as financial insurance policies.) These zip lines are intended to stabilize all the largest banking trees should any one become overwhelmed by too much rot.

The zip lines, however, impose a risk because if enough of the largest trees rot and begin to topple, they could pull down all the largest trees in the forest. This would likely precipitate a collapse of the forest financial system, interrupting all financial transactions. Interruption of all financial transactions would bring commercial activity to a standstill since water flow in the mycelium would stop (paper cash transactions could continue, but electronic transactions would stop).

Over time, as more water is withdrawn from the aquifer, the forest becomes more-and-more saturated, causing prices to rise. Also, forest stability is challenged by the growing void in the aquifer, which weakens the forest's soil foundation and as well as trust in the value of the forest's water.

The question of interest is – "Will the Central Bank Financial Forest collapse if too much water is withdrawn from the aquifer?"

No one knows the answer to that question for certain because it depends on confidence in the financial system and in the perceived value of the forest's water. (Recent examples of such collapse are Zimbabwe and now Venezuela, however, these were not the world reserve currency.)

One precursor to such a collapse is when the velocity of water (velocity of money) moving through the system rises because forest participants fear their stored water is losing value, so they spend it on tangible items, such as nuts and seeds, in an attempt to maintain their wealth/purchasing power. This action brings more water into the mycelium, further accelerating the loss of purchasing power of the water (and can lead to hyperinflation, which is what happened in Zimbabwe, Venezuela, and in Germany's Weimar Republic – ultimately helping bring Hitler to power).