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Questions?

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Money Supply Sector Tutorial

Read Mankiw's chapter 11 ("The Monetary System") *before* studying this tutorial.

Overview

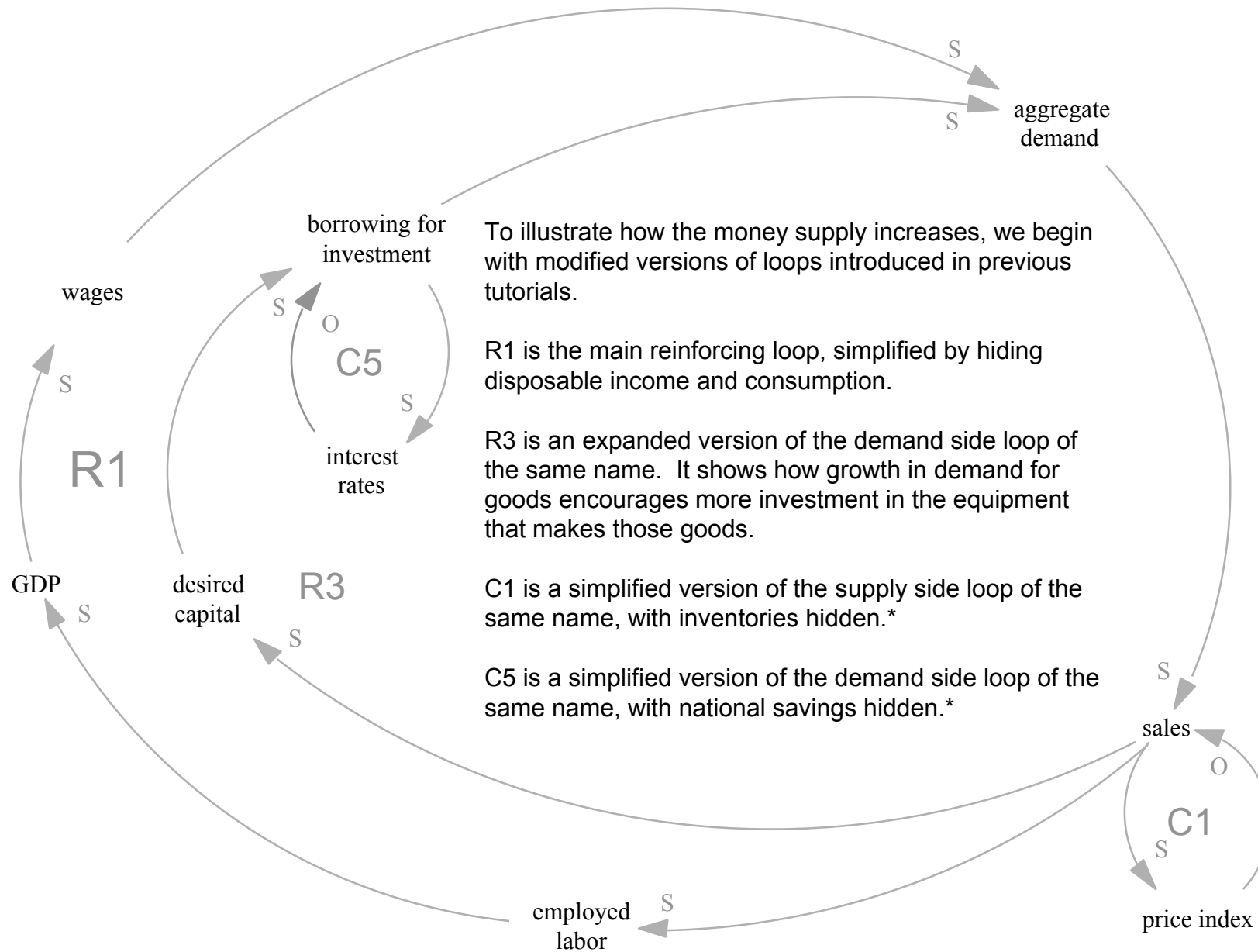
In this tutorial, we will abandon one of our simplifying assumptions and permit the money supply to change.

One goal in this tutorial is to see how money is created (or destroyed) when bank reserves increase (or decrease).

Secondly, we want to see how the U.S. central bank -- the Federal Reserve System -- can change the level of bank reserves and influence the money supply and interest rates.

Finally, we will see how the Fed uses its monetary policy authority to influence economic growth, price stability, and employment.

Be sure that you have read Mankiw's chapter 16 ("The Monetary System") *before* studying this tutorial.



To illustrate how the money supply increases, we begin with modified versions of loops introduced in previous tutorials.

R1 is the main reinforcing loop, simplified by hiding disposable income and consumption.

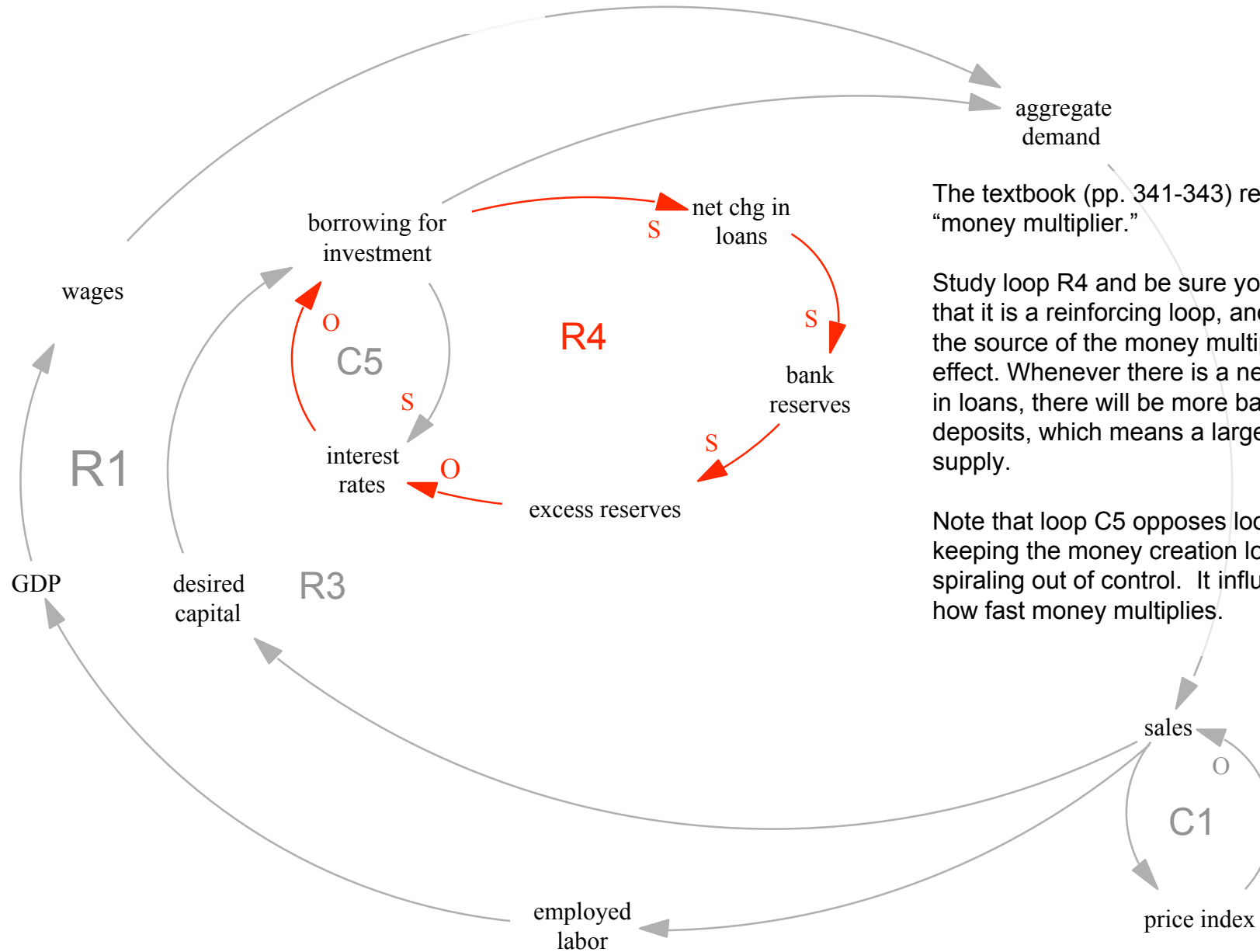
R3 is an expanded version of the demand side loop of the same name. It shows how growth in demand for goods encourages more investment in the equipment that makes those goods.

C1 is a simplified version of the supply side loop of the same name, with inventories hidden.*

C5 is a simplified version of the demand side loop of the same name, with national savings hidden.*

*Be sure you can confirm that two "o" links have an "s" effect, and that loops C1 and C5 shown here are equivalent to those in the supply side and demand side tutorials.

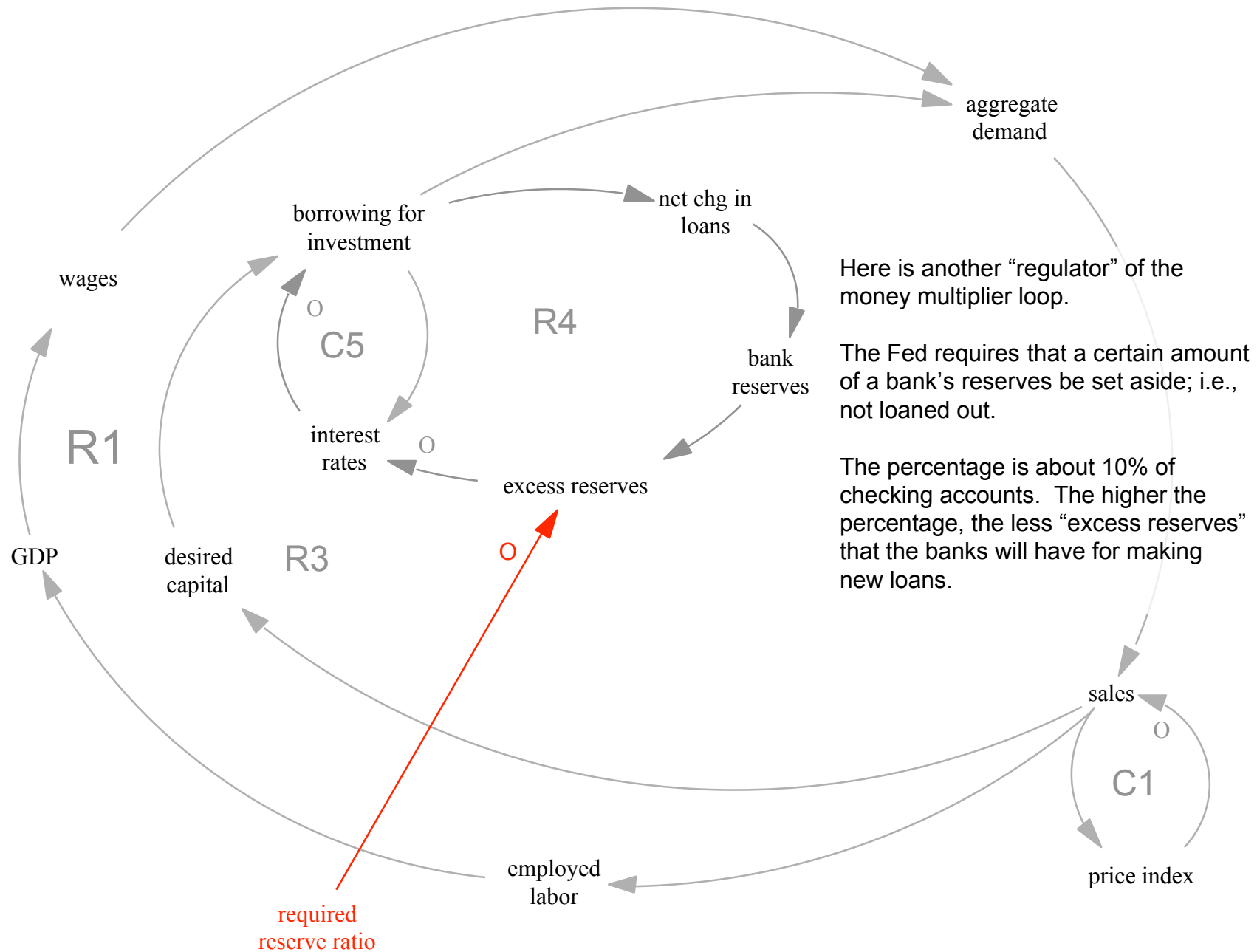
As in previous tutorials, unlabeled arrows have same direction (s) effects.

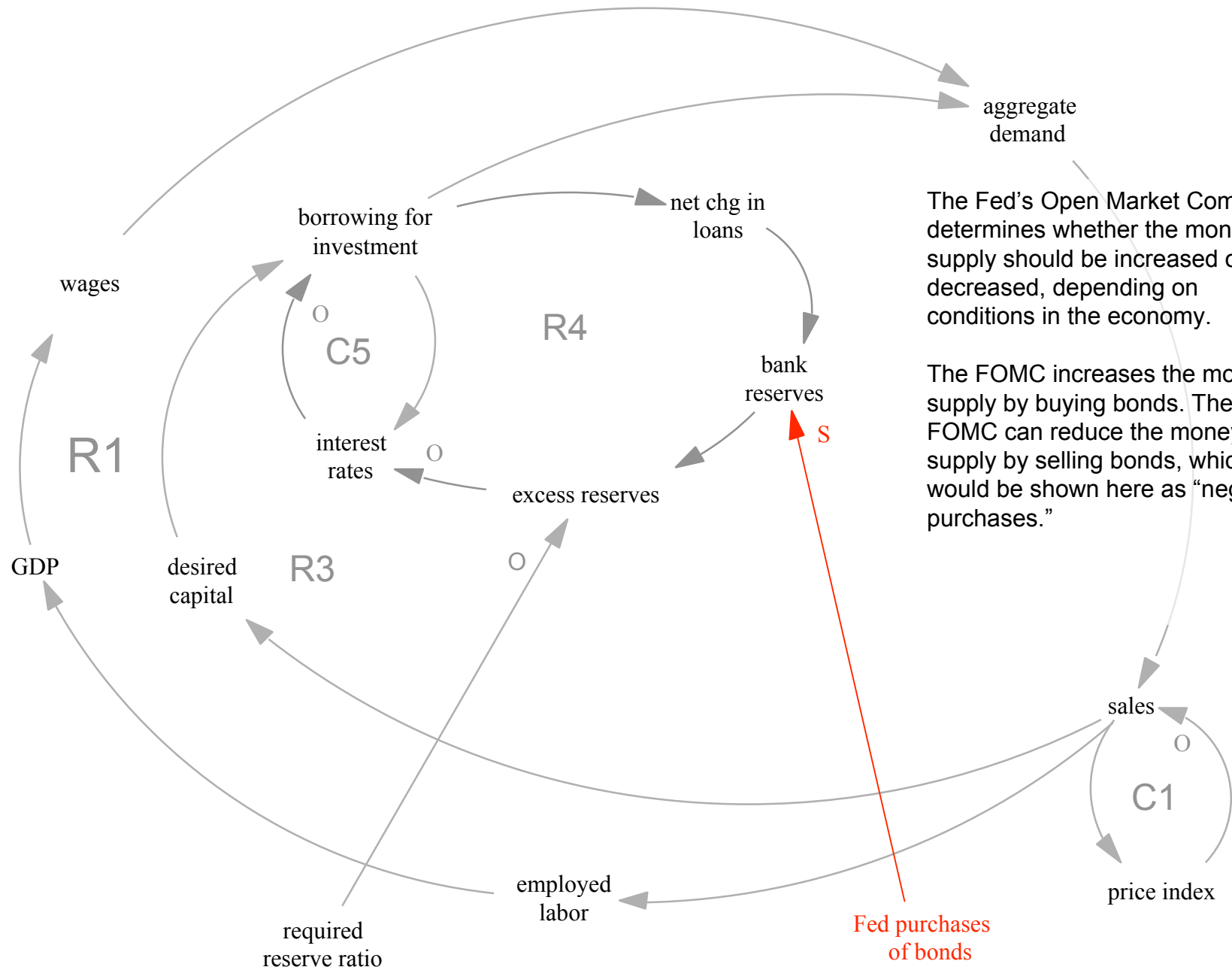


The textbook (pp. 341-343) refers to the “money multiplier.”

Study loop R4 and be sure you can see that it is a reinforcing loop, and that it is the source of the money multiplier effect. Whenever there is a net increase in loans, there will be more bank deposits, which means a larger money supply.

Note that loop C5 opposes loop R4, keeping the money creation loop from spiraling out of control. It influences how fast money multiplies.





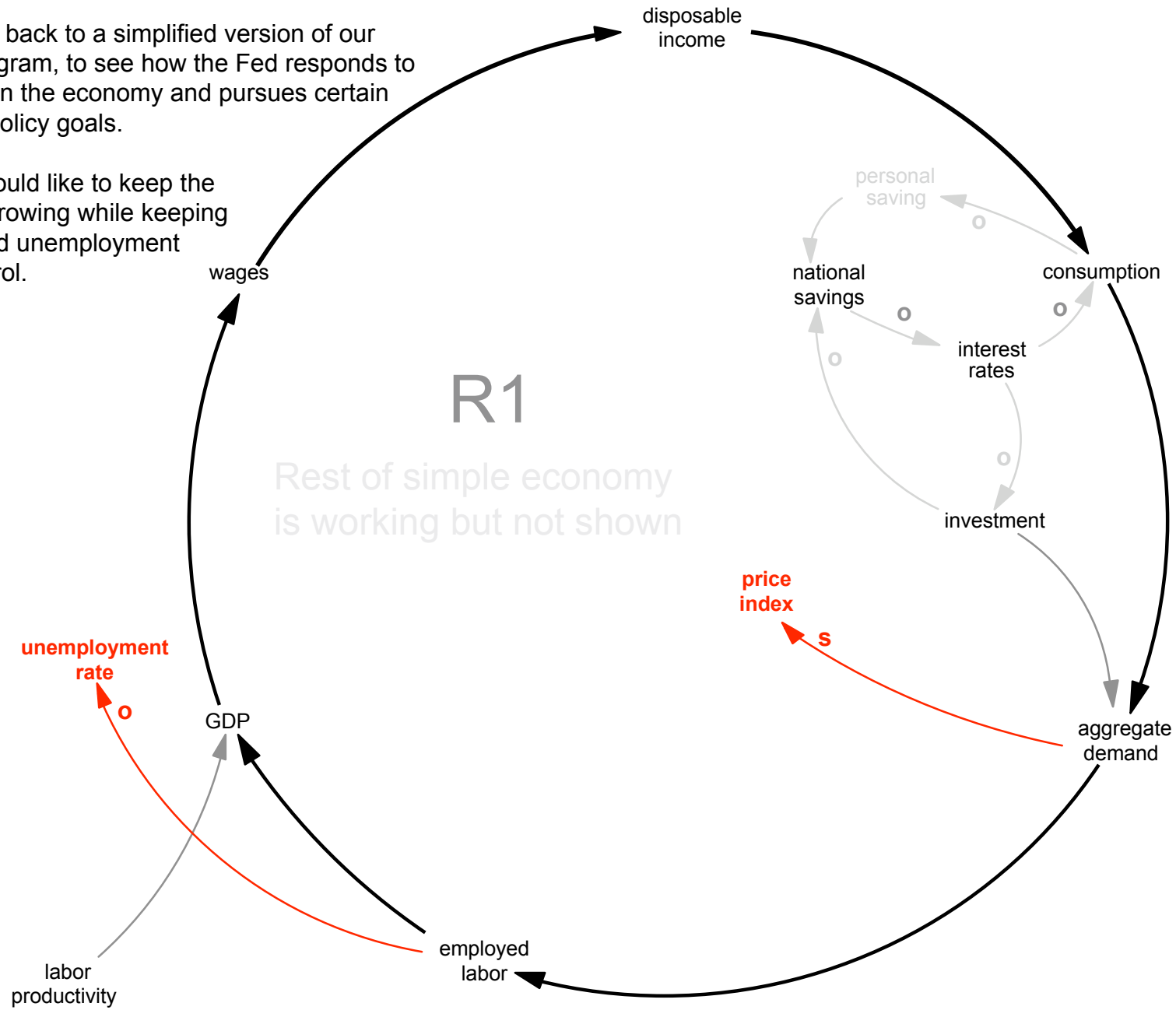
The Fed's Open Market Committee determines whether the money supply should be increased or decreased, depending on conditions in the economy.

The FOMC increases the money supply by buying bonds. The FOMC can reduce the money supply by selling bonds, which would be shown here as "negative purchases."

Fed purchases of bonds

Now we go back to a simplified version of our familiar diagram, to see how the Fed responds to conditions in the economy and pursues certain monetary policy goals.

The Fed would like to keep the economy growing while keeping inflation and unemployment under control.



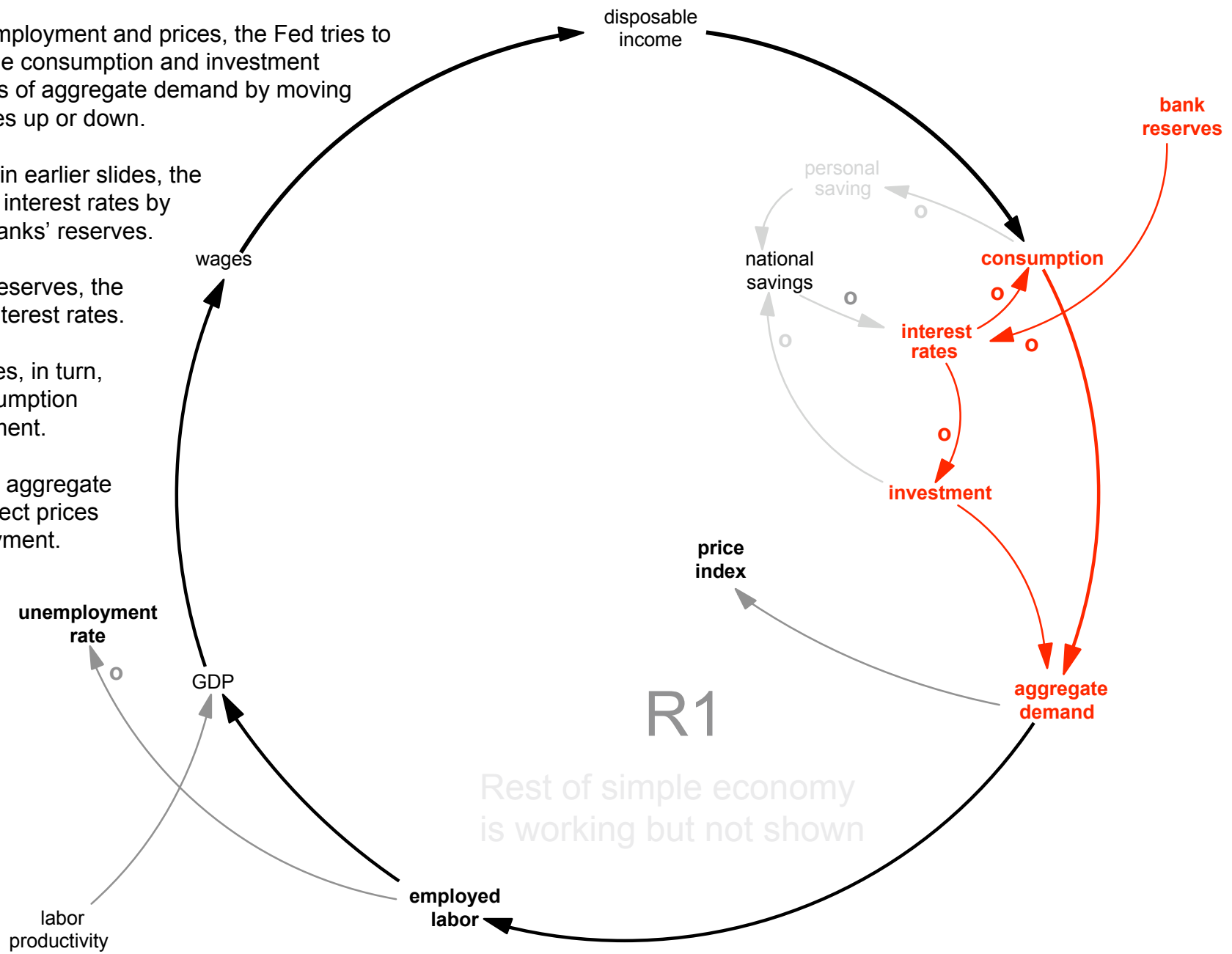
To affect employment and prices, the Fed tries to influence the consumption and investment components of aggregate demand by moving interest rates up or down.

As we saw in earlier slides, the Fed affects interest rates by changing banks' reserves.

The more reserves, the lower the interest rates.

Interest rates, in turn, affect consumption and investment.

Changes in aggregate demand affect prices and employment.



Fed purchases of bonds

Bank reserves are controlled by the Fed's purchases or sales of bonds. An increase in bond purchases results in an increase in bank reserves.

When banks have more reserves to lend, that causes interest rates to fall.

Falling interest rates encourage more consumption and investment.

unemployment rate

labor productivity

GDP

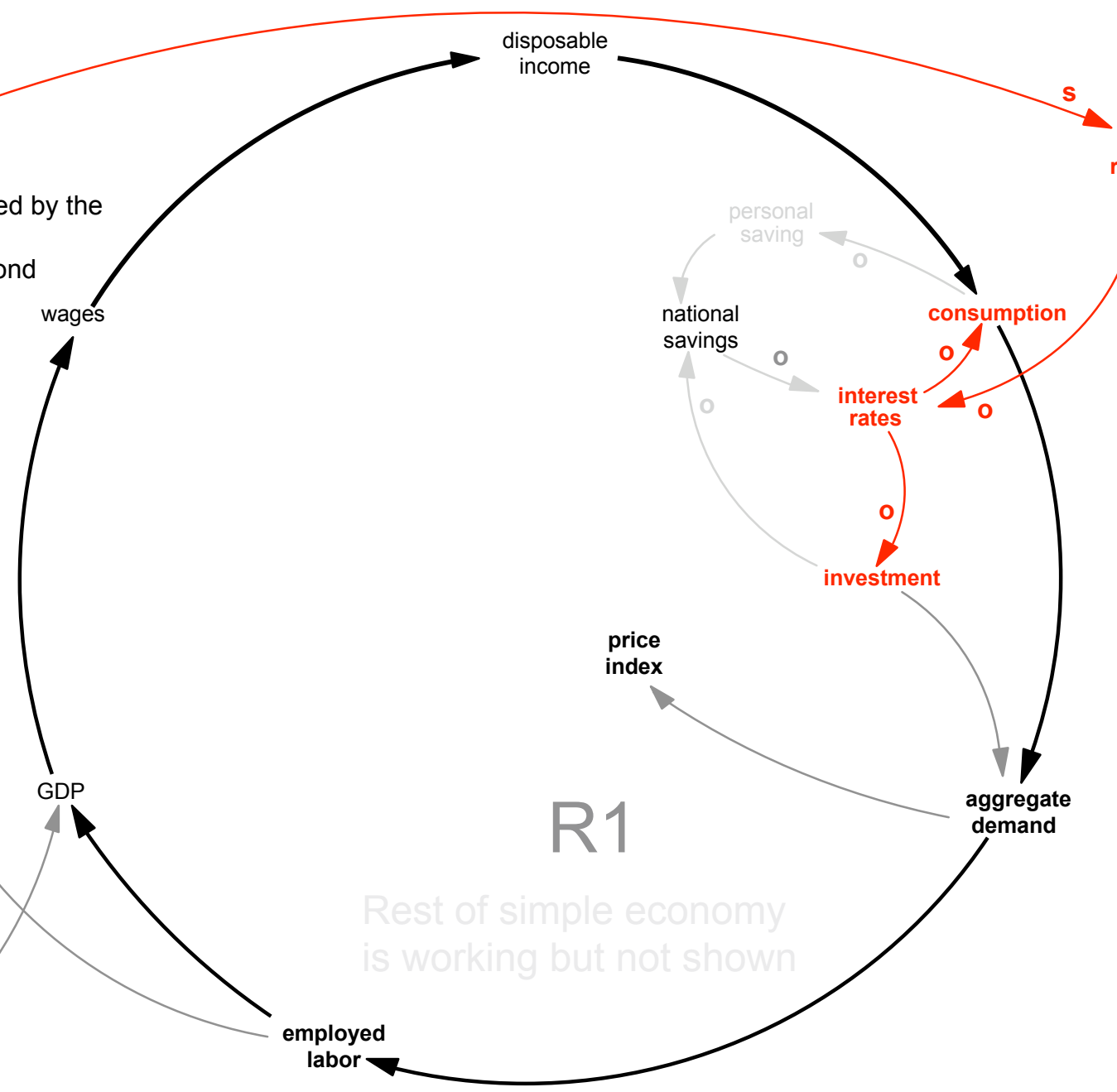
employed labor

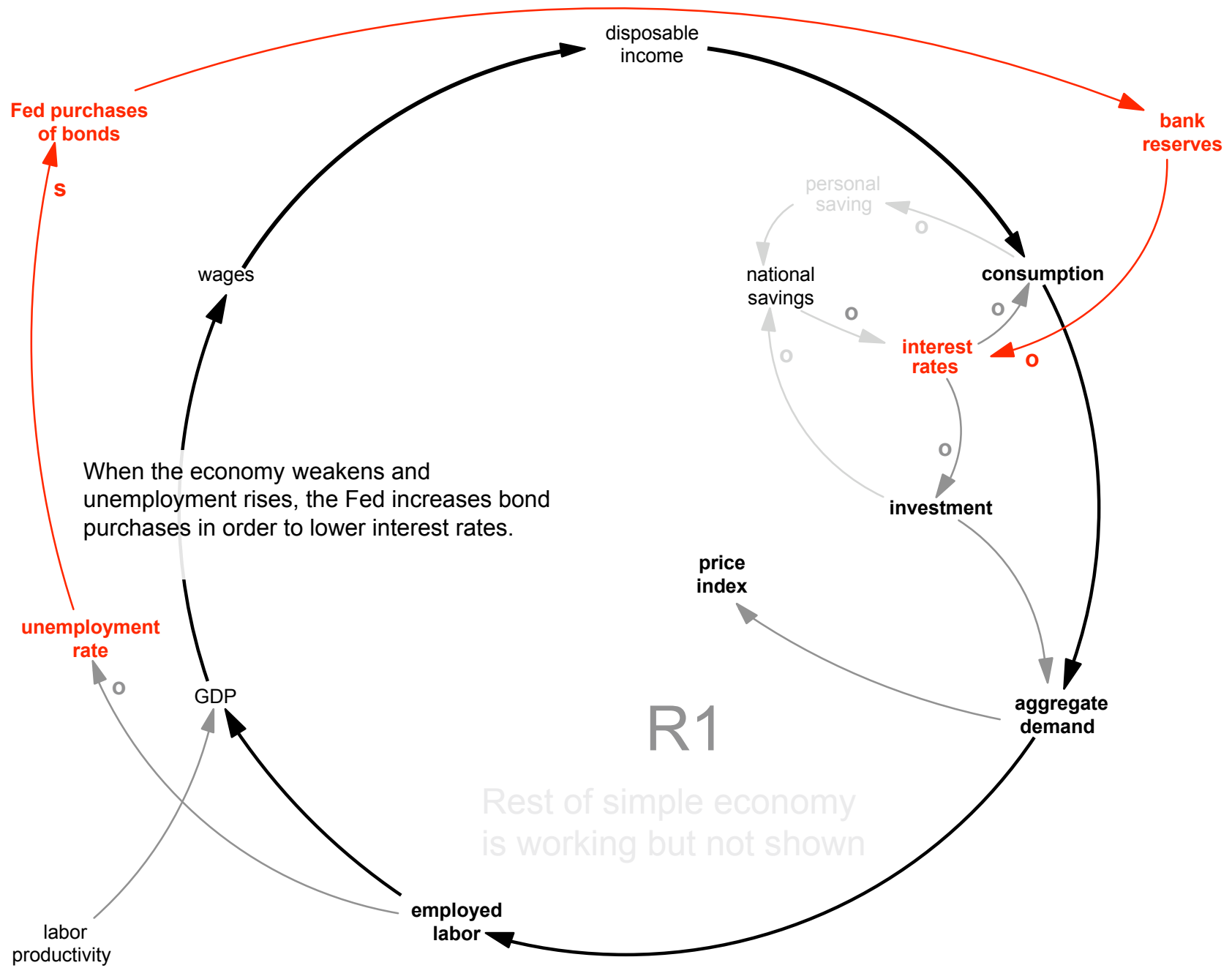
disposable income

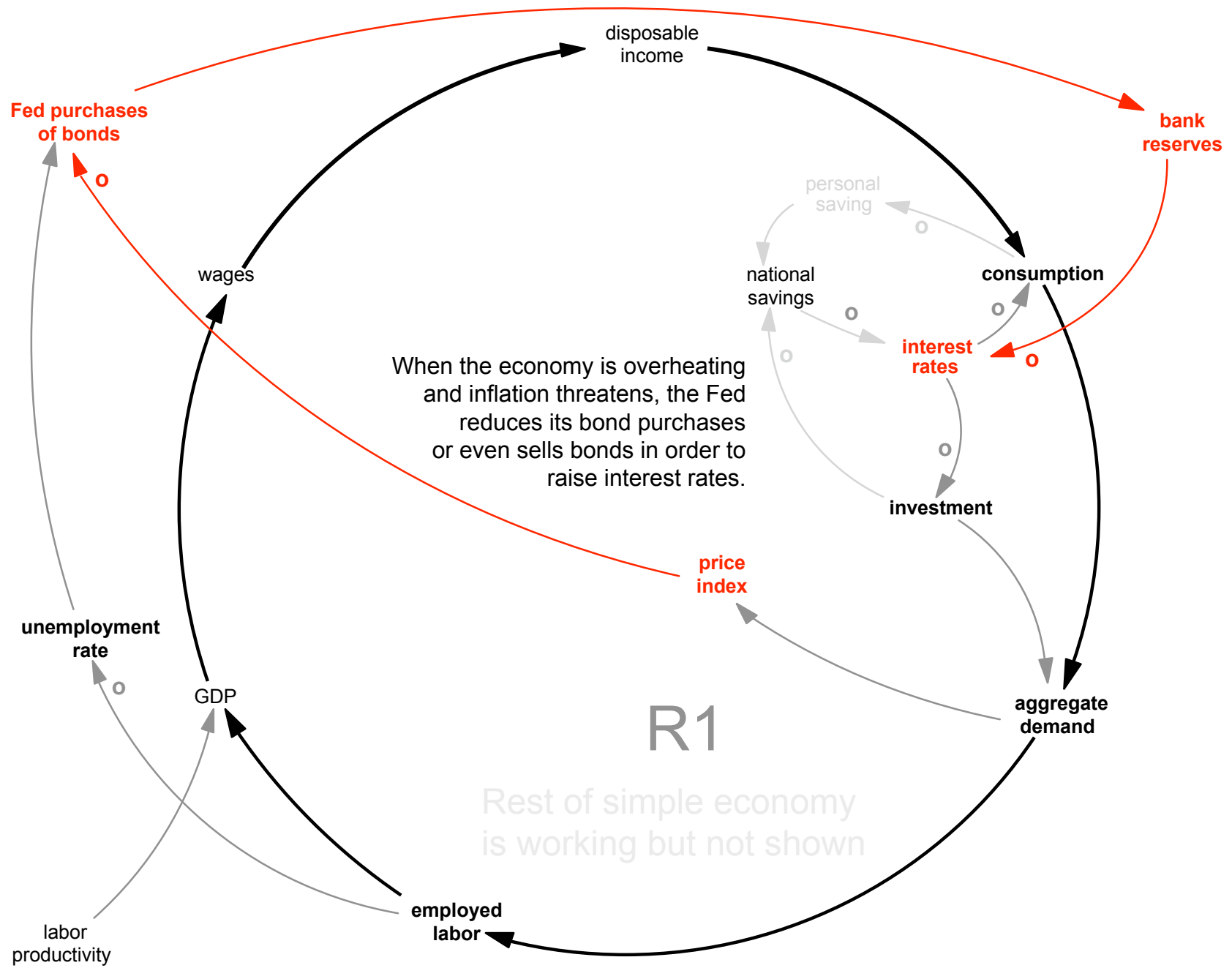
bank reserves

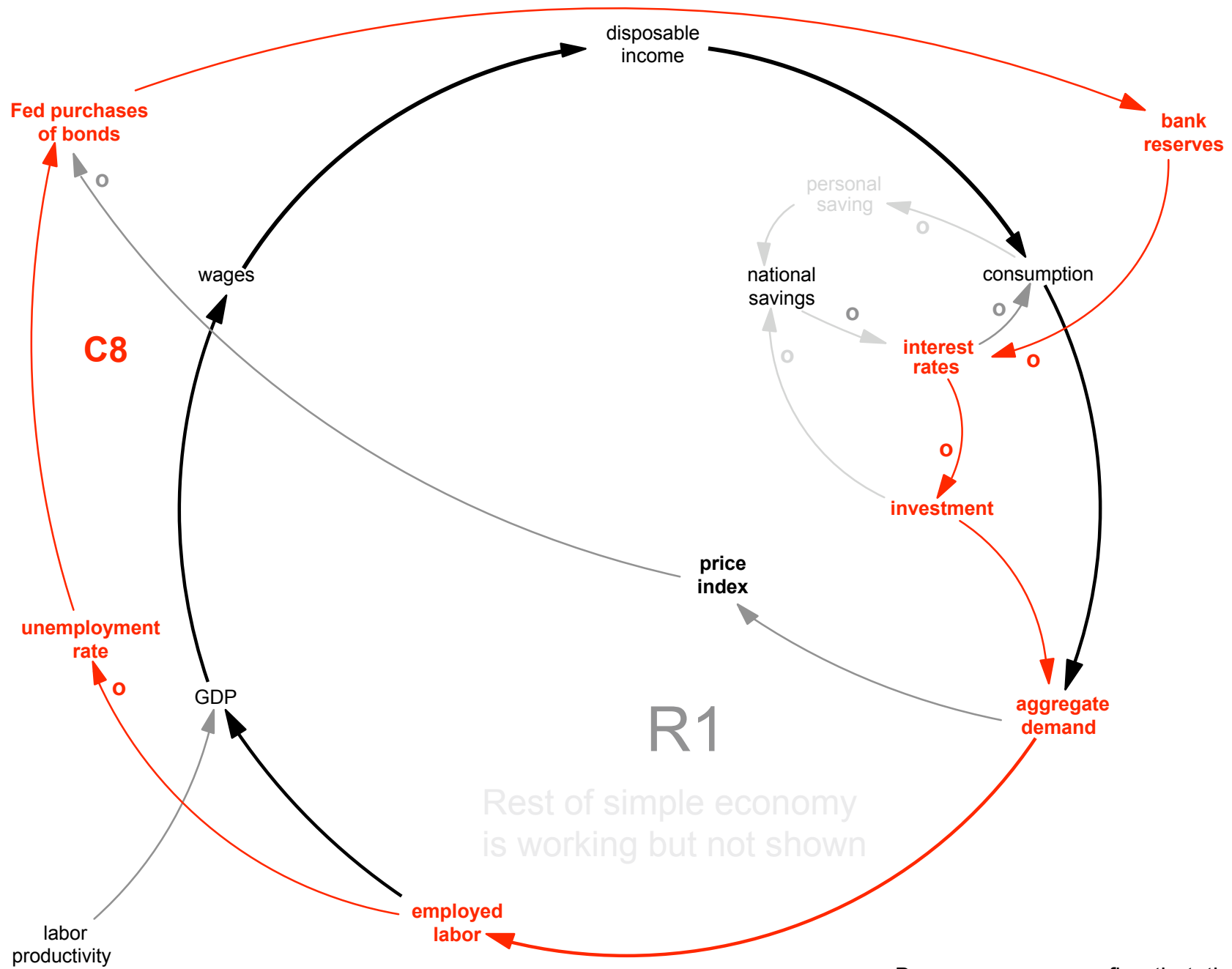
R1

Rest of simple economy is working but not shown

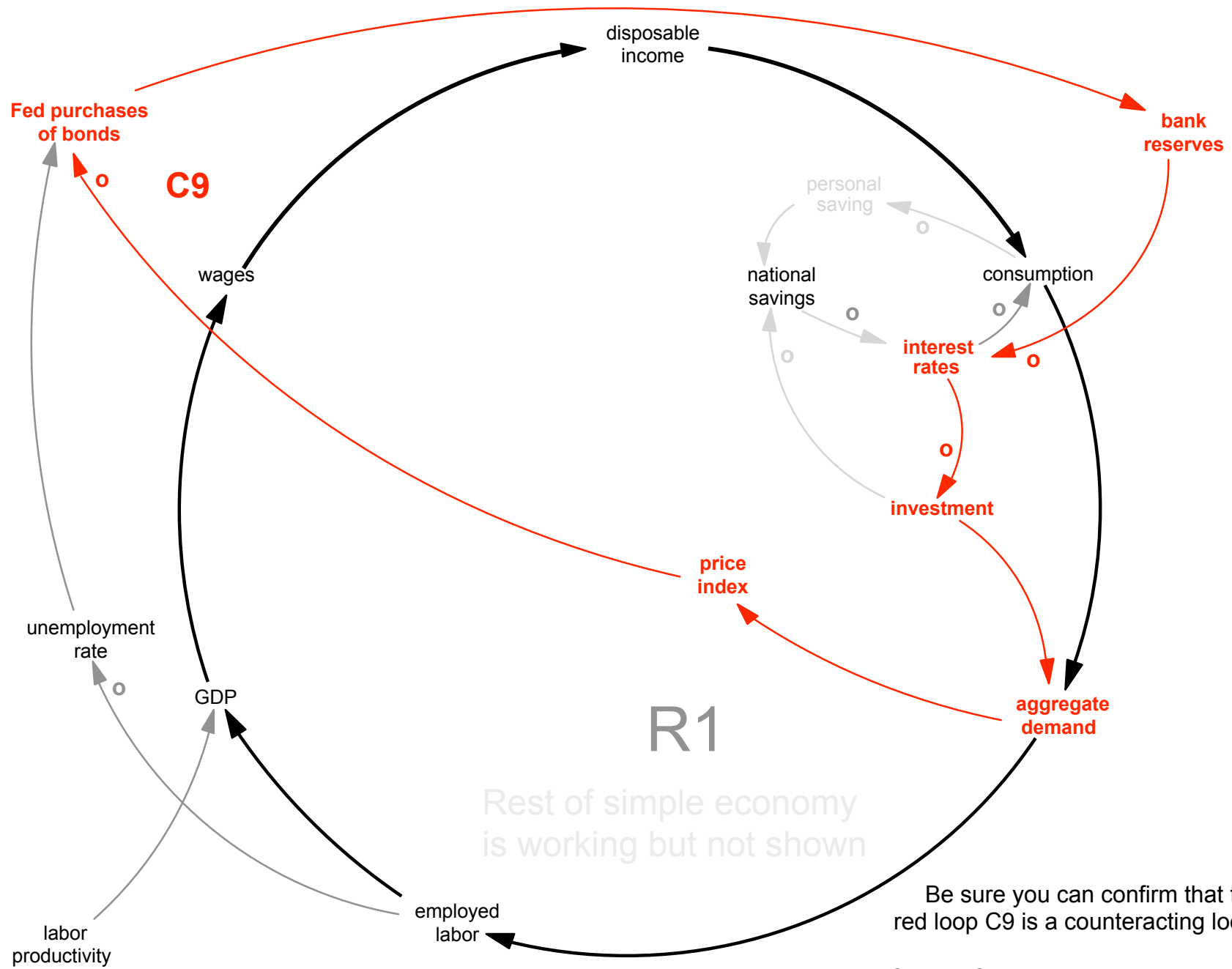








Be sure you can confirm that the red loop C8 is a counteracting loop.



Be sure you can confirm that the red loop C9 is a counteracting loop.

Also, note that loops C8 and C9 work against each other. Be sure you can confirm that a policy aimed at curbing inflation can lead to rising unemployment.

Summary

A nation's money supply consists of bank deposits plus currency in the hands of the public. Banks create money when loans are made. When the loans result in new bank deposits, there is an opportunity for a "multiplier" effect as new reserves are also created and additional loans are made.

The Fed can influence the loan conditions at banks -- and the potential for changes in the money supply -- by setting the reserve requirements for banks and changing the level of bank reserves.

The Fed changes bank reserves when it conducts Open Market Operations -- buying and selling of Treasury bonds. When bond purchases increase, bank reserves increase. When the Fed sells bonds, bank reserves decrease. As bank reserves increase, interest rates fall and both consumers and businesses have greater incentives to borrow money for consumer durable goods and business capital goods. Declining bank reserves have the opposite effect on the economy.

The Fed uses its authority to influence interest rates and aggregate demand in order to pursue its monetary policy goals: economic growth, price stability, and low unemployment. However, when pursuing one goal (e.g., price stability), the Fed's policy may have an undesirable side effect on another goal (e.g., low unemployment).