IRVING FISHER AND INTERTEMPORAL CHOICE

Irving Fisher and Intertemporal Choice

When people decide how much to consume & save, they consider both present & future. The more "consumption" they enjoy today, the less they will be able to enjoy tomorrow. Households must keep ahead of the "income they expect to receive in future & to the "consumption" of goods & services they hope to be able to afford.

Irving Fisher developed the model with which economists analyze how consumers make intertemporal choices involving different periods of time.

Fisher's model expressed the consumer's preferences. They have & know those constraints & preferences determine their choices about consumption & saving.

A consumer faces a limit on how much he can spend, called budget constraint. When they are deciding how much to "consume" today, we need much to have for future. They face an intertemporal budget constraint which measures the total resources available for consumption today & in future.

We examine the decision facing a consumer who lives for 2 periods:

\[ C_1 + C_2 = Y_1 + Y_2 \]

Since the consumer has the opportunity to borrow at current consumption in any single period can be greater or less than income in that period.

Consider how a consumer's income in 2 periods, constraint consumption in these periods:

In 1st period, \( G = Y_1 - C_1 \)

In 2nd period, \( C_1 + C_2 = G + Y_2 \)

In 1st period, it has the equation to cumulative savings, including interest carried on it plus 2nd period income:

\[ C_1 = y + r + C_2 \]

If 1st period consumption is less than it's potential income, then consumer is saving i.e. \( G > 0 \).

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If 1st period income is greater than savings, then consumer is saving in a year:

\[ C_1 = U + h(n) - C_1 + Y_1 \]
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CONVERGENCE

Convergence
If you travel around the world, you will see tremendous variations in living standards. The world's poor countries have average levels of income per person that are less than one-tenth the average levels in the world's rich countries. These differences are reflected in almost every measure of the quality of life—differences in income are reflected in almost every measure of the quality of life—differences in income are reflected in almost every measure of the quality of life—differences in income are reflected in almost every measure of the quality of life—differences in income are reflected in almost every measure of the quality of life—differences in income are reflected in almost every measure of the quality of life. Much research has been devoted to the question of whether economies converge over time to one another. In particular, do economies that start off poor end up growing faster than economies that start off rich? If they do, then the world's poor economies will tend to catch up with the world's rich economies.

This property of catch-up is called convergence. To understand the study of convergence, consider an analogy. Imagine that you wanted to collect data on college students. At the end of their first year, some students have A averages, whereas others have C averages. Would you expect the A and C students to converge over the remaining three years of college? The answer depends on why their first-year grades differed. If the differences arose because some students came from better high schools than others, then you might expect those who were initially disadvantaged to start catching up to their better-prepared peers. But if the differences arose because some students study more than others, you might expect the differences in grades to persist.

The Solow model predicts that much the same is true with nations: whether economies converge depends on why they differ in the first place. On the one hand, if two economies with the same steady state happened by historical accident to start off with different capital stocks, then we should expect them to converge. The economy with the smaller capital stock will naturally grow more quickly. (In a case study in Chapter 7, we applied this logic to explain rapid growth in Germany and Japan after World War II.) On the other hand, if two economies have different steady states, perhaps because the economies have different rates of saving, they should not expect convergence. Instead, each economy will approach its own steady state.
Another hypothesis is that capital accumulation may induce greater efficiency. If there are positive externalities to physical and human capital, a possibility mentioned earlier in the chapter, then countries that save and invest more will appear to have better production functions (unless the research study accounts for these externalities, which is hard to do). Thus, greater production efficiency may cause greater factor accumulation, or the other way around.

A final hypothesis is that both factor accumulation and production efficiency are driven by a common third variable. Perhaps the common third variable is the quality of the nation’s institutions, including the government’s policymaking process. As one economist put it, when governments screw up, they screw up big time. Bad policies, such as high inflation, excessive budget deficits, widespread market interference, and rampant corruption, often go hand in hand. We should not be surprised that such economies both accumulate less capital and fail to use the capital they have as efficiently as they might.

Beyond the Solow Model: Endogenous Growth Theory

A chemist, a physicist, and an economist are all trapped on a desert island, trying to figure out how to open a can of food.

"Let's heat the can over the fire until itexplodes," says the chemist.

"No, no," says the physicist. "Let’s drop the can onto the rocks from the top of a high wall."

"I have an idea," says the economist. "First, we assume a can opener . . . ."

This old joke takes aim at how economists make assumptions to simplify—and sometimes oversimplify—the problems they face. It is particularly apt when evaluating the theory of economic growth. One goal of growth theory is to explain the persistent rise in living standards that we observe in most parts of the world. The Solow growth model shows that such persistent growth must come from technological progress but where does technological progress come from? In the Solow model, it is simply assumed.

To understand fully the process of economic growth, we need to go beyond the Solow model and develop models that explain technological progress. But this is often the subject of endogenous growth theory. We reject the Solow model’s assumption of exogenous technological change.

Albert and his colleagues have been sampling this modern research.
RICARDIAN EQUIVALENCE

One extreme view is that once the government budget constraint is taken into account, neither deficits nor debt have an effect on economic activity! This argument is known as the Ricardian equivalence proposition. David Ricardo, a nineteenth-century English economist, was the first to articulate its logic. His argument was further developed and given prominence in the 1970s by Robert Barro, then at Chicago, now at Harvard University. For this reason, the argument is also known as the Ricardo–Barro proposition.

The best way to understand the logic of the proposition is to use the example of tax changes from Section 26-1:

- Suppose that the government decreases taxes by $1 (again think one billion dollars) this year. And as it does so, it announces that to repay the debt, it will increase taxes by $(1 + r)$ next year. What will be the effect of the initial tax cut on consumption?

- One possible answer is: No effect at all. Why? Because consumers realize that the tax cut is not much of a gift. Lower taxes this year are exactly offset, in present value, by higher taxes next year. Put another way, their human wealth—the present value of after-tax labor income—is unaffected. Current taxes go down by 1, but the present value of next year’s taxes goes up by $(1 + r)/(1 + r) = 1$, and the net effect of the two changes is exactly equal to zero.

Another way of coming to the same answer, this time looking at saving rather than looking at consumption: To say that consumers do not change consumption in response to the tax cut is the same as saying that private saving increases one for one with the deficit.

So the Ricardian equivalence proposition says that if a government finances a given path of spending through deficits, private saving will increase one for one with the decrease in public saving, leaving total saving unchanged. The total amount left for investment will not be affected. Over time, the mechanics of the government budget constraint imply that government debt will increase. But this increase will not come at the expense of capital accumulation.

Under the Ricardian equivalence proposition, the long sequence of deficits and the increase in government debt that characterized the OECD for most of the last 29 years are no cause for worry. As governments were dissaving, the argument goes, people were saving more in anticipation of the higher taxes to come. The decrease in public saving was offset by an equal increase in private saving. Total saving was, therefore, unaffected, and so was investment. OECD economies have the same capital stock today that they would have had if there had been no increase in debt. High debt is no cause for concern.