Real World Graduation: Question 35

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Question 35

What is the source of wealth in the U. S.?
a) The Federal Reserve, because it prints the money.
b) The U. S. Treasury
c) Banks
d) The Stock and Commodities Markets
e) There is no one source of wealth in the U. S.; all of the above together are the source of wealth.

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Answer to Question 35

This is a trick question. All of the answers are wrong.

Answer a) is wrong because the Federal Reserve prints currency (not money); and said currency and even money are nothing more than representations of wealth that has already been created.

Answer b) is wrong because the U. S. Treasury, like any treasury, was intended to be storehouse for government revenues, which is actually wealth already created by taxpayers and given to the government. (However, the U. S. Treasury has become a place where officials add up how much of the wealth that will be generated in the future by Americans actually belongs to other countries.)

Answer c) is wrong because banks lend money, derived form existing wealth, or their credit, which is a way of expressing confidence in the utility of existing wealth. The money and credit are used to procure capital, from which further wealth is created. But the bank per se is not the source of wealth.

Answer d) is wrong because the stock and commodities markets are the means by which individuals and corporations can invest money, which comes from already-existing existing wealth, for the purpose of expanding it. But the market per se is not the source of wealth.

The correct answer is that all wealth comes from the work of nature as harnessed by man's labor and ingenuity. For example, the computer industry has provided many people with employment: the hardware builders, the software writers, the people who use the computers in their work, all the people who provide data to put into the computers, and the people who maintain the hardware and software to keep it all running. That employment has allowed those people to earn money, which they traded for either the comforts of the modern world, such as houses, cars, groceries, TV, etc., or for protection against potential future problems in the form of money and insurance policies. All of these things are the manifestation of created wealth: any standard of living that is above bare subsistence.

In this example, the computer is one source of wealth. But where did the computer come from? The computer consists of software (instructions) that directs the hardware (arithmetic processors and memory) what to do. Without hardware, there would be no need for software.

Where did the hardware come from? It is based on the microprocessor chip. The microprocessor chip is based on "transistors", which are electronic switches that are able to keep track of voltage levels in memory locations, upon which capability all software is based. Where did the transistors come from? A transistor is a small piece of silicon (the metallic component of beach sand) into which is embedded trace amounts of poisons like arsenic, gallium, and antimony. All of these are elements found in nature. How did they come to be combined into a transistor configuration? Because some engineers at Bell Laboratories in the 1940's were searching for a way to "transfer resistance" in electronic circuits, and in the course of their experimentation, discovered the switching and amplification properties of germanium and silicon "semiconductors". Why were they trying to "transfer resistance"? Because doing so would allow them to reduce the size and cooling requirements of the large relay and vacuum-tube computers of the 1940's. By the way, those computers filled several rooms, required several tons of air conditioning, were affordable only by large organizations and governments, and had less computing power than the pocket "scientific calculator" that can be purchased now for less than $25.

The researchers discovered that the transistors used as switches could perform all the required mathematical operations if they could be arranged into various "gates" (called AND, OR, NOR, NAND, and NOT). Mathematicians discovered that all the gates could be constructed from various configurations of

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NAND gates. The electronics designers established that these NAND gates could all be integrated on a large scale by a common transistor design and circuit configuration. So the race was on to pack as many NAND gates into as small a package as possible, while consuming the minimum power. This drive toward commonality led to a great reduction in overall cost, weight, and cooling requirements. Ultimately the process of miniaturization led to the microprocessor chip.

On the software side, engineers created common "instruction sets" called computer languages (such as FORTRAN, c, c++, PL/1, COBOL, Pascal, Java, and many others) so that other people could write programs (applications) to allow people to communicate with the computer and tell it what to do. Thanks to the efforts of scientists and engineers who created all the refinements and improvements in silicon processing technologies, logic, and software, you can play a large number of video games on the internet, not to mention all the productive work that can be done now that could not be done with the old computers. More work that can be done means more work will be done, which means more people will be able to earn a living and save a little. So, in this computer example, wealth was created from the work of nature (refined beach sand and some naturally-occurring poisons), the ingenuity of scientists and engineers, and the labor of all those who use and maintain the many computers now in existence.

There are a very large number of like examples: moveable type and the printing press; eyeglasses; gunpowder; the steam engine; the cotton mill; heating oil; gasoline and the internal combustion engine; the airplane; and plastics are a few that come to mind. These inventions led to more than just a way to improve man's standard of living: they also altered history. Eyeglasses allowed people to work many years longer and support themselves. Moveable type allowed ordinary people to afford books and become educated, ending the monopoly on learning previously reserved to the clergy and nobility. Gunpowder ended the tyranny of the feudal system, since ordinary people had the means to defeat the tyrannical system of lords and knights. The steam engine and the cotton mill increased productivity and reduced the cost of transportation, releasing the people who formerly did those jobs to do more important and valuable ones. Heating oil made us all comfortable during the winter, and reduced the intensity of and duration of flu outbreaks. Gasoline and the internal combustion engine spawned a vast industry that led to many people becoming firm members of the middle class. The same is true of airplanes and plastics.

Wealth consists of all objects of value, that is, property, which may be converted to money if desired. But money is not wealth; it is only the medium used to obtain wealth (i.e., the things that we desire because they have value [1]). The important point is that wealth is accumulated only by saving and investing, because investment is possible only through the use of savings. Savings is spending less than one earns, and is therefore the source of additional wealth.

[1] Amasa Walker, *The Science of Wealth*, Boston: Little, Brown, and Co., 1867, p. 7

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