# How Future Bitcoin Can Prevent a Future Greece

## The digital currency is at a turning point, evolving much more quickly than some observers realize

**CHRISTOPHER MIMS**

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Bitcoin, the volatile digital currency, cannot help the Greeks of today. But it could mean a great deal to those caught up in currency crises to come.

Greece’s fundamental problem is that it cannot work its way out of its financial hole the way just about every other country outside the eurozone would: by printing money, and in the process making its goods and labor cheaper. With a freeze on transfers of funds out of the country and a daily limit on how many euros Greeks can withdraw from the bank, there is a very real threat that countless Greek businesses will go bankrupt and Greece’s people could become unable to buy the basic necessities of everyday life.

For the average Greek, getting one’s hands on bitcoin requires buying it with euros—the last thing any sane Greek would give up. That’s why the bitcoin of today has no bearing on what could easily become a humanitarian crisis.

But Bitcoin is at an inflection point, and it’s evolving much more quickly than all but its most dedicated observers realize. Whatever happens to bitcoin itself, the technology underlying it opens up previously unimagined possibilities for the future of just about anything humans exchange.

You don’t have to take my word for it. Hardly a week goes by that a large institution doesn’t announce its interest in bitcoin, whether it’s the chief information officer at UBS saying it could lead to “massive simplification” of banking, or the Bank of England declaring it will someday have “far-reaching implications.” Deloitte recently issued a report on the potential for state sponsored cryptocurrencies as an alternative to conventional money, and even Nasdaq is testing bitcoin technology for use on its stock exchange.

Yanis Varoufakis, Greece’s former finance minister, proposed on his blog more than a year ago that if Greece wanted to create its own currency to replace the euro, it could use the technology of bitcoin to create a currency that he called “Future Taxes” coin, the value of which would be guaranteed by future tax revenue taken in by the government.

If the idea of Greece rapidly switching to an alternate currency seems ridiculous, consider that it is happening already. In Greece, companies are doing what they often do in times of currency crisis, which is paying suppliers and employees in IOUs, or scrip, which are promises to pay back a debt as soon as the banks unlock a firm’s money.

I asked Michael Casey, the senior adviser to the MIT Media Lab on cryptocurrencies—and until recently, a reporter at The Wall Street Journal—whether or not the technology underlying bitcoin, known as the blockchain, could be used to issue this scrip.

Absolutely, he assured me, and the mechanism might be a new technology called “sidechains.”

To understand side chains, it helps to know how bitcoin itself works. Broadly, transactions are recorded on a main digital ledger, called the block chain, which is like any other account of transfers going back to the clay tablets that recorded pharaoh’s stores of grain.

Bitcoin’s ledger isn’t processed or stored by one central body. Rather, it is distributed across a global network of computers, some of which are granted an economic incentive to keep the whole system running. Owing to this and other characteristics of bitcoin, no one on the system has to trust anyone else, neither a central transactional authority or the person sending them bitcoin, for the system to work. No third-party verification of the transfer of bitcoin takes place, nor is it needed. Not only is this system potentially faster than current forms of digital transactions, it could also be a lot cheaper.

On top of this basic protocol, there are a host of proposals to modify bitcoin to let anyone use it for pretty much any transaction, including signing contracts, issuing stock, and representing any kind of currency, from U.S. dollars to frequent-flier miles. Side chains are arguably the leading contender among these proposals.

But that’s just the start. Because bitcoin is becoming not a currency unto itself but a protocol, like the communications protocol that makes the Internet possible, as well as a platform, like Apple’s app store, the kinds of transaction systems developers could build on top of it are limited only by our imaginations.

One idea, says Mr. Casey, is that Greece could create a “collateralized currency” backed by state-owned assets. Cryptocoins representing a fraction of all the country’s islands, ports and factories would hold their value as long as people believe the underlying assets do.

Thinking even further into the future, it isn’t hard to imagine a way to use digital tokens to permanently institutionalize the last resort in all currency crises—barter.

“The reason why barter was flawed is you can’t cut a horse in half in return for a bunch of arrowheads or whatever,” says Mr. Casey. But crypto-tokens that individually represent a portion of an asset are infinitely divisible, he says, and “if you have infinitely divisible claims on an asset, then you could trade a third of a horse for a trip to Acapulco.”

If that sounds a lot like the abstraction known as money that is at the root of Greece’s problems, you can appreciate that no technology can solve poor planning or badly designed systems. That said, the most exciting thing about bitcoin’s blockchain technology is that it has the potential to democratize how money is created. And that, for many observers, is fundamentally what the debate over Greece and the fate of the entire European Union is about.