Part One

Money in All Its Forms

CHAPTER 1

GOOD MONEY IS STABLE MONEY

How People Make a Living through Monetary Cooperation

> Coinage is imprinted gold or silver, by which the prices of things bought and sold are reckoned. . . . It is therefore a measure of values. A measure, however, must always preserve a fixed and constant standard. Otherwise, public order is necessarily disturbed, with buyers and sellers being cheated in many ways, just as if the yard, bushel, or pound did not maintain an invariable magnitude.
>
> **—Nicholas Copernicus, "Treatise on Debasement," 1517**[1]

> The Individualistic Capitalism of to-day, precisely because it entrusts saving to the individual investor and production to the individual employer, presumes a stable measuring-rod of value, and cannot be efficient—perhaps cannot survive—without one.
>
> **—John Maynard Keynes, "Social Consequences of Changes in the Value of Money," 1923**[2]

Humans have a problem, and the problem is this: Food does not fall into their mouths. Even if it did, they would soon foul the place where they are lying. They could be burned by the sun, soaked by the rain, frozen by the wind. They could fall ill from disease, be plagued by insects, or be attacked by predators. They must find mates and reproduce. Their children must be cared for, or the children will also perish. And if even all this were done for humans, they would quickly succumb to boredom. To survive, they must take action.

A man or woman, alone and naked, is all but helpless. Their

actions are ineffectual. They lack the natural protection of fur or shell or hide. They lack the biological tools—claws, teeth, beaks, poison—with which to feed themselves. Even walking on a natural surface, without footwear, can be difficult. But the human has hands and a brain. With these two assets the human can create tools, discover techniques, and form organizations. In this way the human, born one of the weakest of all the creatures on Earth, has become the most powerful.

Human beings are, from biological imperative, capitalists—meaning only that they invest time and effort to create tools, techniques, and organizations to become more productive. Catching fish with the bare hands is possible, but not very efficient. To catch one fish, it may well be more efficient to use one's hands. To make a hook and line, a spear, or a net from naturally available materials takes time, effort, and technique, but humans calculate that the investment of time and effort will pay off in greater productivity in the future. They calculate, in other words, that there will be a positive return on such a capital investment, that they will make a profit from their investment of effort, that their time is better spent making a hook and line than grasping at fish with their bare hands. By making a capital investment, humans expand their personal economy and productivity.

But there is no guarantee. In deciding to invest time in making a hook and line or spear, humans take a risk. They may search for days and find that the materials to make a hook and line are not available, or that the hook does not catch fish, in which case their capital investment will be wasted. Every time a tool is created and used, it is a capital investment. This is true of picking up a rock to break open a nut, and it is also true of building a semiconductor factory, which is merely a tool to make semiconductors.

Humans have a natural tendency to seek greater productivity, meaning only that they wish to act with greater effectiveness while using less time and effort. Hunters polish their tracking skills; artisans strive for beauty. Laborers adjust their loads so that they are less painful. Monks simplify their lives to allow more time for contemplation. Homemakers store the pots and pans where they are easy to

reach. The term *productivity*, as used here, may have little relationship with official statistics. It does not matter what is wished for, whether more material goods, more services, more knowledge, more leisure, better interpersonal relationships, or even a more pristine natural environment, only that humans increase their ability to attain their wishes. The ends and means of production are limitless, but the urge to increase the ability to achieve those ends is inherent.

The productivity of a single human alone in nature is tiny. Such humans may simply starve to death, especially if they do not enjoy the intellectual capital of their forebears, knowledge of tools, plants, animals, and the seasons. Also, from a Darwinian standpoint, a solitary human may as well be dead, since he or she will not reproduce. The human must find a mate and produce a child, thus engaging in cooperation with other humans.

Unlike many species whose reproductive responsibilities are completed when they deposit their eggs or scatter their seeds, humans naturally form long-lasting families. The woman in late pregnancy may have difficulty feeding herself, and the child must be nurtured for years before it is capable of surviving alone. In the basic family unit, humans not only invest their capital to make tools, but cooperate through the division of labor, specialization, and trade to improve their productivity still further. The wife is, by biological fact, responsible for the child's gestation, and is almost universally responsible for the child's care as an infant. The husband typically specializes in the production of food and shelter for the family. Although one rarely thinks of transactions at such an intimate level as "trade," functionally it is no different than the trade that takes place between people living on different continents. This is more efficient than having each parent gather, hunt, cook, and care for the child in equal proportion, although of course the contemporary world offers all manner of alternative arrangements.

The husband and wife can also pool their efforts to produce and share the fruits of their efforts. The husband and wife can, together, create a cooking pot, which will aid in their production of foodstuffs. Each contributes capital (i.e., labor and time) and shares the fruits of

their capital investment: the use of the pot and the cooked food. They are shareholders. Though there is no legal agreement between them, there is a mutual understanding, probably unspoken, that the ownership of the new capital good, the pot, is shared by the people who helped create it. If the husband suddenly claimed sole possession of the pot, barring his wife from its use, the wife would quite reasonably become angry. Today, the division of the family corporation is handled in divorce courts.

The husband and wife also expend a large amount of capital in the care and upbringing of their child, which even in a primitive context can be expected to last at least 10 years and likely closer to 15. In turn, the child is typically expected to care for the parents if needed, particularly in old age when parents are no longer able to easily support themselves. Young children "run up a debt" with their parents, and when the parents are elderly the children "repay the debt" by caring for their parents and also by raising their own children. This debt, or promise, is a bond. It is an obligation to offer goods and services in the future in trade for goods and services today. The child, which cannot support itself at first, must indebt itself to survive. The adult, seeking to create a "savings" that it can rely on in old age or times of need, must accumulate credits.

Thus, even in their most simple state, humans can hardly exist without creating tools and building knowledge (capital investments), engaging in specialization and trade, jointly entering into productive endeavors (equity investment), and forming contracts, or promises, with others (bonds). The primary features of the modern capitalist market economy are apparent in the primitive family unit. The primary features of socialism, such as caring for the sick, wounded, or otherwise unfortunate, are also apparent. All societies will have some form of "taxation" to fund communal efforts, even if this takes the form of an informal expectation that the person will help build the central gathering hall or provide some food to the hunter who has twisted an ankle. All human societies are a varied mixture of the capitalist impulse to produce and the socialist impulse to ameliorate misfortune.

Families are rarely found living in solitary isolation. The smallest human societies typically consist of groups of 20 to 60 people. In such a group, the activities of capital creation, trade, specialization, organization, shared equity, and obligation can become much more complex. The circle of exchange broadens beyond the family unit. The group shares a campfire. The men hunt in teams and share the fruits of their labor. Women trade off child-care duties. The spearmaker specializes in toolmaking, trading his tools for food provided by others specializing in hunting. A successful hunter shares his catch with others who came back empty-handed, with the understanding that when the others are successful and he is not, they will in turn share their food with him. Trade takes place with other bands, leading eventually to intermarriage.

Already, at this simple stage, the human has entered into hundreds or thousands of arrangements with other humans (i.e., "equity" and "debt" investments), and the records are kept informally in the memory. If one woman constantly watches another's children, but no attempt at retribution is made, the woman confronts the other about her "debts." If a man's contribution to the hunt is lazy or inept, thus contributing little capital, the others may agree to reduce his share of the proceeds of the hunt, acknowledging his small "shareholding" in the "enterprise." The spearmaker may not ask for his "payment" immediately, but remembers exactly how much is due to him from each of his customers, and if they do not pay up he regards them as deadbeats and refuses to make any more spears for them. People may even form "derivatives," such as wagering on tomorrow's weather. This has been institutionalized in today's markets for financial weather derivatives.

As humans deal with other humans to whom they are less closely related, their transactions become more abstract and formal. With a member of another group, the buyer may have to pay up on the spot, engaging in barter—say, five bags of nuts for one beaver pelt. Otherwise, the two may have to establish some kind of formalized contract, since they cannot rely on a relationship formed and enforced through

daily association. When transactions become anonymous and numerous enough they begin to acquire the flavor of "the market," though there is a continuum from the most intimate interactions to the most abstract. In this way, humans are able to extend the scope of their specialization and trade beyond the limits of their immediate or extended family, or band, thus increasing their productivity still further. Because each trade is voluntary, it would not be undertaken unless it provides a benefit for both parties.

Historically, simple human societies of the tribal size have functioned quite successfully without strictly delineated private property, an arrangement with notable advantages. It should be recognized that this is a thought exercise, illustrating the fundamental nature of today's market economies, not a study in anthropology.

Money is created, slowly and organically, when one commodity becomes used, in barter, as a medium of exchange. One commodity is accepted in trade, not because the acquirer plans to use it, but because he or she expects to be able to trade it again in the future. In ancient China, farm tools became a medium of exchange. As the tools were used more and more for exchange and less and less for farming, they became abstracted and miniaturized. By the second millennium BC, the Chinese had developed a type of coinage that consisted of tiny metallic replicas of farming tools. Virtually the same process happened in Britain, where the Romans found the original British using miniaturized, abstracted swords as money. Hoards of bronze double ax heads, too small for practical use and likely a form of money, have been found in burial mounds across continental Europe.

Using a miniaturized scythe or a sword was an extremely vague symbol for money, subject to natural "currency debasement" as swordmakers sought to discharge their obligations with ever simpler and cheaper swords. The ultimate conclusion of these efforts was the creation of coinage where the "sword" was finally simplified to a round disk, its value defined primarily by its metallic content.

Money, or indirect exchange, allows humans to make a quantum leap in their ability to generate capital, engage in specialization and

trade, and form contracts of joint ownership (stocks) or obligation (bonds), particularly with strangers. No longer is it necessary to make direct barter trades with others. People can use money to trade indirectly with the world at large. Nobody invented money. It is as natural as clothing or shelter and has emerged independently all over the world. Certainly governments are not necessary for its creation. All manner of goods have been pressed into service as money: cowry shells, slabs of salt, elaborate beaded belts (wampum), giant stone wheels, tobacco, and so forth. Even in modern times, if no better medium is available, people will adopt as money whatever available commodity is most suited for the task. After World War II, when the reichsmark was rendered useless, German citizens used cigarettes as money. During the inflation in Italy in the 1970s, candies traded as small change.

Monetary exchange vastly expands the ability to specialize and engage in trade through the creation of a unit of account, a measure of value. In a money economy everything has one price, expressed in terms of the monetary standard. In a barter economy, prices are expressed in terms of each of the goods available in trade. In very simple economies, with just a few traded items, barter may easily suffice. For example, among four goods in a barter system, there are six market prices. But for 1,000 goods, 499,500 barter exchange rates would be needed. In a money economy, 1,000 goods have 1,000 prices, all denominated in the monetary standard, or *numeraire*.

It is possible to imagine a time in the not-too-distant future when paper money and coinage would all but disappear, replaced by some sort of credit or debit card that can be used for all transactions. But even then, money's function as a measure of value would remain. In the past it was common to make barter trades in a monetary framework without actually using money—$10 worth of wheat in trade for $10 worth of blankets, for example. This practice lives on today in computerized barter markets, where companies trade goods with one another within a framework of quasi-imaginary "barter dollars."

Money allows more than just trade. It allows, for instance, the creation of credits and debts measured in monetary units rather than

in specific obligations. No longer do adults need to rely on their obligations accumulated with their children for their old age. Those adults can loan money—to anyone—and thus expand the scope of their credits throughout society. This is "savings." Very little in the economy is actually saved in a warehouse, for example. Virtually everything is consumed or put to use within no more than a year of its creation. To save for the future through debt obligations (bonds), humans don't stockpile goods, or even money for that matter, but they accumulate promises, which are massless and, ideally, don't deteriorate over time. Banks were the main means to stockpile monetary debt obligations, with direct bond finance pioneered first by governments and followed later by corporations.

The creation of the joint stock company allowed humans to pool their capital in endeavors much larger and more complex than could be attempted without the organizing principle of money. A hundred investors pooling their money to fund a shipping expedition to China are not inherently different than five humans building their own boat and setting sail on a trading expedition with a mutual understanding that they will split the winnings of their voyage. The main differences are the scale and the ability to divide ownership and its spoils through written contracts and numerical values rather than through an unstructured partnership based on direct association.

The monetary market economy, though it has elements of competition, is primarily a system of cooperation. Until the past two centuries, the majority of humans directly produced their own food. They were hunters and gatherers, and later farmers. Most productive activity took place outside the monetary economy, within the circle of the agrarian family. The land provided food, clothing, shelter, and entertainment. Money and exchange were only intermittently necessary. People's cooperative interaction with others was, by today's standards, rather limited.

Over time, people have become more and more specialized in their actions and more involved in trade and the money economy. The circle of cooperation has expanded. Winemakers can build their

own houses, as the pioneer farmer did, but their house-building abilities are poor. They lack tools, knowledge, experience. Carpenters can make their own wine, but their winemaking abilities are poor. The carpenter calculates that the most efficient way to obtain wine is to build houses and trade them for wine with the winemaker. The winemaker calculates that the most efficient way to acquire a house is to make wine and trade it with the carpenter. By engaging in specialization and trade in this way, both the winemaker and carpenter enjoy more wine and better houses.

Consider a modern citizen, perhaps an advertising account executive. She does not grow her own food. She does not make her own clothes, build her own house, construct or even repair her own car, generate her own electricity, or drill her own oil. She may even have someone else clean her house, have a different person take care of the garden, and eat most of her meals in restaurants. Instead, she specializes in certain services related to advertising, which themselves are not very useful alone but only as part of a complex organization, the advertising agency. She consumes basically none of her primary production of advertising services, all of which she trades, indirectly through the money economy, for the goods and services provided by other people. She feels independent, maybe even isolated compared to the tight-knit farming communities of the past, but she, like everyone else, is embedded in a system of interdependency far more absorbing than those of long ago. The ever-increasing productivity of the advanced economies has been accomplished through ever-increasing specialization and trade. However, there is a danger inherent in such complexity, namely that a breakdown of the system would collapse the productive advantages with potentially disastrous results. It is not possible to go back to hunting and gathering, or even to the situation of a century ago in which most people were farmers. The concept of unemployment is a relatively recent phenomenon, which did not occur in traditional farming societies where you could always fall back on the fundamental economy of eating what you grew. People today are more dependent on the smooth functioning of the money economy than they have ever been.

Our day-to-day lives are so familiar to us that it is worth a moment to consider the awesome complexity of the cooperative order that we participate in. We buy a cup of coffee on our way to work. Someone has just provided a service for us. Perhaps that service was provided by a large corporation, built with the bits and pieces of capital of literally tens of thousands of investors. The employees have struck their own contracts and agreements with the corporation. The coffee itself comes from Colombia, brought to the United States by a series of independent transport companies and wholesalers who buy their transport equipment from another set of companies. The Styrofoam cup was produced by yet another corporation, which acquired its raw materials from petroleum products suppliers, using equipment built in Japan and Germany by corporations that have their own tens of thousands of investors. If enough cups of coffee are sold, the coffee seller makes a handsome profit. Its stock rises on the exchange. It undertakes a debt-fueled expansion, borrowing the capital of further tens of thousands of savers, while other companies compete for the same limited supply of capital. It employs construction companies, equipment makers, investment bankers, consultants, advertisers. In the end very nearly the entire world, in some way, was cooperatively involved in producing this cup of coffee.

The extended order encompasses virtually all of human activity and includes politics and government as well (which can be seen as another kind of cooperation, a necessary component of the extended order). Economics can't be separated from politics, both of which might be considered a form of anthropology, because the political system is the means by which the citizenry adjusts the operating conditions of the extended order. In the nineteenth century, the two weren't separate, but combined in the study of the political economy.

Because money is so vital to the extended order that has made the high productivity and indeed large populations of today possible, it is worth taking a close look at exactly what it is. Modern money very nearly doesn't exist at all. For small transactions, coins and paper bills are used. The paper's material value is almost nil, and the coins are

mere tokens that no longer contain precious metals. For larger transactions, bank checks are common—nothing but a scrap of paper and a scrawl. Transactions on an institutional scale are almost completely electronic and ephemeral. Money today is mostly just the arrangement of bits in computers. Money, in other words, is information.

Not a single person knows how the cup of coffee was produced. The system is not planned. The extended order is organized through the use of money. It is far too complex to be arranged by rational thinking—the classic argument against the feasibility of the Stalinist Soviet model. Even the Soviets depended on money to help organize their economy. Through the system of markets and prices, exact real-time information is conveyed about how much coffee to grow, how many Styrofoam cups to produce, the most efficient arrangement of trucks and ships to move the materials around, coordinating the efforts of millions of people in vast networks of exchange to produce a cup of morning coffee—at a paltry price, a sign of the system's extraordinary efficiency and productiveness.

There is no alternative to the money economy. The only choice is to make it work poorly or to make it work well. Though there have been enduring regimes in the past that were centrally managed with little monetary organization (e.g., ancient Egypt and the empire of the Incas), organizing a complex industrial economy by such means would be impossible.

Because money is information, and the messages sent by the monetary economy dictate in hard, clear terms the actions of billions of people, naturally humans have taken great pains to develop means to keep this information as pure and uncorrupted as possible. If an engineer orders a mechanical shaft of "500 millimeters," and the machine shop produces one of 500 millimeters, but due to fluctuation in the meaning of *millimeter* it is 10 percent shorter than the engineer desired, both the engineer and the machine shop have become unable to cooperate productively. The information contained in the phrase "500 millimeters" has become corrupted, meaning different things at different times. The engineer may decide to

machine the parts himself, the machinist to take up engineering. The circle of exchange is broken, and the productivity of both decline.

Throughout history, humans have sought the most stable money attainable, because stable money, or uncorrupted information, allows greater productivity and prosperity, while unstable money, or corrupted information, cripples productivity and prosperity. It is impossible to improve the system's productivity by corrupting the information that enables it to function. Such a corruption may result in more production—a greater volume of goods and services, a greater number of hours worked or employees hired, a blip in statisticians' charts—but much of the increased production will be wasted, or the greater effort will produce less results, and thus true productivity declines.

There have always been those who have sought to twist and manipulate the monetary system, because any change, though it hobbles the smooth operation of the overall extended order, provides a benefit for one group or another. War enriches weapons makers. Crime provides a livelihood for police officers, lawyers, and prison keepers, and disease is the bread and butter of doctors and undertakers, and there are those who can benefit from monetary instability and devaluation. Debtors benefit at the expense of creditors. Exporters benefit at the expense of importers. The unemployed benefit at the expense of the employed.

Historically, governments are the prime offenders, the institution with both the motive and the ability to carry out the deed, and many industrial or social groups are always ready to entice the government into manipulating the currency for their benefit. But governments rest on the approval of the entire citizenry, not just one part, and no government can act at the citizenry's expense indefinitely and remain in power. Democratic governments can be cleansed by the vote, and the members of less flexible political systems will eventually resort to assassination, civil war, emigration, military coup, or secession.

Today the forces for a sound currency are again ascendant. Governments and central bankers around the world today agree unanimously on the desirability of stable money, ever more so after some

monetary disaster has reduced yet another economy to smoking ruins: Mexico in 1994, Thailand, Korea, Indonesia, and the Philippines in 1997, Russia and Brazil in 1998, Japan throughout the 1990s, Turkey in 2001, Argentina in 2002, Germany in the 1920s, Latin America in the 1980s, and virtually everyone in the 1970s, to name just a very few of the more well-known cases. The governments and citizens cry out together for good money, stable money, boring money, forever the same, supremely reliable, the bedrock upon which the extended order can flourish, not this stuff that wiggles and waggles unpredictably every second of every day, a never-ending chaos that saps the vitality of all countries' economies. On the political side there is near total unanimity. The problem, first, is that nobody apparently knows what exactly this stable money consists of. Second, nobody knows how to accomplish the task of creating and maintaining it.

But even the briefest study of history shows that today's condition of floating currencies is a very new phenomenon. It began August 15, 1971, the day Richard Nixon severed the dollar's link with gold and destroyed the world monetary system, which at the time went under the name of the Bretton Woods system. In the three centuries before 1971, the world for the most part had stable money. After 1971, or more properly after a series of steps in the late 1960s and the early 1970s, it did not. The capitalist economy since the Industrial Revolution, and a long time earlier as well, was based on stable money. The advocates of laissez-faire never ceased to support stable currencies. Their critics, the early socialists and communists, agreed with them on little other than the necessity of a sound unit of account. Floating currencies are not a phenomenon of the free market but the market's inevitable reaction to unceasing currency manipulations by world governments. Since the system today is the exception rather than the rule, it should be easy to find a solution to the monetary problems that plague humanity on a daily basis.

Government money manipulation and floating currencies have appeared since before the birth of Christ; and also since before the birth of Christ, the discontented citizenry has brought to the fore

political leaders to return their country's currency to stability. Alexander of Macedonia unified the Mediterranean world under a hard silver coinage; 25 centuries later, he remains known as "the Great." Julius Caesar returned Rome's currency to a gold standard, and he remains an icon of Rome's greatness. Alexander Hamilton helped launch the United States with a gold dollar, and his face today graces the $10 bill. The person who hired him, George Washington, is on the $1 bill. Napoleon returned France's currency to a gold standard, and the French accepted him as their emperor. Lenin returned hyperinflationary Russia to the gold standard, and statues of him were erected throughout the land. Mao Tse-tung returned China to a gold standard, and the country rallied around him. The U.S. occupation government in Japan returned the hyperinflationary yen to the gold standard in 1949, and the Japanese allied themselves with the country that attacked them with nuclear weapons only three years earlier. Richard Nixon plunged the world into monetary chaos, and he remains the only U.S. president ever torn from office.

Ronald Reagan, the "Teflon president," whose popularity endured through crisis and scandal, came close to returning the dollar to the gold standard in the 1980s, but settled instead for an end to the devaluation policies that dominated the 1970s. Bill Clinton may have learned his lesson: An economic boom based on his administration's strong dollar policy—abandoning a century-long tradition of cheap-dollar Democrats—put voters in a forgiving mood regarding his other dubious escapades. The voters know that it is by no means certain that future presidents will be so wise.

Chaotic currencies have been stabilized countless times. It has already happened three times in United States history alone—or five, depending on how you count. The situation today is not unique in that sense, though the challenge facing governments, politicians, and the citizenry today is as great as it has ever been. Until 1971, in all of history the world had never faced a situation where the entire monetary system of the globe had been separated from its traditional metallic anchors. There had always been floating currencies, but never had all currencies floated simultaneously. More than ever, it

will take a leader with deep understanding, vision, and backbone to guide a return to monetary stability. That leader would best be an American, since the U.S. dollar remains the world's leading currency, but might turn out to be European, Chinese, English, Japanese, Russian, or Argentinean. If so, after a number of years the world might drop the floating dollar and adopt the euro, renminbi, pound, yen, or yes, even the ruble. The first U.S. currency was confetti issued by a government that soon collapsed. For two centuries afterward, "not worth a Continental" was a casual term for worthlessness. It wasn't until the introduction of the gold-linked dollar that the U.S. currency grew to be accepted throughout the world. The British pound had been the world's premier currency for two centuries, but after Britain broke with gold in 1914 and again in 1931, the world abandoned the venerable pound and the dollar rose to world supremacy.

Fortunately, monetary systems are better understood today than at any time in the past. The theory and history in this book is from a classical standpoint, which is fundamentally different than the conventional wisdom of today, often called *neo-Keynesian* but perhaps rightly labeled "neo-mercantilist." Classical economics is the original economics of the Industrial Revolution and the original economics of capitalism. It is a counterpoint to constitutional democracy, just as the mercantilist system was a reflection of absolute monarchy and despotism.

The classical viewpoint is as old as civilization and is echoed in the writing of Confucius, Mencius, and Lao-tzu. In the days of Adam Smith, David Ricardo, and John Stuart Mill, all economists were classical economists. Even Karl Marx was a classical economist at the core. The thread of study was taken up in the later nineteenth century by thinkers such as William Stanley Jevons, Carl Menger, and Léon Walras. In the first half of the twentieth century, classical monetary theory was developed further by the Austrian school under the guidance of Ludwig von Mises and Friedrich von Hayek. Murray Rothbard, Henry Hazlitt, and other writers carried many of the Austrians' discoveries into the latter half of the twentieth century. Beginning in the 1960s, major new advances were made in the understanding of taxes, tariffs, and regulation by such people as Robert

Mundell and Arthur Laffer, which in turn helped clarify monetary issues still further. The classical framework is the product of an unbroken line of investigations stretching centuries.

Although the economic theory presented here may seem unorthodox, that's because its roots are so old that much of the knowledge has been forgotten by today's academics and monetary authorities. A hundred years ago, much of it was conventional wisdom, so self-evident that it hardly needed repeating. The proof of the pudding is in the eating: This theoretical structure produced decades and even centuries of stable money and economic abundance. It has been thoroughly tested, and it works. Those who are confused by today's conventional wisdom are more likely to throw up their hands and swear it cannot be done. Nonsense. It can be done; it has been done; and if history is a guide, it will be done again.