

“Monetary Policy in Developing Countries.” In *Money and Economic Development: The Horowitz Lectures of 1972*, pp. 38-67. New York: Praeger, 1973. This lecture draws heavily on an article by the same title in *Nations and Households in Economic Growth: Essays in Honor of Moses Abramovitz*, edited by Paul A. David and Melvin W. Reder, pp. 265-278. New York: Academic Press, 1973.

I’m going to talk tonight about monetary policy in developing countries. That, as you all know, is really a question of inflation.

I’m reminded by the many fears that people have been expressing of inflation here of a story that was going the rounds in the United States a year or so ago. It had to do with a man who came under the influence of the new science of cryogenics, which had developed methods of quick-freezing a man and then restoring him. This man got himself frozen for twenty years. Twenty years later, in 1990 or something, he was resurrected or defrosted, or whatever the right word is. The first thing he did on being resurrected was telephone his stockbroker. Before he had himself frozen, he had put all his stocks in an account, and he wanted to know what had happened to the value of those stocks. His broker was delighted to hear from him, to learn he’s alive and so on. Says his broker: “You’re a millionaire now, you’re many, many fold a millionaire. Your stocks have gone up like mad.” Naturally, the man was excited and wanted to hear more, but just at that moment the operator broke in and said: “Your three minutes are up. That will be 250,000 dollars for the next three minutes please.”

Cyclical Versus Secular Policy

In the developed countries, countries like the U.S., most discussions of monetary policy are concerned with the problem of business fluctuations, of cyclical expansions and recessions, and hence with the effect of monetary policy on stability. Even for such countries, some of us have concluded that monetary policy is a poor instrument for this purpose, thanks to the length and the variability of the lag in the effect of monetary policy, and the limitations of our knowledge about the factors responsible for such lags and about other

short-term effects of monetary policy; thanks also to the conflicting objectives pursued by monetary authorities and the pressures of politics.

These factors, we believe, have made discretionary monetary policy a major independent source of economic instability, rather than an offset to instability arising from other sources.

We have concluded that, even for such developed countries, the wisest policy, at least for the present, would be to shape monetary policy to meet longer run objectives; to aim, in the short-run, at steady monetary growth. We have come to believe that, in this way, monetary policy would provide a favourable climate for stability without either actively promoting stability or unintentionally introducing instability.

For developing countries—countries that have not yet reached the level of the United States and other advanced countries—the case against using monetary policy primarily as an instrument for short-run stabilisation is far stronger than it is for developed countries.

The crucial problem for such countries is to achieve sustained growth, not to smooth short-term fluctuations.

In addition, such countries seldom have financial markets and banking institutions sufficiently developed and sufficiently sophisticated to permit what has come to be called fine tuning of monetary policy, though I may say that in this respect Israel is more advanced than most developing countries. Your financial institutions and banking institutions are much more sophisticated than those of most other countries that would be regarded as developing countries.

These policy and institutional considerations reinforce a scientific consideration. We know much more about the long-run effects of monetary changes than we do about their short-term effects. Over short periods the effect of monetary changes is often swamped by transitory forces that average out over longer periods.

This was brought out very sharply in some of the charts that I showed in my first lecture, which showed how much more random fluctuation there is in short-term relations between changes in the quantity of money and changes in other magnitudes, than in long-term relations.

As a result, for developing countries even more than for developed countries, it seems wise to determine monetary policy by long-term considerations.

Parenthetically, this conclusion holds equally for fiscal policy and for the same reasons. Hence this conclusion is really independent of the great debate that has been raging about how much importance to attach to fiscal effects relative to monetary effects as determinants of economic change.

Accordingly, in the rest of tonight's lecture, I shall deal primarily with long-run considerations, and take it for granted that we are talking about the monetary policy that is appropriate for the long-run aim of attaining rapid growth.

Monetary Policy and Inflation

From the long-run point of view, the problem of monetary policy reduces primarily to the desired rate of inflation and the best way to obtain that rate. This is so for reasons which I discussed in my first lecture: first, because monetary policy is concerned primarily with the quantity of money, not with the terms and availability of credit; second, because inflation is always and everywhere a monetary phenomenon.

Inflation always and everywhere reflects a more rapid increase in the quantity of money than it does in output. Of course, the reasons for the increase in the quantity of money are not always the same, but nothing will produce sustained inflation unless it produces a more rapid increase in the quantity of money than in output, and nothing will stop inflation unless it causes an end to an unduly rapid rise in the quantity of money. Hence, if we're going to talk about monetary policy, we are in effect going to talk about policy towards inflation.

Inflation and Development

It is widely believed that there is a close relation between inflation and development. Sometimes the relation is supposed to be that economic development causes inflation. Sometimes the relation is supposed to be that inflation promotes development.

In my opinion, neither the one nor the other is correct. We can find examples of all four combinations. Some striking examples of *development without inflation* are the development of Great Britain in the eighteenth and nineteenth centuries, of the United States in the nineteenth century, of Japan after the Meiji

Restoration in 1867 to World War I; and the more modern examples of Hong Kong, Malaya, and Singapore in the past thirty years; of Greece in the late 1950s and early 1960s.

Examples of *inflation without development* include India in recent decades, many South American countries, Indonesia until perhaps recent years, all of the hyper inflations after World Wars I and II, and Great Britain in the past decade.

Examples of *inflation with development* include Israel, Japan in the past decade, Taiwan for much of its existence.

Examples of *no inflation and no development* include Venezuela, many European countries and India in the inter-war period, and numerous examples from earlier times.

So, historically, all possible combinations have occurred: inflation with and without development, no inflation with and without development.

Why, then, is it so widely believed that inflation promotes development? I believe there are two systematic effects that might work in that direction.

First, if inflation is not anticipated, if it is an unexpected inflation, it may for a time transfer resources to active businessmen, innovators or entrepreneurs, and in this way add to investment. Apparently that is what happened in Europe in the sixteenth and seventeenth centuries as a consequence of Spanish imports of specie from the New World. These imports raised the quantity of money, which produced inflation; the inflation was not anticipated so prices of final products rose more rapidly than wages. Interest rates failed to reflect inflation fully, so that the real interest rate fell, and in the process transferred wealth from land owners and workers to entrepreneurs.

The studies of the price revolution in Europe by my colleague, Professor Earl Hamilton, are by now classic documentations of this process.

This effect operates only so long as inflation is not anticipated. Once inflation is widely anticipated, wages will escalate as rapidly as prices, and interest rates will rise to offset the anticipated inflation.

In the modern era, when inflation comes from the actions of legislators and central banks, rather than from such acts of God as specie discoveries, when the press, radio and television rapidly transmit

information to the ends of the world, inflation is not likely to proceed very long without being anticipated, and perhaps, over-anticipated. So this effect can hardly be counted upon as a matter of deliberate development policy.

Certainly, if this is true anywhere, it is true in Israel, where there has developed a very sensitive and sophisticated reaction on the part of the public at large to inflation, and where the central bank publicly announces that it plans to produce at least 6 per cent per year inflation for the next five years. It publicly announces this by offering linked bonds on terms that imply a minimum of 6 per cent inflation.

That is the first relation between inflation and development: inflation may promote development by transferring funds to entrepreneurs if it is not anticipated.

A second way in which inflation may affect development is that inflation is, or can be, a method of taxation that yields revenue to the government, and this revenue can be used to finance development.

I believe that this link between inflation and development has been mainly responsible for the widespread belief that the two go together. In most developing countries in the modern era governments have, wisely or unwisely, and I believe unwisely, tried to play a large role. This has led to demands for government revenue that could not readily be met by traditional sources of government funds. Neither the bureaucratic apparatus nor private attitudes and institutions permitted the large-scale use of such new sources as income and corporation tax. This statement again is less true for Israel than it is for most other developing countries. Israel has had a much better developed system of income and corporation taxes and so on than have most developing countries.

The absence of these modes of raising revenue has tempted governments to resort to the printing press to finance their activities.

Inflation produced in this way has been a mixed blessing as a means of development for several reasons. First, the amount of revenue that can be raised by inflation is not very large in underdeveloped countries. It is not very large because cash balances tend to be rather small relative to total income, and hence the tax base is small. This is concealed initially, because governments at first benefit from the fact that inflation has not been anticipated. For a time, people expect inflation to be temporary, and so add to their cash balances in

real terms. But as soon as people come to expect the inflation to continue they reduce their cash balances in real terms, and the yield from inflation declines sharply.

Second, governments have many demands for funds, so that there is no assurance that the revenue will be used to promote development.

Third, even if the revenue is used to promote development, it is used to promote development as viewed by the government, which means that the revenue is likely to go for the standard development monuments, for international airlines, luxury hotels, steel mills, automobile assembly plants and the like, rather than for productive investment.

Unfortunately, this is an area in which Israel has not been lagging.

A fourth and extremely important reason why inflation has been a mixed blessing as a means of development is that inflation is almost always accompanied by governmental controls and intervention that offset much of the possible benefit from governmental development assistance. These controls and interventions discourage private investment, often lead to a flight of private capital, and produce economic waste and inefficiency.

Development without Inflation

These considerations make it worth contemplating the possibility of refraining from using inflation as a method of taxation. So I want to talk a little about what is, in the present state of opinion in most of the world, an extremely hypothetical possibility, namely, the possibility that a government will deliberately refrain from inflation and will try to develop without inflation.

Though this is highly unrealistic, contemplating it serves a useful intellectual purpose by providing a standard with which we can compare current practice. It thereby will give us a greater degree of perspective.

The surest way to refrain from using inflation as a deliberate method of taxation is to unify the country's currency with the currency of some other country or countries. In this case, the country in question would not have a monetary policy of its own. It would, as it were, tie its monetary policy to the kite of the monetary policy of another country, preferably a more developed, larger and relatively stable country.

Hong Kong is an obvious example. It has no central bank, no independent monetary policy. It has a currency closely linked to the British pound sterling. Through a Currency Board, printing of paper currency requires the deposit of British currency in stated ratio. The quantity of deposits is then indirectly controlled by the banks by the necessity for banks to keep deposits convertible into currency.

This system which I've described for Hong Kong was essentially also the system used by the United States in the nineteenth century after the U.S. return to gold in 1879. Though technically the currency was linked to gold, it could equally well be described as unified with the British pound sterling. The U.S. had no central bank, it had no independent monetary policy. The quantity of money in the United States had to be whatever sum was necessary in order to keep U.S. prices in line with world prices. The policy I've described is also the one that was used by Japan in the period from the Meiji Restoration to World War I.

A system of this kind—a unified currency—must be sharply distinguished from a system that superficially looks the same, but is basically very different, namely, a national currency subject to national control, but linked to other countries by pegged exchange rates. For example, different states in the United States, like Illinois and New York, have a truly unified currency. Both use the same dollar. There is no central bank in Illinois, there is no central bank in New York that can interfere with the flow of funds between them. If Illinois residents buy more from New York residents than New York residents buy from Illinois, and if Illinois residents finance their balance of payments deficit by drawing down their cash balances, then, so far as this goes—neglecting all other transactions—the quantity of money goes up in New York and it goes down in Illinois. And nobody can interfere with that process, because the only way in which the citizens of Illinois can pay for their excess purchases is by transferring the money. And the number of dollars by which the quantity of money increases in New York will be dollar for dollar equal to the number by which it decreases in Illinois.

Though Hong Kong and the United Kingdom use currencies with different names, essentially the same thing is true. They too have a unified currency with a fixed rate of exchange between them.

That kind of a unified currency is very different from national currencies linked by a pegged rate, say the U.S. dollar and the Israeli pound. There is a fixed rate of exchange—4.18 pounds to the dollar—but there are also central banks in the United States and Israel that can, and do, interfere with the flow of funds.

If U.S. residents convert dollars into Israeli pounds, to finance an excess of purchases in Israel, or to make payments to or investments in Israel, the Federal Reserve System can prevent that conversion from leading to a reduction in the U.S. monetary stock, and the Bank of Israel can prevent it from leading to an increase in the Israeli monetary stock—they can “sterilise” the deficit or surplus in the jargon that has developed. Of course, they may not do so. In the past six or nine months, as I understand it, this process has led to a very rapid increase in the quantity of money in Israel because the Bank of Israel did not in fact sterilise the inflow of foreign exchange. But it could have done so, and I doubt very much that the U.S. Federal Reserve System refrained from sterilising the outflow.

As a result, the rate of exchange between Israel and the United States is a pegged not a free market price, and is subject to substantial change from time to time. A unified currency has a truly fixed exchange rate. National currencies linked by pegged rates have jumping exchange rates. When a pegged exchange rate changes, it changes by a jump, as yours jumped a few months ago.

Technically speaking, a nation could refrain from using inflation as a method of taxation without going so far as to unify its currency with other currencies. A nation that succeeded in developing and that kept its prices constant, or in line with the price level in one or more major countries; would require a larger money stock to match its growing output. If it unified its currency with other currencies, whether through an intermediary like gold or directly, the increase in the quantity of money would have to come through a surplus in the balance of payments (defined to include all interest-bearing loans but not literal money).

Instead of doing this, the country could use a national currency and increase that national currency by the requisite amount, i.e., it could use a printing press or the central bank’s bookkeeper’s pen. The amount of increase in the national currency would have to be just sufficient to avoid a balance of payments surplus without departing greatly from the assumed path of prices. The national money would simply replace the inflow of foreign money.

While such a process is technically possible, under present conditions it is highly unlikely to be followed for very long. Even if the central bank itself tried to follow such an austere, self-denying policy, political pressures are almost sure, sooner or later, to lead to irresistible demands to go further, either to stabilise the economy or to provide the government with funds.

The experience of Thailand provides a recent clear example. For many years Thailand followed the policy I have described. It had a national money, and it increased the national money just enough to keep prices in line with world prices. It had a “hard” currency. But the government in power finally realized that printing money was a fine source of revenue. An excellent Governor and Deputy-Governor of the Bank of Thailand were kicked out or kicked upstairs. The Deputy-Governor, who happened to be a very able woman, is now at the International Monetary Fund or at the World Bank, I’ve forgotten which. New people were brought into the bank, and the bank is now departing from its former austere policy and behaving like most other central banks, which means that it is inflating the currency.

I conclude that the only effective way to refrain from using inflation as a method of taxation is to avoid having a central bank. Once a central bank is established, the die is likely to have been cast for inflation. I hasten to add that this does not imply any judgment about the vices or virtues of central bankers, only about the pressures on the central bank that are almost certain to develop.

While the use of a unified currency is today out of fashion, it has many advantages for development, as its successful use in the past, and even at present, indicates. Indeed, I suspect that the great bulk, although not all, of the success stories of development have occurred with such a monetary policy, or rather an absence of monetary policy.

Perhaps the greatest advantage of a unified currency is that it is the most effective way to maximize the freedom of individuals to engage in whatever transactions they wish. In addition, while the major countries are capable of policies that seem unwise to many of their residents and to professional economists, yet they are likely to have far stabler and less erratic policies than the smaller, newer, less-established developing countries.

As many of you know, I have myself been a strong critic of monetary policy in the United States. Yet, the inflation of the post-war period in the United States has been far less severe than the inflation in most developing countries. We have had inflation, but at the maximum, our inflation, and then only for a brief time, was in the neighborhood of 6 per cent. For most of the period it has been much lower than that. We should do still better but the standards you use must vary depending on the alternatives considered.

If it's true that the larger country is likely to have a more stable monetary policy than the smaller one, then a unified currency is likely to reduce the possibility of unwise governmental policy.

Finally, a unified currency assures a maximum degree of integration of the country in question with the greater world.

However great these advantages may be, the brute fact is that few countries are willing to accept the discipline of a unified currency and to refrain from the expensive luxury of establishing a central bank. So I turn to the question of the desirable monetary policy, given that a central bank exists, and that money creation is going to be used as a method of government finance.

Money-Creation as a Source of Government Revenue

The distinctive feature of the inflation tax, the feature that recommends it both to developed and under-developed countries, is that it is the only tax that can be levied without explicit legislative enactment or executive announcement.

You believe in this country that taxes are determined in the Knesset. You are wrong. This country has two tax authorities. The Knesset is one, the Bank of Israel is the second. The Bank of Israel can and does, explicitly or implicitly, intentionally or unintentionally, impose taxes, and affect the rate of tax imposed by the Knesset.

If a country decides to impose an inflation tax, the treasury or the central bank simply prints currency, or does the equivalent by adding to its deposit liabilities. The government uses the additional currency or created deposits to buy goods and services. The sellers find themselves with larger cash balances than they desire, so they purchase goods or services, or make investments, or make gifts, which causes the created

money balances to spread through the economy, in the process perhaps multiplying as a result of the operations of commercial banks. The increased flow of spending raises prices, which reduces the real value of cash balances to the desired level. The holders of cash balances have paid a tax, because they have had to use part of their income or part of their non-cash wealth to acquire additional pieces of paper or additional book entries (deposits) to maintain their real balances at the desired level.

To look at it a different way, if prices rise at 10 per cent a year, you must increase the number of Israeli pounds you hold by 10 per cent in order to keep the real balances you have constant. Those additional 10 per cent of pieces of paper are the exact equivalent of tax receipts from the tax collector certifying that you've paid your taxes. That's what they effectively are. The rate of the inflation tax depends on how rapidly the money stock increases. If the money stock increases by 20 per cent a year, then the rate of tax is 20 per cent. The yield of the tax to the government for a given tax rate depends on how large cash balances are relative to income.

Let me give you a very simplified example. Assume for the moment that the inflation is fully anticipated, so that no unexpected results happen, and that the only form of money is currency, pieces of paper. Let's suppose the government has been increasing the amount of money at the rate of 10 per cent per year so that the tax rate is 10 per cent. Suppose also that, when the quantity of money is increasing at 10 per cent a year, the public chooses to hold an amount of currency equal to one-tenth of a year's income, i.e., it holds about 5.2 weeks of income, in the form of currency (income velocity of circulation is 10). The yield to the government will then be the tax rate, or 10 per cent, times the tax base, which is 10 per cent of a year's income, or a yield of 1 per cent of a year's income. If the public were to hold money balances equal to half a year's income, then the yield would be 10 per cent of a half a year's income or 5 per cent of a year's income.

How rapidly prices will rise under these circumstances depends on two things: first, how rapidly output is growing; second, whether the community is seeking to raise or to lower the ratio of its cash balances to its income.

Let me return to the earlier simple example again. Suppose output in that hypothetical case is rising at 5 per cent a year and people want to keep cash balances steady at 10 per cent of income (i.e., velocity is

constant). Half of the annual increase in currency will then be absorbed to match the rise in output, leaving half to raise prices, so prices would rise 5 per cent per year.

If, as is more realistic for underdeveloped countries for moderate rates of inflation, velocity is falling at roughly the same rate as output is rising, i.e., if for every 1 per cent increase in output people would like to hold 2 per cent more money in real terms (income elasticity of demand for money equals 2), then the 10 per cent rate of money increase I have assumed would be consistent with stable prices. Five per cent would be absorbed by increased output and 5 per cent by the increase in desired balances per unit of output. This example illustrates a very important and much neglected point, that the government can get revenue from issuing money even though there is no inflation. This is a very important point, particularly for a country like Israel.

In a country like Israel, my guess is that if you could keep the rate of money issue at something between 15 and 20 per cent a year, you would have roughly zero inflation. Output in Israel has been growing something like 10 per cent a year. Israel is at the stage of development where the income elasticity of the demand for money is about 2. In that case, if you were to increase the quantity of money by let us say 18 per cent a year, to take a specific number, prices would probably be roughly constant, half of the increase in the quantity of money being absorbed by output and half by a decrease in velocity. In that case the government would still get revenue, and indeed, surprising though it may seem, the revenue might be larger than it would be if you increase the quantity of money by, let's say, 50 per cent a year. If you increase it by 50 per cent a year, the tax rate would be higher, but the people would reduce their cash balances so much that the tax base would be much smaller, and so you might end up with less revenue.

I warn you that this is a very sophisticated matter. In particular you must not jump to the conclusion that, if instead of increasing the quantity of money by 18 per cent a year, you increase it by 25 per cent, you will have 7 per cent inflation. You will not. You will probably have something more like 14 per cent inflation. The reason is that if you start increasing the quantity of money faster, prices will rise, and as you very well know, everybody will try to reduce his cash balances. As a result, the actual rate of inflation will be much

greater than the difference between the rate of increase of the quantity of money and the 18 per cent that I assumed will be consistent with stable prices.

Let me stress also that I have chosen the number 18 rather arbitrarily for illustrative purposes. It would require a much more detailed study of monetary relations in Israel than I have made to arrive at an estimate deserving of much confidence. Needless to say, I regard it as desirable that such a study be made, and perhaps it already has been made by some of your able monetary economists.

The economic effects of the inflation tax depend partly on its rate, but, in my opinion, much more on two other circumstances associated with the tax. Hence I shall discuss these points first before coming back to the question of what is the right rate of money creation. The two other circumstances that I think are important are: first, whether inflation is open or repressed; second, whether inflation is anticipated, as I assumed in my simple example, or unanticipated.

Open Inflation Versus Repressed Inflation

Fundamentally, the distinction between open and repressed inflation is much more important than the distinction between one rate of inflation and another.

By open inflation I mean a situation in which prices are allowed by the government to rise to whatever level is required to clear the market. Under the heading of prices I include wages, commodity prices; interest rates and, most important of all, exchange rates.

By repressed inflation, I mean a situation in which at least an important class of prices, though not necessarily all prices, are prevented from rising to clear the market by governmental measures such as fixing maximum legal prices, where “prices” again include wages, commodity prices, interest rates, and exchange rates.

Open inflation is not desirable. However, if the inflation is moderate it does no great harm to economic efficiency or economic development, though it may do considerable harm to the political fabric of society.

On the other hand, repressed inflation is extremely harmful to efficiency, to development, and to respect for the law. It is an attempted cure that is far worse than the disease.

The most dramatic example that I know of the different effects of open and repressed inflation is provided by experience in Germany after the two world wars. After World War I, as you know, there was a hyper inflation, in which prices rose at fantastic rates, during some periods doubling or more than doubling every day. In fact, in those periods, employers often paid workers their wages three times a day, before breakfast, lunch, and dinner so that they could run out and spend them before they depreciated.

The hyper inflation did immense damage to the social coherence and political stability of Germany. It undoubtedly was a major factor in paving the way for Hitler later on. Nonetheless, from a purely economic point of view, the economy continued to function at a high level until the very final months of the hyper inflation. Prices were free to move and hence it continued to be possible to use a price system to organise the economy.

After World War II, Germany again faced an inflation problem, but the problem was far smaller in magnitude. If the inflation had been open, prices after the war would have had roughly to quadruple, i.e., it would have taken a four-fold increase in prices to absorb the money supply. That seems large, but it's trivial compared to the price rise after World War I.

But the inflation was not open. There was price control covering almost all items. Ordinarily it is impossible to enforce price control when legal prices are so far from market clearing prices; it is impossible to prevent the emergence of black markets. However, it was possible to enforce price control in Germany after World War II because Germany was occupied by American, French, and British forces. The occupation forces were willing and able to enforce the control more rigidly and ruthlessly than any domestic police or armed forces would have done.

The result was that output in Germany was cut to roughly half of its pre-war level. People were driven to engage in barter. Workers in a factory producing aluminum pots and pans, for example, would work for two or three days, get paid in the form of pots and pans, and then spend the rest of the week scouring the countryside for a farmer who would pay potatoes or other food for the pots and pans. Nobody was willing to buy and sell for official money at prices that were about one-quarter of the market clearing prices. Cigarettes, coffee, and cognac came into wide use as substitute unofficial money to reduce the disadvantage

of pure barter. I have often said that the cognac that came into use as unofficial money at that time was surely the most liquid money the world has ever seen.

The great German economic miracle of 1948 was produced simply by the elimination of price control. Ludwig Erhard, then the economics minister, removed all the price controls one Sunday afternoon. He did it on Sunday because the offices of the American, British, and French occupation authorities were closed on Sunday, and he was sure that if they had been open they would have countermanded his order.

The elimination of price control produced a doubling of German output within a fairly brief period. It did so not because of any new capital investment, not because of the discovery of new techniques or the opening of new markets, but solely because the price system was permitted to operate freely.

Perhaps the most pernicious and widespread type of repression of inflation in under-developed countries is the attempt to peg the exchange rate. I think of India—an enormous country with extremely poor people that has tremendous potential for economic growth. India has many energetic, able, enterprising people, much capital, yet its record is depressing. I believe that the main reason for the failure of India has been its attempt to repress inflation and particularly to peg the exchange rate. India finally devalued some time back, but not by enough, and then, instead of letting the rupee exchange rate float, it decided to peg it at a new level. The result has been to force India to ration imports, subsidise exports and import competing goods, to waste her resources, not for serving any national purpose, but simply to preserve an artificial exchange rate.

In many under-developed countries in recent decades, the easiest route to wealth has been special access to import permits and to foreign exchange at pegged rates.

If these comments about India seem to have some relevance to Israel as well, that is not purely coincidental. Israel too has been trying to peg her exchange rate and has introduced extensive exchange control. All the evils of this process have been manifested, including the evils of subsidisation of some industries, of an effective multiple exchange rate system in which some industries get IL.8 or IL. 10 effectively to the dollar, while other industries get IL.6 or IL.5 or IL.4 or IL.3.

All of you have had more experience than I have had with this process. I doubt that there exists a person in this room who could not give an example of the waste and inefficiency produced by exchange controls,

but I was impressed by a small example in my own case, coming here to give these lectures. Thanks to the exchange controls, we were informed by the people here, when we were half way round the world, that our tickets would have to be paid for in Israeli pounds. The result was that instead of getting the benefit of a round-the-world rate we had to divide the trip in two parts. The sponsors here paid something like \$300 more for our travel expenses than they would have had to pay if they had simply reimbursed me in dollars for the relevant part of our trip.

I didn't benefit from that. I made exactly the same trip. How did it benefit Israel to hand over \$300 more to Japan Airlines or TWA or whichever airline it was, simply in order to get the satisfaction of having the ticket paid for in the first instance in Israeli pounds rather than in dollars?

That is a very small example, but it's typical of the kind of waste and inefficiency that is introduced by exchange control, which in turn is a consequence of a pegged exchange rate.

There are much more fundamental reasons why it is especially tragic and especially unwise for Israel to have extensive exchange control and to peg exchange rates.

We come to take things for granted and to suppose that they have always been with us. You now have a system of exchange control under which, according to the letter of the law, any one of you can get dollars for pounds only by applying for permission to a governmental official—to the Bank of Israel or to some other official. That method of exchange control is a modern invention. To the best of my knowledge, it never existed before 1934. Before 1934, if a country's currency was termed inconvertible, that meant that a holder of that country's currency could not get gold on demand at a fixed price. To the best of my knowledge, before that date it was never illegal for a citizen of one country to exchange the currency of his own country for the currency of another country, at whatever rate was mutually agreeable to buyer and seller.

Who do you suppose invented the modern system of exchange control? It was Hjalmar Schacht in 1934 in Germany. What did he invent it for? He invented it primarily in order to despoil the Jews. Under the Nazi regime, Jews were trying to leave Germany. Of course, they naturally wanted to take their property with them. They couldn't take their physical property so they wanted to sell it for marks and convert the marks into foreign currency. Schacht introduced the regulation that nobody could convert marks into dollars

without permission of the government in order to have an effective device whereby he could prevent the Jews from taking their capital out.

Today you have many immigrants from Russia. It is highly welcome that Russia is letting people out. But do you think it is ethically right and proper that Russia should say to the Jews, “You may leave, you may take with you some property that you can carry, but you may not take your wealth. You may not convert your assets into rubles and your rubles into pounds or dollars. That’s prohibited.” Is there anybody here who thinks that this policy is ethically right and just? I doubt it. Yet that is also exactly the policy of Israel.

Israel says to her citizens: We don’t prevent you from leaving, but if you want to convert your property into dollars you have to get permission from the central bank. Don’t misunderstand me. I am not saying that Israel’s reasons for this policy are the same as Germany’s or Russia’s. Quite to the contrary. Israel places a high value on human liberty. Respect for the rights of the individual is one of the highest jewels in the crown of Israel. But that crown has been tarnished by the adoption by Israel, in this area, of precisely the totalitarian philosophy that underlies the German and the Russian restrictions on the movement of people and capital. Israel has adopted a practise that derives from the philosophy that a man’s property belongs to the state, not to him. You do not believe in that philosophy even though you have adopted the practise. It goes against your basic values, and that is why you have been unable to enforce the practise.

We all know that the exchange controls are much more sweeping on paper than in fact. We all know that, fortunately, anybody who really wants to get his capital out can find a way to do so. In my opinion, that reality is the true Israel. As a Jew, rather than as an economist, I say to you, why don’t you get rid of the false appearance, why don’t you abolish the exchange controls and make your practise conform to your values. Set your people free.

I understand, of course, that the plea of necessity will be offered to justify your practise. There has never in history been an infringement on human liberty that was not justified by the plea of necessity. For Israel today, the plea of necessity rings utterly hollow. You will benefit and be far better off if you eliminate these exchange controls root and branch, if you let the exchange rate be a free market rate, if you permit your

citizens to make their own deals on whatever terms they find acceptable, with people inside or outside of the country.

When I was here ten years ago, I summarised my conclusions about the Israeli economy by saying that two Jewish traditions were at war in Israel. One tradition was a tradition of 2,000 years. It was a tradition that had enabled Jews to survive in the Diaspora. It was a tradition of getting around government regulations. It was a tradition of finding those areas in the market where it was possible to operate. By taking advantage of that tradition and using ingenuity and intelligence in that way, the Jews were able to survive in the Diaspora and to prosper in those countries where the restrictions were fewest.

The second tradition is much more modern. It is a tradition of a hundred years, a tradition of socialism, of having a central government, and of letting planners run things. Fortunately, for Israel, I concluded then, the first tradition is far stronger than the second!

In the few days I have been here, I have gotten the impression that fortunately the first tradition remains the stronger—but you know, it would do no harm to help it along a little.

Anticipated Versus Unanticipated Inflation

Let me turn from open or suppressed inflation to the second distinction I want to talk about, between an inflation that is anticipated and one that is not.

An inflation that is not anticipated produces both unnecessary economic waste and unnecessary social disruption. The signals given by the price system are distorted. Entrepreneurs labourers, and other economic actors are led to believe that the prices of their services have gone up relative to the prices of other items, when all that is happening is that all prices are destined to rise. Some prices respond more rapidly than others, so production is encouraged that will prove to be a mistake and methods of production are adopted that turn out to be inefficient.

Socially, unanticipated inflation produces an erratic and disruptive redistribution of income and wealth. Persons who have invested their savings in forms offering a fixed interest return, lose. Persons whose wages and salaries are fixed by custom or long-term contracts lose. On the other hand, persons whose incomes

adapt quickly gain, and among them always are highly visible classes of new rich regarded by the population as profiteers and speculators.

The so-called profiteers or speculators are in fact generally performing a valuable social service by speeding up the adjustment of the price system to the inflationary impulse, but that does not prevent them from being the object of public opprobrium and the source of social unrest.

Both the economic and social effects of inflation are far less harmful if inflation is widely anticipated, which is likely to mean, if it has been proceeding fairly steadily for a fairly long time. Under such circumstances, as you all know from experience very well, wage arrangements will have escalator clauses, either formal or informal, interest rates will be high enough to allow for the anticipated inflation, and similarly exchange rates quoted for future dates will allow for the differential inflation anticipated in the interval in the two relevant countries.

An anticipated inflation is inconvenient because it requires changing the numbers written on price tickets. It produces inefficiency because it leads people to waste real resources in order to keep real cash balances low. But an anticipated inflation produces nothing like the amount of harm that an unanticipated inflation does.

Once an inflation has become anticipated, an unanticipated slowing down of an inflation will have extremely harmful effects as well. For a time prices of commodities and wages of labour will continue to rise at the earlier anticipated rates, both because of long-term contracts and because the anticipations will affect new prices or wages being set. Many debt contracts will bear high interest rates that allow for the anticipated inflation. Until anticipations change, and until long-term contracts expire, the effect is likely to be a severe set-back to business activity, with unemployment of men and machines and discouragement of new capital investment.

What I've just described occurs in developed as well as in developing countries. It's what underlies the American recession of 1970.

As these comments imply, the distinction between anticipated and unanticipated inflation is largely a distinction between steady inflation and erratic inflation.

The Rate of Money Creation

I come finally to the rate of monetary creation. Given that a country is going to rely on inflation to finance some governmental expenditure, what's the proper rate of inflation? The proper rate of money creation for a developing country depends in the first instance on whether the objective is primarily the health of the economy or the revenue of the government.

For the health of the economy, in the most abstract sense which takes minimum account of friction, the optimum would be to have a price level declining at a rate that would make the risk-free nominal rate of interest close to zero.

A more pragmatic judgment, allowing for some friction, would regard as best a roughly stable, or slowly declining price level of final products which would mean a moderately rising or roughly stable price of labor.¹

For a country like Israel this latter solution will still mean a rising quantity of money. As I've already indicated, that latter solution would probably mean a quantity of money rising at an annual rate of something like 15–20 per cent per year for Israel.

Maximum governmental revenue would generally, though not necessarily, be yielded by a higher rate of monetary growth than is desirable for economic health. This is a technical question that I have considered in detail elsewhere.² Here I need only say that the most fascinating conclusion from my detailed analysis is that many developing countries in fact increase the quantity of money at a faster rate than would give them the maximum revenue over a long period.

One reason seems to be that the initial yield from a high rate of monetary growth is always greater than the ultimate yield from that rate of monetary growth, because until people come to anticipate the higher rate of monetary growth, they do not economise fully on cash balances.

Governments, being shortsighted, are led by the short-term gains to accept lower long-term yields. One very widespread misconception about economic development is that governments are generally assumed to be long-sighted, to look a long distance ahead, and to represent the long-term interest of the country.

Nothing could be farther from the truth. A government's perspective, especially in democratic countries, is limited by the period between elections, and generally it's even shorter than that. Individuals in planning their own lives take a much longer view than governments do in planning the country's life. As a result, short-sighted governments, seeing that they can get some more revenue in the short-term, are inclined to be very inefficient in their use of inflation.

Prescription

Let me bring the threads of this discussion together in the form of a prescription for developing countries.

For most such countries, I believe the best policy would be to eschew the revenue from money creation, to unify its currency with the currency of a large, relatively stable developed country with which it has close economic relations, and to impose no barriers to the movement of money or prices, wages, or interest rates. Such a policy requires not having a central bank.

The second best policy, but one which has far greater political feasibility in the present climate of opinion, is to require a central bank to produce a steady and moderate rate of monetary growth, using the new money issued to finance part of government expenditures. The emphasis on a "moderate" rate of growth is partly to avoid so rapid an inflation that a large amount of real resources are wasted in efforts to hold down cash balances, partly to avoid creating pressures for government intervention to repress the inflation. The emphasis on a "steady" rate is to minimise the economic and social cost of erratic inflation, because if the inflation is erratic it is nearly impossible for people to anticipate and adjust to it.

But far and away the most important lesson of experience is that, whatever the rate of monetary growth, the resulting inflation should be permitted to be open. It should not be repressed.

As I have already emphasized, perhaps the greatest damage is done by trying to repress exchange rates. Once a country seeks to peg the exchange rate and then inflates, it is led to impose exchange control, set up multiple exchange rates with special bonuses to exports, impose quotas on imports, and so on and on, in an effort that always proves vain to defend artificial rates.

A second set of prices that it is particularly desirable to avoid repressing, and yet that is almost always subject to repression, is interest rates. By now, one lesson that Irving Fisher tried to spread some 75 years ago has been learned. There is an important difference between nominal and real interest rates. A 25 per cent rate when prices are rising at 15 per cent per year means a 10 per cent real rate of return. As a result, every country that has had substantial inflation has also had high interest rates.

Trying to repress interest rates is a particularly serious mistake for developing countries. In most developing countries capital is scarce. If the interest rate is pegged at an artificially low level, or if, as in Israel, artificial interest rates are charged on special kinds of loans or special kinds of investments, people who have access to capital at these artificial rates, generally people with political influence, will be encouraged to waste capital by using it in ways that have a low yield. Capital that escapes the controls will command an extremely high rate, much higher than the rate that would prevail in a free market.

An additional cost of trying to repress or falsify interest rates is that it leads to intervention into the development of financial institutions as a means of enforcing the legal interest rate ceiling. Yet underdeveloped countries have a great need for active and varied financial institutions, particularly for institutions that can serve small businesses. The best way to foster an effective and diversified financial structure is to let the financial institutions develop in response to market forces.

Repressing prices of goods and of labour, while no less frequently attempted than repression of exchange rates and interest rates, generally does less economic harm. The reason is that they are easier to evade. However, they do great social harm. Given price controls, black markets serve a socially useful purpose by preventing the distortions that would otherwise develop. The effect of price controls is therefore to make socially and individually beneficial action which is morally repugnant because it involves breaking the law. This conflict tends to undermine the moral capital of a nation.

Good monetary policy cannot produce development. Economic development fundamentally depends on much more basic forces. It depends on the amount of capital, the method of economic organisation, the skills of the people, the available knowledge, the willingness to work and to save, the receptivity of the members of the community to change.

Given favourable preconditions, good monetary policy can facilitate development. Perhaps even more important, however favourable may be the preconditions, bad monetary policy can prevent development.

Thank you.

Questions and Answers

Chairman: Are there any questions from the audience not having to do with hints at how to evade. . . .

Question whether a “trotting” peg as in Brazil would not be a way to limit the harm done by “evil” government.

Prof. Friedman: Let me say first, that I don’t think governments are evil. Not at all. Governments do a great deal of harm, which is a very different thing. The people who run governments are generally decent people who are trying to do their best, but they have an impossible assignment. I don’t for a moment in any way want to impugn the personal character or personal motives of any of the people involved.

The Brazilian system is certainly an improvement over a system in which you keep the exchange rate pegged for long stretches of time. But I do not believe that there is any incompatibility between the existence of a government and of a central bank on the one hand, and freely floating exchange rates on the other. You don’t have to have the Brazilian system. The Brazilian system seems to me better than no attempt to change the exchange rate, but less good than an exchange rate that changes more rapidly. I have never been in Brazil but I have been in Korea for one day, which makes me an expert, and Korea also had a system very similar to Brazil’s. They justified it on the grounds that their commercial and financial markets were so poorly developed that they couldn’t expect an effective market rate to prevail. That’s not true for Israel.

Canada is a good example of a highly developed country that has a central bank, that has a government, and that for most of the last twenty years has had a freely floating exchange rate. So there’s no reason why Israel could not have one. Indeed, you do have a freely floating exchange rate. What are you kidding yourselves about? The only question is whether you have it in the open or whether you have it under the table. Surely it’s better to have it in the open!

Question expressing disagreement with the statement in the lecture that something like a 15 or 20 per cent annual rate of monetary growth would be consistent with stable prices on the grounds that velocity had not been declining in Israel.

Prof. Friedman: I haven't studied the detailed data for Israel in this period, so it may well be that my number is wrong. I didn't mean to state that number as a definitive judgment on the appropriate rate of monetary growth for price stability. Let me take a different example for a moment.

I have looked in much greater detail into the data for Japan. Japan is a country that at the moment is on roughly the same economic level per capita as Israel. Like Israel it has been having a very rapid development for the past 10 to 15 years. For Japan, I have a good deal of confidence that a number like 20 per cent is right, because it is perfectly clear that during the period when they had relatively stable prices, velocity was declining fairly sharply.

It may be that that is not the case for Israel, and before a policy is adopted, one should of course examine the evidence carefully. However, there remains the question of whether the period you are speaking of is not a period in which the rate of inflation accelerated. If it was, the relatively stable velocity may conceal a tendency for velocity at stable prices to decline. You may be right—as I say, I haven't studied those data and I don't really want to offer any firm judgment.

Question on same general issue.

Prof. Friedman: Mr. Horowitz was saying that the actual rate of monetary growth in Israel has been considerably less than the 15 to 20 per cent mentioned for much of the period when you did have inflation. That would certainly suggest that my figure may well be an over-estimate. There's a further problem of making sure that you define your money supply correctly. It's a shame that so much of the ingenuity of the Jewish people in Israel has gone into devising the most complicated banking regulations in the world. As I understand it, the reserve requirements against deposits, the kind of interest rates that can be paid and so on, have much of the time been very elaborate and subject to frequent change. As a result, it is not clear that the usual monetary stock figures have a consistent meaning. In many ways, it may well be better for Israel to

look at what happens to currency alone, rather than at currency plus deposits, whose precise meaning changes very rapidly over time.

Chairman: I have a question. I'd like to proceed with that comment—I wish the tape were off. To correct the last point you made—I think it is not correct that Israel really has a fluctuating exchange rate. It is common knowledge, although it may not be true, that the Bank of Israel frequently pegs the rate on Lilienblum Street, so that's not necessarily a completely free rate.

Prof. Friedman: I wasn't referring to Lilienblum Street at all. I was referring to my understanding that the standard life history of an exchange episode in Israel is that you have a devaluation, that the devaluation is accompanied by a liberalising of exchange controls and the narrowing of the multiple exchange rates, then inflation proceeds and the currency becomes over-valued, and then, in a perfectly legal manner, the multiple exchange rate system expands and special provisions are made for various groups. If I were therefore to calculate not the exchange rate that is posted on the board as the official rate but the average of the exchange rates at which dollars are in fact converted into pounds, I would find that that was a fluctuating rate.

You people in the audience know Israel far better than I do. Is what I have said an inaccurate description?

Chairman: My question was a different one. To me it wasn't 100 per cent clear why a unified currency with a major developing country was a first step and a flexible rate a second step. The precise reason for the preference of the first over the second was not completely obvious to me. Let me state that there might, in the context of your presentation, be an argument in reverse—that is that government has more freedom under a flexible rate to use inflation as a tax, which for a country like Israel, or for an under-developed country in general, might be considered part of an advantage—you might not agree.

Prof. Friedman: Let me put aside for a moment the special problem of defence for Israel. If we postpone that and consider the problem of development, then my judgment from observing developing countries is that the less power the government has to tax the better. Government taxation tends to slow down development because it goes into the wrong kinds of programs.

The great advantage of a unified currency is that it limits the possibility of governmental intervention. The reason why I regard a floating rate as second best for such a country is because it leaves a much larger scope for governmental intervention.

In Israel, you have the special problem of defence. For that problem, it's obvious that you have to have a very high rate of taxation. Nonetheless, it seems to me healthier for the society, both politically and economically, to face up to that problem explicitly, to have taxation be open and aboveboard, to have taxes be those that are legislated by the Knesset, rather than to have taxes imposed implicitly without legislative enactment by the rate of money creation. So even in that case I would say you should have a unified currency as the best solution, with a floating rate as a second-best solution and a pegged rate as very much worse than either.

I may say, in talking to many people around Israel about a floating rate, I have been impressed with one argument that is repeatedly offered as an argument against a floating rate yet that seems to be an argument for a floating rate. The argument that always comes up is the following. Israel, it is said, is a nation besieged. From time to time there will be great uncertainties. There might be a war. The outbreak of fears of a war would lead everybody to try to take his capital out of the country. That would be terrible. We must, it is concluded, have exchange control and a pegged rate to prevent such a development.

Let's stop and consider that a bit more carefully. Suppose there is a rumour that there's going to be a war and as a result widespread fear of war. Nobody can take his capital out in a physical sense. Nobody can pick up a factory that is in Israel and transport it across the border. Nobody can pick up a house and take it out. Hence, when you say that some people are trying to get capital out, you mean that some people in Israel are trying to sell pounds for dollars. How can they do it? They can do it only if they can find other people, in Israel or outside, who will accept pounds and sell them dollars. The way in which they try to persuade other people to sell them dollars is by offering a high price for the dollar. As an extreme assumption, the price of the dollar might go from 4 to 20 pounds a dollar.

Let us assume—because if we don't, the whole issue is irrelevant—that either war does not occur or that Israel, as in the Six Day War, wins the war. When that happens, the exchange rate will return to roughly its earlier level.

Now I want you to ask yourself, who lost and who gained in this hypothetical episode? The people who sold their pounds for dollars—and hence lost—are people who had little faith in Israel. The people who bought the pounds for dollars—and hence gained—are people who had much faith in Israel. So this is an episode in which those people who have little faith in Israel lose, and those people who have much faith in Israel, gain. What is wrong with that? Why should you have an elaborate structure of exchange controls involving major economic inefficiencies and a major interference with human freedom, to prevent such an outcome?

Note that the episode I've described is a temporary phenomenon. The rate's going to shoot up and it's going to come down again. What Israel needs to bolster its strength and its ability to meet the threat of war is not a fixed exchange rate but a stock of foreign exchange. It is eminently sensible and desirable that for defence purposes the government should hold, as it now does, a substantial stock of dollars in order to be able to assure itself that it can buy munitions and other supplies outside the country in such an emergency.

So far as prices within the country are concerned, they will not be affected by the hypothetical episode I have described because those prices can only be affected as quantities are affected. What we are talking about is a situation of a temporary nature in which the price of a dollar in terms of pounds is driven up. Of course, in practise it would in fact not go up anything like the amount I envisaged because what would actually happen is that as the price of the dollar went up people would get discouraged and desist from trying to convert pounds to dollars.

I took an extreme case to show that even then flexible rates are a good thing and not a bad thing. In order for prices internally to be affected, you must have a high exchange rate persist for a long time. How can that be? If the pound price of the dollar goes up for a couple of weeks and then down again, it isn't going to affect prices internally.

Comment that the abnormally high exchange rate would raise prices of imported goods.

Prof. Friedman: It is desirable that you should pay more for foreign goods under those circumstances, because under those circumstances it is essential that you reserve your foreign exchange for urgent purposes. There's nothing wrong with that. Domestic prices cannot go up under those circumstances unless the government spends much more money.

Question whether I favour a multiple exchange rate system.

Prof. Friedman: Not at all. I favour a completely free exchange rate with a single rate.

Question about effect of the high exchange rate lasting for a long time.

Prof. Friedman: Of course, it will then have effects on the prices of foreign goods, and under those circumstances it is desirable that it should have those effects. But it will only stay up for a long time if there is a great demand for foreign exchange relative to domestic exchange. In that case you want to conserve your foreign change. You want to make imported goods expensive. On the other hand, the people who cite this argument always refer to the speculators as causing the exchange crisis. If it's the speculators, it's only going to last a week, it's not going to last three months. Under those circumstances it will have negligible effects on the prices of imports. So you have to decide whether there is a real, underlying shortage of foreign exchange, in which case it's desirable that the rate move, or whether you have a speculative attempt by some people to get their capital out of the country, in which case a free rate enables those who have faith in Israel to buy up the capital of those who don't, at a cheap price.

Chairman: I think we should nominate Professor Friedman as our emissary to the next United Jewish Appeal, and with that I would like to thank you very much.

Notes

¹ See my "The Optimum Quantity of Money" in *The Optimum Quantity of Money and Other Essays* (Chicago: Aldine Publishing Co., 1969).

²"Government Revenue from Inflation," *Journal of Political Economy*, Vol. 79 (July/August, 1971), 846–856.

