

BUSINESS CYCLE THEORY AND STAGFLATION

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I. INTRODUCTION

In 1978, Hayek wrote:

In the misdirection of labour and the distortion of the structure of production during past business cycles, it was fairly easy to point to the places where the excessive expansion had occurred because it was, on the whole, confined to the capital goods industries...

In contrast, the present expansion of money, which has been brought about partly by means of bank credit expansion and partly through budget deficits, has been the result of a deliberate policy, and has gone through somewhat different channels...

I do not doubt that in a sense we have today the same kind of phenomenon, but the over-expansion, the undue increase of labour employed in particular occupations, is not confined to a single, clearly defined block such as the capital-goods industries. It is now spread much more widely, and the distribution is much more difficult to describe.¹

This was a somewhat different position than Hayek had advocated in the 1930's because of the changes in the economy since then. These changes must be incorporated into the Austrian analysis.

We propose two major additions to the corpus of Austrian Business-Cycle Theory because of changes in the structure and operation of the economy during the past half-century:

- 1) Inclusion of consumers' goods and long-lived consumer capital goods into the process of expansion and resulting contraction;
- 2) Addition of a financial adjustment process (crisis and resolution) which re-values longer-lived goods, to the previous explanation of reallocation of factors of production away from the expanded structure of production and back toward a shortening of the structure in greater favor of consumers goods. This process takes into account the financing of capital assets and the specificity of the particular assets compared with the generality of factors of production, and it also recognizes that the response of businesses to already-completed capital goods must be different from that toward as-yet-incompleted capital goods, and that the response is differential, depending upon the proportion of the asset and the lengthening of the structure of production which has been completed.
- 3) Consideration of the "wedge" created by government regulations of particular elements of the economy which precludes the restoration of the actual pattern of consumer values and preferences, including time preferences, thereby moderating the recession in intensity but prolonging it considerably.

The Austrian business cycle theory historically focused only on businesses as consumers of credit, so that only businesses' investment decisions were mis-directed by the artificial lowering of the market interest rate below the natural rate. Austrian explanations of the business cycle emphasized that no part was played by consumers' goods. **(Find citations: Rothbard, etc.)** However, today, consumers are also major users of credit, and their response to artificial lowering of the interest rate causes them to buy, in addition to more refrigerators, freezers, cars, and houses (all of them long-lived productive goods), more vacations,

dinners, and clothing, etc. (all of these short-lived consumers goods). The systematic dis-co-ordination also results from these non-capital-goods purchases which are made by consumers in response to interest rate changes. While in the past, the details of the business cycle may well have been confined to the business capital-goods industries, today, we think the situation has changed. Our point is that Austrian theory must be extended to take account of these systematic dis-co-ordinations which result from consumers' activities as well as businesses' activities.

This possibility was foreseen by Mises, who wrote that the increase in the quantity of money can affect the production of consumers' goods as well as the production of producers' goods, depending upon "...whether those first receiving the new quantities of money use this new wealth for consumption or production."² Percy Greaves explained further: "The effects on the economy differ in each case, according to how the new monetary units make their step-by-step appearances on the market...Likewise, the effects are different when banks expand credit for loans to consumers for the purchase of automobiles and real estate."³ This thought was extended by Hayek: "Everything depends on the point where the additional money is injected into circulation (or where the money is withdrawn from circulation), and the effects may be quite opposite according as the additional money comes first into the hands of traders and manufacturers or directly into the hands of salaried people employed by the State."⁴

The nature of the systematic dis-co-ordination has changed in modern times because we can no longer say precisely to which goods (*i.e.*, the long-lived capital goods of higher order) production is mis-directed. Today, with consumers responding to reduced interest rates with increased purchases of vacations, meals, clothing, and groceries, in addition to refrigerators, automobiles, and houses, there is a greater generality of the dis-co-ordination which results from the artificial lowering of the interest rate, and a wider range of goods the production of which is mis-directed, and which will be changed again once the real preferences of consumers regarding saving and interest rates once again gain ascendancy.

The "wrong things" nowadays are different from what they were sixty years ago. The boom is different. But the crisis is also different nowadays. When the consumers reassert their real preferences causing resources to be reallocated to their proper uses, some of these goods *cannot* be reallocated; so *their prices must fall while their applications remain the same*, so that the pattern of utilization can change. And the goods must change hands at the new reduced prices for the crisis to be resolved. Such goods which must be re-valued instead of re-allocated are more specific than the more-generalized goods which can be re-allocated to more valuable pursuits.

Consider a hotel improperly constructed. The resources which produced this building cannot be reallocated to more valuable pursuits; rather the building's value must be reduced so that the operating revenues cover the revised and reduced costs. It must go through bankruptcy and thereby reduce its costs. This path of adjustment to the misdirected boom is in addition to the ordinary reallocation of non-specific resources, which the Austrian theory has emphasized. The specific resources, which cannot be reallocated, must be re-valued downward to adjust the pattern of values, so that it could be used in its actual use. Consider a high-speed printing press which was mistakenly built. It cannot be reallocated, so it must be revalued so it can continue to be used as a high-speed printing press with the now-correct smaller value. These actions of re-valuation

downward constitute a necessary part of the adjustment which seeks to bring back resource allocations to coordination with consumer valuations. The re-valuation can be viewed as a "portfolio re-balancing" in the same way a portfolio of shares of stocks is rebalanced in response to changes in price of the individual component securities.

The reallocation of the non-specific resources, as well as the revaluing of the specific resources, both constitute the crisis-recession.

Just as the incorrect theories of business cycles neglected the heterogeneity of capital goods and the inter-temporal structure of production, both of which are crucial to understanding the causation of the cycle, we find that there is greater heterogeneity of goods and a second adjustment process, both of which must now be included to make the Austrian theory even more accurate. Just as it is appreciated by the Austrian theory that the value of a particular capital good is specific for the business and the stage of production for which it is intended, we find that the same concept of specificity of good and product is necessary to understand the evolution of the business cycle: particular goods, both capital goods and long-lived consumers' goods, which cannot be physically re-allocated to more-valuable applications to restore the primacy of consumers' time preferences after the interest rate has been artificially lowered, must be re-valued monetarily so they can be properly re-integrated into the structural pattern of the economy including the actual time preferences of consumers. This latter financial re-valuing is somewhat like the rebalancing of a portfolio in response to changes in the prices of individual securities within the portfolio in a pattern that had not been anticipated. The financial re-valuing is important in the response of the economy to the misdirections of production, and it must be considered along with the physical re-allocations of goods which has long been recognized.

The heterogeneity of the capital structure of production causes different stages of production to respond in different ways to a particular reduction in the market interest rate; in a similar fashion the heterogeneity of long-lived consumer plans and the associated products similarly respond in different ways to the same reduction in the market interest rate. This non-capital-goods path of adjustment must also be considered.

This paper is also trying to integrate cycle theory (short term) with growth theory (long term). We notice also that there can be revaluations and reallocations of resources which are not at all related to interest rates. These other revaluations and reallocations have an effect on long-term growth rates. These other interventions are *non-monetary interventions*, but are rather *fiscal and regulatory interventions*. When we say "non-monetary interventions", we do not mean that they do not contain monetary items; rather we mean that monetary items are not fundamental to them: they are such as government expenditures, taxation, and regulation.

"Wedges" can be established during the boom by unsuccessful businesses, and they persist and maintain during the boom and the next bust. Because consumers may switch from food to clothes, the wedge need not be inter-temporal in nature. Resources switch from X to Y in response to consumer preferences, giving a lower long-term growth rate which is not cyclical. There is therefore no crisis and bust in the ordinary business-cycle form; there is only a reduction in the long-term growth rate, and superficial observers mistakenly conclude that "the business cycle has been vanquished."

Austrian Business Cycle Theory

According to Austrian Business Cycle Theory a monetary/credit expansion,⁵ because of its very nature, necessarily initiates a cycle of economic activity consisting of an unsustainable boom and a consequent bust, which is a necessary and inevitable consequence of the boom.

Although elements of Austrian Business Cycle Theory can be traced back to before the Marginalist Revolution, the comprehensive theory was mostly developed and refined by Mises and Hayek during the first four decades of this Century.⁶ Since then the theory has undergone virtually no change, despite restatements by Mises, Rothbard, and others.⁷

This stasis presents a serious problem, as the relationships to be explained by the theory appear to have changed since it was first enunciated and developed seventy to forty years ago:

First, the relative lengths of booms and recessions have changed: prior to the Great Depression, economic expansions and contractions were of approximately equal length (two years each); since World War II, expansions have been approximately three times longer than contractions (three years to one year).

Second, the amplitudes of the cycles have been reduced.

Third, there has been a moderating in the rates of change of economic activity through the cycle: a lessening in the average annual rate of growth, a reduction in the average annual rate of productivity growth, and an increase in average annual rates of unemployment and inflation.⁸

In sum, the dynamism of the economy has declined in recent years. This malaise or sluggishness of the economy is currently referred to as "stagflation". Most surprising from a theoretical point of view, this malaise and tepid change in economic activity have occurred in spite of periods of very rapid monetary growth which, according to the theory, should have initiated boom/bust cycles of significant intensity and amplitude.

In its present form, the theory does not explain these characteristics of current "business cycles". In this paper, we propose some modifications and extensions to the received theory to allow it to cope with the current realities of macro-economic dynamics. We think these extensions will enable the theory to explain recent economic history.

There are three primary extensions which appear necessary:

1. **First**, the expansion process proceeds through both a real-goods branch and a financial-assets branch.

2. **Second**, expansions of credit go not only to businesses, but also to consumers, governments, and foreigners.

3. **Third**, the expanding scope of government regulations drives an enlarging "wedge" between the pattern of individual values and the pattern of economic activities, preventing the re-establishment of expressions of consumer preferences through economic activity which brought about the crash in earlier times.

II. RECAPITULATION OF THE EXISTING THEORY

A. Dis-coordination

During a monetary/credit ("m/c") expansion, the additional spending that results does not affect all goods equally, or at the same time. Thus, in addition to, and more important than, the widespread increases in individual prices (inflation), the structure of relative prices is distorted.⁹ It is this distortion of relative prices which causes the boom, as some resources are reallocated in reaction to the new price structure, and others, physically activated (having been physically, but not economically idled).¹⁰ "Reallocation" includes the reallocation from leisure to some other use.

And when, inevitably, the expansion of credit slows down, the readjustment of prices causes the bust (contraction), as some resources (usually many that had been earlier reallocated due to the m/c expansion) are reallocated in accordance with the new prices (this reallocation, of course, involves idling of resources that previously had been employed).

Thus the Austrian theory is one of dis-co-ordination of economic activity, manifested primarily by malinvestments, and the consequences thereof, in response to false signals in the form of incorrect relative prices, which are caused by a fiat monetary/credit expansion.

B. The Expansion Phase

The increase in the money stock is initially allocated to the public through an increase in the supply of credit, which causes interest rates to be lower than they otherwise would have been. Interest rates, then, no longer accurately reflect people's actual time preferences for saving and investment vs. current consumption.

The most likely borrowers are those for whom a decrease in the relevant interest rate(s) will create the greatest increase in value: businessmen who will use the funds to invest in high cost capital goods¹¹ of greater durability and/or earlier entry into the production process;¹² i.e. capital goods with a relatively large composite time dimension. We term these types of goods "L-type" capital goods; these correspond to what Hayek called the "higher" stages of production or "higher-order" capital goods.

The longer the durability, and/or the earlier a good enters into the production process, i.e., the greater the (composite) time dimension, the more the present value is affected by changes in the relevant interest rate.

The increased demand for new L-type capital goods and, therefore, the resources to produce them, manifests itself in the increased prices of these L-type goods and the resources needed to produce them relative to: 1) the prices of less durable and/or later-entry capital goods (which we term "type S" capital goods, corresponding to Hayek's "lower-order" capital goods) and the resources needed to produce them; and 2) the prices of consumer goods, and the resources used to produce them. (Consumer goods are also goods with relatively small composite time dimensions.)

In response to this altered structure of prices, some resources are shifted away from the production of S-type capital goods and consumer goods, and to the production of L-type capital goods; and some previously "idle" resources are brought into production.

The diversion of resources from production of consumer goods to production of capital goods, on the basis of the false price signals, in contravention of people's actual time preferences, constitutes what Hayek called "forced saving". Similarly, the diversion of people's time from leisure to labor, also on the basis of the false price signals, in contravention of people's actual labor/leisure preferences, can be called "forced labor." Both of these forced processes tend to increase future output and employment, at least in quantitative, if not value, terms.

This new pattern of demand for goods and resources, which distorts the structure of prices and resource allocation, occurs neither instantaneously nor simultaneously; nor are the magnitudes of the distortions equal among the various goods and resources. Rather, the changes in some demands and the concomitant changes in prices and resource allocations, occur sooner for some and later for others, and are larger for some and smaller for others. But successive stages feed on prior stages, in a process akin to a cascading amplification sequence; e.g., an audio amplifier or a night-vision scope. This is the "boom" phase of the cycle.

C. The Contraction Phase

Eventually the credit expansion must decelerate; when this occurs, the underlying real forces re-exert themselves, revealing that the new structure of prices and the new allocation of resources are inconsistent with people's values: the new investments prove to have been malinvestments.

The readjustment of the economy to this reality of people's actual structure of values, especially time preferences, is the downside of the cycle; it takes the form of liquidating the malinvestments, with attendant unemployment, until the structure of prices is corrected and resources reallocated in line therewith.

Thus the crisis occurs as the resource owners, especially workers, receive their increased monetary payments and attempt to purchase consumer goods with a larger fraction of their income than is consistent with the artificially lowered interest rates and the newly-emerging structure of production resulting from the forced saving and forced labor. The relative curtailment of the production of consumer goods, which was necessary to produce the new, longer-T capital goods, means that these demands for consumer goods can not be satisfied.

Prices of these consumer goods, and the necessary resources to produce them, are then bid up to redirect resources back into their production.

Also, as inflationary expectations are incorporated into nominal interest rates, market rates begin to rise, causing credit to dry up for L-type capital goods, leading to the abandonment of some incomplete projects. Some aspects of this abandonment process have been considered elsewhere¹³, and we will consider it further below.

III. THE ELEMENTS OF THE EXTENDED THEORY

A. Summary of the Expansion Process

1. We first call attention to the fact that the expansion process involves the creation of claims (financial assets) against goods without creating the goods themselves. One might consider this process to be the creation of "unbacked" claims. We call such claims "excess claims." Past commentators have remarked about the travesty of unbacked money. But the expansion process involves the creation of other unbacked financial assets as well.

2. We will consider in greater detail the categories of transactions involved in the expansion of credit: in particular, we shall argue that credit is extended to more sectors than just the business sector: households (consumers), domestic governments, and foreigners and foreign governments are involved in the expansion as well. This wider extent of the m/c expansion has profound effects on the structure, extent, and timing of the cycle, tending to reduce its intensity, widen its effects, and lengthen its phases.

3. We will trace two branches of the expansion process: an adjustment sequence involving financial assets, and an adjustment of real goods. The implications of the existence of these two separate paths have not been previously considered in the Austrian literature.

4. Similarly, we will trace the effects of the two types of claims (financial assets, or securities) which are created by the expansion process: "general" and "specific". We will consider the consequences of the inevitable pyramiding of financial assets which has come to dominate the expansion.

B. The Nature of the Crisis

5. The onset of the crisis is traced using the concepts of the two types of claims: real interest rates increase sufficiently to cause the writing down of specific claims. The crisis is characterized not simply by abandonment of real investment projects, but by the financial losses accompanying the writing down of claims.

C. Summary of the Contraction Process

6. Ignorance of the specific distortions causes the contraction to be costly; frictions in adjustments due to incomplete co-ordination of actions cause the contraction to be lengthy.

7. The types of adjustments which people make in response to the price changes which cause the contraction depend upon particular institutional arrangements and the details of the specific situations, especially upon the economic function of those who make adjustments. Households make different adjustments than businesses do, and the greater quantity and fraction of credit extended nowadays to households, compared with prior practices, when the credit went almost entirely to businesses, mitigates current cycles, compared with previous cycles.

8. Borrowing by domestic governments and their agencies also mitigates the cycle, as do the large international capital flows, especially to less-developed countries.

9. The increased amount and complexity of government intervention and regulation, in both the financial and real sectors of the economy, has also modified the characteristics of the cycle by preventing the rapid adjustment of economic activities which would be needed to reduce the adverse effects of the malinvestments of the boom. We term this the "wedge" effect of regulations.

IV. THE EXPANSION PHASE

A. The Importance of Excess Claims

We begin with a market economy with a monetary system similar to that found today in the U.S.A. At some point, the central bank undertakes an expansionary monetary policy via open market operations in short-term government securities. This consists of buying these securities from the private sector, including commercial banks, by bidding up their prices (lowering their yields). The central bank pays for these securities with checks drawn on itself. These checks are deposited, penultimately,¹⁴ at commercial banks, and, ultimately, by the commercial banks at the central bank itself. The deposits at the commercial banks are claims against valuable goods, as are those at the central bank; the deposits at the central bank are, also, reserves of the commercial banking system. However, the central bank in the monetary/credit expansion process does not create valuable goods to back up the newly-created claims; therefore, the newly-created claims, both those of the public, in the form of deposits at the commercial banks, and those of the commercial banks themselves, in the form of deposits at the central bank, are excess claims. And, as the commercial banks' deposits at the central bank constitute reserves, and, as the commercial banks are on a fractional-reserve system, much the greater part of the newly-created reserves are excess reserves.

The commercial banks, in order to lend out these excess reserves, lower interest rates (prices of loans)¹⁵ charged to credit-worthy borrowers who were priced out of the market by the previously-existing higher interest rates, and/or extend credit to less-credit-worthy borrowers; i.e., the banks must accept lower returns or higher risk. These new loans take the form of new demand deposits; i.e., the credit expansion takes

the form of monetary expansion. Thus, the original excess claims created in the form of excess reserves of commercial banks are now pyramided¹⁶ into a very much larger amount of claims, but these in the form of new money (demand deposits at the commercial banks). And, in the most important aspect of their role in this expansionary process, the commercial banks replicate the actions of the central bank in that they, also, do not create valuable goods to back up the newly-created claims; and, thus, the claims they create are excess claims, also. That is, the creation of fiat money (in the process of lending out excess reserves) creates claims against valuable goods without creating the goods themselves, and thus excess claims are brought into existence.

It is the use of these excess claims which initiates the boom. Use of these excess claims takes the form of expenditure of the newly-created money. However, these new expenditures are not randomly distributed among goods. Rather, there is a pattern to these new expenditures, and the forces which create this pattern also alter the pattern of "old" expenditures (the previously-planned pattern of expenditures). Thus, not only are there now increased expenditures, but, and of more importance, the pattern of expenditures is altered, and this in a systematic fashion.

The excess claims, having arisen in the monetary/credit expansion process, are expended on the purchase of those types of goods that are normally financed by credit; *i.e.*, expensive L-type goods. So far, this is no different from the old Austrian theory recapitulated *supra*. However that theory was limited because it examined only the case in which these loans went to businesses; that was the situation as they knew it.¹⁷ Thus, the expensive L-type goods that it was concerned with were businesses' capital goods. However, in recent years, these loans have also gone to households, domestic governments, and foreign borrowers, both governmental and private, and these new borrowers constitute a large portion of the market. Thus, when we consider the effects wrought by fiat monetary/credit expansion via changes in the structure of expenditures, we do not limit the analysis to expenditures of loan proceeds on expensive L-type capital goods of businesses, but rather extend it to include expenditures of loan proceeds: on expensive L-type consumer goods and human capital by households;¹⁸ by domestic governments; and, by foreign borrowers, both governmental and private.¹⁹ This extension of the theory to examine the effects of loans to households, domestic governments, and foreign borrowers is important in that it will explain some of the differences between current and historical business cycles.

B. The Two Branches of the Expansion

The expansion process can be conceptually separated into two branches, a process involving financial assets and a real-goods process.

1. The Financial Adjustment Process

First, there is a portfolio adjustment sequence that results when those who are induced, by the higher prices offered by the central bank, to sell short-term government securities find themselves with too much money; *i.e.*, given the existing structure of prices²⁰, they are holding an undesirably large portion of their assets²¹

in the form of money. They rectify the situation by spending the excess funds. It is most likely that the excess money will be exchanged for assets with characteristics similar to those of the securities which were traded for the money in the first place; i.e., short-term, low (default) risk financial assets.²² In order to acquire these substitute securities, their prices will have to be bid up. This process continues when the sellers of the substitute securities find themselves with too much money and initiate further substitutions. At each step in this portfolio-adjustment process, it becomes more likely that the substitute assets purchased are increasingly less similar to the originally-sold assets. Thus, the assets involved become increasingly longer-lived in terms of term to maturity, increasingly riskier in terms of default risk, increasingly less liquid, and increasingly more likely to be real, rather than financial, in nature. And, of course, as, in turn, the demand for each type of asset increases, so also does its price. Thus the portfolio adjustment process initiated by the central bank is a substitution (of assets) process²³, in response to changes in the structure of asset prices, that begins with short-term government securities and ripples outward. The bulk of the assets involved in the earlier stages of this part of the expansion process are securities of types traded on open exchanges or other types of relatively efficient markets, and, both for legal²⁴ and institutional reasons, and for reasons of prudent business behavior, the supplies of such securities are relatively fixed, at least in the short run; i.e., the supply of such securities is very inelastic in the short run. The consequence is that the primary impact along this branch is on the prices of the securities, with little impact on the quantities thereof, in the early stages. It is only in the latter stages that, in response to the higher prices, new securities are issued. It should be noted that, other than for minor effects on the financial industries, this branch of the monetary/credit expansion path has virtually no effects on production and employment, until the later stages, when some real goods enter into the (portfolio adjustment) substitution process, and some new securities are issued, the proceeds of which are intended to finance the purchase of real goods and resources.

2. The Real Adjustment Process

Second, there is a "real good" adjustment process that begins with the expansion of money/credit by the commercial banks. In this part of the expansionary process, people do not respond to the easing of the terms of credit²⁵ by selling pre-existing securities to the commercial banks, but rather, they create new securities for this purpose.²⁶ This path does not, in general, follow the other, insofar as the other primarily involves financial assets. Rather, people create the new securities in order to spend the proceeds from their sale primarily on real goods and resources. It is along this path that the "new" categories of borrowers acquire their importance in the expansionary process.²⁷

(a) Borrowing by Households

The households as borrowers become important as they borrow to finance purchases of durable consumer goods and investments in their own and their families' human capital²⁸, and governments become important as borrowers as they borrow to finance transfer payments and other expenditures.²⁹ Expanded consumer credit does cause over-investment in longer-lived goods which must be liquidated or revalued in a recession; it is not limited only to goods of the lowest order. The adjustment process for long-lived consumer goods is somewhat different than the process involving long-lived higher-order capital goods owned by

businesses. Thus as the claims created along this part of the expansion path are exercised, the prices of things which households and governments borrow for, as well as the things which businesses borrow for, increase. The prices of L-type capital goods, and the resources used to produce them, are not, then, the only ones which rise relative to the prices of S-type capital goods, and all consumer goods, and the resources used to produce them. In addition, the prices of some consumer goods and some types of human capital (those with relatively large time dimensions), and government goods, and the resources used to produce them, also rise relatively. The structure of prices is distorted in a systematic fashion away from the structure of people's values;³⁰ and, this distortion is more broad and less deep than it was in earlier years, before the "new" categories of borrowers became important, and than the "old" theory would lead us to believe.

The bulk of the goods involved in the early stages of this branch of the expansion process, are real goods and resources of types found in inventories and/or readily reproducible.^{31 32} Thus in the earlier stages along this path, the primary effects are on production and resource allocation, while the effects on prices, in absolute terms, are relatively minor. The relative price effects are, however, significant.³³

And, of course, the effects of the altered pattern of expenditures are not uniform throughout the economy. The price changes occur sooner for some goods and resources than for others; and are larger for some than for others.³⁴ Thus, we think that booms have been both milder and longer in recent years (and that this pattern will continue for an indefinitely long time into the future), at least in large part, because the expenditures which distort the structure of prices are more diffuse.

V. THE CRISIS

At this point, in order to set the stage for the crisis, which ushers in the contraction, we consider some other aspects of the boom. Because people's expectations re future rates of inflation are not immediately impacted when the monetary/credit expansion commences, both nominal interest rates, which include premiums to adjust for expected inflation, and real interest rates, which, by definition, are net of expected inflation and thus do not include such premiums, decrease. In response the prices of L-type consumer goods and human capital, as well as L-type capital goods, increase, both absolutely and relatively. Producers of these goods are induced to increase production thereof. In order to do so they require the use of additional resources. Regardless of how acquired, the prices of these resources increase. Thus, for labor, additional employment for current employees or the addition of new employees, whether hired away from other employers or from leisure, causes increased wage rates. Similarly, the increased demand for raw materials and inventories of partially finished goods (embodied capital goods³⁵) causes their prices to go up. The same is true for the acquisition of other pre-existing and new complementary capital goods (of the retained type). Thus the money prices of resources are increasing. And, the total money incomes earned by resource owners are increasing even more rapidly because larger quantities of resources are being used at the higher prices. When the resource owners attempt to spend their greater incomes in accord with their unchanged time preferences, the resulting increased demands, especially for S-type consumer goods, but also for S-type capital goods, cause shortages of these goods to appear, with consequent increases in their prices, and attempts to increase the production thereof. This latter leads to a bidding up of the prices of resources used in the production of these goods in attempts to acquire

more of them. As long as the monetary/credit expansion continues, this pattern will continue. That is, the prices of L-type goods will increase, causing the prices of the resources used in their production to increase, and resources to be reallocated in accord therewith. When the resulting higher incomes of resource owners are spent on S-type goods, their prices increase, causing the prices of resources used in their production to increase.³⁶ Attempts to employ more resources in their production can be successful only if: resources can be bid away from the production of L-type goods; idled resources can be induced into production; or, employment of resources currently employed in the production of S-type goods can be increased. Although the latter two sources do provide some additional resources, they are insufficient to the task of eliminating the shortages and consequent price increases. The first source will not provide resources until prices of L-type goods decrease relatively to prices of S-type goods. And this will occur only when: the monetary/credit expansion decelerates³⁷ causing an increase in nominal interest rates and, therefore, even without increases in expected rates of inflation, increases in real interest rates; and/or, expected rates of inflation increase sufficiently to cause increased real rates of interest, even without a deceleration in the monetary/credit expansion.

Thus the "crisis" comes about when real interest rates increase sufficiently to decrease the prices of L-type goods, both absolutely and relatively. This is brought about by the deceleration of the rate of credit expansion. As the terms of credit are made more onerous for borrowers, the mistakes of the boom become apparent. Neither can the excess claims, nor the distorted structure of prices be maintained any longer. The excess claims must be eliminated, the structure of prices readjusted to reflect the actual pattern of people's preferences, and production and resources reallocated in accord therewith. Facing this reality can be postponed by a further monetary/credit expansion. But any such additional artificial stimulation only increases the amount of excess claims, the distortions in the structure of prices, and the misallocations of resources. As people come to realize what is happening, they alter their responses to subsequent monetary/credit expansion,³⁸ necessitating ever-larger expansions if the boom is to be prolonged and the bust forestalled. But, as monetary/credit expansion causes inflation, this process cannot continue indefinitely without resulting in hyperinflation, at which point it becomes self-defeating, as people abandon the virtually worthless fiat money, in favor of foreign monies, precious metals, or other "real" values.

a. Sequence of Events

When governments undertake a policy of monetary/credit expansion, the usual result is the following sequence of events: a monetary/credit expansion is initiated causing a boom; the boom ends in a crisis when the monetary/credit expansion decelerates; to prevent the crisis from ushering in the collapse; *i.e.*, to stave off the collapse, the monetary/credit expansion is re-accelerated; the re-acceleration extends the boom; etc. And, inflation accelerates from each expansion to the next. Government then has the choice of either decelerating the monetary/credit expansion at some point before the inflation gets to the run-away stage, or of waiting until the financial system collapses under a hyper-inflation. In either case, the last crisis is inevitably followed by a collapse.

b. General and Specific Claims

A monetary/credit expansion involves the creation of two types of claims against value: *general claims* and *specific claims*. "General claims" are money; "specific claims" take various forms; *e.g.*, notes, bonds, stocks, etc.³⁹ Thus, when banks extend credit, the borrowers create specific claims in the form of notes, a type of security, and the banks, in the process of lending out the excess reserves, create general claims (new money), in the form of demand deposits, which they exchange for the notes. Thus, both types of claims are created. And, as no real value is created in this process, both of these claims are excess claims.⁴⁰ Of course, the greater the quantity of excess claims, the greater is the problem, as the more claims will have to be extinguished during the ensuing business cycle.^{41 42} If the ability to expand claims not backed by real goods were limited to the central bank and commercial banks, the problems that arise would not be as great as they actually are in a modern economy. That is, the existence of a variety of different types of non-bank financial institutions increases dramatically the volume of malintermediation that occurs in such societies.⁴³ And, it should be noted that, similar to the double creation of claims in the monetary/credit process engaged in by banks, there is usually a double creation of claims when a non-bank financial institution engages in the financial intermediation process; the primary difference is that in these situations both claims that are created are of the "specific" type. Also, as in the case of banks, no real goods are created to back up these claims, and thus the claims created in this process are excess claims, also. Thus the increased volume of non-bank financial intermediation in modern economies results in a pyramiding of excess claims,⁴⁴ of the specific type.⁴⁵ This pyramiding of excess claims greatly increases the amount of claims that have to be extinguished, with the concomitant losses when they are. To the extent that the pyramiding involves the creation of money, the annihilation takes the form of inflation, and the associated losses will be widely dispersed, and thus there is less likelihood that corrective actions will be opposed by politically powerful special interest groups. However, to the extent that the pyramiding involves the creation of specific claims, the concomitant losses can frequently be categorized by type or class of claims; *e.g.*, bank loans to farmers or insolvency of a major corporation, and thus newly formed or existing politically powerful special interest groups will oppose corrective actions.

VI. THE CONTRACTION PHASE

The contraction, or liquidation phase of the cycle, is the time-consuming process of: 1) obliterating the excess claims (*e.g.*, via bankruptcies and inflation); 2) eliminating the distortions in the structure of prices by restructuring prices to reflect people's values; and 3) reallocating resources and production to more highly valued uses in accordance with the new price structure, including, in some cases, "idling" them.

A. The Pain of the Contraction is Due to "Frictions" and Ignorance

At first blush, it might seem that the process of contraction need not be very time-consuming or severe. For, if people: realized the nature of the problem; knew the extent to which it consisted, on the one hand of excess general claims in the form of too much money, requiring for their elimination inflation of prices, and, on the other hand, of excess specific claims, requiring for their elimination some form of specific annihilation, *e.g.*, bankruptcy;⁴⁶ knew which specific claims were, in part or in whole, the excess claims; knew the extent to which

the problem consisted of a distorted price structure; knew the correct structure of prices; and, identified the specific resource and production reallocations required to allocate resources in accord with the correct structure of prices--then, and only then, could they make the necessary adjustments, virtually instantaneously.⁴⁷ Such instantaneous (frictionless) adjustments, although involving much suffering in the form of despaired hopes and aspirations, and the recognition by many people that they were less wealthy than they had thought they were (when their excess claims were eliminated), would not involve the much more serious suffering that real-world contractions exhibit in the form of massive idling of resources, non-human and, especially, human.⁴⁸ Instead, resource prices would adjust instantaneously, and resources and production would be reallocated in accordance therewith, instantaneously.

In reality, where most people do not know the nature of the problem, much less the specific details of the excess claims, price distortions, and resource misallocations, such relatively low-cost adjustment can not occur. Rather, because they neither understand the problem, nor know the specific corrections required, and, because it is painful to recognize past losses by writing down one's claims, and to face up to a lessened stream of future income (i.e., future losses) by reducing the prices of the things, goods or resources, that one sells,⁴⁹ people are reluctant to take these actions, especially given the possibility that such actions may prove to be mistaken. But the tardiness of the corrective actions causes the adjustment process to be slow and painful, and take the form of idling of resources both human and non-human, for extended periods of time.

B. Other Factors Affecting the Severity of the Contraction

The duration and severity of the contraction depend upon many factors. Thus, the more technologically advanced a society is, the more specialized are its resources, both human and non-human; further, a greater degree of interdependence, in the form of complementarity of resources in production processes, is exhibited in these cases. Both of these characteristics, by reducing the opportunity costs; *i.e.* increasing the disparity in values between those expected in the planned-for, or primary uses of the various resources, and the next-best, or secondary uses, increase the losses involved in reallocations from primary to secondary uses, adding to the reluctance to reallocate, and thereby increasing the length and severity of the contraction. The contraction is exacerbated also to the extent that the misallocations have taken the form of durable producer goods, including human capital, instead of consumers' goods.⁵⁰ Other factors that can and do impede the adjustment process are: governmental interventions in the form of certain provisions in the tax laws, *e.g.*, re depreciation of capital goods, and other regulations, *e.g.*, re plant closings; contractual obligations; and, the actions of union leaders who, for internal political reasons, often prefer layoffs (quantity adjustments), to reductions in money wage rates (price adjustments) or to productivity (value) enhancing changes in work rules.

Further, as the conditions necessary for a frictionless contraction are never realized in the real world, the actual course of the contraction depends on the specific actions taken, by the multitude of individuals, in each historical situation. Thus, as people's plans turn out to be inconsistent, on a huge scale, their actions will depend on how soon and in what fashion they alter their perceptions of reality, expectations, and plans. It is the nature and timing of these (altered/changed) actions which determine the course of the contraction.

C. Types of Adjustments

The key actions in this regard are those affecting the prices and quantities of goods and of the resources used to produce those goods.⁵¹ The problem is that previous expectations about the prices at which various quantities of goods could be sold, and therefore, the present values and appropriate quantities of the goods and of the resources used to produce them, have been mistaken; i.e., the mistakes of the past mean that in reality, the values of some goods and resources are less than had been expected and are less than presently thought.

1. Market-Value Contractions

For those goods and resources for which the expectations were overly optimistic, and which, therefore, were overproduced, prices and/or quantities must be reduced, relatively, and, for many, absolutely as well. As the resource-owners become aware of this new reality, they are reluctant to admit the extent of the lowered real value of the resources because doing so involves the admission that they made costly mistakes in the past. And this reluctance is likely to be greater, the larger were the mistakes, and the more widespread will the awareness of them be, once admitted.

Decision-makers do realize that some losses of values have occurred (compared with their prior expectations, which had been developed in response to the incorrect structure of prices) and must be recognized. The decision-makers' objectives in such cases are to maintain the values of the resources at as high a level as possible, which is to say, to minimize the size of the mistakes admitted. Because it is often easier (psychologically) to concede a large loss in the value of an asset via a series of small (partial) write-downs spread over a period of time, rather than via one large (total) write-down coming all at once, the tendency is to take the former path rather than the latter. This tendency is reinforced by the fact, mentioned supra, that the decision-makers are unsure of the true extent of the losses and, realizing the probability of errors in their assessments thereof, prefer to err in under- rather than over-estimating the losses. These factors retard the reallocations of these resources into a pattern more consistent with the correct new structure of prices; decision-makers continue (albeit unintentionally) to perpetuate some of the misallocations, with each successive small (partial) write-down further reducing the magnitude of the remaining misallocations.

Thus the issue for the decision-makers becomes, how best to react in order to minimize the losses of values. Should the decision-makers reduce prices, or quantities, or some combination of them? Should the reductions be large or small, fast or slow? It should be noted that in some cases, the decision-makers' choices are restricted by contractual obligations, or other institutional factors; e.g., minimum wage laws. Contractual restrictions are relevant, for example, with respect to financial capital and labor union contracts. In such cases, price reductions are very costly, requiring, for example, bankruptcy filings, and the normal course of behavior is to reduce quantities; i.e., produce less, lay off workers, and let capital goods sit idle. Even in cases where there are no contractual or other institutional prohibitions to price reductions, there often are other reasons which lead the decision-makers to think that quantity reductions are preferable to price reductions. Thus, for reasons of

maintaining the value of non-physical assets, such as image and goodwill, which may require only minor maintenance costs, but have large re-acquisition costs, the long-run profit-maximizing course of action may be, or may appear to be, to reduce quantities rather than prices. The combination of uncertainty (the subjective appraisal of the degree of one's ignorance), ignorance (of future events), error (regarding present conditions and appropriate actions), and mistake (regarding past conditions) on the one hand, and institutional constraints on the other, results in the adjustments taking more the form of quantity adjustments and less the form of price adjustments, and these in a larger series of smaller doses, rather than a smaller series of larger doses. This prolongs and worsens the contraction.

2. Market- Value Expansions

For those goods and resources for which the expectations were overly pessimistic and which, therefore, were underproduced, prices and/or quantities should be increased. This is because the crisis comes about when the owners of resources that have been used to produce those goods which were over-produced (and which, consequently, are in over-supply) use their increased incomes not to buy those goods, but rather in an attempt to purchase those goods which were under-produced (and which, consequently, are in under-supply). However, this return of demand is unsustainable. Since resource owners are not demanding those goods which they are busy producing, the inventories thereof expand to undesirably large levels, causing a reduction in, or cessation of, the production thereof.⁵² The decline, partial or total, in production of the over-produced goods necessitates the layoff of workers and the idling of real capital goods; and, reduces the flows of incomes to the owners of these resources, an effect which has important consequences. These reduced income flows manifest themselves in reductions of demands for precisely those goods to which demand had only presently returned; i.e., the goods for which expectations had previously been overly-pessimistic and, consequently, had been under-produced.⁵³ The consequence of this is that, despite the fact that the demands for these goods now constitute a greater proportion of the total of demands for all goods, in absolute amount they are unlikely to be any greater than before the return, and quite likely to be even less. This frustration of the renewed demand prolongs the slump.

3. Misallocations of Resources in Both Phases of the Cycle

The key point here is that once people's actions have been distorted by the monetary/credit expansion, it is the "frictions" of the real world which make the contraction inevitable. For if when resource owners received their higher incomes and, in consequence, demands shifted back to S-type goods from L-type goods, resources were instantaneously reallocated in accordance with the reestablished pattern of demands, there would be no contraction, only losses to be accepted. But the nature of these frictions is such that they can not be eliminated, or even greatly reduced, "rational expectations" theory (and others based on assumptions of "perfect information" or the (statistical) expectational equivalent thereof) notwithstanding.

The contraction can only come to and end when the structure of prices, including implicit prices, has adjusted sufficiently to cause a reallocation of resources, including, importantly, the reactivation of those, especially labor, mistakenly idled during the contraction.

Thus it is that from the beginning of the expansion, when the structure of prices is first distorted, until the end of the contraction, when the distortions in the structure of prices are eliminated, resources are misallocated because of the erroneous information transmitted by the incorrect prices. In the boom the misallocation of resources takes the forms of misguided and excessive physical activity (and insufficient idleness) which is referred to as increased production. Unfortunately, in reality, it is not production but the exact opposite, destruction. In the contraction the misallocation of resources takes the form of misguided and insufficient physical activity (and excessive idleness) which is referred to as decreased production, and, which, also, is destruction. Thus the destruction of value (the ability to satisfy human wants) in the form of misallocation of resources goes on in the boom as well as in the contraction; the difference is the form the destruction takes.

C. Summary

Business cycles consist, then, of massive, widespread, systematic dis-co-ordinations of human actions. And, as people's actions are based upon their plans, their plans must be inconsistent. But people's plans are based upon their expectations which, in turn, are based upon their perceptions of reality. Therefore their expectations, and their perceptions of reality, must be faulty. Thus the essential features of an society subject to business cycles are: 1) a fractional reserve banking or monetary/credit system with fiat reserves; and, 2) an economy based upon production in anticipation of sales, *i.e.*, on the basis of speculation.

D. Comparison of Present with Past Cycles

In the more distant past, when fiat credit primarily went to finance very durable and earlier entry capital goods of heavy industry, the contractions were terrible and intense. There was widespread closure of plants, factories, mines and mills, with attendant massive unemployment. The reason is that recognizing the capital losses involved in business malinvestments was and is very painful. This is because: 1) (again), uncertainties about demands for, and costs of, firms' products create doubts as to the efficacy of reductions of prices as means to increase operating incomes; 2) the adverse publicity generated by write-offs of major assets by publicly held firms calls attention to the errors committed by their managers, and may cause the stock markets to react by undervaluing their shares and/or may play a major role in attempts to replace the current managers, or force hostile mergers or other forms of restructuring deemed undesirable by the current managers;⁵⁴ 3) the compensation of the managers may be affected adversely, from their own point of view; 4) reductions of prices paid for non-human resources may engender ill-will where previously harmonious relations had existed, and create doubts about the future reliability of suppliers, especially creditors, who might be reluctant to advance credit in the future if they are forced to write down loans or renegotiate less favorable terms; and, 5) reductions in wages and/or fringe benefits, or changes in working conditions may cause present or future labor problems, affect adversely physical productivity, and force the managers to face the human suffering caused by their

mistakes. Thus because the capital losses by businesses usually must be both explicit and very painful, they are put off as long as possible, exacerbating the recession in duration and intensity.

VII. THE MODERN MITIGATION OF CONTRACTIONS

Contractions during the post-War period have grown less and less intense than they used to be. The major reason for this appears to be that credit is now extended to other sectors of the economy than the business sector: 1) households, 2) governments and their agencies, and 3) foreign governments. These borrowers absorb a considerable amount of the newly-created credit. The effect of borrowing by non-business sectors is to cause much of the newly-created credit to be used for increased consumption purchases instead of increased investment, thereby not altering the structure of production so much toward "higher-order" stages. Also, the writedowns of financial asset values which households, governments, and foreigners recognize tend to occur more rapidly, thereby reducing the severity of the contraction.

A. Extensions of Credit to New Borrowers Mitigate Contractions

Recently, contractions seem to be both less severe and less prolonged. There appear to be two major reasons for this transformation: first, more recently the bulk of the fiat money/credit created in the expansion no longer goes to businesses; rather, households, domestic governments, and foreign borrowers absorb the bulk thereof; and second, there has been an enormous expansion of government intervention in the economy. We consider each of these factors in turn.

1. Borrowing by Households

The extension of credit to households was relatively minor in the past; this is no longer true. Rather, today, there is a great deal of such credit. To the extent that a monetary/credit expansion both induces, through the distortion of the structure of prices, and finances purchases of L-type consumer goods, such purchases prove to have been mistakes. The excess claims involved in these cases are, primarily, specific, consisting of the inflated net worths of the households involved. The decline in the value (implicit or market) of the goods involved, is accompanied by a decline in the claims (in the form of lower net worths) of the households. And, to the extent that the distorted structure of production in the boom resulted in the over-production of L-type consumer goods, the contraction can be expected to be relatively mild and short-lived. The reasons for this are that households which are suffering losses of value (of consumption goods such as houses, automobiles, or other L-type consumer goods) are likely to adjust more quickly, and the adjustment process will consist primarily of price, not quantity, adjustments.

The adjustment process in this case tends to be more rapid because, in general, such adjustments are less painful for households than for businesses, and this for six reasons. First, the magnitudes of the losses are usually less because, except, perhaps, in some cases of owner occupied residences, the pre-losses values involved are usually less. That is, all three factors affecting the present values of assets tend to produce smaller

values for households' consumer goods than for businesses' capital goods: 1) expected net values of consumers' goods in each future period usually are less: 2) the economically useful lives of consumer goods usually are shorter;⁵⁵ and, 3) householders usually have higher discount rates. Second, the losses are, for the most part, implicit since households sell consumer goods. Third, the sizes of the losses are hard to discern, and thus for psychological reasons tend to be underestimated. The difficulty in judging the sizes of the losses arises, at least in part, because the heterogeneity of consumer goods leads to relatively inefficient secondary markets, in which the prices at which specific goods have been sold are usually not public knowledge, and, even where known, are of limited use in appraising the values of similar, but not identical, goods, because of their dissimilarities. Fourth, for many households the losses involve multiple goods, and, thus are dispersed, lessening the impact and making it more difficult to assess the magnitude and extent of the losses. Fifth, such losses usually do not lead to public humiliation for households because they usually are implicit, unlike the losses of businesses, which usually are explicit and lead to public humiliation when audited financial statements are presented to the financial community. Sixth, although such losses cause both households and businesses to receive smaller flows of value from their assets than had been expected, the consequences for households are relatively minor, while for businesses they are major. The reason is that businesses are dependent upon these value flows, in the form of revenues, both to pay off their creditors who financed the purchases of the goods and to provide the funds to employ those complementary resources necessary for continued production, and thus to be able to continue to operate; households, however, are not dependent upon the value flows from their consumer goods, which in any case do not come in the form of revenues, but rather in the form of want satisfactions, either to pay their creditors or for the continued operations of their households. For those purposes they, also, depend upon value flows in the form of revenues received as the owners of resources, primarily their human capital.

The adjustment process for households *qua* consumers involves virtually *no quantity adjustments; i.e.*, no idling of houses, automobiles, or other L-type consumer goods. Rather, virtually the entire adjustment process takes place via (implicit) price adjustments.⁵⁶ The major reason for this is that when the purchase of an L-type consumer good proves to have been a mistake, minimization of the loss of value usually involves the continued use of the good. This use may be by the original purchaser, with the self-admission that, had he to do it over again, the same purchase would not be made, or it may be by a second-hand purchaser. That is, the goods are not idled, rather they provide less want satisfaction to the original purchaser than expected.

Thus, because it is relatively less painful, households *qua* consumers accept their losses more rapidly and adjust prices more readily to the new situation, making the associated recession less intense and shorter than earlier ones involving major business malinvestments. This conclusion is supported even when "consumer" quantity adjustments do occur. Such quantity adjustments take the form either of idled consumer goods, in which case there are virtually no effects on production and employment. And, although it is true that the monetary/credit expansion not only causes households to make mistakes in the form of excessive purchases of L-type consumer goods, but also causes businesses, in response to the (artificially) stimulated demand, to expand the production of these goods to an extent that proves to be excessive, the mistakes by businesses in this regard take the form, primarily, of excessive inventories of some, but not all, finished L-type consumer goods and raw materials, in which case the effects, from this direction, also, on production and employment are likely to be short-lived (until the excess inventories are worked off), and relatively mild, as businesses find it in

their best interest to minimize the disruption of their operations, especially as such would impact adversely their work-forces.

However, to the extent that households were induced to borrow for the purpose of investments in human capital, resistance to the adjustment process can be expected to be stiff. This is because households qua producers find the adjustment process very painful, and this for six reasons. First, as with businesses, they are unsure as to the duration of the decline in demand, and prefer quantity over price adjustments. Second, the magnitudes involved are relatively large in terms of households' economic positions. Third, such losses are explicit. Fourth, the magnitudes of such losses are relatively easy to discern. Fifth, usually such losses are concentrated on one resource. Sixth, households need the income flows from their human capital to finance their operations. For all of these reasons, households qua producers resist the adjustment process, preferring quantity over price adjustments.

Unfortunately, the extension of vast amounts of credit to households in fiat monetary/credit expansions has resulted in an increase in political pressure for governmental intervention to prevent losses to households qua producers, and, despite the fact that such interventions actually result in increased losses, the virtual absence of opposition to such interventions because the losses are imposed on households qua consumers and taxpayers/citizens. Thus business cycles, and the foundations which make them possible - legal tender laws, legalized fractional reserve banking, and fiat reserves - are responsible, in large part, for the awesome growth of governmental intervention into the lives of individual human beings.

2. Government Borrowing

Borrowing by domestic governments or their agencies, which was relatively minor in the past, also has expanded greatly in recent times. To the extent that the monetary/credit expansion both permits and finances increases in governmental expenditures which otherwise; *i.e.*, had they to be financed by tax increases, would not have been made, such expenditures prove to be mistakes. The adjustment process takes several forms, virtually none of which involves explicit recognition of the loss of asset values, and most of which take the form of (implicit) price adjustments rather than quantity adjustments.⁵⁷ Those cases of quantity adjustment that do occur involve the relatively rare situations in which the construction periods of L-type capital goods projects are stretched out; *e.g.*, slowing down or halting, temporarily or permanently, the construction⁵⁸ of a governmental project such as a road or a bridge, and the even more rare cases involving the layoff of governmental employees. The usual cases do not involve such quantity adjustments, but rather the implicit losses of values in the many cases where governments provide "services" or "transfer payments", the values of which are less than their costs. In such cases, the taxpayers/citizens suffer an implicit loss of claims in the form of a decline in their personal net worths. However, as the provision of most governmental goods, services and transfer payments are extra-market activities, the value reductions tend to be implicit.⁵⁹ Since in these cases, both the value losses and claims reductions tend to be implicit, and, which is of more importance, since the losses and associated suffering are widely dispersed over the taxpayers/citizens the per-capita losses tend to be relatively small, and since no-one, under the circumstances, can even begin to accurately estimate the effects upon themselves individually, there is less resistance to such adjustments. Rather, reactions to such losses take the form chiefly of

generalized indiscriminant anger with, and distrust of, the whole governmental/political milieu; i.e., virtually helpless and hopeless rage. Since the adjustment process tends to be relatively painless to individuals, it is relatively swift and mild, consisting primarily of the continuing dispersion of implicit losses of value and claims among the taxpayers/citizens. And to the extent that governments wish to avoid the quantity-adjustment process; i.e., avoid layoffs, and slowdowns in capital goods projects, they inevitably must raise taxes. Thus the adjustment process also takes the form of tax increases, but again, these tax increases are usually dispersed over large numbers of people, so the individual burden is lessened. Because of this, and also because for various reasons, not the least being the practical difficulty, not to mention theoretical impossibility, of determining the incidence of a change in tax rates, no one knows their individual burden, resistance to adjustment is lessened, and therefore more rapid and mild.

3. International Borrowing

Another modern development is the huge increase in international "capital flows".⁶⁰ To the extent that such flows are funded by monetary/credit expansion, the expenditures thus financed prove to be mistakes. Much of these flows take the form of loans to the governments of "Third-world"⁶¹ and "Eastern-bloc" countries. Even under the best of circumstances those loans which are part of the fiat monetary/credit expansion process, result in misallocations of resources because of the unavoidable distortions in the structure of prices. What makes matters worse in these cases are the additional problems endemic in these countries, the primary ones in this respect being non-market allocations of resources and corruption. These factors add to the misallocations by, for example, directing the funds to un-economic state-owned/run industries or into the pockets of the rulers.

Eventually, the point is reached where the "debtor countries" can no longer service their debts.⁶² At such points in time, instead of the creditor banks admitting the loans were mistakes and writing down the book values of these loans to the market values, they look for ways to avoid admitting their mistakes and the consequent losses. That is, because the decision makers in these cases hold prestigious, highly remunerative, and very powerful positions with major international banks, and because they fear their positions would be placed in jeopardy by straight-forward admissions of their mistakes and acceptances of the losses involved, with almost certain negative consequences for stock prices and/or dividends, they take actions to avoid this course of events. These take various forms: 1) renegotiated terms which are less favorable to the lender but maintain the book values of the loans in spite of the fact that the less favorable terms recognize the reduced real value of these assets; i.e., implicit write-downs; 2) new loans to the debtor to be used to pay the interest on existing loans, thereby increasing(!) the book values of the loans outstanding, in spite of the fact that the debtors' de facto defaults, which necessitated the subterfuge of the new credits in order to create the fiction that the interest was paid and the loans were not in default, reduce the real values of these assets; i.e., explicit write-ups(!);⁶³ 3) some explicit partial write-downs in the form; e.g., of increases in reserves for bad debts or loan losses; and 4) most popularly (at least with the lenders), the transference, by one act of financial legerdemain or another, of the debt at face (therefore, inflated) value from the stockholders of the lending institution to the taxpayers/citizens of the nation of the lending bank, through that nation's central bank, or the IMF, or other (national or international) governmental agency. The governmental agencies involved are, then, ostensibly, the ones that have to absorb the loss; i.e., reduction in claims. Thus, governmental credit is substituted for private credit, and in reality the loss is borne, not by the original lenders, nor by something called government, but by the taxpayers/citizens of the nation whose governmental agencies do the bailing out. Again, in such circumstances, the losses are assumed by government and then spread widely, as they usually are,⁶⁴ over the taxpayers/citizens, instead of being left concentrated, and this both speeds up and mitigates the adjustment process. When the debtor nations are no longer able to incur additional debt, the adjustment occurs. In the debtor nation, the mistakes of the boom have to be eliminated: resources have to be reallocated from the prior wasteful uses to more economic uses, including production of goods and resources for export, as imports of goods and resources (exports of claims) must be reduced and exports of goods and resources (imports of claims), increased. Thus, if left to the market process; i.e. people's voluntary actions, an adjustment process would occur in the debtor nation, and it would require major quantity adjustments. However, in many such cases, the political consequences for the ruling group of such an adjustment would be unacceptable, and thus

the normal course of events is suppressed. Instead, even more governmental intervention and compulsion are instituted. The economy slides further into stagnation and remains there.⁶⁵

In the creditor nation, the mistakes must also be eliminated, but here the adjustment takes the form of a write-down of the value of the claims (after most of them have been transferred to government) and thus an implicit decline in the net worth of the taxpayer/citizens. Part of the adjustment process may take the form of bank bailouts, involving partial or total sell-offs of the failed banks' assets and liabilities with the government absorbing the losses incurred, directly or indirectly. What quantity adjustments do take place result primarily from any decline in exports of goods and resources to the debtor countries and/or any increase in imports of goods and resources from them, with attendant resource-allocation consequences for the creditor nation. These are likely to be of a minor order of magnitude. Thus the increase in the diversion to foreign borrowers of the fiat money/credit created in an expansion tends to shorten and ease the adjustment process.

B. Summary.

These changes, then, involving new "players in the game"; *i.e.*, consumers, domestic governments, and foreigners as major borrowers, tend to shorten and mitigate the contraction. Business is no longer the sole "writer-down" of over-valued claims and goods; *i.e.*, those the values of which are less than they were expected to be when they were created: rather, consumers, domestic governments and foreigners now participate in this aspect of the cycle. And, consumers and taxpayers/citizens make their write-downs faster than businesses, and at the same time, they minimize quantity adjustments, thus making the contraction shorter and less severe.

VIII. THE REGULATORY "WEDGE"

The other significant change which has altered the character of the business cycle is the massive increase in government intervention in recent decades. This government intervention is either "financial" or "real."

Opposing the forces discussed above which tend to mitigate the contraction are the effects of increased government regulation, which extend the adjustment process in time by preventing the recognition by businesses of losses which must precede the adjustment and recovery. This massive increase in governmental intervention in the economy is the second change (after the addition of new categories of borrowers of the excess claims) which has altered the character of the business cycle.

A. Government Intervention and Regulation Prolong the Contraction

For the purposes of this paper, we categorize governmental interventions as either "financial" or "real". In the financial category, we place any government activity related to credit; including borrowing, lending, loan guarantees, and regulation of the financial industries (banks and other financial intermediaries and institutions).

The financial activities of government are those activities intended to affect the overall nature, structure, and stability of the monetary/financial system, including banks and other types of financial intermediaries and institutions. In the real category we place governmental purchases of goods and services, transfer payments, taxation, governmental borrowing, lending, and loan guarantees, and those regulations of economic activity not included in the financial category.⁶⁶

1. Financial Interventions by Government

The purpose of financial intervention is to stabilize the economy by providing stability in the monetary/financial system. It takes several forms, of which the more important are: 1) imposition and enforcement of legal tender laws; 2) regulation of banks and other financial intermediaries and institutions as to the types and amounts of assets and liabilities they may have, and the activities they may engage in, especially the legalization of fractional-reserve banking; 3) creation of fiat reserves; and 4) provision of deposit insurance.

There are those, including the authors of this paper, who maintain that, on net, in industrial economies, government financial intervention is not an agent of stability, but rather the primary cause of instability. That is, without legal-tender laws, legalized fractional-reserve banking, and fiat reserve-creation, fiat monetary/credit expansion would be impossible (or at least illegal), and thus, the primary (only?) cause of macro-instability; *i.e.*, business cycles, would not exist. In any case, these interventions are responsible for the persistent (price) inflation of the post-World War II era. That is, inflations are always and everywhere monetary phenomena⁶⁷ which result from increases in the stocks of money relatively to the stocks of other goods and resources. And it is only these interventions that have made such increases possible incessantly.

However, once legal-tender laws, fractional-reserve banking, and fiat reserve creation occur, then other financial interventions may be stabilizing; that is, they may reduce or suppress some of the instability created by the destabilizing financial interventions. The most important intervention in this respect is deposit insurance, and this for two reasons. First, because all of the banks in the fractional reserve banking system share the same pool of fiat reserves, their operations are interrelated. Therefore the collapse of a few banks, or perhaps even one if it is very large or important, or if its collapse were to generate wide-spread publicity, could set off a chain reaction which would lead to the collapse of virtually the entire banking system. But the liabilities of banks are money, and as such form the base upon which the inverted pyramid structure of credit is built. That is, not only are these liabilities both excess claims and a form of fiat money, but they also are the base for further financial intermediation; *i.e.*, the creation of additional excess claims. And, the collapse of the base must lead to the collapse of the superstructure. That is, the collapse of the base level of claims, the banks' deposit liabilities, would initiate a massive chain reaction, as subsequent levels of claims fell. The result would be the collapse of virtually the entire monetary/financial system. Deposit insurance serves to prevent such collapses from occurring by preventing the mistakes that have been made by banks, and other depository institutions with governmental deposit insurance, in past extensions of credit from starting the chain reaction. Second, deposit insurance shifts banks' losses, arising out of mistaken loans, to taxpayers/citizens and, therefore, the adjustment process, for reasons explained supra, is speeded up. However, the security provided by deposit insurance does induce a counter-effect, to wit: neither depositors, nor owners, nor managers of insured depository institutions are as

risk-averse as they should be, and more credit is extended to less-credit-worthy borrowers, than would be the case without the insurance.

Regulation of the nature and structure of financial inter-mediaries, and of their balance sheets and permitted activities, increases significantly the volume of malintermediation during the expansion, necessitating additional adjustments in order to eliminate the increased volume of excess claims, which tends to prolong and exacerbate the contraction. Conversely, such regulation causes the fiat credit excesses of the boom to be much more widely dispersed, which tends both to prolong the boom and, by lessening resistance to the adjustment process, to shorten and mitigate the contraction.

2. Real Interventions by Government

The purpose of the interventions falling into the real category is not, in general, overall stability,⁶⁸ but rather, the reallocation of resources to politically favored uses and the redistribution of wealth to powerful and politically-favored groups; that is, these interventions are of the types of government activity associated with the concept of rent-seeking. These interventions are essentially microeconomic; that is, they consist of governmental actions which are intended to cause more or less specific results in particular markets or for particular groups of people. Such governmental actions can work only to the extent that they cause individuals to alter their actions to conform to the pattern of behavior necessary to bring about the intended results. Then, because the specific actions people take depend on their individual (subjective) values and perceptions of the alternatives available to them, real interventions take the form of alterations of, and succeed to the extent that they do "correctly" alter, the set of alternatives available in the particular markets or to the particular groups of people intended to be affected.⁶⁹ Thus, any attempt to understand the (re)allocational/(re)distributional ramifications of such interventions requires a detailed examination of the particulars of each one. Real interventions, however, and, for the purposes of this paper, of more importance, also affect the macrostability of the economic system. And, analysis of the consequences for business cycles of such interventions does not require, fortunately, a detailed examination of each one. Rather, for this purpose, real interventions may be analyzed according to the way they interfere with the functioning of the market process.

Real interventions affect both phases of the cycle: they affect the duration and intensity of the boom by affecting the volume of fiat money/credit created and the specific uses to which it is put; they affect the duration and severity of the contraction by interfering with the adjustment process (affecting which adjustments take place and when they take place).

Real interventions do not "just happen". Rather they are governmental responses to perceived problems. And, which is critical, the causes of the problems are perceived, virtually always and everywhere, to be the same: for sellers, insufficient demands for their goods or resources; and, for buyers, insufficient supplies of the goods or resources sought. Insufficient demands are the cause of sellers' problems in the sense that they think that their problems would be eliminated if they could but sell their goods or resources in greater volumes and/or at higher prices. Similarly insufficient supplies are the cause of buyers' problems in the sense that they think that their problems would be eliminated if they could but buy goods or resources at lower prices. Of

course, these are the real problems only if the one takes the odd positions that: 1) re sellers' problems, buyers should act not in accordance with their own values and the opportunities available, but in the interests of the sellers; and, 2) re buyers' problems, sellers should act not in accordance with their own values and the opportunities available, but in the interests of the buyers. If these positions are rejected, the real problems are seen to be: for sellers, mismatches between their supplies and buyers demands, requiring for their correction changes in the sellers' actions; and, for buyers, mismatches between their demands and sellers supplies, requiring for their correction changes in the buyers' actions. The requisite changes for buyers are changes in their demands; the requisite changes for sellers are changes in their supplies, which usually involve changes in production. For reasons explained supra, most people are more concerned about the markets in which they sell their goods and/or resources, especially their labor services, than about the markets in which they are buyers. That is, for most people, the role of producer is more important than that of consumer, in the sense that the events in the markets in which they sell their goods or resources dominate the events in other markets in terms of the impacts upon their material well-being. Thus most people perceive the key problem to be one of insufficient demand. (Shades of Lord Keynes! Where is Major Douglas when we need him?)

Although from each seller's perspective the problem is insufficient demand for his or her goods and or resources, in reality it is the mismatch between what the seller is producing and what the buyers want. Nevertheless, each thinks the solution is increased demand for his or her own goods and/or resources. Of course, even if producers' problems did consist of insufficient demands, the insufficient demands would be insufficient relative demands. Thus no general solution would exist as it is impossible for every producer to experience an increase in demand relative to the other producers. Thus, any governmental intervention that "solves" the problem for one individual or group of people necessarily makes the problems of at least some others worse. Nevertheless people do seek the assistance of governments to solve their problems, and governments do respond. And, as shown infra, real interventions in attempts to diminish the (perceived) demand problems of particular groups of producers affect the course of the business cycle because they inevitably hinder the adjustment process whereby the mismatches between demands and production are eliminated.

The producers' problems arise when the pattern of demands changes. This occurs when the monetary/credit expansion decelerates and resource owners attempt to spend their increased incomes in accord with their unchanged values. If a monetary/credit expansion has reached significant proportions the consequential adjustments will have to be large, involving large losses for many producers. For those producers experiencing a reduction in demand, the only alternatives available in the market are painful: price reductions and/or quantity reductions, and the acceptance of the attendant losses. Again, each such producer thinks that an increase in demand for his or her goods and/or resources would solve the problem. But this is precisely the opposite of what is occurring.

There is, of course, another alternative: governmental intervention. With great regularity, producers finding themselves in such a position seek, and, also with great regularity, receive governmental assistance (real intervention). Such assistance is designed to maintain or increase the incomes of the favored producers. Although the details vary greatly from one such assistance program to the next, the primary approach used is to artificially bolster demand for the favored groups' goods and/or resources, and/or artificially reduce their costs. Such interventions take divers forms, the most important of which are: direct purchases by governments; indirect

purchases by governments, e.g., the food stamp program; direct subsidies to producers; indirect subsidies to producers, e.g., bail-outs of producers' creditors; subsidized credit for customers; and, restriction of competition. Such interventions make it possible for the affected producers to avoid the market alternatives: price and/or quantity reductions. Because in the real world supplies are not perfectly elastic, sound adjustments involve, sooner or later, some price changes. Thus real interventions prevent the structure of prices from adjusting to the structure of people's values.

Of course, such interventions thwart the real demands of the people based upon their values, substituting instead, artificial demands based upon political power. And, in the process allow producers to maintain the misallocation of resources begun in the boom. The longer the boom continues due to successive, and more rapid, increases in money/credit, the greater the misallocations, and the greater the number of producers seeking and receiving assistance. But the nature of the assistance is, precisely, the thwarting of the adjustments required to return the economy to a sound basis (correct allocation of resources).

B. The Permanent Wedge Preventing Recovery

The major effect of real interventions is that the distortion of the structure of prices away from the structure of peoples' values persists indefinitely. It is as if these interventions form a "**wedge**" between the structure of peoples values and the structure of prices which prevents the latter from adjusting to, and conforming with, the former. This condition manifests itself in the form of massive and persistent misallocations of resources: economic stagnation.

IX. CONCLUSION

The consequences for business cycles of the confluence of important new categories of borrowers (households, domestic governments, and foreigners) in the monetary/credit system and massive increases in governmental intervention, both financial and real, are: 1) longer, more moderate, and diffuse booms; and, 2) shorter, less severe contractions; 3) persistent, but erratic, inflation; 4) massive, persistent misallocations of resources; 5) stagnant productivity; 6) attenuated economic growth; and 7) deteriorated standards of living.

We note that the essentials of Austrian Trade Cycle theory are still relevant for understanding business cycles, and that all that is required to enable it to be used to gain key insights into current macroeconomic events is to extend it to account for significant alterations in economic institutions.

According to Mises, Bohm-Bawerk said, "A theory of the trade cycle, if it is not to be mere botching, can only be written as the last chapter or the last chapter but one of a treatise dealing with all economic problems", a dictum with which he "fully agree<d>."⁷⁰ This paper is necessarily incomplete.

ENDNOTES

¹ F. A. Hayek, *New Studies in Philosophy, Politics, Economics and the History of Ideas*, Chicago: The University of Chicago Press, 1978, pp. 212-213.

² L. v. Mises, *On the Manipulation of Money and Credit*, pp. 124-125.

³ Percy Greaves, "Some Misconceptions of the Mises Cycle Theory," page *xl* in Mises, *On the Manipulation of Money and Credit*.

⁴ F. A. Hayek, *Prices and Production*, page 11.

⁵ Note re *fiat not real* expansion.

⁶ F. A. Hayek, *Prices and Production* (1935), London School of Economics; *Monetary Theory and the Trade Cycle* (1938), London School of Economics; *Profits, Interest and Investment* (1939) especially "Price Expectations, Monetary Disturbances and Malinvestments", Routledge. L. Mises, *Human Action* (1949) Yale University Press.

⁷ M. N. Rothbard, *Man, Economy and State* (1961), Van Nostrand, pp. 850-866; *America's Great Depression*; and "Economic Depressions, Their Cause and Cure".

⁸ Throughout this paper the term "inflation" refers to increasing prices, not an increasing stock of money.

⁹ In this paper the term "goods" refers to "real" goods, and includes services.

¹⁰ We distinguish between physically and economically idled resources, noting that resources are never economically idle, as at each moment of time, they are being used by their owners in the way they deem most valuable. Therefore, herein, leisure is considered to be a form of physical idleness. For a more complete exposition of this position, see W. H. Hutt, *The Theory of Idle Resources*.

¹¹ It is unlikely that the purchase of low-cost capital goods would be financed by credit.

¹² The length of time during which the value of an individual capital good is tied up in the production process before its value is realized in the form of sale to the consumer of the consumer good(s) it was used to produce, has two dimensions. We refer to these two dimensions as the "vertical", V, and "horizontal", H, time dimensions. The vertical dimension V is the period of time from the application of the capital good in the production of a specific individual consumer good until that specific individual consumer good is sold to the consumer. The horizontal dimension H is the period of time over which the capital good is expected to enter into the production of successive individual consumer goods. For example, consider a stick of dynamite used on 1/1/X to blast free a piece of stone which, after N years of work by a sculptor, ends up as a work of art sold to the connoisseur, on 1/1/X+N. It has a vertical time dimension of N years. Note that all of the "work" done by the capital good (the dynamite) was done instantaneously on 1/1/X, but the value of that work was not realized until 1/1/X+N; therefore that value was tied up in the production process for N years.

Now consider a cash register used at the point of sale at a retail store. In this case, the capital good does its "work" with respect to any specific individual consumer good virtually instantaneously, as did the dynamite, but now, unlike in the case of the dynamite, this "work" is tied up in the production of a specific individual consumer good only momentarily; i.e., for the time necessary to consummate the transaction. Thus its vertical time dimension is virtually zero. However, and again unlike the case of the dynamite, which could be used but once, the cash register can be used over and over again in the production process; i.e., in the production of many individual consumer goods. If the cash register is expected to be used for, say, M years, then its horizontal time dimension is M years.

This example has contrasted the extremes; that is, two capital goods, one with a time dimension of ($V = N, H = 0$), and the other with a time dimension of ($V = 0, H = M$). Of course, for most capital goods, neither time dimension is zero.

In our terms, the greater is V , the earlier is entry of the capital good into the production process (Austrian theory would say the capital good was of "higher order"), and the greater is H , the more durable is the capital good. Thus, the earlier a capital good enters into the production process and/or the more durable it is, the greater is its composite time dimension (T); i.e., the composite time dimension is: $T = V * H$.

The time element is important for consumer goods also. However, in their case there is only one time dimension, the horizontal (H). That is, as consumer goods are intended to satisfy wants directly, the only time element of concern is their durability. Thus for consumer goods, the composite time dimension is: $T = H$.

We refer to those types of goods which have relatively large or small T values as type L or type S goods, respectively.

¹³ J. Stuart Wood, "Some Refinements in Austrian Trade-Cycle Theory," *Managerial and Decision Economics*, Vol. 5, No. 3, September, 1984, pp. 141-149.

⁷ Of course the penultimate deposit may be, and often is, the initial deposit, also.

¹⁵ An interest rate is not actually the price of a loan, i.e., of *credit*, but rather a datum used in calculating the actual price. A price is per a certain quantity of a good; i.e., what has to be given up, usually measured in monetary terms (although this not really correct as it is not really the subjective cost to the buyer), in order to acquire the certain quantity of the good. In order to facilitate economic calculations, i.e., comparisons, (monetary) prices are usually stated per unit measure of quantity, e.g. \$X per (42 gal.) barrel, or \$Y per (metric) ton, of crude oil. The unit measure used in credit calculations is the monetary unit itself, e.g. in the U.S.A. the dollar. Then the interest rate is used to calculate the actual price of a loan, as in the following example. The price of a non-amortized loan on $1/1/X$ for a period of three years at simple interest of 10% per annum is: \$0.10 per \$ of principal on $1/1/X+1$, \$0.10 per \$ of principal on $1/1/X+2$, and \$0.10 per \$ of principal + (an amount equal to) the principal on $1/1/X+3$. The interest rate is used in calculating these payments (the "money price"), but is not, itself, the price.

¹⁶ Actually the term "pyramided" may not convey the correct image; an inverted pyramid is a better image. Perhaps the best description of the fractional reserve banking system is that it is a form of Ponzi scheme. (Is it a greater Ponzi scheme than the social security system?)

¹⁷ Mises says, "The fact that in the regular course of banking operations the banks issue fiduciary media only as loans to producers and merchants means that they are not used directly for consumption. Rather, these fiduciary media are used first of all for production, that is to buy factors of production and pay wages." L. v. Mises, "Monetary Stabilization and Cyclical Policy," 1928, in L. v. Mises, *On the Manipulation of Money and Credit*, 1978, pg. 120, trans. by B. B. Greaves, ed. by P. L. Greaves.

Hayek says, "It will be sufficient if we investigate only the case most frequently to be encountered in practice: the case of an increase of money in the form of credits to producers." F.A. Hayek, *Prices and Production*, 2nd. (rev. & enlg.) ed., 1935, pg. 54.

Hayek added more recently:

"In contrast, the present expansion of money, which has been brought about partly by means of bank credit expansion and partly through [governmental] budget deficits, has been the result of a deliberate policy, and has gone through somewhat different channels. The additional expenditure has been much more widely dispersed. In the earlier cases I had no difficulty in pointing to particular instances of overexpansion; now I am somewhat embarrassed when I am asked the question, because I would have to know the particular situation in a particular country, where the additional money flows went in the first place, etc. I would also have to trace the successive movements of prices which indicate these flows. In consequence, I have no general answer to the question."

"I do not doubt that in a sense we have today the same kind of phenomenon, but the over-expansion, the undue increase of labour employed in particular occupations, is not confined to a single, clearly defined block such as the capital-goods industries. It is now spread much more widely, and the distribution is much more difficult to describe." - F. A. Hayek, "The

Campaign Against Keynesian Inflation," in F. A. Hayek, *New Studies in Philosophy, Politics, Economics and the History of Ideas*, 1978, pp. 212-213.

¹⁸ A consumer good does not have to be a material good in order to be a L-type good. In fact consumer services can be L-type goods; *e.g.*, a once in a lifetime vacation may be expected to, and may actually, create memories that provide pleasure (satisfy human wants) for an indefinitely long period of time. Durability is subjective in nature.

¹⁹ When it comes to credit financing of expenditures, governments, with the power to create fiat money, find themselves in a different position from other borrowers. Whereas these latter are constrained, more or less, by their creditors, fearful of default, to appropriate uses of credit, the former are not. (Of course, it is sometimes true that the creditors make mistakes; witness, *e.g.*, the New York City debt "moratorium".) Thus, on the one hand, businesses, households, and those governments which do not have the power to create fiat money, and which attempt to finance expenditures by credit, the term to maturity of which would exceed the (expected) valuable life of the good or resource to be purchased with the proceeds thereof, find their ability to do so severely restricted by their would-be creditors; and, on the other hand, governments with the ability to create fiat money have enormous, if not unlimited, ability to engage in such transactions, (provided, of course, that such loans are redeemable in their fiat currency). That is, neither can a business or government without the power to create fiat money continuously borrow money with one-year notes to finance its weekly payrolls, nor can a household continuously borrow money with one-year notes to finance its weekly purchases of groceries; either their creditors will cease lending to them, or they will go bankrupt. Either there are no limits to similar types of borrowing (*e.g.*, to finance monthly transfer payments) by governments with the ability to create fiat money, or the limits are disastrously (for their societies) high.

²⁰ The structure of prices includes prices of credit, for which interest rates serve as proxies.

²¹ The term "assets" includes, in addition to real goods, claims (financial goods), both general and specific.

²² Of course, it is possible that some of the capital gains realized from the prior asset sale may be spent on "real" goods, especially consumer goods that might be classified as "luxuries".

²³ We note here that among the securities involved in this part of the expansion process are foreign securities, both private and governmental.

²⁴ This factor is becoming somewhat less important in the U.S.A. due to recent changes in securities laws regarding shelf registration.

²⁵ The "terms of credit" should be distinguished from the "price of credit" as follows: the *price of credit* refers only to the pecuniary part of the terms; *i.e.*, the part which the interest rate is used to calculate; whereas the *terms of credit* encompass also such things as the risk factor (degree of credit-worthiness), the term to maturity, callability (by either party), and the conditions thereof, etc. When we speak of the "easing of the terms of credit", therefore, we mean not only the lowering of the interest rates charged different classes of borrowers, but also changes in other conditions of credit which make them less burdensome to the borrowers, and the offering of credit to borrowers who were previously thought unworthy of loans.

²⁶ These securities are usually less homogeneous, and therefore not traded on open exchanges or other types of relatively efficient markets, although some are packaged in various ways and sold in less-well-organized secondary markets.

²⁷ As we shall see, these new categories of borrowers are of even greater importance in the contraction phase of the cycle.

²⁸ Much human capital has a relatively large time dimension, especially in the horizontal dimension, *e.g.* education of the young.

²⁹ Because of the way governments transact their ("our"?) business, it is often impossible to determine which expenditures are financed by loans, which by taxes, and which by the creation of new fiat money, either directly or indirectly (*i.e.*, debt monetization).

³⁰ In the context of the broadened monetary/credit expansion presented here, the concept of forced savings can no longer be restricted to mean the shifting of resources from the production of consumption goods to the production of capital goods in contravention of the actual pattern of people's time preferences. Rather, it needs to be generalized to include the shifting of resources from the production of S-type consumer goods to L-type consumer goods and human capital, and to governmental uses, direct or indirect, in contravention of people's actual values and time preferences. Also, to the extent that government transfer payments induce some people to work less and spend more time at leisure, we need to add the concept of "forced leisure".

In fact, following this line of thought leads to its logical conclusion, to wit: Any government intervention that distorts the structure of prices away from the structure of people's values induces both a misallocation of goods and of resources; *i.e.*, allocations in contravention of people's actual values. Since each such misallocation is the result of government intervention; *i.e.*, coercion, they (the misallocations) can, and should, be referred to as "forced" consequences.

Thus, there can be "forced saving", and also "forced investment", "forced consumption", "forced exports", "forced imports", "forced idleness", (referred to as "forced leisure" in the case of human resources), and, "forced work". (Note also, that the concept of "exports" and "imports" is not at all satisfactory. On this point see footnote 38) These occur when government intervention distorts the structure of prices in such ways as to cause the following shifts, respectively: resources away from the production of consumer goods; resources into the production of capital goods; resources into the production of consumption goods; usage of goods or resources away from domestic uses; usage of goods or resources away from foreign uses; resources away from work; and, resources away from idleness.

Government intervention by distorting the structure of prices also can induce a shift of production from one consumer good to another, from one capital good to another, from one export good to another, from one import good to another, from one work use to another, and/or , at least in the case of people, from one form of idleness (leisure) to another. Since in these cases, also, there is coercion involved, and since they involve losses of value in the form of misallocations (of goods or resources), they can be referred to as "forced downgrading of consumption", etc.

³¹ By "readily reproducible", we mean that production can be increased with relatively minor cost increases.

³² This holds for government transfer payments because the vast majority of such payments are spent very rapidly by their recipients on these types of goods.

³³ This seeming paradox is easily resolved when we note that decisions about production and resource allocation are based on profit expectations, and thus, for example, a 1% increase in absolute price results in a 10% increase in profits if the before-tax profit margin is 10% of the sales price--a not unreasonable approximation for typical businesses in the U.S.A.

³⁴ In this context it should be noted that although it is changes in the structure of relative prices that provide the information upon which decisions to alter production and the allocation of resources are made, in a monetary/credit expansion, changes in the structure of relative prices come about primarily, although not exclusively, from *differential increases* in prices. But the more specialized resources are to the production of certain goods (their primary uses), the less productive they are in the production of other goods (their secondary uses). And the less productive the resources are in their secondary uses the greater must be the price increases of the goods produced in these uses in order to be able to bid the resources away from their primary uses. But increased specialization is frequently a characteristic of more advanced economies. So booms exhibit more inflation now than in the past.

³⁵ We distinguish "embodied capital goods" from "retained capital goods". Embodied capital goods are resources that become physically embodied in the good being produced. Retained capital goods are resources that do not become physically embodied in the good being produced.

³⁶ One consequence of the inflation which occurs during the boom is that (at least a portion of) the general excess claims are eliminated, thereby lessening the extent of the adjustments that must occur in the contraction.

³⁷ A deceleration of the monetary/credit expansion requires not even a lessening in the growth rates of either, but merely a leveling off of their growth rates.

³⁸ Thus lenders demand higher nominal interest rates in anticipation of accelerating inflation, and higher real interest rates because of the increased riskiness of being creditors in such times. And, workers demand larger, and more frequent increases in wages, and this for two reasons: 1) to return their real wages, at least, to the levels existing before they were reduced in the boom, when the increases in their money wages did not keep pace with the increases in prices of consumer goods; and, 2) to prevent the anticipated acceleration of inflation from adversely impacting their real wages. The rapidity with which incomes are spent increases, especially for consumers.

³⁹ Actually, the specific claims exist in the form of legal rights, and the stocks, bonds, etc. are merely evidence of these rights. And for many specific claims such formal evidence of rights does not exist; *e.g.* claims "against" many household items.

⁴⁰ We refer to this type of activity as "malintermediation".

⁴¹ The term "excess claim" means that the value of the claim exceeds the value of the goods and/or resources against which it is held; it does not mean that the claim is totally without value.

⁴² The excess value of excess general claims is eliminated through inflation. The excess value of excess specific claims is eliminated through a decrease in the price, market or shadow (imputed), of the claim.

⁴³ We use the term "bank" to refer to a firm, or part thereof, engaged in financial intermediation, whose liabilities created in the intermediation process are a form of money. We use the term "non-bank financial intermediary" to refer to a firm, or portion thereof, engaged in financial intermediation, whose liabilities created in the intermediation process are not a form of money. Of course, using these definitions, some firms are purely banks, others, purely non-bank financial intermediaries, and yet others, a combination of both.

⁴⁴ The concept of pyramiding as per footnote 7 is applicable in this case, also.

⁴⁵ Financial intermediation has three dimensions which we refer to as "depth", "breadth", and "magnitude", along each of which it can increase or decrease. The three dimensions create the "volume of financial intermediation."

The *depth* of intermediation refers to the weighted (by dollar value of transactions) average number of claims created between an ultimate lender and ultimate borrower. The ultimate borrower is the party who uses the borrowed purchasing power to acquire the rights to real goods or resources (in contradistinction to further financial claims).

The *breadth* of intermediation refers to the number of different types or categories of borrowers or lenders which are serviced by a particular level of financial intermediary. Because transactions occur at that level (flow through that pre-existing stage) that either would have bypassed that level, or would not have occurred at all, there are more claims created. For example, banks, which formerly intermediated credit transactions between households as lenders and businesses, but not households, as borrowers, began to lend also to households; previously, households borrowed from other households or businesses directly, bypassing any intermediary, or they did not borrow at all.

The *magnitude* of intermediation refers to the intensity of saving activity on the part of ultimate lenders, as when the portion of income saved changes, thereby changing the total volume of claims created without independent changes in depth or breadth of intermediation.

The *volume* of intermediation refers to the total money value of financial claims which have been created. An increase or decrease in the volume of financial intermediation refers to an increase or decrease, respectively, in the total value in monetary terms of intermediated transactions outstanding at any point in time.

⁴⁶ It is possible that some general claims can be eliminated via some form of specific annihilation; *e. g.*, holders of demand deposits, a form of money, at financially-insolvent institutions sometimes have been, and could in the future be, allowed to experience the elimination of their individual general claims.

⁴⁷ Of course, the correct structure of prices and consequent correct allocation of resources, is constantly changing as the determinants thereof, people's values, expectations, etc., are constantly changing. And thus, the distortion in the structure of prices is also constantly changing.

⁴⁸ Thus, in one sense, asset owners, especially producers, are forced to become, to a greater extent than necessary, speculators in values, and the contraction is the vehicle for eliminating inefficient speculators in values, in spite of the fact that they might well be some of the more efficient producers of real values.

⁴⁹ In general, people are much more concerned with the prices of the things they sell than those of the things they buy. The primary reason is that most people buy many different things from many different businesses, so that adverse price movements for these things are diffused, and, individually, relatively insignificant, whereas, they tend to sell relatively few things, and these are dominated, for the vast majority of people, by one thing, their labor services, so that adverse price movements for these things are concentrated, and, especially for labor services, of major importance.

⁵⁰ This occurs because the difference in present value of a resource between its primary and secondary uses is greater the longer is the expected economic life of the asset, *ceteris paribus*, and its expected economically useful life is directly related, usually, to its physical durability.

⁵¹ The prices of resources, of course, are directly related to the prices of the products they are used to produce because the value imputed to resources is based upon their contribution, properly discounted, to the creation of value in the products they are used to produce; the prices of resources then tend, absent offsetting changes in productivity and/or discount rates, to move in the same direction as the prices of the products they are used to produce. Similarly, the prices of specific claims are directly related to the prices of the goods and/or resources against which the claims are held. (Many claims are held, not against individual goods or resources, but against bundles of goods and/or resources, so that the prices of these claims are affected by the prices of all of the things in the relevant bundles.)

⁵² That is, the expansion results in a mismatch between the demands for various goods and resources and the production/supplies thereof. This mismatch is the result of the distortion of the structure of prices away from the structure of people's values initiated by the fiat monetary/credit expansion.

⁵³ Thus the multiplier effect of Keynesian economics, which makes no sense whatever in the single-good world of much economic theorizing, is seen both to make sense and to be important for business cycles in the more realistic multi-good analysis. Note also the relationship of this analysis to the notional demand/effective demand analysis of Clower and Leijonhufvud.

⁵⁴ That the desire for quiet lives by managers may affect their decisions, has long since been noted by John R. Hicks, "Annual Survey of Economic Theory: The Theory of Monopoly." *Econometrica*, January 1935, page 8, in his suggestion that one of the major uses, and manifestations, of the "power" and profits of "monopoly" may be the provision of quiet lives for their managers.

⁵⁵ The economically useful lives of many, if not most, goods are directly related to their physical durability.

⁵⁶ Personal bankruptcy is one form of adjustment that does involve the explicit reduction in asset values and household claims. In recent years, the stigma of personal bankruptcy has been greatly reduced, thus making this a less painful option; further, recent changes in the bankruptcy laws in the direction of "liberalization" have also made this option less undesirable. Thus changes in values (attitudes toward personal bankruptcy) and in the institution of personal bankruptcy have increased the use thereof, the effect of which has been to reduce the duration and severity of the downturn.

⁵⁷ It is true that, *e.g.*, both the New York City fiasco of the mid-1970's and the WPPS ("WHOOPS") fiasco of the 1980's involved explicit losses, but such cases are rare.

⁵⁸ The WPPS case did involve quantity adjustments in the form of termination of construction of incomplete power plants as well as the cancellation of orders for others.

⁵⁹ There are some cases where the losses of value involved are explicit. Examples are: in regard to material goods: the WPPS facilities; in regard to services: the educational services provided in many, if not most, governmental schools; and, in regard to transfer payments: the cases in which food stamps are sold (illegally) at a discount from face value.

⁶⁰ The term "capital flows" does not refer to international movements of *real capital goods* but rather to increases or decreases in foreign *claims*, either specific or general, against a nation's real domestic goods. A nation is said to have a net capital outflow ("net foreign investment") or inflow ("net foreign disinvestment" or "net investment by foreigners") as the net foreign claims against it decrease or increase, respectively.

⁶¹ For a succinct statement of the inappropriateness of the term "Third-world" see P. T. Bauer, *Dissent on Development*, rev. ed., 1979, pp. 24-25.

⁶² The terms "debtor nation" and "creditor nation" are highly unsatisfactory for several reasons.

First, only people, individually or in groups, can be debtors or creditors.

Second, the people of every nation, taken as a whole, always both hold claims against foreigners and have claims held against them by foreigners. Therefore it is aggregate net claims that determines a nation's debtor or creditor status. But this datum has limited usefulness to decision-makers in international financial markets.

Third, from the point of view of decision makers, the citizenship or residency of those people against whom they hold claims or who hold claims against them is of virtually no importance. In fact, many, if not most, debtors and creditors do not know who their creditors and debtors, respectively, are. What is important to existing creditors is that they receive what they are due, timely, and to existing debtors, that they pay what they owe, timely. And, for prospective borrowers and lenders, what is important are the terms and conditions of the prospective loans, and the risks involved.

Fourth, it is not at all clear what meaning ought be attached to the terms "foreign" and "foreigner" in this context. And yet this is a crucial matter, for if a nation is a debtor or creditor this must mean that on net the rest of the world holds claims against it or it holds claims against them, respectively. That is either they owe foreigners or foreigners owe them. But who are these foreigners and what constitutes foreign debt? Should a U.S. T-bill owned by a citizen of some other nation, resident in the U.S.A. be considered foreign debt? Does the answer hinge on whether the individual is permanently or only temporarily residing in the U.S.A.? Should a U.S. T-bill owned by a citizen of the U.S.A., resident in some other nation be considered foreign debt? Does the answer hinge on whether the individual is permanently or only temporarily residing in the other nation? Does it matter, in any case, whether the actual physical evidence of the claim is located in the U.S.A. or some other nation? And what of securities sold by a corporation chartered in the U.S.A., of whose stockholders some are resident citizens of the U.S.A., some non-resident citizens, some resident non-citizens, and some non-resident non-citizens? Does it make any difference where the securities were issued, or where they were and are subsequently traded, or in what currency they are denominated?

Further, since it is exports and imports of goods and services which create, respectively, claims against foreigners and foreigners' claims against a nation, the terms "exports" and "imports" also are unsatisfactory.

In sum, what does it mean to be a debtor or creditor nation, and is the concept of any usefulness for business cycle theory?

⁶³ This is a form of throwing good money after bad and, from the points of view of the banks' stockholders and creditors, and of the taxpayers/citizens, highly undesirable.

⁶⁴ In some cases, of course, the government concentrates losses, but these are less common.

⁶⁵ The greater is the increase in government intervention, the greater will be the disruption of the economy. The result will be a reduced ability to export and an increased dependence upon imports, decreasing the ability to service the existing debt and increasing the need for additional credits. Thus the result will be an even larger default, although it may be postponed for a while or disguised, depending on the reactions of the creditors, and their governments.

⁶⁶ As it is not always in the interests of politicians and bureaucrats to disclose their true intentions, any categorization of governmental interventions based upon intended effects or stated intentions is suspect and subject to error. Further, regardless of intentions, financial interventions virtually always have effects that, were they the intended effects, would place them in the real category, and, at least some, real interventions have effects that could place them in the financial category. Two important examples of interventions that have major effects of both types are the Social Security system and the Pension Benefit Guarantee system.

⁶⁷ That inflation is always and everywhere a monetary phenomenon is made manifest when we try to answer the question, "Of what does inflation consist in a barter economy?"

⁶⁸ Although it is true that there are still some who would maintain that the governmental budget; *i.e.*, fiscal policy, is the primary tool of stabilization, and that the levels of governmental expenditures and taxes, and the consequent deficits and surpluses, are the primary determinants of such things as inflation, interest rates, and unemployment, etc., because the evidence of the real world seems to confute it, the credibility of this position among professional economists continues to be in decline.

⁶⁹ The matter of governmental attempts to alter people's actions by attempting to alter their values raises difficult issues of moral and political philosophy; and, the consequences of such actions for the most fundamental of human values and rights are of the first magnitude of importance.

⁷⁰ L. v. Mises, "The Trade Cycle and Credit Expansion: The Economic Consequences of Cheap Money," 1946, in *On the Manipulation of Money and Credit*.