

KNOWLEDGE, EXPECTATIONS AND CAPITAL
THE ECONOMICS OF LUDWIG M. LACHMANN: ATTEMPTING A NEW PERSPECTIVE

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There are various ways in which, in any discipline, we might look upon its history of thought. According to one view the contributions of past thought are given to us, like sculptures in a museum, as objects of interest and study but as something which has assumed a permanent form....

It is possible, however, to take a different view of the present role of the history of thought. According to this view the ideas contributed in the past do not at present necessarily exist in their final form. The answers which have been given are all possible answers to recurring questions, but there may be other answers. The problems which thinkers of the past have attempted to solve may have solutions other than those they proposed, but which still elude us. A thinker may have dealt with a complex of facts and problems some of which are linked by threads of which he may have been unaware. From time to time therefore at least the major contributions must be reexamined.¹

Ludwig Lachmann, died on December 17, 1990 at the age of 84. All those who met him, and especially those who were taught by him or who worked with him, could not help but be impressed by him. As a man he was unfailingly gracious and considerate. As a scholar he was amazingly precise and consistent.² Still, his death passed unnoticed among all but a small group within the world of economics. His economics was couched in a language that was foreign to most economists. His interests were remote from those in the mainstream. And even within the group with which he was most at home, the Austrian economists, he was regarded by some as having very extreme views. In part, the restricted popularity of his ideas was a result of what some perceived as his "nihilism" - the apparent implication that economics could not say anything about anything. In part, it was the result of a lack of concrete proposals that his readers could take away with them from his work. Even those who agreed with him could find themselves nodding in agreement through his books and articles and yet still be left with a feeling of uncertainty as to "where we go from here". Now that he is gone it is natural to wonder what it is that he has left us and whether there are implications of his work that have not yet been drawn out. In order to answer this I will attempt, necessarily inadequately, to summarize some of his main ideas and how they relate to one another, and to draw out some of the implications that these ideas have for working economists. In particular, since Lachmann rarely addressed policy issues directly, we shall have to extrapolate from his writings on different topics in order to discover the implications of his work for the relative merits of alternative economic systems and policies.

The general question around which one may think of Lachmann's work can be articulated in different ways, all having much the same content. Is equilibrium a meaningful or helpful concept for economic analysis? Is equilibrium possible? Does the market economy exhibit any tendency toward equilibrium? Or, more accurately, can it be shown (logically, empirically, etc.) that the market economy exhibits a tendency towards equilibrium? Or, most generally, is the market economy stable? Lachmann left the distinct impression that the answer to these questions was either "no" or "uncertain".

¹ Lachmann (1971, vii).

² See Caldwell (1991).

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What emerges from our reflections is an image of the market as a particular kind of process, a continuous process without beginning or end, propelled by the interaction between the forces of equilibrium and the forces of change.³

Is a different answer possible? I will suggest a perspective that throws a different light on Lachmann's way of looking at the world.

Much of what Lachmann wrote about economics can be placed under one of three general topics namely, "knowledge", "expectations" and "capital" and it is in terms of these that I will make my summary.

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Lachmann is a thoroughgoing subjectivist, according to some a radical subjectivist. Everything meaningful in economics must be traced back to the subjective states of mind of acting individuals. Individuals act on the basis of their preferences and of their expectations. Both are subjective. Subjectivism is more than the recognition that value is determined by subjective preferences at the margin.

Austrian economics reflects a "subjectivist" view of the world. The subjective nature of human preferences is its root. But in a world of change the subjectivism of expectations is perhaps even more important.⁴

One's expectations are formed on the basis of one's knowledge and experience.⁵ Knowledge is thus crucial to understanding action. To understand or to predict someone's actions one must have information about what they know as well as what they want. But both are subjective and unobservable. Information, in the form of observable, disembodied bits and bytes, as well as observable facts of nature, is the raw material for the production of knowledge. But this connection is by no means a simple one and the distinction between information and knowledge is seldom made. In his recent work Lachmann does make this distinction, though it is possible to feel that he does not go far enough to draw out the full implications.

...[w]e shall use the words *information* and *knowledge* respectively to mean the tradable material embodiment of a flow of messages, and a compound of thoughts an individual is able to call upon in preparing and planning action at a given point of time. Our distinction between the two terms thus rests in part on the traditional flow-stock dichotomy, but in part also on that between a socially objective entity and a private and subjective compound of thoughts.⁶

³Lachmann (1976a, 61). This article contains a densely argued summary of much of Lachmann's thought about subjectivism and its consequences for his way of looking at the market process. Although Lachmann seems to have predated G.L.S. Shackle in his treatment of expectations and radical uncertainty (see Lachmann (1943)) he thought himself to have been very much influenced by Shackle's work.

⁴ Lachmann (1976c, 28).

⁵ See generally Lachmann (1943) and also Lachmann (1978, chapter II).

⁶Lachmann (1986, 49). Italics in original. The stock-flow distinction strikes me as incorrect since both information and knowledge may be either a stock or a flow depending on the context. This is, however, peripheral to our current discussion which focuses on the distinction between observable, objective information and unobservable, subjective knowledge. This distinction is similar to the one made by Hayek and Polanyi between (objective)

In another place Lachmann says:

We are often told that knowledge is to be included among the equilibrium "data" along with tastes and resources, so that changing knowledge entails changing prices and output quantities. But 'data' must be measurable and knowledge is not.⁷

This distinction, we shall see, is an important one for Lachmann's subjectivism as well as for his concept of capital. It is knowledge that imbues information with value. Disembodied information is valueless. Information without cognition is valueless. In a sense, knowledge is information transformed into capital and, in fact, *all* capital has a similar knowledge dimension. In this sense all capital is "human".⁸ Capital is resources (information and other resources) plus "meaning". Disembodied pieces of equipment or raw material have no value until they are considered within a production plan conceived by someone in a position to implement that plan. Knowledge in many forms is an indispensable part of any production plan.

So while information is observable, knowledge is not. Knowledge is indispensably idiosyncratic to some degree. There is an inescapable element of interpretation associated with anyone's "knowledge". We communicate by trading bits of information. Knowledge, as such, is never traded, never exists outside of the human mind. Knowledge is inevitably dispersed among individuals and can never be collected in a single place (though information can). This has the obvious implications for the impossibility of socialist planning explained by Mises and Hayek⁹, but it also has implications for conceptions of equilibrium and prediction. Each individual's experience and knowledge is unique and each formulates a plan based on these. Plans are based on different and frequently incompatible expectations (of which more below). Thus the unfolding of time brings revelations about these incompatibilities leading to further plan formulation. In the process, individuals learn. That is to say they see opportunities for production and exchange that they had not seen before and they revise their plans. This includes the discovery of new ways of using resources that we call technological change.

The most important implication of the subjectivity of knowledge is thus found in its connection with time. Briefly, "[T]ime and knowledge belong together. As soon as we permit time to elapse, we must permit knowledge to change. The pattern of knowledge never stands

knowledge and tacit knowledge, the latter being personal, unobservable and uncollectable. The distinction offered here is tautological to the extent that I define knowledge as subjective and unobservable and information as an objective representation. Knowledge thus understood would include but is not confined to tacit knowledge. Theories written down in the form of words or equations thus fall into the category of information, their meaning and implication are part of knowledge. There is a knowledge base that we all have in common, but there is a part that is strictly personal.

⁷ Lachmann (1976,55)

⁸"Human capital" usually refers in the literature to the value of education, training and experience. Austrians have shown almost no interest in this concept. Given the wider scope, suggested in the text, of an Austrian approach to capital, I suspect that Austrians could contribute much on the role of "human" capital in the economy.

⁹ See for example, Mises (1981), Hayek (1976, chapters 2, 4, 7-9).

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still."¹⁰ This is so fundamental to his thought that it may be called *Lachmann's axiom*.¹¹ When time elapses individuals learn, that is they come to know something that they did not know before. This must be true unless we assume that all individuals plans are consistent and their expectations coordinated such that no one is disappointed. If individuals have different expectations about the same future reality, at most one of them can be right. Those who are wrong are said to be "learning".¹² But if they are learning then their knowledge is changing and their expectations may change along with it.¹³ This underscores the impossibility of prediction as it is usually understood. We noted earlier that prediction (and understanding) are inhibited by the subjective nature of expectations and preferences. But this is only a small part of the story. In order to predict an individual's actions one would have to know not only his preferences and expectations (which are based on his current knowledge), one would also have to know his *future* knowledge on which his future actions will be based. But it is impossible (by definition) for *him* to have knowledge of his future knowledge. If he knew what he would know in the future but doesn't know now he would know it now - a hopeless contradiction. And if it is impossible for each of us to have knowledge of our our future knowledge it makes little sense to think of us having knowledge of the future knowledge of others. As long as learning takes place future knowledge in general is different from present knowledge. Thus, in the world as we know it, where learning is universal, we cannot conceive of time elapsing without knowledge changing and thus we cannot, in any detailed way, predict future states of the world.¹⁴ Therefore, if we mean by prediction the ability to foresee individuals' future actions either absolutely or as a function of certain states of the world, we cannot predict. Not all the possible future states of the world are available to us in the present, because future knowledge

¹⁰Lachmann, (1976c, 36). Also "*As soon as we permit time to elapse, we must permit knowledge to change, and knowledge cannot be regarded as a function of anything else* (italics original). The state of knowledge of a society cannot be the same at two successive points of time...." Lachmann (1976b, 129).

¹¹ "According to a well-known Austrian axiom, 'Time cannot elapse without the state of knowledge changing'!" Lachmann (1986, 95).

¹² Lachmann quotes Hahn "I shall want to say that an agent is *learning* if his theory is not independent of the date *t*. It will be a condition of the agent being in equilibrium that he is not learning". Lachmann (1976b, 36) from Hahn (1973, 16). Lachmann comments "It is difficult to know the range of implications here envisaged. Strictly speaking, it means that point-of-time equilibrium is the only equilibrium possible since it involves not learning".

¹³The distinction between knowledge and expectations bears further examination, especially in the light of the observation that knowledge is subjective. Does what one "knows" include what one, more or less confidently, "expects" to happen? Are expectations a subset of knowledge or is even a distinction possible? For purposes of this paper I will continue to make the distinction as if they were separable categories. I do not yet know if anything hinges on this. I am indebted to Israel Kirzner for raising this issue.

¹⁴In a recent lecture Edmund Phelps has commented (purporting to interpret Keynes) "...[S]ociety cannot have objective (sic) knowledge now of the future, with discovery and learning. To have such knowledge would be to have knowledge of what we do not now know". Phelps (1990, 3). Two things can be noted about this. One, Phelps seems unaware of the implications of this for economic modeling as we know it or, for that matter, of the implications for economic policy. Second, and related, Lachmann's thought has a certain affinity to Keynes's. He has expressed admiration for this aspect of Keynes's thought, namely the treatment of uncertainty. And this has drawn suspicion from his Austrian colleagues as a result. But I shall argue below that those aspects of Keynes that he admires point up a fundamental contradiction in Keynes's thought that is completely compatible with Austrian economics.

is unavailable. Whether prediction in any form is possible remains an open question about which more will be said below.

EXPECTATIONS

Although we have no "knowledge" of the future we do act. Action implies planning¹⁵ and planning implies expectations. Expectations are mental pictures of the state of the world in the future (or that aspect of the future world in which we are interested).

The future is unknowable, though not unimaginable. Future knowledge cannot be had now, but it can cast its shadow ahead. In each mind, however, the shadow assumes a different shape, hence the divergence of expectations. The formation of expectations is an act of our mind by means of which we try to catch a glimpse of the unknown. Each one of us catches a different glimpse. The wider the range of divergence the greater the possibility that somebody's expectation will turn out to be right.¹⁶

Thus in Lachmann's view there is no realistic possibility of a Hayekian equilibrium¹⁷ in which everyone's plans are *ex ante* consistent. According to Lachmann there are in the market competitive forces that tend to bring individuals' disparate expectations into greater consistency and, were it not for the persistence of constant change, a final state long run equilibrium might well be attained. That is to say if the environment, which includes the actions of others, did not reveal genuine novelty with every passing moment, so that individuals continued to learn, they would eventually learn all there was to learn and learning would stop. All actions (and the plans upon which they were based) would be consistent. As it is, however, the forces of convergence are continually offset, to a greater or lesser extent, by the forces of change.

Lachmann is aware that the notion of "long run equilibrium" is never used by anyone as a depiction of a real world state of affairs (although the "equilibrium always" Rational Expectations school¹⁸ seems to come close to this). However, he suggests that there is no reason even to expect a "tendency towards" long run equilibrium. The only kind of real equilibrium we actually observe is a short term market-day equilibrium in which there is a "balance of expectations" with no tendency toward convergence in general especially in capital markets.

¹⁵"Action is guided by plans, i.e., by thought, and all action has to be interpreted as the outward manifestation of such plans, which must be coherent if they are to have a chance of success. In fact all economic phenomena are intelligible only as the outcome of planned action." Lachmann (1976a, 55).

¹⁶Lachmann (1976a, 59).

¹⁷See Hayek (1948, 35-39).

¹⁸See Garrison (1986).

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...[A]sset markets are inherently 'restless' and equilibrium prices established in them reflect nothing but the daily balance of expectations. In the cotton market, for example, it is likely that expectations about the probable price in July 1976 will tend to converge as this date draws nearer. But this cannot happen in the Stock Exchange, since what is being traded there are titles to (in principle) permanent income streams, which have no 'date' that could 'move nearer'. All we get is a succession of market-day equilibria determined by a balance of expectations tilting from one day to the next as the flow of the news turns bulls into bears and *vice versa*. There is no question of a gradual approach towards long-run equilibrium.¹⁹

This is a challenge not only to the standard neoclassical fare, but to the Austrians as well. Lachmann suggests that both Mises and Hayek are wedded to a vision of long-run equilibrium that is inconsistent with subjectivism properly understood.²⁰

Upon reflection we see that Lachmann's skepticism regarding the efficacy of equilibrating forces rests on his conviction that *at any point of time* individuals' expectations are invariably inconsistent to some degree and that therefore the elapse of time will bring disappointments and surprises. This is a strong proposition, very difficult to deny. Its power rests on the fact that it is impossible for us to imagine that in the world as we know it there could ever actually be a moment in time when all individuals plans were mutually consistent. And if this is true for each and every point of time how are we to think of an equilibrating process?²¹

Mises, and other Austrians following his lead, have identified such a process. Garrison has summarized it as follows:

The claim that there is a general tendency toward equilibrium rests on the understanding of a market process in which each investor is investing on the basis of his own expectations. Investors whose expectations about future market conditions turn out to be correct enjoy an accumulation of resources; investors whose expectations turn out to be incorrect suffer a decumulation of resources. Investment decisions of the former become increasingly influential *over time*; investment decisions of the latter become decreasingly so.

By focusing on the market process within the investment sector, the Mises-Hayek theory can predict that equilibrating expectations will tend to govern, *even though it cannot predict what in particular will govern the formulation of expectations*. Recognizing the subjectivity and unpredictability of expectations in any given circumstances, then, does not imply the nonexistence or the inefficacy of equilibrating tendencies. The existence and efficacy of equilibrating tendencies does presuppose, however, that correct expectations are rewarded and incorrect expectations are penalized. The realization of such rewards and penalties in turn depends upon the nature of the institutions within which the investment decisions are made.²²

¹⁹Lachmann (1976a, 60).

²⁰Lachmann (1976a, 61).

²¹"...[I]f individuals generate information through their actions, rather than just acquire it, there is no reason for expectations to converge. Kregel (1986, 163)

²²Garrison (1986, 98-99). In a footnote to the first paragraph quoted Garrison notes that "[L]achmann acknowledges this reasoning but is not especially swayed by it. 'We might say that unsuccessful planners make capital losses and thus gradually lose their control over resources and their ability to engage in new enterprises; the successful are able to plan with more confidence and on a much larger scale. Mises used such an argument. But how can we be sure?' Lachmann (1976b, 129). Garrison then makes the following very provocative point. "Of course, in some absolute sense, we can never be *sure* (italics original) . But Mises's argument applies to a market

With regard to intertemporal equilibrium and interest rates, Garrison says,

Investors who are able successfully to complete their projects gain command over greater quantities of resources. In turn, the *subsequent* decisions of these successful investors have increased weight in determining the market rate of interest. Investors who overextend themselves get caught in a credit crunch, suffer losses, and their investments possibly are subject to liquidation. *Subsequent* investment decisions by these investors have decreased weight in determining the market rate of interest. Through this process the market discipline creates the tendency towards intertemporal equilibrium.²³

Attention to the italicized words reveals what is really being asserted here. Human beings are presumed to be innately different with respect to their abilities to determine which investment prospects are viable and which not. Some people are more likely to be "winners" in their investment activities and some are more likely to be "losers".²⁴ Through the process of competition over time the market system allows the identification of and sorting out of these two categories. No other system but the market system can do this. In this way the market system outperforms every other in most closely producing what most people want at any given time. In this sense it exhibits a tendency towards optimality and equilibrium.

It is clear however, that this process depends crucially on the proposition concerning winners and losers. There must be persistence over time in the ability to make good and bad investments. If, on the other hand, individuals did not vary in their abilities to pick good and bad investment prospects, if the future were so cloudy that it was really simply a matter of luck, then there would be no such equilibrating process. Gainers and losers would emerge randomly and it would not matter who picked them. The proposition that there is such a thing as 'entrepreneurial ability' and that individuals have it to varying degrees is an empirical judgment about "what the world is like" like Lachmann's assertion about the inconsistency of individual expectations. Both are most likely true. Even though, as Lachmann's insights suggest to us, we are unable to explain how some people are better able than others to judge the viability or otherwise of investment prospects, we see much evidence to lead us to believe that such abilities do indeed exist. We thus two have basic propositions:

economy in a way that it can never apply to state planning, a managed economy, or any other nonmarket system. " What is suggested here is that this debate is really about *policy* rather than *logic* and that the policy debate really hinges on empirical questions. I will return to this in the last section. Apparently, in this regard, Lachmann's view of equilibrium is closer to that of Hayek than it is to that of Mises. Both Hayek and Lachmann stressed that, though they may be derived *analytically*, the success or failure of equilibrating tendencies to actually predominate over other forces depended on the particular *empirical* circumstances. Hayek, over a long period of time tried in different ways to argue that equilibrating forces were likely to predominate in the real world. Lachmann was tenaciously consistent in insisting that in the modern world as we know it equilibrium as we theorize about it was unlikely. See Rizzo (1990) and (1992).

²³Garrison (1986, 98).

²⁴A possible alternative (though similar) is that some "theories" or modes of behavior are more likely to produce profits in a wide range of circumstances and the market system in effect provides a way of weeding out the less efficient "theories". In this way it is the ways in which people behave in their investment decisions as well as the individuals themselves (those who learn more or less quickly) that are the winners or losers.

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Proposition 1.(Lachmann's axiom). At any point of time individual plans will be based on partially inconsistent expectations. Time and knowledge thus belong together. It is impossible to conceive of time elapsing without knowledge changing as plan inconsistency is revealed. Each moment brings with it some essential novelty.

Proposition 2. (Mises et. al.) Although we don't know how it is done,²⁵ we know that some individuals are consistently better able to pick good investment prospects than others. (In modern parlance, there is serial correlation by individual in good investment and entrepreneurial performance that is reflective of basic differences).

Propositions 1 and 2 are in no way inconsistent. Taking them together gives a perfectly reasonable picture of the world and one that invites a logical bias in favor of the market system. It is not clear that Lachmann would have denied Proposition 2 although he would have reminded us that equilibrating tendencies are continually being upset by the passage of time and that it is an empirical question whether or not they actually prevail. It is of some interest to ask whether it is more likely that equilibrating forces will prevail under some circumstances (institutional environments) rather than others. This will lead us to a closer examination of what exactly we mean by "equilibrium". I will return to this in the final section.

CAPITAL

Lachmann devoted considerable time and thought to the theory of capital. The role of expectations and what they imply for equilibrium, influenced his way of looking at capital and this proved to be another area of disagreement with his fellow Austrians. For the Austrians, macroeconomic problems have always involved careful attention to the structure of capital. But Lachmann was uncomfortable with what he perceived to be the formalistic nature of their theories of the capital structure and the business cycle. Given his view of expectations he felt they had not adequately captured the nature of capital and the difficulties of anticipating the effects of any policy.²⁶ Lachmann agrees with the Austrian view that the central problem facing a capital using economy is the problem of intertemporal coordination of economic activities. Recognizing this involves recognizing that there is an intertemporal logic to the production setup in any economy. The Austrians characterize this in terms of an economy where different

²⁵. This in itself is an interesting question. In a kaleidic world, where the passage of time necessarily brings with it unanticipated (unanticipatable) events, would it not be true to say that the very success of certain investments make it impossible to repeat them? How it is that some individuals persistently make better entrepreneurs than others, how they seem to have a better feel for diverse investment projects, is a real mystery. I owe this point to Robert Formaini.

²⁶"For some time one particular feature of Austrian economics had puzzled me. Its theory of capital, an essential and perhaps its best known ingredient, did not appear to fit the canon of methodological individualism.... The Austrian theory of capital...from Bohm-Bawerk onward, proceeded along altogether different lines and offered little scope for the effects of individual action." Lachmann (1978, preface to the second edition, viii). Lachmann says very little about "time preference" and one must presume that he did not take issue with Mises's contention that interest is to be explained solely in terms of it. He does spend some time discussing Bohm Bawerk's third reason for the existence of interest (the greater productivity of roundabout production) but does so in the context of describing the nature of economic progress rather than the existence of interest. See Lachmann (1978, chapter V).

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goods are applied at different "stages of production". The final stage is the one just before the sale of the finished product to the consumer. The more stages there are the "longer" or more roundabout is the production process. Longer production processes will only get adopted if they earn a higher rate of return. Thus, given the economy's expression of time preference in the loan market, those production processes of appropriate length will be adopted and the pattern of production will adapt itself, if left undisturbed, to the desired pattern of consumption.

The once highly respected Mises-Hayek theory of the business cycle relied on distorting effects to the capital structure of central bank induced changes. By lowering the interest rate below the natural rate of time preference in the economy, the central bank causes entrepreneurs inappropriately to adopt long lived production processes i.e. production processes that could not be maintained because, given the unchanged time preference of consumers, a demand for their output would not be forthcoming. The pattern of production is out of line with the pattern of desired consumption. The production structure is too long and will eventually have to be shortened. Unfinished projects will have to be abandoned and labor will be displaced.²⁷ Lachmann was uncomfortable with this theory. Its simplifications rendered it vulnerable to the objection that entrepreneurs would be able to anticipate the distorting effects of central bank policy and would avoid them thus negating the cycle.

... [T]rade cycle theory holds an instructive lesson. Here we have a body of analytical thought designed to meet the requirements set out...: to depict a recurrent pattern of events with booms and depressions following each other in ceaseless succession. But can we really believe that agents witnessing these events will learn nothing from them and act in successive cycles in identical fashion? Is it not more likely that their action in each cycle will be affected by the lessons they have learnt from its predecessors, even though, as always happens, different people learn different lessons from the same events? Once we admit that people learn from experience, the cycle cannot be reproduced time after time....These considerations suggest that it may be better to give up the doubtful quest for a model of *the* business cycle and to regard phenomena such as cyclical fluctuations in output and prices simply as phenomena of history in the explanation of which changes in human knowledge will naturally play a part, with the events of each successive cycle requiring different, though often enough similar, explanations.²⁸

By paying greater attention to the nature of capital one gets a more realistic, if less deterministic, picture.²⁹

Again, this is not to deny the importance of intertemporal coordination. Some things must obviously happen before others and the production plans of individual producers thus depend on each other in very crucial ways. Anything that affects the consistency of these plans

²⁷Generally, Hayek (1935).

²⁸Lachmann (1986, 30-31).

²⁹Lachmann also objected to the concreteness of the concept "stages of production". This view might be appropriate for a world in which no learning was occurring and production plans were fulfilled. But in a world of ceaseless change the capital structure at any point of time will defy simple characterization in terms of stages of production. Most obviously, length of production life is more a matter of economic durability than of physical durability. So "long lived" capital assets may not be in the "early stages" of production. Indeed in a multi-commodity, multi-process, ever changing world, the stages of production become very blurred.

will affect the capital structure and thus the production of consumption goods and the employment of labor. Lachmann thus offered his own view of capital.

The capital structure can only be understood in terms of the individual plans from which it derives.³⁰ A production plan involves the combining of individual capital goods and labor resources in order to produce particular outputs. These capital goods stand in a complementary relationship to one another within the plan. As individual bits of machinery, raw materials, buildings, and so on they make little sense. But when seen as part of an overall plan that is defined by the entrepreneurs (subjective) knowledge and expectations, they assume immediate significance.

The importance of understanding capital in terms of the plans from which it derives can be seen by noting that the plans provide the reference points for interpreting any given capital structure. We understand the role of capital goods only in terms of the plans that they help to fulfill and it is only to the extent that we understand these plans that we see meaning in the structure of capital. This explains the different valuations placed by different individuals on capital combinations on which trade in capital goods is based. Given any existing structure of capital, that structure will be maintained only as long as the plans on which it is based are successful. When plans fail, completely or in part, or succeed beyond the planner's expectations, they will be revised and the capital structure will be changed. It is in understanding this change that we must, once again, refer back to the individual production plans. Change (by which we must mean the occurrence of something unexpected) results in a regrouping of the established capital combination, and this will obviously have implications for labor resources as well.

The importance of Proposition 1 (in the previous section) becomes apparent when we note that the success or failure of an individual production plan depends crucially on the nature of other individuals' plans. Only if plans are consistent with one another will they succeed. Plan inconsistency implies plan failure. Plan failure implies plan revision which implies capital reshuffling. Plan revision is thus the root of changes in the capital structure.

But, as already discussed, the perfect consistency of all individual production plans is a most unlikely occurrence. In any modern economy production plans are almost certain to be, at least in part, inconsistent. This means that producers will experience less than complete fulfillment of their expectations. Thus plan revision is a normal part of any economy and is the key to a continually adapting capital structure. Plan revision entails *substitution* of some resources for others. Substitutability is a phenomenon of change. It is part of the process of capital regrouping that follows upon the revision of disappointed (or surprised) expectations. Thus, while complementarity is an aspect of any given plan, substitutability is an aspect of contemplated *changes* to the plan. Together these two concepts characterize different aspects of the capital structure, namely its coherence and its adaptability. Whether or not the capital structure is able successfully to adapt to change is an important question.³¹

³⁰What follows in this section draws heavily from Lewin (1986).

³¹Lachmann, L. M. (1947, 108-19). It may be of interest to mention some other aspects of capital that Lachmann described. Obviously the capital stock is *heterogeneous* in nature. That is to say, it is composed of many physically very different objects that are not reducible to any common denominator except in terms of the economic value they have as a result of the plans in which they are embodied. As we shall see this calls into question any economic policy that is based on insights derived from theorizing in terms of a single dimensional homogeneous

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In the economy as a whole many firms plan and replan their production activities in the face of changing circumstances. Out of the interaction between them and the economic environment, will emerge a flow of goods and services. It is as a result of the individual production plans that production occurs. The logic of these interacting plans provides the logic of the capital structure. At the firm level, the entrepreneur-manager establishes the plan structure. At the market level, the market process establishes the capital structure. Successful plans are rewarded, unsuccessful plans are punished. In this way, those capital combinations that prove themselves survive at the expense of those that do not. In a perfectly stable world this would mean that a perfectly stable capital structure, consisting only of sustainable capital combinations, would eventually be established. All production plans would be consistent with one another. No surprises or disappointments would occur. The capital structure would be perfectly integrated. We may refer to it as a "sustainable capital structure".

In reality, no capital structure is perfectly sustainable. Its existence would imply, for example, a world devoid of technological progress. The latter necessarily implies capital reshuffling as some resources are rendered obsolete and others find unexpected uses. The normal course of economic progress implies the unavoidable failure of some plans and the reallocation of resources. In this way, as long as we accept Proposition 2, the market process tends towards the integration of capital into a sustainable structure. The stability of a market economy rests, in the final analysis, on the dominance of capital integrating forces over forces of disintegration. The latter exist, as a result of incessant change, but we should normally not expect them to predominate.³²

We may draw two conclusions from our examination of Lachmann's theory of capital. His analysis suggests that the Austrian theory of the business cycle is out of tune with subjectivism as Austrians should practice it.³³ Indeed cycle theory *per se* is considered

stock of capital. Such a simplifying assumption would not matter in a static world or in one where the production techniques were irretrievably fixed in the form of rigid input coefficients. But in Lachmann's world it obviously does. In Lachmann's world capital goods have the property of *multiple specificity*, that is to say, they can be adapted to many different but a limited number of uses. Some of these uses are unanticipated. (See Lachmann (1978, chapter 1)). The importance of this to understanding the transmission of technical change is obvious.

³²"... [W]e may say that the desire to maximize profits on existing capital goods and the obvious futility of maintaining those that cannot, either now or in the foreseeable future, be fitted into the existing structure, warrant the *belief* that economic action will at each moment tend in the direction of such an integrated structure, even though this may never be completed." Lachmann(1978, 9) (italics added).

³³It is interesting to note that, in terms of Lachmann's own formulation, it *is* possible to obtain Austrian Business cycle-like conclusions. Lachmann (1978, 44-46) characterizes each production plan in terms of some common components. We may imagine a firm that makes production decisions once every period. During period t_1 , it has a capital combination of the form $kA; lB; mC; \dots$ where A, B, C, \dots are different types of production equipment and k, l, m, \dots are positive constants. In other words the firm has k units of A , l units of B and m units of C . At the end of t_1 , as a result of its experience, the firm decides to alter this combination for period t_2 to $l'B; m'C; n'D \dots$ where $l < k$ and $m > m'$, and D is a type of equipment not hitherto used by the firm (in fact it may be a newly discovered or constructed resource). The firm will therefore have to sell kA and $(m - m')C$ and buy $(l' - l)B$ and $n'D$. What this will imply for the firm's cash balances depends upon the market prices of A, B, C , and D , and these depend upon the actions of other firms. However, in general there is no reason to expect that the proceeds of the assets sold will just suffice to buy the ones acquired. It must then be true that

(1) $kAp_A + (m - m')Cp_C + Z = n'Dp_D + (l' - l)Bp_B$ where $p_A \dots p_D$ are prices and Z is the fall in cash reserves. Changes in $p_A \dots p_D$ from period to period reflect capital gains and losses that indicate the value of the resources in

impossible. However, application of what we have called Proposition 2 (namely the existence of "entrepreneurial ability" in selecting and maintaining "successful" capital combinations) suggests that capital structures as Lachmann understands them exhibit important stability in market economies.³⁴ The final section will bear on this as well.

ECONOMIC POLICY

While he shared in their general and unambiguous condemnation of most of mainstream economics, we have seen that, in some important respects, Lachmann parted company with his fellow Austrian economists. In his writing there is very little to be found which directly addresses specific policy questions. So it is difficult to know where Lachmann stood on issues very basic to Austrian economists, most notably, on the presumption of the superiority of free market institutions for organizing economic activity. There seems no doubt that his skeptical attitude with regard to the identification and establishment of equilibrium, discussed above, as well as his evident admiration for aspects of the economics of Keynes, cast suspicion on his credentials as a supporter of the market system, an unwritten article of faith for most (all?) Austrians. In this regard there are two separate questions to be answered. First, what was Lachmann's position? Second, what does his economics imply? I shall consider the first in this section and the second (in addition to what has already been said) in the next and final section.

Where he does address issues in political economy, Lachmann appears hesitant in his commitment to free market institutions. A close reading, however, leaves no doubt as to his basic faith in a market system. For example, Lachmann clearly condemned notions of monopoly that have emerged out of modern neoclassical analysis and have motivated the kind of anti trust policy we have come to take for granted. The clear implication is that the government should leave private producers alone to conclude whatever contracts they wish, including agreements that appear to inhibit competition. Seeing the market as a continual process of imitation and innovation he had no fear of the ability of producers to collude.

this and alternative uses. Z (relative to its expected level) is an indicator of the firm's success or failure in producing and selling its outputs. If n firms reshuffle their capital combinations and sell their discarded equipment to one another, then, (2) $Z_1 + Z_2 + \dots + Z_n = 0$ implying a windfall for some firms. A negative Z implies greater financial strength.

Now, it is important to note that the prices $p_A \dots p_n$, being prices of durable capital goods, reflect not only individuals' expectations of the value of their future output, they also reflect individuals' time preferences. For example, a decrease in time preferences would, *ceteris paribus*, result in an increase in capital goods prices (more for those of perceived long economic life whose output extended into the far future) as the demand for future goods relative to present goods increased. Thus an increase in central bank provided credit that increased the availability of loans and decreased interest rates might well push marginal time preferences lower than they would otherwise have been, along the lines of the Austrian theory. Entrepreneurs would be hard pressed to sort this out from everything else that was going on. A "distortion" of the capital structure would then result favoring capital goods with longer economic lives. As far as I can tell, Lachmann did not see this connection to the "stages of production" approach. His formulation differs from mine by not explicitly symbolizing prices!

³⁴This is my interpretation of what Lachmann's views imply. It is strengthened by the conviction that he would not have denied Proposition 2 as an empirical generalization (although in some circumstances it might not be true).

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Similarly, "the view, widely held, of product variation as monopolistic practice perpetrated by wily producers on an unsuspecting public and incompatible with competition, is quite wrong".³⁵

As we shall see in the next section, Lachmann considered the institutional structure of any social system to be of vital importance. This is very evident in his approach to inflation. There is no question that he thought of inflation as an unmitigated evil and his particular way of characterizing it is obviously shaped by his thinking on capital.

We may conclude that all inflation, quite apart from the effects on the relative price structure...gives rise to a tendency towards a distortion of the capital structure. There is no longer an unambiguous criterion by which we could measure the relative performance of firms.³⁶

But when he talks about the *causes* of inflation, his views appear decidedly idiosyncratic. He believed that the nature of modern inflation was heavily influenced by several important institutional developments. First, there was the disappearance of the wholesale merchant as a price setter. This meant that prices were no longer flexible in a downward direction as they had been in the nineteenth century. He saw this as a fundamental move from a 'flexprice' to a 'fixprice' world in which prices are basically set by manufacturers and do not always respond to changes in supply and demand.³⁷ Secondly, a modern credit system, with complex financial intermediation, is one in which the supply of money is extremely elastic. A metallic standard is no longer any guarantee against expansion of the money supply because the latter is created by a simple contract between private parties. Any attempt to control the money supply can be thwarted by financial innovation. In fact, Lachmann gives the distinct impression that he regards the money supply as wholly endogenous.³⁸ But, thirdly and most importantly, the rise of collective bargaining is the development that ensures that prices are not only prevented from falling, they must continue to rise to successively ratify each round of wage increases granted by the price setting producers. It is the strength of trade unions pursuing their own ends that is, in Lachmann's view, the most pernicious cause of modern inflation.

Our first two causes, while being necessary major conditions of inflation, are really only conditions. Neither the elastic nature of money supply nor the modern method of fixing industrial prices could by themselves have produced the phenomena we all know....The really decisive force of our inflation has to be sought in the driving power of trade unions, and the environment, intellectual and institutional, within which they operate today.... The institutions of collective bargaining ...have...destroyed the autonomous price system on which the economy must rest.³⁹

³⁵Lachmann (1986, 16).

³⁶Lachmann (1967, 300). There is a potential conflict in Lachmann's thought with regard to inflation. If we cannot rely on market signals to move us towards equilibrium, if some market forces are disequilibrating, then in what sense can we talk about a distortion of signals by inflation? This is related to the notion that the very act of planning seems to imply some notion of stability or equilibrium. I discuss this in the last section below. I am again indebted to Robert Formaini for raising this issue.

³⁷Lachmann, (1967, 294-295) and Lachmann (1986, 124).

³⁸Lachmann (1967, 294) and Lachmann (1986, 85-88).

³⁹Lachmann (1967, 296-298).

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While this vision of our modern economy being held hostage by these three institutional developments, each one of which will appear to some readers to be highly disputable⁴⁰, is interesting in its own right, we are here interested only in what they imply about Lachmann's views of the market system. Unfortunately he does not tell us how we are to respond to these conditions in our attempt to solve the problem of inflation. We may infer that he would have looked favorably on measures designed to reduce the powers and privileges of trade unions. But we do not know what he had in mind as the ideal monetary system and what role government was to play in it. In particular, we don't know how he felt about the relative merits of a gold standard as compared to competitive moneys for example, to cite one issue of contemporary interest to Austrians.⁴¹ Similarly, we don't know what, if anything, he favored doing in order to get the economy back to a world where prices, in the absence of overriding union power, would be free to fall as well as rise.

In different contexts we do find significant statements suggesting a bias in favor of a limited role for government and alerting us to the dangers of an expanded role.

The modern State in its Western version, which promotes such schemes for faster economic growth, is what has come to be known as a Welfare State: it has taken over responsibility for satisfying more and more needs. Already it had made itself responsible for Full Employment. It may be said that taking on the responsibility for growth is merely a further step along the same road. But it is a step which must be regarded with great misgivings, in general and not merely on economic grounds.⁴²

As the classical economists knew well, a market economy may adjust itself to changes of many kinds, but it rests unconditionally on the institutions of property and contract.⁴³

Will not the leaders in the course of the political struggle have to make promises to the electorate which cannot be redeemed without whittling away some of the very institutions on which the democratic process rests?⁴⁴

It is clear also that he thought attempts to redistribute income were futile (given the continuous nature of spontaneous redistribution through the market process of capital gains and losses) and counterproductive.⁴⁵

There is still the question of his views on Keynesian economics. It is clear that Lachmann agreed with Keynes's treatment of radical uncertainty.

By uncertain knowledge ... I do not mean merely to distinguish what is known for certain and what is only probable. The game of roulette is not subject, in this sense to uncertainty ... Even the weather is only moderately uncertain. The sense in which I am using the term is that in

⁴⁰Note however the following rather prophetic statement. "It is not impossible in the future that the modern chain store will come to assume the wholesale merchant's former role of a price setter." (1967, 307n).

⁴¹In private conversation some years ago, I got the distinct impression that while he thought that the idea of free market money was an interesting one, he did not yet feel comfortable enough with it to argue in its favor.

⁴²Lachmann (1963), 326).

⁴³Lachmann (1971, 90).

⁴⁴Lachmann(1971, 15).

⁴⁵Lachmann (1956).

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which the prospect of a European war is uncertain, or the price of copper and the rate of interest twenty years hence, or the obsolescence of a new invention, or the position of private wealth owners in 1970. About these matters there is no scientific basis on which to form any calculable probability whatever. We simply don't know.⁴⁶

And he saw much to admire in Keynes's analysis of the psychology of expectations. In particular, Keynes thought that macroeconomic events could and would be much influenced by magnified changes of opinion concerning future values (for example of asset markets) where such opinions were influenced not so much by expectations about the underlying productive "facts" as by expectations of the expectations of others. In some ways this fit in very nicely with Lachmann's emphasis on disparate expectations. In a world of radical uncertainty multiplier effects do not seem so remote a possibility (though he denied their universal applicability)⁴⁷. Individual producers planning in the face of unexpected changes may be alternately cautious and adventurous depending upon their perceptions of the overall "business climate".

But, having said this, Lachmann parted company with Keynes when it came to the implications that can be drawn from his (Keynes's) analysis. He sees a fundamental inconsistency in Keynes.⁴⁸ And, although Lachmann is not explicit on this, radical uncertainty and the prospect of inducing waves of optimism and pessimism seemed to imply for him a *reduced* not an *expanded* role for government. In a radically uncertain world, where prediction is impossible, the government policy makers would face an impossible task if they tried to engage in macroeconomic "fine tuning". They would most probably end up exaggerating the fluctuations that they were trying to smooth.⁴⁹

Clearly, Lachmann's views have some obvious implications for macroeconomic policies. Aggregates like GNP, investment, sales etc. are the results of millions of individual decisions that are based upon individual plans. To determine an economically meaningful relationship between any economic aggregates, one must be able to show the connections between the individual plans underlying them. For example, it is almost certainly erroneous to say that investment and the rate of interest are inversely related and that when the supply of investment goods increases the rate of profit decreases. Such a view obscures the essential nature of the capital stock as composed of multiply specific, heterogeneous, complementary capital goods.

⁴⁶Keynes (1937). Quoted in Phelps (1990, 3).

⁴⁷"If merchants hold surplus stocks,....the multiplier process comes to an abrupt end...." (1986, 13).

⁴⁸. "It is hard to avoid the conclusion that Keynes introduces expectations when they suit his argument, and leaves them out when they do not. The main purpose of the *General Theory* is to entrench the principle of effective demand." (1986, 98).

⁴⁹. This ironic contradiction has been recently noted. "The portrait that Keynes's theory drew of the economy, one in which labour-market participants faced daunting uncertainties about the extent of the general fall of wages that will prove necessary to restore employment and about the extent to which other wage setters have reached the same calculation, hardly seems a propitious environment for government authorities to try their hand at stabilization. And indeed Keynes says in the *General Theory* that even optimal policy decisions by the stabilization authorities will inevitably leave a large amplitude of fluctuation in employment. Yet Keynes was no passivist in the battle over policy." Phelps (1990, 25).

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As long as we cling to the view that all capital is homogeneous, we shall only see ... the unfavorable effects of investment on the earning capacity and value of existing capital goods, since all the elements of a homogeneous aggregate are necessarily perfect substitutes for each other. The new capital competes with the old and reduces the profitability of the latter. Once we allow for heterogeneity we must also allow for complementarity between old and new capital. The effect of investment on the profitability of old capital is now seem to depend on which of the various forms of old capital are complementary to, or substitutes for, the new capital....In general, investments will tend to take such concrete forms as are complementary to the capital already in existence.⁵⁰

This suggests that in a growing economy investment and profits should be positively related. But it also raises questions about the way in which we look at idle resources. In the normal course of economic life as some plans succeed and others fail, some resources, capital and labor (human capital), will be rendered obsolete and they will be displaced. A policy designed to continue their employment in existing capital combinations, based on failed and failing production plans is doomed to result in ever increasing unemployment. Aggregate measures of unemployment obscure the changing patterns of the complementarities that underly them. Undesirable macroeconomic outcomes, like unemployment, will not respond to the Keynesian style stimulation that is still so popular because this policy has nothing to do with the structural causes that produced the outcomes. Economists have shied away from so called "structural" explanations of macroeconomic fluctuations. But if we follow Lachmann, we realize that it is impossible to avoid a structural view of things; in fact providing sound micro foundations for macro outcomes compels it. Focusing on macro aggregates can result in both incorrect diagnoses incorrect cures.⁵¹

There are many possible causes of fluctuations in economic aggregates. Lachmann was skeptical of the notion of an "economic cycle". Obviously, as discussed earlier, such a cycle cannot be a regular one, or else it would be predictable. In what sense, then, can we speak prospectively of an irregular cycle? Retrospectively anyone can identify "cycles" out of fluctuations in amorphous economic aggregates. Lachmann's explanation of a continually adapting capital structure would lead us to expect ups and downs in economic activity as a normal course of economic life. Sometimes errors in planning will tend to "cluster" and at other times successes will tend to prevail. Technological changes, that produce far reaching underlying structural changes are important.

PLAN ECONOMICS

Lachmann's economics, with its analysis of the relationships between knowledge, expectations and capital, revolves crucially around the notion of the "plan". Economic agents exist in and through time, planning and replanning their actions. His analysis of equilibrium refers to the consistency of these plans between individuals and over time. It is because he thought plan consistency to be an extremely rare event that Lachmann thought equilibrium an unlikely occurrence. Nevertheless we have seen that, as an empirical matter, he considered the market process the best possible way of organizing resources and held a basic faith that,

⁵⁰. Lachmann (1978, 6-7).

⁵¹See Lachmann (1973).

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through the market, the capital structure would tend toward integration even though this tendency was continually being disturbed and redirected.⁵² Ironically, however, it is the very implications of the concept of the plan that should lead us to believe that the market system is an equilibrating system *in the sense that it exhibits underlying stability*.

We know that individuals do plan. And we know that in order to plan they must have some signposts, some reference points against which the plan can be evaluated, aligned and realigned.

Plans are comprehensive means-ends schemes. The means which figure in them must not merely denote resources actually available to the agent; they must, to his knowledge, be adequate means to achieve his ends. When some of them become inadequate, the plan may have to be revised. The need for such revision thus depends on the state of the stock of knowledge which, in its turn, is continuously transformed by the flow of information. As it is clearly impossible to revise the plan as often as information possibly relevant to it is received, decisions about plan revision have to be made at intervals whenever the stock of knowledge that prompted the original version of the plan appears to have undergone enough transformation to warrant it. By what criteria do agents decide when exactly this moment has come?⁵³

Thus, a crucial question is "When is a plan considered changed and how is the change manifested?". Although it is not possible to foresee the causes of the various outcomes that we can imagine, it is possible to experience various outcomes that in retrospect are considered to fall within the plan. Whether or not the plan is considered "failed" is a subjective assessment. But this dramatically restricts the set of outcomes that need to be considered "disequilibrating" to those that cause plan "revision". For the most part various outcomes are absorbed smoothly because they are perceived to be "within the range" of the plan. Plans, though inconsistent in details, might be close enough in the range of outcomes to imply the real possibility of a high level of coordination.⁵⁴

⁵²See note 30 above.

⁵³Lachmann (1978, 53). What follows in this section is my extrapolation from Lachmann's ideas rather than an interpretation of what Lachmann knew.

⁵⁴Hayek also used the notion of the individual "plan" as a central theoretical concept. There appear to be some differences, however, between his usage and Lachmann's. In particular the quotation above seems to imply the existence of contingencies within the plan, and this is confirmed by statements like the following:

"Every plan of course has to be flexible to some extent if it is to succeed. The need for flexibility partly stems from the fact that some of the knowledge relevant to the actions will only be acquired ...after the plan has been drawn up and the course of action started. To this extent the planner will have to leave certain blank spaces in his scheme, details to be filled in later as new knowledge accrues in action. It is of course impossible to plan everything in advance,....In an extreme case ... new knowledge may suggest that the purpose of the plan is altogether unattainable, and then the whole plan will have to be discontinued." (1971, 40).

Rizzo comments "Hayek is implicitly excluding the possibility of plans containing contingent statements. The individual, in this view, formulates an intention *simpliciter*, rather than a set of intentions each contingent on a possible state of the world....If we allow plans to contain certain contingent statements then it is possible for sellers to expect that it will be sunny tomorrow but intend to sell umbrellas if it rains. Under this second, and more modern view, equilibrium does not require homogeneity of expectations about external events." (1990, 29n). Actually, the existence of contingencies and "blank spaces" in the plan even allows for some inconsistency in expectations between agents concerning each others actions.

Further, there is some reason to believe that events often fall "within the range" of the plan and thus do not require "revision".

"...[W]hile expectations diverge, they do not normally diverge by amounts so large as to render the probability of equilibrating forces nil....In addition, changes in expectations are not always widespread or drastic. After all, "[t]he daily flow of the news will affect [only] some of the divergent expectations".⁵⁵ Not everyone changes his mind with each change in the data. Thus, the divergence of expectations is limited in two general ways: (1.) by the bounds generated at the individual level, such as resource constraints and the constraints imposed by the agent's previous decisions; and (2.) by the common stock of knowledge, opinions, and methods of interpretation and inference shared by members of a society. So while expectations diverge, they do not do so in a boundless or uncontrollable way.⁵⁶

It seems though that our usual ways of thinking about "equilibrium" will have to be modified to allow for a looser, more pragmatic concept. The notions of "coordination" and "order" come to mind. In fact, it appears as though the route we have traveled from of concept of equilibrium based on the requirement of a strict consistency of individual plans to one less restrictive, exactly mirrors the intellectual path that Hayek's thinking has taken over the years in his attempt to reconcile the undeniable logical implications of divergent expectations with the undeniable fact that coordination at some level does occur. Thus, Hayek moved from the concept of equilibrium to the concept of order.⁵⁷

The very existence of plans over time must imply coordination. If discoordination were always the order of the day plans would always fail (in the assessment of the planner) and people would cease to plan. So the extent to which individual economic agents actually do plan, and the length of their planning horizons, is a sure indication of the degree of coordination that is actually experienced. The experience of past success and the anticipation of future success are the keys to understanding the persistence of planning. Conversely, in societies where coordination has broken down, we should expect to see much more reactive and less "planned" behavior. All action involves a plan. The issue is in what context the plan occurs. In unstable and unpredictable environments, plans will be short term and restricted in range and imagination. It is a delightful irony that individual planning activities are richest and most robust in the kaleidic societies of the industrialized West.

⁵⁵Lachmann (1978, 4).

⁵⁶Rizzo (1992, 15).

⁵⁷Rizzo (1990, 26) on Hayek's concept of "order". In mainstream writing equilibrium is sometimes used in a "statistical" or "average" sense, in which although the individual may not be in equilibrium the economy (as indicated in some or other aggregate) is. Hayek himself anticipated this strategy, "[I]t is an interesting question, ... whether, in order that we can speak of equilibrium, every single individual must be right, or whether it would not be sufficient if, in consequence of a compensation of errors in different directions, quantities of the different commodities coming on the market were the same as if every individual had been right. It seems to me as if equilibrium in the strict sense would require the first condition to be satisfied, but I can conceive that wider concept, requiring only the second condition, might occasionally be useful.." Hayek (1936, 43n). We must disagree. This concept of equilibrium suffers in building no connection whatever, or at least one not specified, with individual planning and decisionmaking whereas the strategy adopted in the text involves modifying the notion of the plan in order to widen the range of individual and, therefore, social "equilibrium".

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In this connection we may profitably examine Lachmann's (largely neglected) theory of institutions. In (1971, chapter 2) Lachmann analyses in some detail the effects of institutional structures. In particular "[I]nstitutions serve as orientation maps concerning future actions of the anonymous mass of other actors." (1971, 13). By regularizing and placing bounds upon certain types of actions, institutions (like the law, language, the postal system, traffic rules, the constitution, common rules of conduct, etc.) render individual plans much more compatible than they would otherwise be. Within them, plans contain references to different kinds of institutional signposts. Some of these are explicit, as in the form of written contracts making reference to certain expected modes of conduct and recourse. Some are implicit (and unconscious) as in reliance on well accepted methods and forms, etc.

But, while an ordered society needs institutions to render certain actions predictable, a growing, dynamic society needs institutions that encourage innovation and experimentation.

...[T]he central problem of the institutional order hinges on the contrast between coherence and flexibility, between the necessarily durable nature of the institutional order as a whole and the requisite flexibility of the individual institution...the relative immutability of some institutions is always a necessary prerequisite for the relative flexibility of the rest.⁵⁸

This is a key point worth emphasizing. It is ironically only because of *lack* of change of the fundamental institutions of our society, that we are able to cope with so much change in both other, less fundamental, institutions which are free to adapt to changing circumstances and in the capital structure of the economy (as, for example, a result of rapid technological change). It is this compromise of stability and flexibility that is responsible for the dynamism of the market system. Just as there is a "structure" of capital, so there is an institutional structure whose basic order remains even while its individual elements (some designed, most spontaneous) change. Freedom of contract is an important unchanging element of this structure.

...in our society, especially in modern industry, many plans (buildings, plant, equipment) have to extend over a large number of years and are therefore particularly susceptible to unexpected change. The conclusion appears inevitable that the more important become long-run plans which, once the planned course of action has been set in motion, cannot be adjusted to subsequent change, the more damaging institutional change becomes...

The legal framework of modern western societies in fact ...thus [leaves] a wide sphere of 'freedom of contract' to individuals acting in pursuit of their respective interests. The modern market economy would not be possible without it.⁵⁹

⁵⁸Lachmann (1971, 13).

⁵⁹Lachmann (1971, 80-81),

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