Chapter 10

INCENTIVES TO LIQUIDITY

Money has no intrinsic use — it cannot be eaten, nor will it keep one warm. Its usefulness derives from what it will buy, and the flexibility it affords over the timing of payments. Financial assets, similarly, have no intrinsic use; they are held only for the interest they yield. Both are ‘temporary abodes of purchasing power’, ways of holding over income which is not to be spent immediately. Ready money may burn a hole in one’s pocket, financial assets may lie undisturbed in one’s passbook or deposit box, but all will be spent eventually, or bequeathed.

When deciding which abode one’s purchasing power shall occupy, the relevant question is how long it is expected not to be wanted for the purchase of goods. There must be time enough to earn some interest and make the bother of buying and selling bonds worthwhile, if the unspent income is not to be held in cash.

To a large extent, the question of time is related to the type of expenditure envisaged. Keynes is not very explicit about this connection; the analysis can gain in precision if the matter is gone into in some detail.

Transactions Demand, Consumption, and the Wage Bill

Some expenditures are made on a very regular basis. Of these regular payments, some are contractual, such as the firm’s payments of wages, interest and rent, and the household’s rent or mortgage. Other expenditures are regular because of the nature of the goods bought: food and household supplies are usually bought on a regular weekly basis. These expenditures may vary in their frequency, but the overall pattern is highly predictable. Certain elements of income are also highly predictable, both in amount and frequency, whether this income be wages and salaries for the household, or certain kinds of sales which produce a cash flow to firms.

The typical pattern for the household is a frequency of payments greater than that of the incoming cash flow. Because income is predictable, expenditures can safely be planned to be paid out of that cash flow. This is the model for the simplest kind of transactions demand. For a given individual one may define an ‘income period’, the interval between receipts. If out-payments are regular and all transactions balances are held as money, then the average transactions-money balance over the income period is proportional to income:

\[ M^p = kY. \]  

(10.1)

The size of \( k \) depends on the pattern of payments within the income period; the more payments occur soon after income is received, the lower the average amount of cash on hand, as compared to cash holdings of households whose payments are closer to the next income date.

For firms the pattern may be reversed, exhibiting a steady build-up of cash from daily sales to be paid out in weekly wages. The result for average balances is the same, with a payments period as the base.

Devising a satisfactory expression for the aggregate demand for transactions balances is not a simple matter unless the payments pattern is very stable indeed, but it does no serious harm to assume a stable pattern, in which case the general form of (10.1) applies.

Additional assumptions, namely (i) that the income period is too short or the rate of interest net of brokerage charges is too low to justify transactions balances in bonds, and (ii) that the transactions exhaust income, produce the familiar ‘quantity theory’ result that the total demand for money is wanted to conduct transactions; then \( M^p \) as a whole is a constant fraction of income.

If one is taking the income or payments period as one’s base, and I feel one must, one should make it clear that these are not the same as the production period, but typically shorter (refer back to Figure 2.1) and of course overlapping continuously for the economy as a whole. The size of \( k \) for aggregate transactions balances has to do with the relationship of the income and payments periods to the production period.

The Precautionary Motive

There were two elements of certainty in the above description: the amount and timing of both incoming cash flow and cash outflows were assumed known. That is why the household could be described as willing to run its transactions balances down to zero by the end of the income period. That level of certainty does not, however, generally apply. Even if income is certain (for households with labour contracts) expenditures are not, nor can
firms count on steady sales. It is to have enough cash to cope with unpredictable expenditures or receipts that precautionary balances are held by those whose incomes more than barely cover their expenditures.

Interestingly, the textbook version of precautionary demand typically gives as examples of unexpected expenditures such things as hospital bills, while Keynes stressed the desirability of having extra money to take advantage of unexpected bargains. This is more than a reflection of a rather more positive approach to life on Keynes's part; it is related to the possibility of holding liquid assets instead of money for precautionary purposes. Many unexpected outpayments can be met, with a day's notice, out of liquid assets.

Keynes reasoned that the average amount of unpredictable expenditure (and, he might perhaps have added, the range of income fluctuations) was correlated with income; therefore precautionary balances could be lumped together with transactions balances. Their sum, which he called $M_1$ — not to be confused with the collection of monetary assets later christened $M_t$ — was related to income, as before by a constant factor $k$:

$$M_1 = kY.$$  (10.2)

The constant, $k$, might differ for the two types of balances, but as long as the average was relatively stable, applying (10.1) to both sorts of balances would, he reasoned, create no difficulty, and it had the advantage of simplicity for his purpose, which was to highlight the speculative demand.

This simplicity is bought at the expense of glossing over a fundamental problem in monetary theory: what constitutes 'active' and 'idle' money. There is no doubt about the transactions balances: the way they have been defined, all balances held for the transactions motive are spent within the income period and can therefore be counted as being in active circulation, even though they are held idle briefly. As such they do not count as 'saving', that is, money-income withheld from consumption, even for the short time they are held. Transactions balances and consumption are intimately linked, but the relevant periods differ.

If the links were perfect, the velocity of circulation of money with respect to consumption could be expected to be constant. Precautionary balances intervene; they represent money which sometimes, but not always, is spent, and it is their essential feature that they are not spent in the same income period in which they are accumulated, while exactly the opposite is true of transactions balances. These balances, therefore, could be counted as 'saving' when accumulated and 'dissaving' when spent; they are 'idle' balances by general intention, only becoming 'active' when the contingency for which they were acquired arises.

The income period is thus seen to be crucial; the above distinctions are made on the basis of interperiod versus intraperiod changes in money balances. Treating money held for the two motives as additive thus poses the additional problem of the relevant dimension of measurement. Transactions balances are in the nature of what accountants call a 'suspense account', accumulated only to be run down; any notion of a demand for these balances must refer to their average over the income period. The intention to accumulate money balances for the precautionary motive, on the other hand, is an intention to carry over money from one income period to the next; precautionary balances — if they could be separated from monies held for other purposes — could be measured as an average of stocks held at the end of several income periods, whereas the end-of-period stock of transactions balances ought always to be zero, regardless of $Y$.

Keynes's device of lumping transactions and precautionary demands together poses problems from the technical point of view. But in any case Keynes paid little attention to the precautionary motive. One might think this odd, considering the level of uncertainty which attaches to income in a period of high and variable rates of unemployment. However, precautionary money balances are unlikely to be held against major contingencies, such as a prolonged spell of unemployment, where highly liquid assets bearing interest are available instead. Saving against unemployment is much more likely to be done in non-money forms, particularly by lending to financial intermediaries, and then whether these balances are withdrawn from the spending stream depends on what the intermediaries do with them.

Transactions and Precautionary Demands and the Interest Rate

The implication of the availability of interest-bearing assets as an alternative to cash is, plainly, that the choice between holding money or such assets for transactions and precautionary purposes is likely to be interest-sensitive. The fundamental work on the interest-elasticity of transactions balances demonstrates what common sense would predict — that for a given income period, the larger is income (or the volume of transactions), the more likely it is that a given interest rate is sufficient to compensate for the brokerage and nuisance costs of moving into non-money assets and out again when cash is required. And for a given volume of transactions, the longer the income period the more attractive is a given rate of interest, because there is a longer time in which to earn it. The same points have been shown to hold for uncertain payments streams, i.e. for precautionary balances.

The significance of an interest-elasticity of transactions and precautionary balances lies in its challenge to the quantity theory as expressed in equation (10.1). If the speculative demand for money is accepted, there is no particular need to attack the quantity theory in this way.

Though the proposition is clearly an interesting one, it should not be allowed to distract us. It gives a reason for having the rate of interest appear in the demand for money function which is entirely different from the
speculative motive. That is not to say that it is 'wrong': its relevance is illustrated both by the behaviour of business firms and their bankers, who have developed a variety of ways in which firms may economise on their barren cash-holdings, even for such frequent payments as wages, and by households, who in periods of high interest rates are said to economise on non-interest-bearing deposits (though I do not know of any direct evidence). It does, however, apply only to money which is not interest-bearing.

This is particularly unfortunate in the British context, where arrangements for automatic transfer in and out of deposit accounts lower 'brokerage costs' to a minimum. It also diverts money from other assets on the basis of the non-interest-bearing attribute of money rather than the capital-safety of a wide range of assets which for certain purposes one may call 'money' because their value is realisable without (substantial) loss. The speculative demand is made to look ridiculous because it seems to imply that speculators occasionally hold a totally barren asset when obvious alternatives are available.

The Finance Motive

In response to comment on the General Theory by Bertil Ohlin (1937), Keynes (1937) developed a third expenditure-related motive for desiring cash: the 'finance motive'. Ohlin had argued that the rate of interest depends on the supply and demand for new credit arising from ex ante saving and investment. While not accepting the 'Classical' implications of this formulation, Keynes did agree that he had not allowed for a demand for money as a preclusion for investment (C.W. XIV, pp. 201–23).

Keynes and Ohlin did not, however, have the same thing in mind. Ohlin meant the demand for credit, while Keynes, being consistent with his earlier definitions, meant only the demand to hold money — this time to finance expenditures which are both not routine (and therefore not appropriately financed out of current income) and large (too large to be financed from precautionary cash balances).

The most obvious type of large, non-routine expenditure is investment in capital equipment. The link between the finance motive and investment is not perfect, however: certain sorts of household expenditures would also come into this category, while investment in working capital would be excluded as being routine. It is a useful approximation, however, to connect the finance motive with intended investment as long as the two are not regarded as identical.

The finance motive does not refer to the funds required to support an investment project until the end of its life, but only to the amount of money needed to get the project started: e.g. when a new railway is undertaken it is not usual to borrow the whole of what it will cost before the first sod is cut.

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(C.W. XIV, p. 216, n.2)

This sense of 'finance' — cash required between the decision to invest and the beginning of construction — is neither finance in the cash flow sense (being able to pay for a project) or in the sense of being able to pay the fixed cost of a given capital stock. The need does not last for long for any individual firm: only for the interval between the decision to invest and its implementation. It may be satisfied by the sale of liquid assets — a transformation of precautionary holdings of bonds to 'finance-motive' holdings of cash — or (and this is the channel Keynes emphasised) the cash may be borrowed from banks. Thus this motive is different from the others, in that it is not a motive for retaining income and holding it in the form of cash (which if held for more than an income period is a kind of 'saving') but for money to hold temporarily in anticipation of exceptional spending.

A rise in the desired level of precautionary balances would be satisfied by holding off both consumption and lending to hold money idle (until needed, of course). This action will have a deflationary impact on producers and (ceteris paribus) put pressure on interest rates, as the supply of funds is reduced. A need for 'finance' satisfied by internal funds will raise the rate of interest because of the increased supply of liquid assets to the market from the investing firms. A rise in the desired amount of borrowed 'finance' will also raise the rate of interest, but from the demand side. In neither case is the demand for 'finance' deflationary, for no funds have been diverted from expenditure on goods; any deflationary impact the finance motive has arises only from its interest rate effect.

It can be seen that the withdrawal of funds is very temporary for the individual firm: the money returns to the income stream as soon as the equipment is bought or the construction workers are paid, and much of it will return to the banks (almost all of that used to finance consumption and some of the remainder). The funds are to be borrowed or liquid assets sold as close to the time of expenditure as possible, in order to minimise interest cost (actual or forgone). In the case of using bank overdrafts to satisfy this motive, no cash is actually held by the borrowing firm at all; there is no interruption of the flow of spending in that case.7

The finance motive's importance at the aggregate level arises out of the variability of investment, for it is only when plans to increase (or decrease) investment are made that the finance motive has its effect. If the volume of investment is steady overall, the pressure on sources of finance arising from one project will be counterbalanced by expenditure of finance balances as other projects get underway.8 Thus it is a motive whose importance is based on change in the economy. The transactions motive, on the other hand, is most cogent when based upon stability: a recurring pattern. The precautionary demand is also based on stability: the pattern of payments is irregular and unpredictable in a single income period, but broadly predictable over several income periods and thus (probably) over the
production period.

Keynes makes another distinction between the finance motive and the others:

I allowed [in the transactions and precautionary demands] for the effect of an increase in actual activity on the demand for money. But I did not allow for the effect of an increase in planned activity, which is superimposed on the former ... (C.W. XIV, p. 290)

This passage has caused much controversy. The indisputable fact is that planned expenditure requires financial planning and actual expenditure implies that the need to finance it is over. This has led Davidson (1965) to reformulate the demand for money in terms of planned consumption and investment and to propose that the finance motive, thus interpreted, be taken as the model for the demand for money to spend, encompassing the transactions demand. Compare Shackle (1968, p. 138): 'Of course, the transactions motive is an ex ante motive. Whoever said it was not? Only the proponents of a mechanical quantity theory of money.'

The interpretation offered in this chapter mediates between these views. Transactions balances are held in anticipation of payments, and so are related to planned expenditure, every bit as much as finance' balances are. The difference is that no special effort is taken to acquire them: they arise out of income or from sales. The market for funds, and therefore the interest rate, is not affected. The expenditures against which they are held are expected to be undertaken within the income period: they are planned but one can think of them either as not being planned very far in advance (if one thinks within the income period) or as planned in general terms for a fair run of income periods; it does not matter, for the income and payment flows are assumed stable. The analytical basis of transactions demand is the 'tranquillity' of the Classical tradition, in which the distinction between ex post and ex ante, planned and actual, is not important. The relative importance of the finance and transactions motives can thus be seen to depend on the extent to which plans are changing.

The Speculative Motive

Money held for the transactions, precautionary and finance motives satisfies relatively immediate needs -- certain and uncertain -- for purchasing power. Money for the first two of these motives is retained out of the cash flow which represents income. Income not required for current or near-future purchases must also find an 'abode' which is also temporary, albeit less so. With a longer horizon between the receipt of income and the intention (however vaguely formulated) to make purchases, the pursuit of interest income becomes more worthwhile. On the face of it, it is difficult to justify the holding of money for long periods of time: it would seem that however low the rate of interest is, it is better than nothing.

The suggestion that the level of the interest rate might influence the amount of cash held for precautionary purposes is persuasive, but the reasoning is much less compelling in the case of assets designed to be held for a long time. Indeed, if one knew the time horizon to which one was working with any exactness, one could arrange to hold securities which matured just before cash was wanted. Given the existence of government securities, even the risk of default is minimal. (This might be an ideal world in which to apply the classical theory of interest, for 'saving' is always loaned out.)

However, even if expenditure plans were either certain or of long horizon, there are always some assets which by their nature have no secure capital value: equity shares and consols are perpetuities; their value fluctuates with changes in demand and supply. Wealth held in the form of these assets is always of uncertain value and uncertain return, for the return involves not only dividends or interest but also the difference between realised capital value and original purchase price. Holders of these assets risk not getting the returns they expected. Interest on consols is contractual and certain, dividends are not contractual but in practice are kept fairly stable; the major uncertainty is the variation in capital value.

This uncertainty need not be particularly worrying if the expected date of realisation of the capital value is flexible. It may be acutely uncomfortable if the date is fixed. Money may be wanted before the asset matures, the holder is concerned with market fluctuations in the value of the asset. And the longer the term of the asset, the more a given change in interest rates will affect its capital value.

The risk of a disadvantageous sale is, however, no reason for holding money in an economy with short-term assets. These may be held in sufficient volume to allow the optimal timing of sales of scepticities and longer-term assets. In that role they serve as a kind of precautionary demand -- for liquid assets -- as uncertainty over the timing of expenditure provides the incentive to hold them.

Keynes does not discuss this issue. He is content to leave it to the reader or analyst to decide what to include in 'money' to suit the purpose at hand. Without disturbance to this definition, we can draw the line between 'money' and 'debts' at whatever point is most convenient for handling a particular problem. For example, we can treat as money any command over general purchasing power which the owner has not parted with for a period in excess of three months, and as debt what cannot be recovered for a longer period than this; or we can substitute for 'three months' one month or three days or three hours or any other period; or we can exclude from money whatever is not legal tender on the spot. It is often convenient in practice to include in money time-deposits with banks and,
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Consider the effect of a change in the interest rate on the value of financial assets over time. Let us suppose that all interest payments are reinvested in the interest-bearing security, so that 'wealth' — the value of a portfolio of securities — grows at the rate of interest, the slope of the line AB in Figure 10.1. Now suppose the rate of interest rises at time \( t_1 \). The value of the portfolio falls at that time and then grows, at the higher interest rate (the slope of CD), more rapidly than before. It can be seen by extending AB (the dashed line BE) that in time the higher interest rate recoups the loss made at \( t_1 \). If the wealth-holder's horizon is longer than \( t_2 \), the (unrealised) capital loss at \( t_1 \) has done no harm.

On the other hand, if he had forecast the change just before \( t_1 \), say at \( t_{1-} \), he would sell his shares and buy them back at the lower price, holding idle cash in the interval. Then the growth path of his wealth would follow the line FG, clearly a superior result. (\( F \) is slightly below \( B \) to allow for brokerage costs and interest lost in the interval between \( t_{1-} \) and \( t_1 \).) There are two reasons, however, why the wealth-holder may not take action, setting for growth along CD instead. One is the lack of time to devote to the necessary forecasting and the other is the risk of getting it wrong. If he thinks his change of forecasting correctly is no better than 50-50, and his time horizon is quite long, it is better to take the long view and let the portfolio rest. (Indeed, his chances must be quite a bit better than 50-50 to compensate for his time and transactions costs.) The speculator has a more optimistic view of his chances.

The speculator is distinguished from the ordinary saver or wealth-holder by the purpose of his market dealings. While the 'ordinary wealth-holder' earns his main income by the sale of his labour and 'stores his wealth' in the form of financial assets for some rather distant future purpose, the speculator commits funds to the active pursuit, derived from buying and selling assets, of an income based on 'knowing better than the market what the future will bring forth' (G. T. p. 170) so that — subject to the inevitable mistakes — he captures capital gains and avoids capital losses by predicting the future course of security prices.

The borderline between these two types is fuzzy: even the most lackadaisical wealth-holder may be spurred to active forecasting and decision-making by news of a take-over bid. He may move funds about in an attempt to avoid capital losses, but not with the same rapidity as the speculator, nor will he give the matter the same attention. The speculator may do little else, and of course the professional portfolio manager's job is to do nothing else. It follows that to a great extent the latter's decisions will be based on the same principles as the speculator's. In what follows, the term 'speculator' can be interpreted to include him.

The speculator's time horizon is short; he does not leave his portfolio to generate interest quietly, for interest, relatively to what can be made on capital gains, is small beer. It is by constantly seeking to sell at the peak and buy cheaply that his income is to be made. Not only are the long-term forecasts, suitable to a stable portfolio position, difficult to make, but price changes in the intervening time will be missed. In contrast, the 'ordinary investor', who doesn't want to spend as much time as the speculator in managing his portfolio, may take the long view, and let some potential gains go.\(^{13}\)
The Speculator's Behaviour

We will give the speculator two assets to play with: money, which is capital-safe, and bonds, which are not. He moves into bonds when he expects their price to rise (interest to fall) and sells out, holding money instead, when he expects the price to fall (interest to rise). The speculator's decisions are thus based not on levels of interest rates, but on forecasts of changes in the interest rate. There are many hypotheses one could entertain as to how these forecasts are made, but we shall simply retain Keynes's.

The concept of a normal rate of interest is central to Keynes's theory of how speculators form their expectations. Each speculator, $i$, has an expectation of a 'normal' rate of interest, $r_{no}$, toward which the actual rate of interest, $r$, tends to return. Keynes did not discuss how the normal rate was estimated; this failure has been a cause of the theory's rejection, most notably by Dennis Robertson. However it is derived, one feature is crucial: it is subjective assessment. Once that assessment is made, the speculator is in a position to make the forecast on which he will base his portfolio decision. If at time $t$ the actual market rate of interest, $r_t$, is higher than $r_{no}$, speculator $i$ expects the rate in the near future, $r_{t+1}$, to be lower than $r_t$; and if $r_t$ is below $r_{no}$, he expects the rate to rise; that is, rates are expected to regress toward $r_{no}$. Formally, Keynes's theory of expectation-formation may be written:

$$r_{t+1} - r_t = f(r_{no} - r_t), \quad f > 0.$$  \hspace{1cm} (10.3)

When $r_{t+1} - r_t < 0$, speculator $i$ expects capital gains on bonds and hence purchases bonds in $t$, holding no speculative balances in money. In the opposite situation he moves out of bonds into money to protect against the realisation of a capital loss. Money is reinvested in bonds once the fall in price has occurred.

It should be obvious that if an individual is going to speculate, he does not hedge his bets. If he expects capital gains he must commit all his speculative funds to the pursuit of those gains, even though he has doubts. To do otherwise is to risk losing potential profit. If he expects losses he would be irrational to hold any quantity of the assets whose prices are expected to fall. His behaviour results in the discontinuous demand function of Figure 10.2.

The length of the horizontal axis of Figure 10.2 is given by the total quantity of speculative funds. The demand for money to satisfy the speculative motive of individual $i$ is measured rightward from the origin $O_{sl}$; the demand for bonds for speculative purposes is measured leftward from the origin $O_{sb}$. At current rates of interest above $r_{no}$ the demand for money is zero; all speculative balances are held in bonds to capture the expected capital gains. At rates below $r_{no}$, no bonds are held.

Divergent estimates of the normal rate give an aggregate speculative demand function which for a number of transactors is a series of vertical lines, as shown in Figure 10.3. Above $r_t$, everyone (everyone who speculates) believes the rate is too high to be sustained, and no one wishes to hold money rather than bonds. $r_t$ is the normal rate of some individual, for below that rate he switches his speculative funds, the extent of which is indicated by the distance between the axis and the first vertical segment, into money. At $r_t$, no one expects the rate to fall further, and all speculators switch out of bonds.

The importance of differences of opinion concerning the normal rate is obvious enough. If all speculators held the same view, $r_{no}$, the aggregate speculative demand function would be two discontinuous segments. According to whether the rate of interest lay above or below the common normal rate, all would be trying to sell or buy bonds. At best, speculators would be buying from or selling to non-speculating investors. Assuming there is enough speculative activity to make the subject worth discussing, the price of bonds would fluctuate substantially. If everyone were a speculator, bond prices would rise to infinity when $r_t > r_{no}$ (there being no sellers) and fall to zero if $r_t < r_{no}$ (there being no takers). While the limiting case is a practical impossibility, it illustrates the role of a divergence of opinion in maintaining the stability of security prices:

...opinion about the future of the rate of interest may be so unanimous that a small change in present rates may cause a mass movement into cash. It is interesting that the stability of the system ... should be so dependent on the existence of a variety of opinion about what is uncertain.

(G.T. p. 172)
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\[ M^0 = L(Y,r) \]  \hspace{1cm} (10.6)

All the factors determining a preference for liquidity have now been brought together.

To return to the speculative demand: the assumed stability of the normal rate necessary to formulating the demand for speculative balances is a parallel to the analytical strategy of not permitting short-run fluctuations to influence long-term expectations on the production side. Just as entrepreneurs’ expectations of long-run profit, which govern investment, need not react to short-run variations in income, or may change when current demand is quite stable, so may the evaluation of what is a normal rate of interest remain stable as rates fluctuate daily, or, conversely, shift unpredictably in a period of quiet trading.

A change in the normal rate will, of course, shift the function. A rise in the normal rate means that some interest rates which were above the old normal rate, and hence indicated potential capital gains, are now below the new normal rate. The demand for money will have increased, because at a given current rate the belief in capital losses on bonds is now held more widely. On the same reasoning, a fall in the normal rate reduces the demand for speculative balances, shifting the curve to the left.

Since the normal rate is subjective, the speculative demand for money is potentially volatile. And given that capital gains and losses affect the whole of one’s holdings of financial assets, the possible disturbance to securities markets from this source far outweighs the effect of any flow from current saving. It is also able to outweigh the impact on market transactions of the more quiescent long-term investor seeking long-term returns with a minimum of fuss.

The Classical theory regarded interest as a reward for ‘waiting’, for putting-off consumption, and the rate was determined by the potential productivity of investment, which determined the demand for funds, and the thriftiness of the population, which determined their supply. On this view, buyers of financial assets took no heed of market psychology but were governed only by prospective ‘real’ returns. Thus funds would go to finance the most profitable, and in that sense the ‘right’, projects or firms. The overall level of the interest rate then conforms to the rate of profit and investment is undertaken at the pace which is justified by the willingness of ‘the public’ to lend for the purpose and (as reflected in profits) to buy the resulting output.

A speculative approach to the placement of funds is significant because it cuts the link between long-run profitability and the supply of funds. To demonstrate this fully one should bring the return to equity shares into the argument. Suffice it to say here that since equities and bonds compete for ‘savings’, the rate of interest and the rate of return on equities are closely related. Speculation occurs both in bonds and equities, and not only
speculators narrowly defined, but professional investors generally
... are mainly occupied, not with making superior long-term forecasts of the
probable yield of an investment over its whole life, but with foreseeing changes in
the conventional basis of valuation a short time ahead of the general public...

[It is, so to speak, a game of Snag, of Old Maid, of Musical Chairs—a pastime
in which he is victor who says Snap neither too soon nor too late, who passes the
Old Maid to his neighbour before the game is over, who secures a chair for himself
when the music stops. These games can be played with zest and enjoyment, though
all the players know that it is the Old Maid which is circulating, or that
when the music stops some of the players will find themselves unsated.

(G.T. p. 154-6)

A financial market dominated by speculation may exhibit an interest rate
which owes more to mass psychology than to the long-run profitability of production and spend its energy trading in existing financial instruments rather than channelling funds into investment.¹⁹

There are two undesirable results of speculation. One is that the cost of borrowing, when influenced by speculative considerations, does not reflect the social utility of investment: it may be either 'too high' or 'too low' at various times. The other effect, which particularly concerned Keynes, is that the existence of a capital-safe asset, money, sets a floor to the rate of interest by offering a safe haven when the rate of return offered on bonds is thought inadequate compensation for the risk of loss. Once that point is reached, investment can only be stimulated by improving expectations: the rate of interest can fall no further.

How important is speculation, you may ask? One cannot say definitely, of
course, for speculators and long-term investors cannot be distinguished by the colour of their eyes or any other objective criterion. Any active portfolio management must have an element of speculation in it, and there are always some whose behaviour is dictated by considerations of long-term profits of the firm issuing the security, even given the uncertainty of such distant prospects. The relative importance of these two groups will of course vary according to circumstances. History offers many examples of speculative 'fevers' which stand out against a background of more normal temperatures. The fever of the late 1920s undoubtedly prompted this imagery:

Speculators may do no harm as bubbles on a steady stream of enterprise. But the position is serious when enterprise becomes the bubble on a whirlpool of speculation.

(G.T. p. 159)

Just because the stock market has not behaved quite so spectacularly since the 1920s we should not conclude that the speculative demand is not important. The rise in importance of financial intermediaries as a vehicle for saving and the increasing importance of corporate retained earnings have both enhanced the role of the professional investor, who, given the size of the fund he has to deal with, is unlikely to forget the attempt to capture intramaturity capital gains, and if these are won by outguessing the market, market opinion will influence him.

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"Other Speculative Margins"

The speculative demand for money in the General Theory was related to a particular kind of speculation: in bonds. There is, however, no reason to limit one's speculation to this kind of asset. In a broad sense, anyone holding an asset with any thought of future sale is speculating, taking an open position in something which may gain or lose capital value—as money itself does, in terms of purchasing power, when the price level varies. Speculation needs only two things: a liquid market and sufficient variation in prices to make the game worth playing.

Two areas in which speculation has in recent years been prominent spring immediately to mind: real property and foreign exchange. The emergence of inflation as a serious and continuous problem for the last fifteen years or so (people differ in what they regard as 'serious') has shifted the margins of both speculation and long-term investment away from money-dominated, interest-bearing assets toward assets offering more protection to the real value of wealth.

Purchases of real property for speculative purposes, or with a speculative element, are likely to occur when inflation is anticipated (as in the UK in 1972, fuelled by a great relaxation of credit, and again in 1977-8). The effect is to divert funds away from both currently-produced goods and finance for productive investment, into capital gains on the existing stock of houses or land. Prices will continue to rise as long as they do not exceed what buyers believe to be the price which the house could reasonably realise in a subsequent sale. Obviously this has little to do with the general rate of inflation for someone intending to sell out rather quickly, for there isn't time for the inflation to take place. But at the end of the chain there is always someone who wants the property for a longer period, and it is their beliefs toward which the price is driven. If a belief in ever-accelerating prices takes hold, the rise in house and land prices will eventually exceed the expected short-term rise in the general price level by enough to make property difficult to re-sell, and the speculative boom abates.

Getting ahead of our story slightly, the theoretical importance of speculation in the General Theory was that it provided a theory of the general level of interest rates. Speculation in land is speculation on future property prices, not interest rates. Yet interest rates are affected, in two ways. One is specific: the mortgage rate is pushed up by the buoyant demand. (In 1972 this was not noticeable, for the property boom was fed by a great increase in the supply of mortgage funds.) Keynes mentions instances of the interest on farm mortgages exceeding any reasonable expectation of return from working the land. And in general the loan market is being starved of funds it would otherwise be getting, thus affecting all interest rates to some degree.

Even in a period of inflation it may not be rational for a particular
individual to speculate in land. Transactions costs are high and so is the minimum volume of funds committed. Speculation in financial markets will, therefore, be likely to co-exist with land speculation.

Equity shares were once thought to be a hedge against inflation. Indeed Keynes treated them (Chapter 12) as if they were indistinguishable from real capital equipment—except for the ease with which they can be bought and sold. The experience of inflation in the 1970s showed, however, that though they may be a good hedge against demand inflation, which is good for business, they are likely to be a poor hedge against cost inflation, which is not.

With the freeing of exchange rates, speculation on exchange rate changes is a further attractive possibility for those not subject to exchange controls. Transactions costs are low, markets are active, and the potential gains in recent years have been large. If this margin of speculation plays an important part in the demand for money, the expected exchange rate becomes an argument of that function, just as expected property and other prices did in the previous case. The differential in interest rates between countries also enters, for funds are placed in interest-earning assets, and a large differential may compensate for interest rate risk.

Exchange rates have varied with (among other things) relative rates of inflation in different countries. When all currencies look a poor bet, as at the moment, when lengthy recession threatens and governments are tempted to buy their way out, the desire to protect wealth is turned to purchases of durable real assets which will withstand currency debasement. The money that supports that price rise is held off the loan market and away from productive use just as it was in Keynes's model when speculators held 'money' idle.

In so far as bonds are the vehicle for speculation, the entire operation is conducted with regard to maximising the money value of one's assets. One does this, of course, in order to maximise real value—real purchasing power—but as long as one is choosing between two money assets the rate of inflation is not relevant; the demands for these assets are properly specified in money terms. There is little justification for the specification in real terms that one finds in most textbooks. The appropriate action, if one feels inflation threatening, is not to increase one's speculative holdings of money-denominated assets, but to find a real commodity or asset in which to speculate.

Notes

1. See Ellis (1938) and Fleming (1964). The more usual approach is to assume that the micro results hold, but that is not justifiable.

2. If one does not set this standard, one begins to argue that all money is 'idle', non-transactions money except for the instant before it is spent. Hicks (1967) and Sayers (1969) have puzzled at length over this problem. Tsang (1966) argues, correctly in my view, that holdings at any particular time are not to do with intent, but the accident of the timing of payments and receipts.

3. See Tobin (1950) and Baumol (1952).

4. Barro (1970) investigates the optimal payment period; we have assumed it and the time-shape of payments to be exogenously determined.

5. See Miller and Orr (1960), Patinkin/Dvoretzky (1965) and Nishans (1978).

6. It is not widely accepted, more I think because it has disagreeable implications for the functioning of markets and for the equilibrium method dear to economists, than for anything to do with 'truth' or relevance.

7. Provided, as Keynes pointed out (C.W. XIV, p. 222), that bank decisions are not altered by the existence of unused overdrafts.

8. This is Keynes's 'revolving fund' of finance. His debate with Robertson about this 'fund' founders on a confusion between the demand for liquidity being extinguished and the loan being repaid; Robertson seems to suggest that until the loan is repaid the bank will not lend again, while Keynes sees the return of deposits to the banks as sufficient. The argument is incomplete without specifying the banks' reserve position (see C.W. XIV, pp. 226-234 and Robertson (1938)).

9. The theory is 'mechanical' in that it is ill-equipped to deal with variations in expenditure, for then the expenditures are no longer routine.

10. Many financial intermediaries, notably life assurance companies and Euro-banks, have made a fine art of this procedure of 'maturity-matching'.

11. Keynes treated equities quite separately from fixed-interest securities.

12. Critical to liquidity preference theory on the grounds that speculators would not hold cash when they could hold Treasury bills reveals that a combination of careful reading and common sense did not prevail.

13. This behaviour is not irrational, as some seem to think. (See Hicks, 1967, p. 44, who argues as if there were only one model of rational behaviour, and that everyone would speculate if transactions costs (eg brokerage fees) were low enough.)

14. The suggestion that the normal rate is generated by some adaptive learning mechanism based on past interest rates would, I think, be rejected by Keynes. Of course speculators learn from the past, and a long history of low rates is bound to lower the normal rate; but speculators undoubtedly use more than past history to derive rₔ.

15. Note he will still hold money to satisfy non-speculative motives. The allegation (Tobin, 1958) that Keynes's theory precludes portfolio diversification is simplistic. If it were not for such interpretations, indeed, one needs not go on at such length.

16. In behaving in the way described, the speculator is not ignoring uncertainty or taking risks for the sheer enjoyment of the risk itself. Tobin (1958) has alleged that the speculator is either indifferent to risk or positively enjoys it. It is simply a consequence of the decision to attempt to make money by speculating that he must act on his best guess, as if he were certain, even though he is not.
17. With one qualification, the exposition of this and the next paragraph follows Tobin (1958). The qualification is the rejection of Tobin's 'critical rate' in favour of Keynes's 'normal rate'. Tobin's critical rate, the rate at which the portfolio will shift, allows for the fact that expected capital losses are partly compensated by interest earnings. But this allowance is very tricky. The critical rate is not independent of time: if a capital loss is expected, there is always some length of time over which the capital loss can be recouped. The critical rate thus depends on the expected holding period. Tobin's period is an arbitrary unit period with no correspondence to calendar time. Interest can only be earned over calendar time. Furthermore, we have argued above that the holding period is not an arbitrary matter; rather it reflects a substantive difference in the intensions of savers and speculators. Speculators have, by hypothesis, a time horizon so short that the possibility of compensation may be ignored. As the rate falls to very low levels, however, the lack of compensation becomes more important to ordinary wealth-holders. As the risk of loss also increases at low rates (see text below), they may come to behave like speculators.

18. Note that it is not the size of speculative holdings that matters, but the size of offers or demand on the market arising from this source, relatively to both the flow of current saving directed to securities and offers and demands from long-term portfolio holders.

19. This statement in no way conflicts with the proposition for which Friedman (1953) is well known, that speculation must be profitable for the activity to survive. It is precisely the possibility of private financial gain which could result in 'wrong' signals about social costs and benefits of investment which concerned Keynes. Entrepreneurs cannot act in the social interest if the signal for their private profit is subject to 'interference' from speculators.


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Appendix to Chapter 10
LIQUIDITY PREFERENCE AS BEHAVIOUR TOWARD RISK OR UNCERTAINTY

The ambition of this Appendix is to make clear once and for all that the portfolio-theoretic approach to the demand for money is not, as its author claimed and as is widely believed, a development of or an advance upon Keynes's justification for the interest-elasticity of the demand for money but an entirely different theory, relating to the behaviour of a quite different set of transactors, motivated by a desire to invest, rather than to speculate. In principle, therefore, portfolio theory need not displace Keynes's analysis of the speculative demand for money, it could instead be held as complementary to it. In practice, it will be shown, portfolio theory is an unsatisfactory analysis even of investor behaviour.

Although portfolio theory has been much refined and extended since the seminal articles of Markowitz (1952) and Tobin (1958), we shall have little to say about these developments. We shall be concerned with fundamentals, for which an examination of Tobin's article will suffice.

In many respects portfolio theory and the speculative aspect of liquidity preference theory are compatible. The former deals exclusively with microeconomic behaviour while the latter is interested in the aggregate, but there is a microfoundation to liquidity preference. They both assume that the pool of resources available for placement in one or other asset is, for purposes of the analysis, fixed. They both deal with the question of choosing between assets, one of which is capital-safe and the other of which is not, so the potential return on the latter asset includes the possibility of capital gain or loss.

The differences between portfolio theory and Keynes's liquidity preference theory derive, fundamentally, from the comparative-static nature of the former. The comparative-static method requires analysis within a confined period of abstract time (it is not actual time), the 'unit period' during which certain features of the model are not allowed to alter. In the case of portfolio theory it is the probability distribution of returns from the risky asset which is taken as given. Keynes's speculators are operating in time and forecasting specific future values of interest rates.

I am deeply indebted to J.J. Thorpe of the London School of Economics for discussions which have shaped significantly the argument of this Appendix.
Tobin's Framework

The basic framework of Tobin's article is easy to summarise. Returns on the variable-price asset are given by the interest rate and capital gain or loss over the unit period. The distribution of expected returns is given and is symmetrical around the mean, which is the interest rate, such that it can be described completely in terms of the mean \( \mu \) and variance \( \sigma^2 \), which are mutually independent. 'Money' is assumed to have zero mean and variance. Various proportions of money and bonds can be chosen, giving different levels of return and risk (variance) for the 'portfolio'. Choices are made according to the preferences of the holder for return and risk.

The risk-averse person is taken as the norm. He will only accept greater risk in return for greater returns. While corner solutions are possible they are not thought likely, the article's central purpose is to explain the observed phenomenon of diversification.

Risk and Uncertainty

Tobin entitled his celebrated and influential article 'Liquidity Preference as Behaviour Toward Risk'. 'Risk' was accurate, and the word immediately indicates that he will not be analysing speculative behaviour. The distinction between risk and uncertainty is one which has become fashionable to claim does not exist or even that one does not understand it. It is not difficult to understand.

We live in time and are aware that the future is unknown: we are uncertain. Because we cannot know with certainty our future environment or the outcome of our actions, we realise that life is risky. These are accepted usages. We speak, however, of a 'calculated risk' and of 'insurable risk' (e.g. of life insurance). Implicit in these ideas is probability. In technical use of these two words, is that risk pertains to what is in principle insurable — it can be described by probability distribution — and uncertainty is whatever falls outside such a description.

Even within the realm of insurable or calculable risk, however, uncertainty lingers. Uncertainty attaches to the time of the insured event occurring. Occasional fires at a house in the insured period will cause a fire or not. An actuary will tell you the probability of death within any time period you specify, but the time of death is still uncertain.

These examples have been taken from the realm of time, for that is where the confusion about these terms is deepest. But the comparative-static framework of portfolio theory is timeless. In a static framework, uncertainty arises from the fact that the outcome of a random draw from a given distribution is unknown. The distribution itself is generated by repeated sampling from a fixed population of observations, existing independently of time.

Actual draws must be taken successively, for we live in time, but conceptually the order of the draws is of no consequence if outcomes are sequentially independent. Here a better analogy for the risk-uncertainty distinction is the difference between a doctor conducting a drug trial and one prescribing a drug in clinical practice. The trial takes his 'population' as homogeneous from the point of view of the likely effects of the drug and determines the mean response and its standard deviation. The doctor dealing with an individual patient, if he is a good doctor, attempts to assess where on that probability distribution that patient is likely to be. He is dealing with uncertainty; the drug trial indicates the risk.

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The Unit Period

To return to portfolio theory, the probability distribution is fixed for the unit period. One may compare the effects of different hypothetical probability distributions (e.g. different risk attributable to configuration of asset-holders' choices).

For every combination of \((\mu, \sigma)\) parameters, portfolio theory determines the optimal portfolio to be held for the unit period. Thus it is a theory determining one period only, where the period can be any length, so long as conditions do not change. Since there is no mechanism within the model to generate change, it is in fact implicit that the portfolio is held forever, once it has been chosen.

This conclusion is difficult to reconcile with the role played by capital gains and losses as the source of risk in portfolio theory. Capital gains or losses are said to occur when the asset's price differs from the expected value. But capital gains or losses can only be relevant if there is a plan to sell assets at some future date before the asset's maturity date \(T\).

If a portfolio is chosen once and for all, variations in the market price of the assets affect only paper gains and losses. They are never realised. Hence they are irrelevant to the portfolio decision. The rate of return is given by the stream of contractual interest payments appropriately discounted, divided by the current purchase price. Rational choice depends on the coupon yield and current asset prices only; there is no return in holding default-free securities forever.

Capital-loss risk is consistent with the single-period interpretation if (and only if) we impose the condition that portfolios must be unchanged, and gains and losses realised at the end of the period. If the investor has the option of realising losses by not selling his assets when some predetermined date, and of realising capital gains whenever he observes a price rise, then he can always do better than the expected rate of return as given by the distribution simply by waiting for a favourable price. The mean is then not his expected return and the standard deviation of asset price is no measure of his true risk.

The logic of the situation suggests that we must impose enforcement at the end of the unit period and forbid it before the end. The asset-holder is now interested in the price at only one date: \(P_T\), the price at the close of the unit period. The course of the price during the unit interval is of no interest. Its variance serves only one purpose: to permit the calculation of the risk that \(P_T\) will be other than the expected value.

This is an insurance problem. Indeed, in the portfolio model the risk-averse investor could arrange insurance. Properly calculated insurance would on average compensate those who would have to take capital losses out of the capital gains of others (a premium for doing the work). Investors would earn a return equal to the rate of interest (less insurance).

It should be plain by now that this model does not describe speculative behaviour. Speculators were defined as a class of people seeking to make profits from capital gains, not an income from interest payments. Portfolio theory describes the behaviour of the long-term investor. There is no reason for such a person to hold cash as a asset, until the rate of return falls so low that he in effect becomes a speculator.

Equally, there is no reason for a speculator to deal with insurable risks for the time has shown that insurable capital gains and losses cancel out. They cancel out because they are random. If they are random, they cannot be forecasted, and can be balanced on forecasting.

By mentioning forecasting we have reintroduced time. To move the analysis into the future requires that the asset-price distribution functions be interpreted as lagging the relative frequencies with which given prices will occur over time or probability that an asset's price will take any given value on any particular date at random. If either such dynamic interpretation were intended, one would...
expect portfolio theory models to specify the process by which the time series of each asset's price is generated from its static distributions, and they do not. There is a fundamental ambivalence in the portfolio choice literature between the static method and a dynamic interpretation. There is no doubt, however, that we must choose the dynamic approach if portfolio theory is to have any relevance.

To do this we make some hypothesis about the dynamic process by which the probability distribution is generated.

A Random Generating Process

Suppose the price of a security with a given coupon yield is a random variable, generated by the following demand and supply relations:

\[ Q_1^d = a + bP_1 + w_1, \]  
\[ Q_1^s = m + nP_1 + v_1. \]  

On the assumption of market clearing we have by substitution

\[ P_1 = \frac{m - a}{b - n} + \frac{v_1 - w_1}{b - n}, \]

where \( w_1 \) and \( v_1 \) are normally distributed with zero means and standard deviations \( \sigma_w \) and \( \sigma_v \), respectively. For simplicity, define

\[ K = \frac{m - a}{b - n}, \]

and

\[ u_1 = \frac{v_1 - w_1}{b - n}, \]

so that we can write (10.A3) as

\[ P_1 = K + u_1, \]

which is normally distributed with mean \( K \) and standard deviation \( \sigma_u \). Thus we have a distribution completely described by its mean and variance.

There is a certainty in the sense that it is assumed that all investors know the mean and standard deviation of \( P_1 \); with certainty. But it is obvious that having perfect knowledge of the parameters of the distribution (and all other distributions, for other assets) does not imply full and perfect certainty about the future.

Future prices are given by

\[ P_{i+1} = K + u_{i+1}, \quad i = 1, \ldots, n. \]

The \( P_{i+1} \) are days (or hours) within the unit period of length \( n \). Perfect certainty implies knowledge of the true values of \( u_{i+1} \) for all \( i \). By the nature of a random variable, knowledge of the \( u_i \)'s is held to be impossible.

What is the speculator's best forecast of prices on any date \( t \) if covered by this distribution? \( K \), the expected value, is a constant. To do better than that he must forecast individual \( u_t \)'s, which is impossible. A two-parameter distribution independent of time rules out any possibility of profitable speculation. Some may try it for a time, but the game would soon fail.

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An Autoregressive Scheme

Consider, alternatively, a time-dependent generating process such as the autoregressive scheme

\[ P_t = K + u_t, \quad \text{where} \quad u_t = \mu_{t-1} + \varepsilon_t, \]

the \( \varepsilon_t \) are normally and independently distributed, with zero mean and standard deviation \( \sigma_\varepsilon \). Assume \( \sigma_\varepsilon \ll 1. \)

If such a scheme generates price observations it is no longer true that one day is like another. It is possible to 'beat the market' if \( P \) is positively correlated from one day to another. The closer the approximates the random generating process is, the clearer the would be.

It is also interesting in the light of the discussion in the main text of Chapter 10 on 'pulling period horizons' that \( P \) is less important the further into the future one is forecasting. The autoregressive structure implies a high correlation of adjacent and near-by observations, but observations widely spaced in time approach randomness.

Thus the long-term investor should ignore \( P \) and use the two-parameter assumption does little damage. The speculator, however, must take it into account.

In the real world, of course, information other than the past behaviour of prices may play a major role. This is not explicitly allowed for in Keynes's forecasting model, but at least he does have a forecasting model. Tobin does not.

It should be clear that Tobin's model does not refer to speculation. Altered to impose encumbrance, Tobin's model could be used to explain long-term investment.

With its applicability thus restricted, it is clear that only when running yields are too low to compensate for expected loss within some well-defined calendar period, or when the expected yield will not cover an insurance premium does it make any sense for the long-term investor to which this model applies to hold any cash. The long-term investor will hold money, but on transactions and precautionary account, not asset account. (This conclusion is modified where there exists a 'money' — i.e. deposit accounts and NOW accounts — paying interest.)

Notes to Appendix

1. For a thorough treatment of the subject see, e.g. Mossin (1973) or Sharpe (1970).
2. Portfolio theory has been extended to include several assets of variable capital value. The 'Tobin article simplifies, as does Keynes, to the choice between 'money' (a capital-safe asset which in Tobin is also non-interest bearing) and 'bonds'.
3. This distinction is due to Knight (1937).
4. Roussas (1972, p. 268) has also made this point.
5. This ambiguity runs through all comparative statics exercises. For example, we speak of price rising to a new equilibrium after a shift in demand — clearly a dynamic process of adjustment. Tobin, in another context, protests:
   'As is usual in comparative analysis, the purpose is to describe the difference it makes whether a parameter — in this case demand debt — is smaller or larger. The analysis is timeless, even though it would be
impossibly purist to try to explain it without chronological language.  
(1968, p. 153)

Impossibly purist or not, only the timeless explanation is strictly legitimate.

6. This $\rho$ has nothing to do with the $\rho$ of Chapter 11. It is merely a fractional constant.

Chapter 11
THE DETERMINATION OF THE RATE OF INTEREST

The rate of interest determines how much investment demand there will be. What, in turn, determines the rate of interest? Keynes's answer is at least apparently straightforward: the rate of interest is that which brings into equality the desire to hold wealth in liquid form with the available supply of money. A simple enough proposition, one might think, but it is made on two very different levels: that of static equilibrium and that of dynamics. Chapter 3 of the General Theory is concerned with the static equilibrium, yet the determination of interest turns out to involve the entire structure of Keynes's theory. We shall present that first, although it is less interesting than the dynamic stories one can tell with the same theoretical structure, and which are merely hinted at, passim, in the General Theory.

Much of the energy in Keynes's presentation of his theory of interest is devoted to refuting what he conceives to be 1 Classical and neoclassical theories. Although one does not want to perpetuate old disputes, the contrast between Keynes's theory and the Classical theory helps one to see the causal structure of Keynes's theory. In this chapter we see that a dynamic approach to liquidity preference theory also tells us something about causality.

The Static Theory

Assume the stock of money is given. This need imply nothing about the behaviour of banks or the monetary authorities, only that in the static equilibrium whose characteristics we are about to explore, the stock of money in the economy is whatever it is: it is not a variable determined by the equilibrium solution. This stock must in equilibrium be willingly held by the
MACROECONOMICS
AFTER KEYNES

A Reconsideration of
the General Theory

VICTORIA CHICK

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