**7 ter.   Classes of Payments.**   In any economy, with a degree of development beyond that of primitive fruit-gathering, it is possible to verify the existence of a productive process with one or more surplus stages, a basic stage, and an emergent standard of living. Equally may one verify the facts that as the emergent standard of living is consumer to the basic stage, so the basic stage is consumer to the lowest surplus stage, and similarly up the hierarchy of stages. Again, in each case this rate of consumption stands, with due allowances, as a double summation of the activities constituting the product to be consumed. Finally, while each higher stage is for the long-term acceleration of the next lower stage, the basic stage is for the standard of living, and the standard of living for its own sake.

These differences and correlations have now to be projected into their monetary correlatives to set up classes of payments. Thus a restrictive supposition is introduced into the argument. The productive process is now to be envisaged as occurring in an exchange economy. It will be supposed to be an economy of notable size, complexity, and development, with property, exchange, prices, supply and demand, money. However, to obviate considerations irrelevant for the moment, it will be convenient to suppose that foreign trade and foreign payments do not exist; and this supposition is to be maintained until notice to the contrary is given.

The supposition of an exchange economy is a supposition of a relation to sales. Thus along with the productive process of the exchange economy in a given geographic area, there may exist other productive processes. Any individual may set up his own Robinson Crusoe economy in which he is both monopolist seller and monopsonist buyer in transactions which occur only in his own mind. One may go to a barber or shave oneself. One may live in maximum dependence upon the goods and services of the exchange

Circulation Analysis: Revised Diagram
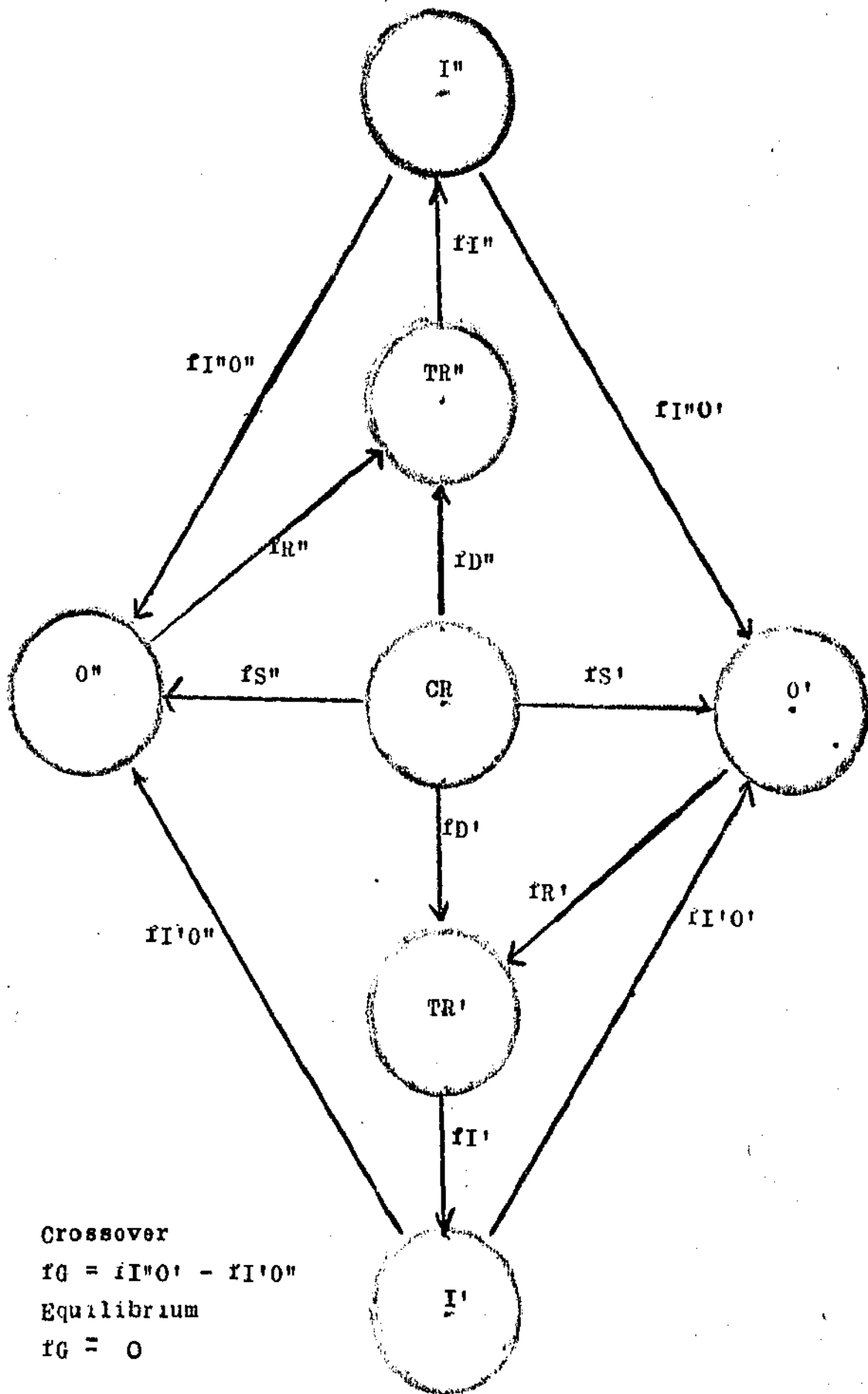
Crossover

$$fG = fI''O' - fI'O''$$

Equilibrium

$$fG = O$$

The Revised Diagram

The basic circuit starts from outlay (O') on the far right, moves along basic receipts (fR') t. the basic transitional division of receipts (TR'), where it is cushioned by additions or subt.actions from the central redistributional area (CR) whence it moves along (fI') to basic income (I'), and thence along $fI'O'$ to basic outlay, where it may be increased by a positive contribution from CR along fS' or, on the other hand, decreased by the payment of a loan.

The surplus circuit starts from outlay (O'') of the far right, moves along surplus receipts (fR'') to the surplus redistributional area (TR'') where it may be augmented by contributions from the central redistributional area (CR) or diminished by payments to it; thence it moves along fI'' to I'' and thence, in part, along $fI''O''$ to surplus outlay (O'') where it may be increased, or on the other hand diminished along fS''.

Over and above these circular movemnts there are the crossovers: $fI'O''$ from basic to surplus for the maintenance, widening, and deepening of basic producers goods and services; and $fI''O'$ for the standard of living of entremeurs and workers in the surplus circuit.

When there occurs a crossover difference, then one circuit is accelerating by decelerating the other. The result is a very serious disequilibrium, and the longer it lasts the more deleterious are its consequences. Let us represent the crossover difference by fG ($= fI'O'' - fI''O'$). Then, once crossover equilibrium is attained, the condition of continued equilibrium will be $fG = 0$.

Again, let the basic propensity to consume, to invest, and to $save$ be respectively: c', i', s'. Now $s'R'$ will be a component moving to CR along fD', so on the supposition that fD' still remains a positive total, then

$$fI' = (c' - i')(fR' - fD')$$
$$fI'O' = c'(fR' - fD')$$
$$fI'O'' = i'(fR' - fD')$$

Similarly, in the surplus circuit

$$fI'' = (c'' - i'')(fR'' - fD'')$$
$$fI''O' = c''(fR'' - fD'')$$
$$fI''O'' = i''(fR'' - fD'')$$

Should it happen the fD'' or fD' happen to be a negative quanity, the sign in these equations changes.

The Revised Diagram

The basic circuit starts from outlay (O') on the far right, moves along basic receipts (fR') t. the basic transitional division of receipts (TR'), where it is cushioned by additions or subt:actions from the central redistributional area (CR) whence it moves along (fI') to basic income (I'), and thence along $fI'O'$ to basic outlay, where it may be increased by a positive contribution from CR along fS' or, on the other hand, decreased by the payment of a loan.

The surplus circuit starts from outlay (O'') of the far right, moves along surplus receipts (fR'') to the surplus redistributional area (TR'') where it may be augmented by contributions from the central redistributional area (CR) or diminished by payments to it; thence it moves along fI'' to I'' and thence, in part, along $fI''O''$ to surplus outlay (O'') where it may be increased, or on the other hand diminished along fS''.

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$$fI' = (c' - i')(fR' - fD')$$
$$fI'O' = c'(fR' - fD')$$
$$fI'O'' = i'(fR' - fD')$$

Similarly, in the surplus circuit

$$fI'' = (c'' - i'')(fR'' - fD'')$$
$$fI''O' = c''(fR'' - fD'')$$
$$fI''O'' = i''(fR'' - fD'')$$

Should it happen the fD'' or fD' happen to be a negative quanity, the sign in these equations changes.

For dQ''/Q'', dQ'/Q' read: $\triangle Z_2/Z_2$ and $\triangle Z_1/Z_1$ respectively.
where Z_1 is a weighted Y''/p' and Z_2 is a weighted T''/p''

Y''

11. The Cycle of the Productive Process.

By a cycle is meant a more or less necessary succession of phases. By a phase is meant a series of intervals in which certain defined characteristics are verified. By a cycle of the productive process is meant a concatenation of phases defined by relations between quantity indices and their increments. The following table explores the possibility of different types of phases.

	$\delta Q''$, dQ'	$dQ''/Q'' > dQ'/Q'$	$dQ''/Q'' = dQ'/Q'$	$dQ''/Q'' < dQ'/Q'$
I.	Unspecified.	Surplus Advantage	Proportionate Phase	Basic Advantage
II.	Neither negative.	Surplus Expansion	Proportionate Expansion	Basic Expansion
III.	Both negative	Surplus Contraction	Proportionate Contraction	Basic Contraction
IV.	Both zero	---	Static Phase	---
V.	One positive & one negative	Mixed Phase	--	Mixed Phase

The foregoing is simply a complete list of possibilities of given type. The main criterion of division is derived from the relation between basic and surplus acceleration. In any given interval dQ''/Q'' must be greater than, or equal to, or less than dQ'/Q'. If one does not specify whether dQ' and dQ'' are positive, zero, or negative, one has three generic types of phases named respectively the surplus advantage, the proportionate phase, and the basic advantage. If however one specifies that neither dQ' nor dQ'' is negative, ~~in the sense that at least one is positive~~, the phase is respectively a surplus expansion, a proportionate expansion, or a basic expansion. On the other hand, if one specifies that neither dQ' nor dQ'' is positive, ~~in the sense that at least one is negative~~, the phase is respectively a surplus contraction, a proportionate contraction, or a

basic contraction. Finally, if both dQ' and dQ" are zero, there is a static phase, and if one is positive and the other negative, there is a mixed phase; the static phase and the mixed phase are likely to be mere theoretical possibilities.

The significance of the table is that it makes possible a distinction between different types of cycle. The trade cycle is a succession of expansions and contractions: it certainly is a movement up and down the table, and it may or may not also involve movements across the table. The contention of the present analysis is that there is a pure cycle at the root of the trade cycle. By a pure cycle is meant a movement across the table with no implication of a movement up or down the table. Thus the succession of surplus expansion, basic expansion, proportionate expansion, repeated as often as you please, would give a pure cycle. Of itself, it would not involve any contraction. It would be simply a matter of the intermittent emergence of acceleration lags in a general movement of expansion. Such a pure cycle can be shown to have an exigence for rather vigorous adaptation on the part of human agents as one phase succeeds another. It can further be shown that the lack of such adaptation transforms the pure cycle into a trade cycle: the free economies of the present day are over-adapted to the surplus expansion, which they exaggerate into booms, but under-adapted to the basic expansion, which they convert into slumps. Lack of adaptation thus transforms a movement across the table into a movement that also is down the table. So much, then, for the general drift of the argument in subsequent sections; present concern is the probability or necessity of pure cycles.

* cf Schumpeter Hist. Econ. Anal. p 565

A first preliminary point is a distinction between the several functions of surplus final products. The aggregate of surplus final products in any given interval is measured by Q". But of this aggregate, part goes to supplying mere replacements and maintenance of existing capital equipment, while the remainder goes to supplying additional and/or more efficient equipment. Thus while part of Q" has no tendency to accelerate the process, the remainder tends to effect a long-term acceleration in either a surplus stage or in the basic stage. Let us say that in any given interval $(1 - H)Q"$ has no accelerating effect, $H"Q"$ accelerates the surplus stage, and $H'Q"$ accelerates the basic stage, where $H = H' + H"$.

There immediately follows a distinction between two significantly different situations. At any given time the coefficient H may be great or small. If it is small, the possibility of a long-term acceleration of the process requires that first the surplus stage accelerate itself to make Q" and H great before turning to the long-term acceleration of the basic stage. On the other hand, if H already is great, the surplus stage may proceed at a constant rate yet have a great $H'Q"$ to effect a notable long-term acceleration of the basic stage; and in this case the basic stage will accelerate first uniformly and then with decreasing rapidity, as the lag in additional replacement requirements gradually is overcome and H decreases.

This distinction between a high and a low potential for long-term acceleration, according as H is great or small, is to be complemented with a parallel distinction between a high and a low potential for short-term acceleration. The two types of acceleration differ, it will be recalled, inasmuch as the short-term acceleration is through the more

intense and more efficient use of existing capital equipment, while
the long-term acceleration is through the introduction of additional
and/or more efficient equipment; thus, the short-term acceleration
is a consequent of a previous long-term acceleration and consists in
exploiting it to the full; inversely, one may say that the long-term
acceleration changes the basis on which short-term accelerations
operate. Now at any given time the potential of the economy for
short-term acceleration may be high or low. One may presume it to be
high when a long-term acceleration is well advanced: then there is
much new equipment; many new combinations of production factors have
recently emerged; and one may expect that the full potentialities of
this new situation have not yet been discovered and exploited. Again,
one may expect short-term potential to be high after a crisis: for
then there has been a sudden contraction of rates of production, so
that the material means for increasing these rates greatly are still
in existence. On the other hand, short-term potential is low if a
long period has elapsed since the last long-term acceleration has
taken place. For if the expansion of the process has been maintained,
the potentialities of short-term acceleration will in time be exhausted;
and if the expansion has not been maintained but has degenerated into
a slump, the potentialities of short-term acceleration will in time
be destroyed by obsolescence and liquidations.

This pair of distinctions between high and low long-term and
short-term acceleration potential set the stage for a pure cycle.
But the issue has yet to be clarified by further considerations. It
is to be expected, in the first place, that either a long-term accel-
eration does not occur at all or else it occurs in a massive fashion.

There are three main reasons grounding such an expectation. First, a
long-term acceleration is a matter of long-term planning: capital
formation is not worthwhile unless one can foresee a long period of
utility for it; on the other hand, if such an anticipation is possible,
then it is worthwhile to do the job properly while one is about it,
for one is settling one's fate for years to come. Second, the intro-
duction of additional or more efficient capital equipment will not take
place in isolated units here and there in the productive process: the
supply of a single product depends upon the activities of many units;
and if it is worthwhile for one of them to go in for an expansion, it
is worthwhile for a series to do so. Third, in a long-term accelera-
tion, demand is not for some single type of surplus product but for a
ramifying variety of products; thus one may expect not merely series
of units but series of series of units to expand. These considerations
do not make long-term accelerations inevitably massive, but they do
reveal an objective logic which is verified no less in socialist planning
than in capitalist free enterprise.

In the second place, the more massive the long-term acceleration
the greater will be the expansion of surplus activity. Surplus activity
supplies capital equipment to the surplus stages and to the basic stage.
Hence a massive long-term acceleration is a massive development of sur-
plus activity. Further, one is not to think of this increment in Q'' as
concentrated in firms of certain types. The distinction between basic
and surplus is not a material nor a proprietary but a functional distinc-
tion. There are types of enterprise that in themselves are indifferently

basic or surplus and turn from one stage to the other according
to the use to which their products are put: such are the extrac-
tion or production of raw materials, transportation, the supply
of light, heat, power, and a variety of general services. As
the quantity of surplus activity expands, not merely is there
a great increase in the supply of tools and machinery, in con-
struction, and so on, but also there is a great diversion of
indifferent activities to the surplus stage.

In the third place, it is of the nature of a surplus expan-
sion to prepare the way for a far greater basic expansion, for
surplus activities stand to basic as a flow to a flow of flows.
But a surplus expansion calls for saving, and a massive surplus
expansion calls for massive saving. In contrast, the basic
expansion calls for ever increasing consumption. So the
practical wisdom cherished in the surplus expansion has to
give way to a quite different type of practical wisdom in
the basic expansion.

The difference is not merely an internal difference, a
change of mentality and attitude. For the simplest way to
obtain great savings and so promote a surplus expansion is
to increase the income of the rich who can hardly spend more
on their standard of living. Again, the simplest way to
promote consumption is to increase the income of the poor
and thereby make/possible for them to improve their standard
of living.

Now to change one's standard of living in any notable
fashion is live in a different fashion. It presupposes
a grasp of new ideas. If the ideas are to be above the
level of currently successful advertising, serious education
must be undertaken. Finally, coming to grasp what serious

education really is and, none the less, coming to accept that
challenge constitute the greatest challenge to the modern economy.

We have had the great surplus expansion of the industrial
and scientific revolutions. But we have yet to master the
basic expansion. First it was dodged by the world-wide pursuit
of a favorable balance of foreign trade. When political economy
overcame mercantilism, it clung to the practical wisdom that
guided the surplus expansion and to the scientific ideal of
the necessary laws of nature to be deduced from assured prin-
ciples. Eventually through strikes, labor legislation, and
the application of scientific ingenuity to practical inventions,
the tables have been turned. In a number of countries today
there is massive production of consumer goods and services.
But even in them there is much poverty and backwardness.
And in the rest of the world the old methods of cooperation
and survival are being or have already been lost without
the new methods effectively taking hold.

In fact, it can be argued that the new methods are flawed.
For the past fifty years the device of deficit government
spending has provided an economic equivalent of the favorable
balance of foreign trade; and as the latter led to an impasse,
so too may the former. But this topic belongs to a later
stage in the argument.

12. Price and Quantity Changes in Accelerating Circuits.

Section 10, page 58, ended with expressions for the rate of change in prices, dP' and dP", and in quantities, dQ' and dQ".

$\Delta Z_1, \Delta Z_2$

These have now to be related to the various phases in the cycle of the productive process (section 11).

$\Delta Z_{2'}$
ΔZ_1

~~Now~~ In a surplus expansion dQ" will be increasing, and in a basic expansion dQ' will be increasing. In either case the expansion will begin with a short-term acceleration that makes full use of already existing resources and equipment. But a movement towards long-term acceleration will be marked by an initial

ΔZ_2

increase of dQ" alone, as efforts are concentrated on ~~exhuming~~
                                                                on
widening and deepening existing capital equipment and/training employees in new skills. However, as this movement advances, the capacity for basic production will keep increasing, and as

ΔZ_1
ΔZ_2

the new capacity is more fully utilized the increase of dQ' will tend to outstrip by far the increase in dQ". For surplus stands to basic as a flow to a flow of flows, and even in part as a flow of flows of flows.

Increasing quantities tend to imply increasing prices. For as quantities keep increasing, competitive bidding for
                                                        those
resources arises among/that wish to remain in the game. Such pressure will be slight or notable in accord with the scarcity of resources and the will to achieve. On the other hand the pressure goes beyond bounds when the possibility of further expansion comes to an end with no end imposed on the further granting of credit.

If increasing quantities tend to imply increasing prices, decreasing quantities imply decreasing prices only in truly competitive markets. Oligopolist managers can agree to prefer the

prior prices, when their alternative would be to pay the
higher prices for their supplies and receive lower prices
when their turn to sell comes round. Similarly, labor leaders
are loathe to accept any appearance of declining wages and
other benefits.

Now variations in dP', dQ', dP'', dQ'' involve similar
variations in fE', fE'', fR', fR'', fO', fO'', fI', fI''. In brief,
cross-over balance has to be/maintained, and any sustained imbalance
will result, in the first instance,/ineffective basic or surplus
demand. Further sustained imbalance in either one will lead
to its breakdown and, as the two are solidary, to the breakdown
of the other as well.

There follows the recession or slump. It may be mitigated
by the productive process migrating from the domestic to foreign
markets, by deficit government spending, and by the redistribution
of income through an income tax. All three have their incon-
veniences to which we revert later.

To conclude, the acceleration of the productive process,
if it is to succeed and not be destroyed by maladjustments to
change of phase, postulates that in a proportionate expansion
the rate of saving be constant, that in a surplus expansion it
increases, and in a basic expansion it decreases. While this
decrease need not reduce the standard of living of employers
or deprive them of the means to meet the costs of maintenance,
it may mean that they will not have that excess of income that
may be labeled "money to invest."

Social dividend