A Macro-Distributive Theory
Dispelling the Econometric Fog

For some time now, and in scattered writings, I have been using a linear model of the private market sector of the economy that is closer in spirit to Keynes, not least in its inclusion of an aggregate supply function, than the Hansen-Samuelson 45-degree approach or J.R. Hicks' IS-LM apparatus. It also borrows from some ideas of Kalecki and has an immediate opening to the theory of income shares while possessing obvious links to econometrics. Not least it strips much of the mystery from econometric models and demonstrates the circumstances in which they are likely to perform well or badly. These are tall claims, but I think the argument can withstand critical scrutiny. Too, there is a singular benefit in that the critical ideas can be stated succinctly. The supply function attaches readily to the theory of the firm although the exercise will not be performed here.¹

The essential equations are:

1. **Aggregate Supply:** \[ Z = \text{k} \times N = W \]
2. **Aggregate Demand:** \[ D = D' + D'' \]
3. **Employment Equilibrium:** \[ D = Z \text{ and } N = (D' + D'')/\text{k} \]

\[ Z = \text{income (Gross Business Product, specifically)} \]
\[ w = \text{the average money wage} \]
\[ N = \text{employment} \]
\[ k = \text{the reciprocal of the wage share (Z/wN) or the average markup of prices over unit labor costs} \]
\[ W = wN = \text{the wage bill} \]

¹ Of my Approach to the Theory of Income Distribution (Gowerwood Press reprint, 1958 edition), I regard this article as some simplification of the general argument developed at that time.

² As I work in nominal units, I use D' and D'' instead of the more usual C and I notation which conceives "real consumption" and "real investment," respectively.
D = aggregate nominal demand
D' = consumption nominal demand
D'' = nonconsumption outlays including current capital investment, government expenditures on private sector
GBP output, and the net export-import trade balance.

So far the model is straightforward and without any surprises. The next step consists of borrowing Kalecki’s profound simplifying hypothesis, namely, that “wage earners spend all their income while nonwage earners — ‘capitalists’ — save all their income.” Manifestly this is not strictly true in the western world (and Kalecki himself qualified it) but using it in its stark form is particularly insightful. As Kaldor and Joan Robinson have used the hypothesis in several writings I have taken to refer to it as the K-K-R hypothesis. Too, I have taken a minor liberty with the assumption by way of generalization. Thus:

(4) K-K-R Hypothesis: D' = wN
(5) Generalized K-K-R: D' = αwN

Relation (5) obviously covers the K-K-R simplification when α = 1. But it also extends to the case where wage earner savings (and tax payments) are exactly offset by nonwage earner consumption or when α ≠ 1 but is “reasonably” constant. Making use of (5) we can substitute so D'' = αwN. This leads to an interesting formulation of the employment equation in (3) and spotlights the major determinants of the theory of employment which remains the vital center of macrotheory. Thus:

(3') N = \[D''/w(k-\alpha)\].

Subsequent focus will be on (3'). As written, it is a disguised form of the average (not marginal) employment multiplier which is usually written as:

(3'') N = \(\Theta D''/w_s\), where \(\Theta = \) the wage share = l/k
s = the average propensity to save (including the tax bite)

---


The argument of this present paper is a more general extension of the ideas presented in "Generalizing Kalecki, etc."

---

The Econometric Link

Equation (3') provides an immediate clue to econometric models and why they work as well, or as badly, as they do. Obviously the models have to gauge the future of nonconsumption outlays, mainly of investment and government demand, and the trade balance, with the combined aggregate mainly an "exogenous" phenomenon though there are many instances where future events cast some earlier shadows. For example, there are surveys of business investment intentions, and business construction permits; also, government budgets are written in advance of the expenditure facets; the trade balance is often a more obstreperous nut to crack in advance though in the United States, at least, it is of trifling importance by far.

Predictions of the average wage are made easier by the fact that most wage contracts have been written in the past, to extend into the future, so that it is only in a period where new contracts covering a large segment of the economy fall due, and are to be rewritten, that formidable forecasting clouds arise, though even in this respect much of the die is already cast by knowledge of contracts sealed in the recent past. For the usual quarterly forecast, in any event, the prospect for big mistakes seem to be minimized.
It is with respect to \( k \), or its reciprocal \( \Theta \), that the hurdles are knocked down well before the projection date. On other occasions I have referred to \( k \) as nearly constant, and that it is not apt to change very much year-to-year; it also possesses strong constancy over long stretches of time, being nearest to an empirical law in this respect.\(^4\) Annual variations of 1 percent constitute an almost remarkable change. The constancy of \( k \) is about the best known and least explored fact in all of economics yet its behavior is a forecaster's delight.\(^5\) Its good rigidity renders the forecasting chore of the econometrician as practically mechanical.

On \( \alpha \) the probing job is only a little more complex. Under the K-K-R hypothesis its value of unity eliminates any need for estimation. Even when \( \alpha \neq 1 \) its movements appear to be consistent and regular; econometric projections can work confidently on the assumption that either any trend or cyclical variation will cause it to fluctuate only within narrow bounds.

Turning to the income forecast (for GBP), equation (3') reduces to:

\[
\text{GBP: } Y = kD^\alpha/(k - \alpha) \quad \text{or } \quad Y = D^\alpha/(1 - \Theta)
\]

from the truism \( Y = kwN \)

Either form of (4) suggests that the forecasting game is designed mainly for children — or serious young adults. With \( k \) (or \( \Theta \)) practically plucked from the past, and \( \alpha \) moving within small and slow bounds over time, the only element requiring broader factual information, and some intuitive feel and judgement, is \( D^\alpha \) representing the total of nonconsumption outlays.

Econometric forecasts tend to concentrate on income predictions. Formula (4) is thus a venture in "econometrics made easy," and "in one easy lesson." The mystery is demystified; forecasting models will work well whenever \( \Theta \) and \( \alpha \) hold firm, as they will tend to do over the short period, and whenever they stay within narrow bounds over longer stretches of time. Actually, operating to narrow the range of error is the fact that it is the difference of \( (k - \alpha) \) that needs to be estimated, rather than exactitude in surmising the individual component.

Of course, to warrant fancy fees, econometricians preparing their forecasts for market sale will provide more detail, breaking up the nonconsumption components and then engage in all sorts of mind boggling and confusing contortions in deriving \( D^\alpha \), and in performing always updated versions of the consumption function with an apparent aim of making the obvious obscure in evading the Generalized K-K-R. Thus the simplifying aspect of a eludes them, and any careful but nonknowledgeable reader. Thus the mystery of econometric income forecasting is perpetuated. Running the computer, and spilling out reams of paper, constitutes a magician's sleight-of-hand to render the obvious, by hocus-pocus, inaccessible to any but those fraternally initiated.

Econometric models render forecasts not only of nominal income, as in (4), but also of "real" income, which involves price level corrections to specify the aggregates in terms of some base year value. This is an elementary statistical feat. The more difficult issues emanate in the theory of the price level which involves a study of its determinants.

### The Price Level

The price level equation shakes out rather directly from (1) and attest to the versatility of the relation. Thus:

\[
Z = PQ = kwN \quad \Rightarrow \quad P = kwN/Q \quad \text{or} \quad [P = kw/A]
\]

where \( P = \) the price level of GBP output
\( Q = \) physical output volume of GBP
\( A = \) average labor productivity = \( (Q/N) \).

Many of the large familiar econometric models do use equation (5) for forecasting purposes, or some minor variant of it. Entailed are nearly the same terms encountered earlier; there is both \( k \) and \( w \) once more. The new term is \( A \) which is a numerical derivation from \( Q \) and \( N \), and a ratio which is actually one that is easier to project for, as a rule, say, in the United States \( A \) tended to grow by about 2.5 percent per annum. In the past decade \( A \) occasionally was slightly negative, in the 1 to 2 percent range, while for the full 1970s it was at about \( +1 \) percent. So once again the variations year-to-year occur within a narrow band, preventing the forecasting guess from getting too badly out of line. The far greater variations are in \( w \) which can show greater volatility, from almost nil levels in year-to-year percentage change to the double-digit jumps of over 10 percent in the United States in the 1970s to the about 25 percent escalation in the United Kingdom and Australia in 1974.

---

\(^4\) Cf. my "Capitalist Inflation and Unemployment Crisis" (Addison-Wesley, 1978), Chapter 3 and the references to the literature. My own work on \( k \) in "Gross Domestic Product, dates back to A General Theory of the Price Level" (Chilton, 1951).

\(^5\) See my recent "An Algebra Theory of Income Shares," Journal of Post Keynesian Economics (Fall 1971) for a specification of the likely important determinants.
From (5), with $k$ nearly constant year-to-year, and taking causation as running from right to left, from unit labor costs (w/A) to prices, the price level emerges as a race between money wages and average productivity gains.6

The Consumer Price Level

Somewhat less familiar is the formulation of the theory of the consumer price level. This is readily elicited from the Generalized K-K-R. Thus:

(6) \[ D' = \frac{P_c Q_c}{\omega N} , \quad P_c = \frac{\omega N}{Q_c} = \frac{(\omega W/A)}{(N/N_c)} \]

the c-subscript denotes the consumer sector.

Once more, familiar terms obtrude, with the need for estimates of C-sector productivity and the employment allocation to the consumer sector. A rise in $\alpha$, which would convey a consumption demand increase, is also capable, as simple theory would tell us, of raising $P_c$. A really substantial increase in the C-sector price level is almost certain to be identified with an outsized jump in the wage-productivity ratio.

The Open Economy

Omitted so far is a concern with the price level in the open economy. Going beyond the closed national circuit requires only a small modification of (5).7 Thus:

(7) \[ P_{out} = \frac{[(kw)/(nA)](Q_v/Q_{out})} \]

where $P_{out}$ = price level of goods which includes domestic and imported content

$\omega$ = domestic value content

$Q_{out}$ = combined domestic and imported physical content of output sold domestically.

6 For a more extended discussion see my Capitalism's Coin, Chapters 3 and 4. The formulation began in A General Theory of the Price Level.
7 Cf. Capitalism's Coin, Chapter 3 where estimates for some of the terms for several countries are made.
Marshall, with their own interpretive mischief imparted, that “higher costs and higher prices will reduce demand and sales revenue because of demand elasticity.”

It is long overdue that students were taught not to be shocked that nominal sales receipts will grow positively, and about proportionately, as higher money wages become the rule. Henry Ford understood this years ago; too many economists resist the obvious connection.

The Average Propensity to Consume

A more esoteric conception is that of the average propensity to consume which, from Keynes’ simple construction, has been made complicated enough to become a specialized study in itself. Nonetheless, from the Generalized K-K-R the concept is reduced to a low grade sophonoric tool. Thus:

\[ c = \alpha(\Theta) \]

where \( c \) = the average propensity to consume (C/Y) or (D/Y)

It follows immediately that \( \alpha \) and the size of the wage share (\( \Theta \)) between them determine the magnitude of the average propensity to consume. With \( \Theta = \Theta \) it is not a very arduous econometric feat to compute or project \( c \); it entails only some estimate of \( \alpha \) which is not beyond the ken of elementary statistical study.

To be sure, econometric discourse on \( c \) has often been so obscurantist as to tax brilliant minds in intense and dedicated study.

Real Consumption

Most often the tedious discussion and the home spun econometrician’s forecasts rally around ‘real consumption’ in some ambiguity to money or nominal consumption outlaw which is apparently regarded as some sort of ‘false’ phenomenon. Again, invoking the same play on K-K-R we have:

\[ D' = P, Q_1 , \ldots, Q_n = \alpha N(w/P) \]

\( Q \), is, of course, ‘real’ consumption. It is seen to depend on: (1) the volume of employment and (2) the real wage, and to give no mind to the endless stream of variables that have tended to find a niche in the consumption function.

Little more remains to be said on this; the idea should come easy to economists though their colleagues have striven mightily to make its comprehension somewhat beyond the powers of more mortal economists.

Distributive Implications

Turning to the distributive implications of the model we consider first the ‘real-wage’.

The Real Wage

To ascertain the real-wage it is only necessary to switch the price level formula of (5) around a bit. It follows:

\[ (w/P) = \Theta A \quad \text{for} \quad P = kw/\Lambda = w/\Theta A \]

The ‘real-wage’ is peculiarly in a veritable bind with average productivity (\( A \)) and the wage share (\( \Theta \)). Given a rise in the wage share, productivity constant, the real-wage will go up. Or given a productivity increase, with shares constant, will accomplish the same real wage improvement. For a more explosive move in the real-wage, a combination involving a productivity improvement and a wage share uplift, will do the trick.

For those who prefer to emphasize the real-wage in terms of consumer goods — or ‘wage goods’ — we can invoke the relation implicit in (6). Then:

\[ (w/P) = (A/\alpha)(N/N) \]

Evident in (12) is that labor productivity, in the consumer sector, is modified by \( \alpha \), so that the real-wage falls with an ascent in \( \alpha \). The real-wage is also acted upon by the allocation of labor between the \( D' \) and \( D'' \) sectors so that a shift to nonconsumption outputs will work to reduce the real-wage — a not unexpected theorem.

Between (11) and (12) some focal ideas on real-wages are gathered into a small funnel. Literally a tome can be written on the determinants of the several terms, and the ramifications of them which extend into the political and sociological, as well as the economic universe. Ricardoan and Marxian discussions revolve about real-wage aspects, and their implications for mechanisation or capital formation, and for growth, economic evolution, and social tensions in the private market economy. Marginal productivity aspects are conspicuous by their absence from the ‘real-wage’ equations of (11-12).
Profits

Classical and neoclassical economists spoke learnedly of 'normal' profits, while evading any quantification of the concept. Economists since the early days felt secure in the concept, and yet somewhat uneasy about its vagueness. Modern neoclassical economists seldom even bother with the concept, being content to invoke Walras' candid statement that he assumed 'neither profits nor losses' in his system. Parroting Walras the modern general equilibrium army is prepared to do battle about interpreting capitalism without even the foresight of arming itself with a profit weapon. Its temerity has made it irrelevant in conveying understanding.

It is a virtue of the techniques related to the K-K-R formulae that quantitative dimension can be assigned to the profit magnitude. This is the great accomplishment of the K-K-R triumvirate.

The Wage Share

In a two-part division of income into wages and 'profits,' or nonwages, where the latter is taken as a gross total to include all interest, rent, depreciation charges, and is understood as a pretax concept, we have:

(13) \[ Y = W + R \text{ and } 1 = (W/Y) + (R/Y) = \Theta + \pi, \]

where \( \pi \) = the profit share.

We shall use these definitional relations in a moment. Going back to (9), which contains the average propensity to consume, we already have an embryonic theory of the wage share and thus the profit share:

(14) \[ c = \alpha\Theta \quad \therefore \quad \Theta = c/\alpha \quad \text{and} \quad \pi = 1 - c/\alpha. \]

This would be satisfactory if \( c \) never altered with \( N \). Insofar as \( c \) is a function of \( N \), we would have to look for the employment determinants in a complete wage share statement.9

The Profits Magnitude

Most significant is the clear illumination thrown by the foregoing set of ideas on the numerical magnitude of 'gross profits' or the total

---

Some Concluding Remarks

The foregoing macromodel, built out of the main blocks of Keynes
with some pieces furnished by Kalecki, Kaldor, and Robinson, seems
rich in promise by virtue of its scope. The consistent relations offer
hostile shelter for the theory of income, employment, price level,
and income shares in a succinct design. Pedagogically the elemental
ideas are capable of transmission at an early stage in economic studies.

Not least the elements are amenable to direct econometric quantifi-
cation, demystifying the packaged esoteric econometric models which
have labored overtime to make the presentation recondite and accessible
only to a cloistered sect of refugees hidden away from the main
corpus of economic theory. The macromodel sketched out should
persuade economists that the legendemani has suffered to an addiction
to the ‘black art’ of making the obvious obscure, as Keynes feared long
ago in his skeptical review of Tinbergen’s work which, by modern
standards, was candid and straightforward. 10

The linearity of the equations outlined here are, of course,
vulnerable to criticism — but not from econometric model builders
whose regression equations are also generally linear. Non-linearity can
be injected into the \( Z = kwN \) equation by writing \( Z = k(N)^{\alpha} \), making
\( k \) a function of \( N \). But this would be a spurious compromise, considering
the empirical behavior of \( k \). Fiddling with \( k \) would entail a fluctuating
\( (Z/W) \) ratio, which does not seem to be in fidelity to the facts.

The price of operating on the hypothesis of \( k = k \), and that \( \alpha = \alpha \),
seems to be most affordable for it makes feasible an enormous
consumers’ surplus from economic study. Clearly the relations can be
extended in other directions; the theory of growth is a prominent
candidate. ‘Experience teaches’ that the penchant of economists for
qualification on secondary matters can generally undermine their
vitality.

Philadelphia

SINDY WEINTRAUB

---

Recent Changes in London’s Money Market Arrangements

Despite numerous changes over the past 20 years, there can be
little doubt that the 12 discount houses 1 still constitute the core of
money market arrangements in London. They form the London
Discount Market Association and they have accounts with the Bank of
England, which give them access to the Bank of England as lender of
last resort to the banking system. The two largest houses are Union
Discount and Gerrard & National, followed some way behind by Cater
Allen. In the past some houses had diversified their activities by
establishing subsidiary companies engaged in gilt-edge fund manage-
ment, or broking activities (operating, for example, in the inter-bank
and related markets). Lately, most have concentrated their resources
on discount business proper and this has been consented to by the Bank
of England, which would wish to see the discount houses major profit
centre highly sensitive to short-term monetary policy. Each of the
houses in the Association is required to have a paid-up capital and
published reserves of at least £1 million. In fact, all have capital
resources well in excess of that sum. 2

---

1 Alexanders Discount; Cater Allen; Clive Discount; Gerrard & National; Gillet Brothers
Discount Company; Jesiell, Toynbee & Company; King and Simmons; Secombes, Marshall &
Campion; Smith, St. Aubyn; Union Discount Company; Page & Gwyther; and Gerald Quinn, Cope
& Guy. The last two houses, which are smaller, were admitted to the Association in 1980. There
have latterly also been a number of mergers. The most recent were between Gerrard & Reid and
National Discount to form Gerrard & National in 1969, Norman & Bennett and Jesiell, Toynbee in
1974; and Cater Ryder and Allen Harvey and Ross to form Cater Allen in November 1981. The
other thing to note is that the money trading departments of certain banks, which departments
competed for discount market-type business, are now less significant than they were. They are not
included in the ‘club money’ arrangements (See text). At the time of writing, a further merger has
been proposed — between Gillet Brothers and Jesiell Toynbee, the new house to be known as