BASIC COMMODITIES, GROWTH AND LABOR ABSORPTION

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I. Introduction

An economic system alters its sectoral labor use over time. This paper will explore the connection between sectoral labor use and the growth rate of a simplified but structured system. Section II will set out the constraints and characteristics of a formalized system based on Srflin’s use of “basic” commodities. This system can develop through increased production of machinery, and provide rising consumption per head. In Section III growth proceeds by drawing on a surplus population of subsistence farmers laboring with primitive tools. Production of machines and consumption per head will likely fluctuate as the subsistence population “migrates” to become a part of the formal two-sector system. Section IV will focus on the model’s characteristics once the surplus population is exhausted. To illustrate the systemic constraints on our two-sector economy, a short-run effective demand model will be introduced. I will show that fluctuating capacity utilization augers for a crisis during the adjustment to a world without a labor “pool” upon which to draw. Finally, in Section V the points developed will be used to critique an account by Lord Kaldor of slowing growth (in the U.K.). I will argue that his account falls short of identifying the full range of crucial explanatory variables. While Kaldor argues that the existence of a labor pool makes robust system growth more likely, he neglects the importance of incentives to produce the correct growth-inducing behavior. One institutional explanation for the failure of incentives is described and critiqued.

II. A Steady State

Initially, the population of our system is stationary. Agriculture is the only consumption good. Machines compose the only other output. There are workers and owners represented in each of the two sectors: workers dominate both sectors numerically, but owners control the disposition of both outputs and (thereby) the offer of employment in each sector. Neither workers nor owners are at the outset inherently limited in their appetites. In this world there is a surplus produced and it provides the basis for consumption per head to grow. How consumption per head (and any growth in it) is divided between owners and workers is not of central interest. While it is well known that the composition of output between machines and consumption goods will affect value relationships, this exercise will ignore them.

There are several formulations which rely heavily on the functional difference between Srflin’s basic and non-basics, and lay a foundation for considering sectoral labor use. If Neumann growth world, for the machine is used in both its own production and that of agriculture, or our consumer good. Labor, however, is not produced and therefore is not a basic commodity. The special role of basics (machines versus the consumer good) is well-known in the analysis of price formation, and the Srflin maximum rate of profit/standard ratio. Consumer goods necessities as wage goods would be basics if labor were "produced" or sustained by each wage goods.

The distinction in Moses here is used to justify the choice of machines as numéraire (see mathematics below). Assume an input-output matrix where the bottom row shows machine and consumption inputs per unit of machine production. The top row represents machine and consumption inputs per unit of consumption goods output. A represents machine input into machine production. B represents consumption input into consumption goods production.

\[
\begin{bmatrix}
A & B \\
A & B \\
\end{bmatrix}
\]

where \( X \) is the stock of machines and \( x \) is the growth in stock machine (not). \( X \) is the size of the employed workforce. Then:

\[
N = ax + bc \\
N = ax + bc \\
x = x + y \\
\]

Normalize on the basic stock, \( X \) so:

\[
N = ax + bc \\
1 = Ag + Be \\
\]

\( bc \) is the proportion of the machine stock producing consumption goods; from (3)

\[
q = (1 - Be)/A \\
\]

Depreciation is uniform for machines and is ignored. The larger the proportion of the stock of machines employed to produce machines (the larger \( 1 - Be \)), the higher will be the rate of growth of the system. Therefore, consumption per head will be inversely related to the growth rate and directly related to the proportion of machines not used to produce machines. Moses [8, 77] calls this proportion the "internal ratio."

1. Basic commodities enter directly or indirectly into the production of all commodities. Each basic commodity must therefore enter into its own production, and must therefore be produced. Labor, while necessary to produce all commodities, is not itself produced and therefore non-basic. If von Neumann type growth models, labor is represented by proxy—a "basket" of subsistence goods. In formulations like this one with an explicit labor input neither labor as "wage goods" are basic. This follows since labor itself does not have a technologically defined production price [8, 76-7; 16, 6-9, and 1, 78-9].

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In partitioning the system into basic and non-basic, rather than the non-discriminatory designation of von Neumann, one additional assumption is adopted: the machine/man ratio is greatest in the machine sector. This makes good sense if one takes a sequential, period by period view: machines have "originated" in their own sector. The higher number of machines per worker could only be "reversed" (or have been otherwise) if the accumulation of machines by either sector required a reduction (substitution of labor for machines) in machines per worker. If carried through logically, the machine sector "reverses" and ceases to be basic. That amounts to the elimination of any endogenous constraint on our two-sector system.  

The connection of the growth rate to the internal ratio is clear. Now we will consider the allocation of a fully-employed labor force among the sectors. In a fixed coefficient world the proportion of the employed labor force is a pure result of the disposition of machines between the two sectors. This allocation of machines not only affects consumption per head but also the relative allocation of the workforce. Put in this light, owners have an interest in at least maintaining the stock of machines wherein the authority of owners resides. Owners' self-preservation dictates that the internal ratio be greater than zero as soon as we allow the number of workers and owners to grow. If owners are systematically wise, the internal ratio is equal to the numerical growth of the "membrane" and a steady state is achieved. But with this forced coincidence there is no structural change in labor use (no absorption of "new" members); only proportional growth.

III. Development

In order to describe absorption of "new" labor we must posit unbalanced growth: that is, growth with development through the equipping of larger population with the same equipment and the trade-off between in the two sectors.

The process of equipping new system members can be thought of as expansion to include a larger population whose existence predates it in logical time. Expansion of our system certainly comes at the expense of the consumption per head of those already laboring within it. But, as we have posited, owners decide to which sector they will "sell" their machines and thereby the trade-off between growth in the stock of machines and consumption per head. The choice to grow by owners will now not be constrained by the growth of the already laboring in the system. Rather it is bound by ability to equip new labor (displacement and absorption) coupled with a maximum rate of machine stock production (accumulation). (If misleading, neoclassical terms such as "substitution" of machines for men as occurred. This description is a travesty, since the whole point from the owners' view is to create a greater labor supply (and more output) than a "swarm"—without noticeable output effects—as the neoclassical paradigm would have it.)

The process of growth is the increased ability to equip more workers without any change in the machine/man ratio of our system; development with an exogenous labor "pool." The result is replacement (displacement) of men without machines (subsistence farmers) by men with machines. In the process a labor transfer has occurred. The transfer has been

2. The possibility of an extension of the absurd neoclassical logic that machines can be built by less machines per worker ad infinitum or by "pure" labor. The concept of pure labor as "an ultimate factor of production is specifically denied by Steffis (16. 112) following Marx.  

3. Where (1 - R) = 0 per-system population grows an increasing portion of the population would be "outside" our system having no machines with which to labor. Such is the result of discontent and the temptation to survive by destructive means, e.g., pillage. See footnote 3, as a role for the state.
Ideology in Economic Sociology

But what is ideology? Unfortunately, neither Schumpeter nor Mannheim provided a clear and "unitary definition" of the concept [15, 13]. They did agree, however, that ideologies are not simply lies or negative value judgments, in the sense of conscious political lies. On the contrary, said Schumpeter, "they are more often than not sincerely believed in by the people who harbor them" [8, 14]. In order to get this important point across, Schumpeter commenced with a special reference to what he considered the salient findings of the contemporary behavioral sciences.

Moreover psychology and psychotherapy have made us familiar with . . . rationalization. This habit consists in comforting ourselves and impressing others by drawing a picture of ourselves, our motives, our friends, our country, our vocation, our nation, our world, which makes us as happy with ourselves as though there were a way to be other than with what they are. The competitor is more successful then we are ourselves is likely to be our success to the degree that we despise [12, 34-35].

Schumpeter added: Marx was the economist who discovered ideology for us and who understood its nature. Fifty years before Freud, this was a performance of the first order.

Schumpeter was particularly impressed by Marx's notion that ideology is a "system of ideas" that is shared by members of a social group [9, 354; 8, 14].

According to Schumpeter, however, Marx had a one-sided view of ideology: Marx "was entirely blind to its dangers as far as he himself was concerned. Only other people, the bourgeois economists and the utopian socialists, were victims of ideology." In fact, the "ideological character of his premises and the bias of his argument are everywhere obvious" [9, 354].

For the purpose at hand, to explain how an innovator came to construct his vision, Schumpeter went on to formulate an amended and generalized version of Marx's definition of ideology. First, ideologies are superstructures erected upon and produced by the realities of the objective social structure. Second, ideologies tend to reflect these social realities in a biased manner. Third, such biases in the hands of doctrine founders are not exclusively shaped by the economic elements in their class position, as argued by Marx.

In other words, Schumpeter attached a broader meaning to the concept of "ideological influence" than did Marx [12, 37, 96, 5, 20-21].

Schumpeter illustrated how a doctrine builder's vision is colored by such a broad-based ideology with an extended reference to Smith. He saw Smith as a homo oeconomicus of a middle-class family who became a civil servant. Above all, since Smith's family did not belong to the business class, his attitude toward the landowning and capitalist classes was that of an outsider. He made it clear that the landlord was an unnecessary, and the capitalist a necessary evil. The necessity for the capitalist was rooted in the virtue of parsimony; otherwise Smith's sympathy went wholly to the laborer. Add to this the distant Smith had for the English bureaucracy and political corruption, and you have practically all of Smith's ideological vision. According to Schumpeter, the other component of this vision, Smith's natural-law philosophy, also influenced that vision [9, 353].

Similarly, Alfred Marshall's "ideals and convictions were (three) of the average intellectual Englishman of 1890." This meant, according to Schumpeter, that Marshall accepted an ideology that was cast in the mold of the "utilitarianized and dechristianized Christianity that prevailed" among the intellectuals of Victorian England [8, 244]. Keynes' ideology was likewise rooted in the "viewpoints" and "creeds" of the "high intelligentsia of [the] England" of his time. As a member of this social group, Keynes correctly claimed spiritual kinship with the Locke-Mill connection. Finally, Marx "was a bourgeois radical who had broken away from bourgeois radicalism. He was formed by German philosophy" preceding by a fraction of the equipped labor force being devoted to machine production such that that fraction is greater than or equal to 0. Logically, at any point during this process when system member growth is equal to or greater than 0, consumption per head will have to fail to enable the system's expansion in the stock of machines to equip new workers.4

There are at least two paths to take in lending credence to the owners' decision to allow machines to the production of machines. The classical explanation is the race for profits by accelerating "machinification." In this spirit Nell [10] has produced a cyclical model based on fluctuating town-countryside profit rates. Here capitalists are driven by the (in retrospect mistaken) belief that greater profits are to be had by cheating peasants into selling their labor by promoting new machines. Their frenzy is intermittent, however. Shortages in consumption goods cyclically sober capitalists as profits are squeezed by higher consumption goods prices and money wage costs.

Another alternative is more difficult to quantify. The American institutionalists, Thorstein Veblen, John R. Commons, John Kenneth Galbraith, to name a few, see the accumulation of more and more machinery employing a larger share of the population as an ethic. It is the need for power and control over others. Of course, the financial considerations are present, but they are more the tool than the objective. In both accounts there is certainly the underlying observation that failing to adopt the mechanization ethic spells doom for any who dare. In both accounts there is the likelihood that increased mechanization does not proceed to absorb all the labor displaced from subsistence farming.

In either of the accounts of the drive for accumulation of machines described above there is an implied accelerator. This stems from any rise in g permitting labor displacement (from subsistence farming) and the concomitant necessity for g (and the internal ratio) to rise further to employ and equip the now expanded labor force. Should this process proceed uninterrupted, system consumption per head would have to fall since g must continue to rise. Ford [4] has shown empirically that labor absorption (new employment) of machine-displaced rural farming inhabitants is halting, incomplete and selective. The degree of displacement is determined by both the ability to equip one "new" worker with a machine and by the rise in consumption good demand (created from abandoning subsistence farming). Only where the rise in consumption good output is exactly equal to additional consumption demand (at pre-displacement per head levels) can the accelerator (or idle displaced labor) be avoided. It is not surprising that periods of subsistence labor displacement can easily crush consumption per head in the economic system. In the limit consumption per head could fall to a low point where subsistence farming represents a "richer" life.

Precisely because of the implied accelerator attention should focus on the absorption of displaced labor. To focus on absorption is to focus on the internal ratio owing to its determinacy over g. The disposition of machine output between consumption goods and its own sector results from the predictions of machine producers. We must understand the motives of the machine purchasers. We assume the machine sellers do not "decide to whom to sell their outputs" [8, 78], per se. Purchasers withdraw to whom can be identified as a reliable customer, whether themselves or producers of consumption goods, so that purchase orders are placed by both parties. Purchase orders in turn manifest a willingness to add capacity, that is to invest.

We can imagine a fluctuating internal ratio (and g) as a labor displacement and absorption alternate. A rise in machine "sales" to consumption goods producers absorbs labor

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4. I am ignoring the issue of advances to labor during the machine stock expansion period. This fact will lower consumption per head of system members in all circumstances and therefore strain socio-political relations.
and raises consumption per head. But this choke off the displacement consequent upon equipping "new" members of the system. The value of g will then be lower (and so likely will profit). In either of the incentive cases described above owners are disposed to raise "sales" of machines to equip new members. This must come instantly at the expense of consumption per head within the system. Owners could in this process call upon the state for assistance. Direct aid perhaps would occur in the form of transfers from consumption goods to machines. Indirect aid could be some form of enforcement of a fall in consumption per head.

While this process occurs in fits and starts, there is in it a restoration of g (and profit) periodically. This restoration is directly related to equipping the additional members of our system. The possibility of equipping new members ceases to exist—the exhaustion of a labor "pool"—the process must take on a new form and interpretation. This occurs when, logically speaking, subsistence farmers become extinct. Historically, it seems likely that the rate of population growth of the subsistence "pool" is (was) considerably less than the growth in the machine stock. This likelihood has the effect of ensuring extinction. Our system could technically cease the process of accumulation and the alternating movements in the internal ratio. This possibility entails the establishment of a post-release steady state. But owners would have to abandon the ethic which led them to accumulate. It seems more likely that our owners would resist such a prospect if only because their relative control and power would be set. Inhabitants' growing numbers (together with machine decay which I have left out of account for clarity) would fix the relative position of owners vis-a-vis workers. It is also true that in a steady state the role or function of owners becomes clearly a custodial one. It may be that inhabitants will not "agree" with the world according to owners consequent upon such a limited and drab role. These social reasons as well as the pure coordinative problem of locating and establishing a steady state auger for its avoidance (or impossibility) by owners. Let us now suppose machine sector owners become faced with this very dilemma.

IV. Post-Development Growth

At some moment no more labor displacement can occur. The whole working population is fully equipped. Machine sector owners will be stuck with an excess stock of machines which will then have to be idled or transferred to the consumption goods sector. What are the short run prospects of the owners in our two sectors? First, there will be a contraction in machine sector employment as machines are idled. We cannot simply assume the excess machines are transferred by fiat to the consumption goods sector with labor conveniently transferring without any disruption. This would only be plausible if our system had been planned for the day when labor displacement ceased.

To sort out the prospects we will rely on Keynesian effective demand model formalized by Nell [11]. There is a fixed machine-man ratio in both sectors. Wages exhaust a fraction of output value at full utilization. The output value of the consumption goods sector equals the wages paid to both sectors' employed workers. Profits in the consumption goods sector therefore equal wages in the machine sector. The capacity of both sectors were constructed to induce labor displacement, but once the displacement has ceased, layoffs in the machine sector cause a fall in the output of consumption goods. Owing to constant returns (and positive profits at full capacity) the fall in consumption goods de-
Owing to the structural characteristics of our model, lower growth will impose limits on future system behavior. The coordinate and incentive difficulties in "moving" to a lower growth rate are significant. But the reverse movement—from lower to higher growth—with a now fully developed and equipped workforce—is structurally even more demanding. The obstacles to higher growth (without a labor "pool") have been formally analyzed by Lowe (7). In his formulation, Lowe has shown that a "travense" from a lower to higher rate of growth is structurally a demanding event. In our model the equivalent is a "forced" reduction in consumption per head to free up machines for transfer into our machine producing sector. (This transfer would raise the internal ratio.) But our schema does not embody any institutional entity by which such a "national mobilization" could occur. Therefore, little can be said as to why a traverser should be undertaken and by whom it would be shepherded. We can evaluate the structural obstacles to overcome, but not the reason for so doing.

V. Kaldor and "Slow Growth"

Interestingly, Lord Kaldor has come to a conclusion paralleling that reported here. There is little reason to suppose rates of growth in a "mature" economy should remain at levels in effect during a time when a surplus population on the land is being displaced. In a bold work, Kaldor (5) suggests that the exhaustion of a labor pool—the appearance of a labor shortage—is the cause for a slowing in the rate of growth in the United Kingdom. (For reasons outside the scope of this paper he dismisses the possibility of financial constraints or any lag in technical know-how.) In Kaldor's analysis, as in our model, there comes a period when all workers are absorbed and equipped with machines. "The United Kingdom, almost alone among advanced countries, has reached the position where net output per head in agriculture is as high as in industry" (5, 26). That is, the U.K. economy, left to its own devices, apparently will (or can) not re-allocate labor sectorally to sustain the former (higher) rate of growth. That it should wish to regain the earlier (higher) rate is presumed, but not defended. (See the article by Halsey in this issue.)

In his analysis Kaldor identified the manufacturing sector as, broadly, the engine of growth for the entire economy. Following the work of the Italian economist P. J. Verdoorn, Kaldor has suggested that manufacturing exerts a disproportionate influence on the overall rate of growth in an economy. Kaldor presents empirical support for this hypothesis (the "Verdoorn Law") and later others conducted similar exercises (3, 17). These statistical tests have neither confirmed nor invalidated such a relationship.

Kaldor recognized that manufacturing, per se, may only loosely reflect the Verdoorn relationship. "I am not suggesting that the Verdoorn relationship applies only to manufacturing activities or that it applies to every manufacturing industry considered separately"

7. The British government during the early 1970s enacted the Selective Employment Tax (SET) whose purpose was to create a labor "pool" from the ranks of tertiary employment. Its effects were negligible, according to Redclay (15). The failure of SET presented a test of Kaldor's premonition that a labor pool would boost investment and output in the manufacturing sector by providing incentives to machine producers to sell their output to "themselves." Interestingly, this policy did provide a proof on Millian logic that the employments (and therefore employment output) created by SET were non-basic. Staal, (16, 64-65) theorized that a tax on厂商 would affect relative prices, output, and employment in general, but a tax on non-basics would affect only their price and neither employment nor output are produced. 8. One probable reason for the failure to outline the key importance of manufacturing sector growth is suggested by the overall trend in advanced industrial economies to lower growth in the post World War II era. The leadership role of the manufacturing sector is not likely to be continued in the context of the relatively stagnant period examined.

References

[S. 16]. From the model presented earlier, it is basic commodities whose production is crucial for growth, and this relationship is not the one tested by Kaldor, et al. Basic commodities by their definition are likely embedded in manufacturing, but are not located there exclusively.

Surprisingly, there is little attention paid by Kaldor to the lack of structural incentives for maintenance (or attainment) of robust growth. Independently of the purely structural obstacles to a "traverser," why presume the requisite behavior is financially attractive to manufacturing sector purchasers of new capacity? Kaldor presumes as much: "Provided that entrepreneurial expectations are buoyant,..." the rate of growth of manufacturing output... could— theoretically— go on until technological constraints... impose a limit on further acceleration" (3, 21). This is the implicit crux. It is expectations which fail in the face of exhaustion of a labor pool and not a labor shortage in the purely physical for technical sense. The failure of expectations is implied by our earlier exercises.

In an innovative work Moss (9, 163-205) suggests a financial reason for caution by potential investors in manufacturing capacity. It is important for markets to exist which permit the sale or liquidation of basic machinery by owners. Moss argues that the basic market for used "basic" machinery exists. Owing to the lack of "continuous markets" the decision to add machinery stocks increases the potential financial loss when underutilization occurs. On nonclassical grounds increased machinery stock (and higher fixed costs) raises the extent of potential operating losses by proportionality lowering variable costs and the "shutdown price" (threshold).

There is little doubt that expansion of machine stocks ("basics" among them) is both crucial for growth and financially risky. But it is not clear that the latter reality reflected in cautious machinery investment behavior would be altered with continuous markets. Whether one supposes flexible or rigid prices in markets for used machinery, the potential for financial ruin is present. Either machinery would be sold near scrap value—in a fire-sale price world; or they would not find a buyer at historical or sunk costs—in a fire-price world. Thus, markets for used machinery do not reduce the importance of buoyant and self-fulfilling expectations, nor increase the incentive to invest in basic machine expansion.

Like Kaldor, I have tried to illustrate why a higher rate of growth is more congenial to a system which is absorbing subsistence labor. Whatever the virtues of maintaining such a rate, this exercise has illustrated why a structural system, without a labor pool, will likely not succeed. Lack of some institution which creates and perpetuates systematically rational incentives for investment, there is no obvious downward limit to slow growth or severe cycles, or both.
J.A. SCHUMPESTER ON ECONOMIC SOCIOLOGY

HANS E. JENSEN

I. Introduction

In my perspective, the concept of economic sociology is basic to everything that Joseph A. Schumpeter wrote on the history of economic thought. Hence the title. I shall make a few references to the contributions of Karl Mannheim because I believe that Schumpeter was influenced by Mannheim’s work on the sociology of knowledge. In addition to substantial circumstantial evidence, some direct evidence to that effect appears in Schumpeter’s work. In his Capitalism, Socialism, and Democracy, he referred to the sociology of knowledge as “that most interesting post-war (interwar) development”; the “German word is Wissenssociologie and the best names to mention are those of Max Scheler and Karl Mannheim. The latter’s article on the subject in the German Dictionary of Sociology . . . can serve as an introduction” (10, 11, 11n, 12, 33n, 33-47).

II. Schumpeter’s Sociological Theory of the History of Economics

In one of his last works on doctrinal history, Schumpeter made the following cryptic observation that may provide a beacon that lights Schumpeter’s approach.

It is impossible to tell not only where economics ends and sociology begins but also what the frontiers are of that intermediate field of economic sociology that has come into existence via here. The difficulty of satisfying our craving for definite borders is that this seems to be fundamentally quite different from the type of difficulty which we often encounter in trying to define a thing that is perfectly definite in itself [8, 28].

Schumpeter was referring to two fields of sociology. The one, which he simply called sociology, is actually a Mannheimian variety of the sociology of knowledge and has been broad in its coverage. The other type, economic sociology, is narrower in scope; it served Schumpeter as a tool of analysis within the confines of the first.

Sociology of Knowledge

Schumpeter agreed with Mannheim that “actual thought is influenced in many decisive points by extra-theoretical factors.” That is so, the latter argued, because these elements have impact upon human “experience” by virtue of their embedment in a particular, “concretely” operating order of life.” In other words, the relevant factors are part of a per-