Reinterpreting the Micro Economic Foundations for Labor Market Outcomes
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The functioning of labor markets has not been an intellectual priority among post-Keynesians, even though the phenomenon of involuntary unemployment prompted the development of the theory of aggregate effective demand. This may change if rising unemployment rates persist. But, for the present, the post-Keynesian “state of the art” when it comes to labor market theory remains critical of the mainstream, in particular its methodological individualism and its singularly microeconomic orientation, but it has advanced minimally beyond that.

The objective of this paper is to develop a theoretical model consistent with this factual anomaly that goes beyond the usual microeconomic interpretation of labor market outcomes. The latter, as is well known, relies on a marginal productivity perspective of the demand for labor, coupled with a disutility perspective of the supply of labor effort. In rejecting that the neoclassical “demand for labor” is a useful perspective, it will be argued that the role of business firms is not to demand labor, but to make employment offers in order to realize business proceeds. Business firms aspire to realize net proceeds from financial investments, by generating outputs that are realized as proceeds. It will be demonstrated that the Keynes-Weintraub Z function can be reinterpreted as an Employment-Offer (E-O) function that can serve as a vehicle for representing the kinds of job offers employers offer based on their underlying cost experiences. It thus can replace the diminishing productivity based demand curve that critics of neoclassical theory have long since discarded. Firms that experience increasing return operations in the high tech large scale manufacturing sector have different cost experiences from those that characterize labor intensive service, light manufacturing, and many agricultural activities in the economy’s diminishing returns sector. They thus make different job offers. To explain the economy’s level of employment and its sectoral allocation between its price-making and price-taking sectors, the Employment-Offer functions of both sectors are joined to Aggregate Proceeds functions developed on the basis of Davidson’s demand-outlay curves (Davidson 1964).
A useful preliminary to developing this alternative view of the basis for the employment decisions of business firms, is to begin by interpreting the role of labor markets in terms of a systems perspective, which envisions capitalist economies as comprised of two major subsystems: a production subsystem ($P$) and an anthropogenic subsystem ($A$). The anthropogenic subsystem is comprised of families, schools, unions, religious organizations and other social institutions that educate, train, motivate and direct the production of human competencies. A systems approach thus leads in the direction of an aggregate or macroeconomic perspective of labor market behaviors and outcomes, which is considerably broader than the microeconomic approach of the contemporary mainstream. When Keynes was writing it was appropriately the aggregate employment level of the macroeconomy that concerned him. Aggregate employment remains a central concern. Given the engineering requirements of production, the number and type of employment opportunities that business firms will make available depends on their expectations that levels of aggregate demand will generate sufficient revenue to cover the costs that govern the “supply price” of employment offers. The technological changes of the information age have shifted concern to the re-deployment of workers from increasing-returns industries into service and other firms operating with diminishing returns and/or reduced price-making capability. This is the perspective of Part II that I believe is necessary to eliminate the conventional “commodity market view” of labor markets. When that is accomplished, it can be replaced by the perspective that it is the supply of employment opportunities at the level of the firm, and ultimately the economy, which is necessary to explain employment levels and its sectoral distributions between well paying “good” jobs and the increasingly large number of jobs that are “poor” in terms of wages, benefits, and job security. Part II also introduces the companion notion of an Aggregate Proceeds-Function (APF) to distinguish between the proceeds levels that businessmen expect from the output sales and the proceeds that are realized in the price-making and price-taking sectors to support specific levels of employment in each.
The comparison makes it possible in Part III to articulate a non-neoclassical microanalytical foundation to explain the relative decline in the proportion of “good” jobs that have been shifted to increasing return industries.

I

A Systems Perspective

Capitalist economies are comprised of two major subsystems: a production subsystem \( (P) \), and an anthropogenic subsystem \( (A) \), that operate within the framework of sophisticated monetary-financial institutions. The anthropogenic subsystem is comprised of families, schools, unions, religious organizations and other social institutions that educate, train, motivate and direct the production of human competencies.\(^1\) Human competencies are ‘inputs’ employed by a production subsystem that includes for-profit business firms, federal, state and local government agencies, educational and non-profit institutions and military organizations that offer paid employment opportunities in exchange for human competencies.

Their relationships are readily visualized in terms of a Venn diagram like that displayed in Figure 1. The rectangle that is the universal set represents the monetary-financial institutional framework that is the hallmark of modern capitalism. The two inner circles represent the anthropogenic subsystem \( A \) and the production subsystem \( P \). Realistically, employers (including the military) are also subsets of the anthropogenic subsystem, because they provide various kinds of training. However, for simplicity, the \( A \) set is represented as comprised of only two subsets: households and schools. The anthropogenic subsystem \( (A) \) and the production subsystem \( (P) \) are linked via the labor market. If \( A \) is a set and \( P \) is a set, the labor market is usefully interpreted as the union of subsystems \( A \) and \( P \).
Operationally, there is a flow of ‘inputs’ from the anthropogenic subsystem $A$, and an income flow, (that is, wages, salaries and other labor income), that reflects payments by the
production subsystem $P$ to households for the human competencies they sell to employers. What distinguishes these relationships from those perceived by mainstream labor economists is that wages and other worker payments are conceived as determined by social institutions, rather than by the labor market, which provides the opportunity to choose between work and leisure. In contrast, a systems perspective makes it possible to envision employment as being determined (given factor supplies and the state technology) by the level of aggregate demand and the perceived profitability of making employment offers to the economy’s workers (whether they are nationals or not). A systems approach thus leads in the direction of an aggregate or macroeconomic perspective of labor market behaviors and outcomes, which is considerably broader than the microeconomic approach of the contemporary mainstream. Because the systems approach also incorporates the monetary institutions of the economy and related government institutions, specifically the Federal Reserve Bank and Treasury, it also lends itself to recognizing the link that Keynes established between employment and the effective demand for output. It is the latter that underlies employers’ willingness to offer a supply of job opportunities at prices that are equivalent to the unit cost of labor plus a margin for profit.

II

The Supply Price of Employment: Price-Taking Firms

A firm’s production function in the price-taking sector is typically characterized by variable proportions (which is the usual assumption made in analyzing production under competition) so that the inputs of resources other than labor are fixed. The supply price ($SP$) of an added employment opportunity for the individual firm will rise when production increases beyond the point of diminishing returns, even if the wage rate is constant. What is being suggested here, following Sydney Weintraub, is that the cost curves of a competitive firm can also be used as a basis for explaining employment offers. I add to this that these costs are relevant for understanding the sectoral distribution between industries offering jobs that are “poor” in terms of wage levels and benefits, and “good” employment opportunities, which are atypical among price-taking firms. Based on Keynes’ verbal description, Weintraub used the cost curve approach principally to utilize the upward slope of the economy’s
aggregate supply, or output function $Z$, to analyze wage-push as the source of inflation, and explain the “stagflation” phenomenon that so plagued the economy in the 1970s.

While the stagflation issue has passed into history, the logic of Weintraub’s derivation of the $Z$ function can be reinterpreted to provide a basis for integrating the role of labor markets into the post-Keynesian theory of employment. The role of the labor market was not explicit in Weintraub’s model, but the employment offer curve $EO_{pt}$ in Figure 2 can be viewed as representing the supply of employment offers by profit-motivated price-taking firms based on their expectation of earning revenues from the sale of the output they produce. The perspective of an employment offer function circumvents the conventional diminishing returns “commodity market view” of labor markets, replacing it with the perspective that, ultimately, labor market outcomes reflect employer job-creating power rather than household choices between work and other uses of time. Indeed, it seems relevant to note that this interpretation is linguistically consistent with the German designation of the employer as “der Arbeitsgeber”; i.e., the provider of work that offers the opportunity to generate profits.

![Figure 2](image-url)
The size of these profits depends on what Paul Davidson termed “demand outlays”; i.e., expenditures that buyers are willing to make on particular goods at every possible price, given their preferences, means, and the prices of other goods. As is represented in Figure 3, a family of demand curves like $d_1$, $d_2$, $d_3$ identifies intended consumer demand outlays at each supply price (Davidson 1994, pp. 170-173). Connecting the relevant demand-outlay points associated with alternative supply prices (again following Davidson, 1994) generates an upward sloping demand-outlay curve $DO_{pt}$ for a hypothetical price-taking firm. It is represented in Figure 3 as sloping steeply upward because even at an unchanged wage rate, increased employment and output increases the wage bail. Its steepness implies that the product demands satisfied by price-taking firms are limited in their job creating potential. Neither Weintraub nor Davidson were concerned with explaining labor market outcomes, but to link the influence of the wage-push process to stagflation. However, both their analytical constructs can be given new relevance in the context of the major sectoral changes in the composition of employment during the approximately fifty years that have elapsed since their early writings.

**Price**

![Figure 3. Demand outlay function for a price-taking industry](image)

Fig. 3. Demand outlay function for a price-taking industry
An appreciation of the changing environment of consumption and production in the latter part of the 20th century is an essential preliminary to extending the Keynes-Weintraub-Davidson competitive model to infer the effect of increasing returns production functions on pricing and employment offers. Modern economies, to borrow Kaldor’s well known expression, became characterized by certain “stylized facts” (1957). The most relevant is that production processes were accompanied by new technologies that have encouraged representative firms to become oligopolistic. Unlike firms in the competitive price-taking sector, firms became large scale, making Henry Ford’s automobile factory a prototype, and emerged as price-taking oligopolies operating multiple plants or plant segments consistent with engineering requirements for efficient levels of production. They became megacorps. These firms rely on shift production, in order to adjust output by adding or eliminating an entire shift of workers (and sometimes entire plants) to utilize capital more or less intensively around the clock. This is very different from the notion of ‘factor substitution’ with it simplification that firms hire varying combinations of labor and capital, depending on the prevailing ratio between wage and interest rates. Such factor substitution is inconsistent with modern technology and, additionally, often with workplace rules. There is often a work place protocol establishing the proportion between capital and labor, even where engineering standards for combining factors have not been established. Accordingly, in Figure 3, \( Q_c, Q'_c, Q''_c \) represent the capacity outputs of a price-making firm as it alters its production functions by increasing its investment and the requisite workforce to make capital stock operative. Production of a capacity output \( OC \) thus requires a wage bill expenditure \( WB \) plus a levy \( k \) to defray various non-wage costs, and finance future investment and R&D expenditures from internal sources (Eichner, 1976, pp. 61-88)

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WB + k, \ WB' + k' \quad \text{and} \quad WB'' + k'' \text{ in Fig. 1 represent the successively higher expenditure plateaus required to support the larger plants (or additional plant segments), and the requisite number of production and management workers to make them operational. Accordingly, the supply price of an additional unit of their output is falling; i.e., supply price } SP = (WB + k)/q = ac_1, \ ac_2, \ ac_3. \text{Declining average costs (marginal costs do not exist}
\]
when factor proportions are fixed) of producing output potentially translate into increasing returns.

Figure 4. Representative Cost Curves for Increasing-Return Firms

Their increasing returns potential is realized via the *price-making* capability of firms able to markup their wage bills to establish sales prices for their outputs that are high relative to competitive prices. Historically, demand for the outputs of the price-making manufacturing sector responded positively to rising incomes, and was price inelastic. This biased the growth process away from the production of goods such as food and other necessities, and towards those goods able to yield increasing returns to firms. As long as price-making firms are able to mark-up their wage bills, their proceeds were able to support an increasing supply of employment offers.
Fig. 4. Aggregate supply of employment offers when increasing returns are possible

The Employment-Offer Schedule ($E-O_{pm}$) for the price-making sector in Figure 4 identifies the level of proceeds associated with each price-quantity combination a megacorp might choose. Each Employment-Offer schedule relates the size and/or number of employment shifts that might be offered to activate the capital stock of the plant size chosen. Each level of output will be associated with a level of employment offers based on expected proceeds that rise more rapidly than employment. Accordingly, in Figure 4, the Employment-Offer schedule for the price-making sector starts above the origin and is concave to the employment axis. It is represented as rising at an increasing rate because
the megacorps’ selling price tends to be able to increase more rapidly than output and employment.

This is the pattern that characterized the manufacturing sector from the mid-1940s and into the late 1970s. It was accompanied by the bargaining power of relatively strong labor unions, which preserved an historically constant relationship between the shares paid to workers and the recipients of non-wage income. This scenario reflected a mutually beneficial relationship between big business and high wage workers, which was often symbiotic during the era of Fordism (Eckstein, 1968, pp. 133-143). The accelerated expansion of the manufacturing sector between the mid-1940s and into the 1970s had the potential for increasing the profit share because the practice of mark-up pricing made it possible for wage increases to be passed on in the form of higher prices. However, profit shares remained fairly constant because oligopoly firms also tended to be more tolerant of labor unions and their demands for wage increases. High wages and high profits together encouraged high consumption and investment in price-making sector products that yielded increasing returns. Firms confronted demand curves that were income elastic and price inelastic income elastic demands, as was the case for many goods that were unavailable during the war, and responded to the rising incomes that followed from increasing civilian employment. The latter supported increased output, and higher employment at rising wage rates in the price-making sector.

The relationship between productivity growth and employment in the technologically progressive manufacturing sector has been deteriorating since the early 1970s. This deterioration accelerated during the 1990s with the coming of the information age. Downsizing and re-engineering have compromised the 'good jobs' historically associated with the manufacturing sector. While the latter practices also created new high-paying jobs in the high-tech sector, the increase is smaller in magnitude than the jobs destroyed (Carey & Franklin, 1991).

Newly developing industrial economies have changed the environment of both production and consumption. Their progress impacts on the ability of price-taking firms in economies that became industrialized earlier, making them unable to retain their historical
comparative advantage, and compromising their ability to generate increasing returns and make employment offers on a continuous basis. The American auto industry is a prime example. The subsidies that newly-industrialized countries typically provide to industries targeted for development have especially hindered the ability of historically older American firms to be competitive in terms of cost. Also, the latter are burdened by the “legacy” costs of pension and health care for retirees and environmental protection, which more recent industrializing countries do not confront,

![Graph](image)

Fig. 5. The possibility of reduced proceeds from employment in the price-making sector.

Accordingly, U. S. price-making firms became less able to operate along average cost functions like $ac_1$, $ac_2$, and $ac_3$ in Figure 3 as newer industrialized foreign firms adopted advanced information technology to introduce computer monitoring of production processes and quality control. The ability of U.S. (and European) firms to maintain wage-cost prices consistent with increasing employment opportunities has declined as manufacturing firms were pressured by international competition to become price-takers. Thus, proceeds from the sale of output tended to become pressured downward to increase at a decreasing rate as in Figure 5, which discourages investment in the creation of “good” jobs; i.e., jobs in which technology facilitates high worker productivity and declining average costs.
The technical changes on which Fordism was predicated yielded increasing returns that were more or less protected by the patent system. The present day information economy is predicated on an entirely different source of increasing returns; specifically, knowledge that is encoded via the microchip and is for all practical purposes a public good. When knowledge is in the public domain, global competition compromises the cost advantages of many historically older megacorps. The clear implication is that the Employment-Offer curve has become displaced to a lower level as suggested in Figure 5, for which proceeds ultimately only increase proportionately with employment. Thus, workers have become redeployed into service and light manufacturing sectors, where wage rates are lower, and are accompanied by few if any benefits. While the initial adverse effect is likely to be on consumption demand, it will ultimately compromise new investment out of retained earnings (Minsky, 1986), or through new credit supplies (Chick, 1983), both of which become transmitted via changes in employment to the economy as a whole. Thus, Keynes’ concept of aggregate demand retains its central analytical importance. It is, however, unable to explain the change in the work environment that has accompanied the shift from the “factory age” to the “computer age”.

Some three decades ago large scale manufacturing industries were substantially insulated from market vagaries by firms’ abilities to mark up average labor costs sufficiently high to set output prices that generate net profits for future investment and dividend payments, while also maintaining a symbiotic relationship with their unions.

The contrast between employment offers in the price-making and price-taking sectors is shown in Figure 6. For simplicity these have been compressed into a single diagram to establish employment level \( O N_{pt} \) in the price-taking sector, To avoid the aggregation problem that would result from superimposing the Aggregate Employment-Offer functions of the price-taking sectors onto those of the price-making sector, the vertical distance from \( N_{pt} \) to \( P \) (employment in the price-taking sector) in Fig. 6 is interpreted as the Proceeds axis of the price-making sector. Employment in the price-making sector thus reflects its ability to generate increasing returns to employers, and may be identified as \( O N_{pm} - O N_{pt} \); the economy's total employment is the sum \( O N_{pm} \) and \( O N_{pt} \).
Fig. 6 has particular relevance at present because it represents sectoral changes in the deployment of labor between the heavy manufacturing goods sector industries, which have historically been dominated by price-making firms, and the light manufacturing and service sectors, which are predominantly comprised of price-taking firms. The latter have become newly relevant in the post-Fordist economies that have been emerging in recent decades (Baker, 1996). The clear implication is that the workforce has become re-deployed into the service and light manufacturing sectors, because megacorps are less able to realize increasing returns from the sale of their outputs. Instead of explaining this change in terms of the neoclassical “demand for labor” concept, which seeks to explain labor market outcomes as analogous to those taking place in commodity markets, it seems more appropriate to explain sectoral changes in employment wages and benefits as reflecting changes in the profitability of employer job-offer behavior.

IV

The concern of this paper has been to seek an explanation for the most serious labor market phenomenon of the twenty-first century: the demise of the economy’s ability to generate well-paying jobs at a rate consistent with the increase in its labor force. The explanation that has been developed is predicated on insights derived from a reinterpretation of two early post Keynesian analytical tools. Employment-Offer Functions
and Actual Proceeds Functions are based on two relatively early Post Keynesian concepts; specifically, the Z function and demand-outlay functions, which are the joint intellectual products of Sidney Weintraub (1961) and Paul Davidson (1964, 1994), who developed them, in the main, to address the phenomenon of “stagflation” that so plagued the 1960s and 1970s. While stagflation has passed into history, the usefulness of these concepts transcends their original applications. The aggregate supply or Z function lends itself to being reinterpreted as an *Employment Offer function*. It can thus replace neo-classical downward sloping demand curves for labor, which replicate the inverse price-quantity relationship of commodity markets. The functioning of labor markets is not analogous to that of commodity markets. Employers are less appropriately thought of as “buyers of labor services” than they are as offering workers with particular qualifications employment opportunities to produce products for sale from which sellers derive profits. In effect, employers invest fund to acquire raw materials, capital equipment, and labor services that are transformed into sellable goods to be offered in commodity markets in which sellers are either “price-makers” or “price-takers”. These Employment-Offer functions are represented as interacting with *Aggregate Proceeds* functions predicated on Davidson’s demand-outlay curves. In the present global economy, firms are increasingly price-takers rather than price-makers, and are less able to generate aggregate proceeds curves that are able to promote the revenue required to support “good” jobs of the sort that characterize the era of Fordism. We are fortunate to have available two Post-Keynesian analytical tools that are able, with appropriate adaptations, to explain recent labor market changes for which neoclassical theory is unable to explain, and which is not supported by macroeconomic empirical research.

Notes

1. The word *anthropogenic* relates to the family of human beings, and has been adapted from Al Eichner’s whose important paper “Why is Economics not yet a Science?”

2. The mapping of the P-E-O, or Employment Offer curve, builds on the aggregate supply or Z function conceived by the late Sidney Weintraub to represent J. M.
Keynes’ verbal description of the Output-Employment relationship. Weintraub’s rendition was presented within the context of the cost-push inflationary pressures of the 1960s-70s on the premise of a largely competitive economy characterized by diminishing returns.

3. Paul Davidson (1964) added an important insight to explaining employment levels by illustrating how demand-outlay functions can capture the interactions between quantities that sellers intend to offer and buyers that wish to purchase, which facilitates the market-clearing price via changes in employment and income.

References


Proceeds-Employment-Offer functions are a vehicle for representing the kinds of job offers employers offer based on their underlying cost experiences. Firms that are increasing return firms that operate in the high tech large scale manufacturing sector have different cost experiences than those which characterize labor intensive service, light manufacturing, and many agricultural activities in the economy’s diminishing returns sector, in which firms hire workers as variable inputs at exogenously established wage rates, and experience diminishing productivity at the margin. By way of contrast, in the economy’s increasing returns sector the producing organization is typically a megacorp whose physical plant requires a full complement of production and management workers to produce any output. Thus a megacorp will typically vary the number of shifts rather than the number of individual workers to which it offers employment instead of varying the number of employees per se.