

The background of the entire page is a grayscale photograph of a modern university building. The building features a prominent glass facade with vertical window lines. In the foreground, there is a paved courtyard with several concrete benches and some trees. The overall scene is bright and clear.

# KRANNERT GRADUATE SCHOOL OF MANAGEMENT

Purdue University  
West Lafayette, Indiana

The Labor “Embodied” in Smith’s Labor-Commanded  
Measure: A “Rationality Reconstructed” Legend

by

Glenn Hueckel

Paper No. 1122  
Date: July 1999

Institute for Research in the  
Behavioral, Economic, and  
Management Sciences



**The Labor “Embodied” in Smith’s Labor-Commanded Measure:  
A “Rationally Reconstructed” Legend**

Glenn Hueckel

Department of Economics  
Purdue University  
West Lafayette, Indiana 47907  
E-mail: [hueckel@mgmt.purdue.edu](mailto:hueckel@mgmt.purdue.edu)

July 1999



It used to be said that Adam Smith tried to formulate a labour theory of value but got horribly confused between the “labour commanded” by a product and the “labour embodied” in its production. The origins of the legend are to be found in Ricardo’s *Principles*, but the “authorised version” is by Marx.”

Blaug (1997b, p. 51)

Nearly a half-century has passed since Ronald Meek (1956, p. 63) warned us that Adam Smith’s notion of the labor commanded by a commodity in the marketplace is to be understood not as an expression of the “*substance*” but rather as a *measure* of value and sought to fix that distinction in our minds with his memorable image of the magnet. Indeed, it is more than three times that long since John Stuart Mill ([1848] 1976, p. 568) conveyed the same distinction with his particularly apt metaphor of “the thermometer and the fire.” Further, it is now forty years since Mark Blaug (1959), reminding us of that distinction, turned our attention to Smith’s use of his labor-commanded measure as an expression of potential productive capacity, but one which conveys a subjective dimension as well.<sup>1</sup> Yet in spite of further repeated admonitions in subsequent editions of Blaug’s text (1997b), the “legend” that Smith’s concept of labor commanded is to be understood as expressing, in some way, price ratios proportional to ratios of labor “embodied” in production remains remarkably resilient.

Some authors simply take for granted the presence in Smith’s thought of a “labor theory of value,” suggesting apparently that no evidence in support of such a reading is required, beyond

---

<sup>1</sup> The range of applications to which Smith put his measure are discussed at length in Hueckel (2000). For a suggestion that Blaug might not have got just right the precise nature of the subjective dimension associated with that measure, see Hueckel (1998)

perhaps an occasional reference to the Marxian “authorized version”(Rashid, 1998, pp. 213-15). When supporting argument is advanced, it typically involves the juxtaposition of a quotation drawn from the opening paragraphs of *The Wealth of Nations*, I.v. with one from the first paragraph of chapter six, where we first encounter the famous “early and rude state of society.”<sup>2</sup> This strategy has, indeed, a long pedigree, dating back to David Ricardo’s ([1817] 1951, p. 14) famous complaint that Smith employed his concept of labor commanded in place of Ricardo’s labor-embodied notion “as if these were two equivalent expressions;” and it is this practice that underlies the frequently-encountered view that Smith advanced “these two explanations of value, [which though] very different in nature, yet they rub elbows with each other on almost the same pages” (Douglas, 1928, p. 88).<sup>3</sup> Of course, it is pedagogically useful to highlight the unusual single-factor character of the “early and rude state” of I.vi.1 (and of I.viii.1-4) in contrast to the multi-factor nature typical of Smith’s analysis to illustrate his observation that, outside of the single-factor world, the magnitude of the labor-commanded expression must exceed that of the labor embodied (I.vi.9-24, *passim*). Those who maintain a sharp distinction between the fifth chapter’s discussion of the labor-commanded measure and the sixth’s discussion of the “component parts of price” typically find the latter to be a convincing refutation of any suggestion that Smith advanced in any meaningful sense a “labor theory of value” as that phrase is understood from the work of Ricardo and Karl Marx.

---

<sup>2</sup> Citations to Smith’s work follow the convention of the Glasgow edition, identifying all relevant gradations—book, chapter, section, and paragraph—in the hope that readers familiar with the work will find helpful the identification of the larger context. Where a particular work is not identified, the citation refers to *The Wealth of Nations*. The designation LJ refers to *Lectures on Jurisprudence*.

<sup>3</sup> This view of multiple Smithian value theories, each of equivalent analytical weight has found its way into a number of modern textbooks; for examples, see Landreth and Colander (1994, p. 84), Rima (1991, p. 96), Spiegel (1983, pp. 248-9). Others, however (eg., Ekelund and Hebert, 1997, p. 106), follow Blaug in sharply delineating Smith’s labor-commanded measure from any notion of a theory of value.

Recently, however, a new interpretive procedure has arisen in which Smith's introduction of the labor-commanded concept in chapter five is read quite explicitly through the prism of the "early and rude state" of chapter six, leading, naturally, to the conclusion that Smith did indeed intend his concept as the equivalent of (or "proportional to") the quantity of labor embodied in a commodity. In the most complete expression of this argument, Rory O'Donnell (1990, pp. 63-4) insists that Smith's "choice of a labour commanded measure of value was predicated on a set of assumptions under which changes in value measured in labour commanded will, in general, be approximately proportional to changes in value measured in labour embodied." Elias Khalil (1991, p. 34) independently employs a similar procedure to resurrect "Smith's identification of labor-commanded [LC] with labor-embodied [LE] in chapter 5, book I of *The Wealth of Nations*." Not only do these authors deny the now widespread interpretation that Smith understood the labor-commanded unit to produce (outside the single-factor world) a result quite different from the labor-embodied magnitude, they also call into question the established view that among the various applications to which Smith put his measure was that which we associate with a price index—that is, as a deflator with which to adjust nominal magnitudes for "purely monetary changes" (Schumpeter, 1954, p. 188), or, to borrow Samuel Hollander's (1973, p. 128) phrase, to express the magnitude of an income stream in terms of its "command over consumption goods." O'Donnell (p. 74) characterizes this reading as "extremely dubious," while Khalil (p. 42), more decisively, dismisses it as inadmissible on the ground that it "amounts to confusing real exchangeable value with real useful value." There can be no doubt of the significance of this alternative reading: if it is found persuasive, then much of what we think we know regarding Smith's value measure and its role in his larger system must be jettisoned. That alone qualifies this new view as deserving of the most careful inspection, and it is to that task that this essay is

devoted. We will find, however, that no such drastic action is necessary; it is this alternative reading, not the established view, that fails to withstand scrutiny.

### **Sraffian “rational reconstructions”**

Before turning to our analysis, we must take a moment to place this question within its larger context, and here Blaug’s distinction between “rational” and “historical reconstructions” will prove helpful. The former, of course, refers to what has come to be described as “Whig history”—that approach which applies to historical texts the analytical categories and techniques of modern theory so as to construct from those texts a line of intellectual progress leading to present “truths.” “Historical reconstruction,” on the other hand, refers to the historian’s attempt “to recover the ideas of past thinkers in terms that they, and their contemporaries, would have recognized as a more or less faithful description of what they had set out to do” (Blaug, 1999, p. 213). To be sure, these two approaches to the past, while logically distinct, nevertheless tend in the actual work of the historian frequently to shade into one another. Particularly in the case of historical reconstruction it is clear that all such attempts must inevitably contain some element of rational reconstruction as well since the modern reader cannot purge entirely from his mind all influences of modern theory. As Blaug reminds us, “we can at best struggle to grasp what a past author really meant to say in terms *he* would have accepted but we can never fully recapture *his* theoretical innocence” ([1990] 1997a, p. 58, emphasis in original). We must acknowledge, then, that any attempt to render a historically faithful description of Smith’s ideas concerning value runs the risk of “reading backward”—of, that is, reading Smith’s text through Marxian or, alternatively, Walrasian spectacles.

But Blaug’s distinction has more to offer us than this edifying caveat, for O’Donnell’s reading of the labor-commanded measure is advanced in service of his larger contribution to the



so-called Sraffian “surplus approach” to classical economics, the very interpretive tradition that Blaug criticizes as “just another Whig interpretation of history” (1999, p. 215).<sup>4</sup> This tradition identifies the common, defining characteristic of classical economics as a focus on the generation and disposition of a “social surplus,” a concept roughly analogous to the non-labor component of net national product. The magnitude of this surplus is said to have been determined as the residual left after subtracting from total output the wage bill of the laborers employed in the production of that output. The determinants of this residual—that is, the magnitude of the total product, the technically-determined input coefficients, and the real wage—are said to have been taken as “known prior to this determination,” a reading which, as Blaug reminds us, originates with Piero Sraffa (1960, p. v). Hence, the “logical basis” of classical economics is said to lie “in the consideration of real wage and social product as being determinable *prior to* [the non-wage] *shares*” (Garegnani, 1987, pp. 560-61, emphasis in original; O’Donnell, 1990, pp. 8-12; Blaug, 1999, p. 217-18 and 222-3). Finally, and following Sraffa’s explanation for Ricardo’s introduction of a labor theory of value (Ricardo, [1817] 1951, pp. xxx-xxxvii), that construct is portrayed as the classical’s attempt to resolve the fundamental circularity of their model: if the total product comprises more than one commodity, it must be expressed in value terms; but if the value coefficient is itself dependent upon the rate of profit, then to claim that the magnitude of the total product is determined “prior to” the rate of profit is to involve one in circular reasoning. The labor theory of value is said to be Ricardo’s (and Marx’s), unsuccessful, attempt to resolve this problem (Garegnani, 1987, pp. 566-68).

While this “surplus” framework has been most frequently applied to Ricardo and Marx (Garegnani, 1984; 1987), O’Donnell (1990, p. 29) claims to have extended the approach to Smith,

---

<sup>4</sup> Lest there be any misunderstanding, it must be emphasized that this “Sraffa connection” is absent from Khalil’s argument.

insisting that we find in the *Wealth of Nations* “a *definition* of the concept of surplus analogous to that of the Physiocrats and identical to that which was to be adopted by Ricardo and Marx.”

Moreover, Smith’s determination of that surplus corresponds exactly to the Sraffian formula: “in analysing accumulation Smith took total *produce* and the *capital* requirements of production as given magnitudes (explained [separately] by his theories of output, technology and the real wage), leaving the surplus—profits plus rents—as a residual” (p. 212 and chap. 3; emphasis in original). The argument is not, however, a complete precursor of Ricardo since, we are told, “Smith did not use his surplus explanation of aggregate profits and rents to develop a theory of the *rate of profit*, his concern being, almost exclusively, the *amount* of surplus and its implications for accumulation” (p. 212, emphasis in original).<sup>5</sup>

It is not our purpose here to judge the historical validity of the reading produced by O’Donnell’s struggle to fit Smith’s system into the Sraffian “surplus” framework; Blaug (1999) has performed that task for us, and his critique will serve: this is indeed “an ingenious rational reconstruction” by which “we assume that perfect truth is found in [Sraffa’s, 1960] *Production of Commodities*, and then we read backward, finding Sraffa in much of Ricardo and Marx, although much less in Smith and Mill, and forget about almost everything else in classical economics because it will not fit the Procrustean bed of the interpretation.” O’Donnell, of course, insists that there is more of Sraffa to be found in Smith than has been commonly understood, but Blaug’s (pp. 215 and 218) assessment remains unimpeached: this “certainly is an amazingly narrow interpretation that omits some of the most exciting and indeed fruitful elements in the thinking of the classical authors”

---

<sup>5</sup> As one of his reviewers observed, this qualification is particularly hard to credit since it “attributes to Smith the almost unbelievable incapability to calculate a ratio (whose nature was perfectly clear in his mind) between two aggregates [the “surplus” and the wage bill] that, according to O’Donnell, he had already calculated with precision” (Caravale, 1992, p. 1124).

It is, however, O'Donnell's (p. 5) self-consciously "new interpretation of [Smith's] labour command measure" which attracts our attention; but if we are to judge that interpretation, we must read it from the perspective of that "surplus approach" which it is intended to serve. The problem of Smith's value measure takes on particular importance for O'Donnell because he takes as a point of departure his rendition of Maurice Dobb's claim that Smith may be viewed as the source of two divergent interpretative "streams": "the classical or surplus theory found in the work of Ricardo and Marx," on the one hand, "and the neoclassical or marginalist theory" on the other (O'Donnell, p. 2; chap. 10; *cf.* Dobb, 1973, pp. 112-18). O'Donnell, of course, seeks to highlight the former and to deny the latter. The second of these tasks is accomplished simply by setting an extraordinarily rigorous definitional standard: "the essential elements of a 'supply and demand' theory are utility functions, which are maximised subject to the constraint of given endowments, which have alternate uses (p. 19). Here, perhaps, is the source of O'Donnell's peculiar unwillingness to acknowledge Smith's application of the labor-commanded expression as a measure of "purchasing power over consumption goods": if Smith is to be excluded from the "supply and demand" tradition, his work must be seen to be empty of utility considerations.

As to the first of his tasks—the positioning of Smith within the "surplus" tradition—O'Donnell (p. 208) objects that Dobb's rendition limits "Smith's contribution to the surplus theory" to no more than "his occasional use of a labour theory of value." Contrary to this feeble attribution, O'Donnell's (pp. 215-16) claim to have located at the center of Smith's system a clear statement of the Sraffian surplus, permits us, we are assured, to "dispense with any idea that Smith's connection with a surplus approach was tenuous." No longer will historians of the surplus approach be reduced to "seeking all sorts of incidental similarities between [Smith's] work and that of Ricardo and Marx—such as his occasional relation of value to labour

embodied.” Nor can Smith be denied a place in the surplus tradition on the ground either that he confused labor command with labor embodied or that he “vacillated” between the two concepts. O’Donnell (p. 216, also pp. 128-9 and chap. 6) denies both readings on the basis “of the assumptions which Smith adopted in using his labour command measure”—the very assumptions which, O’Donnell insists, ensured a “proportionality” between the two magnitudes. Finally, to those who object that Smith’s claim to a place in the surplus tradition is jeopardized by the failure of his labor-command unit to resolve the measurement circularity of the classical surplus calculation (Garegnani, 1984, p. 301), O’Donnell (p. 220, emphasis in original) replies that “Smith’s measure of value was not *designed* for that purpose.” Indeed, while he acknowledges (pp. 111-17) that Smith cannot be said to have employed a labor theory of value in any meaningful sense, O’Donnell is careful to remind us, by reference to Sraffa, that the simultaneous solution to the classical problem, as it is formulated in the surplus framework, does not involve a labor theory of value, from which, we may conclude that “it is not necessary that Smith held or approximated a labour theory of value in order that he can be said to have contributed to the classical theory” (p. 20).<sup>6</sup> The interpretive problem arises from the work of those who, “following Dobb, elevated the particular work of Ricardo and Marx into a yardstick against which to measure Smith’s performance,” a strategy that led them “to attach unwarranted significance to the labour theory of value but ... insufficient attention ... to the *concept* of surplus and the conceptual framework which underlies it” (p. 222, emphasis in original).

---

<sup>6</sup> In his assessment of Smith’s value theory, O’Donnell (pp. 86-9) follows the common view, observing that Smith’s resolution of price into its “component parts” “brings one to a theory of value only in so far as one has a prior theory of the rates of wages, profits and rents,” and it was this coherent distribution theory that Smith lacked. Khalil too denies the charge of “confusion” on Smith’s part, arguing (pp. 35-6) simply that Smith’s treatment of the labor-commanded unit in chapter five was conducted from the perspective of the single-factor economy introduced at the opening of chapter six, leaving the “negation of the labor theory of value” to that later chapter.

It is evident that O'Donnell's "new interpretation" of Smith's labor-command measure plays a key role in his larger effort to fit Smith into a Sraffian surplus tradition. It is "highly dubious" that the measure would have been used to judge purchasing power over consumption goods since, if Smith is to be excluded from the competing, neoclassical tradition, his system must contain no hint of utility maximization. On the other hand, Smith's use of his measure is no indicator of a confused, primitive Ricardian unable to distinguish between labor command and labor embodied. Smith knew what he was doing: his unit was intended not as a solution to the circularity of measurement embedded in the surplus problem but simply as a measure of "changes in the relative value of commodities brought about by changes in methods of production" (p. 62; see also p. 102), and, further, he rested it upon "a set of assumptions" which established a "proportional" relationship between his measure and the labor embodied magnitude. There is nothing in Smith's labor-commanded unit that can threaten his rightful claim to a place in the Sraffian tradition. Clearly we have here too an "ingenious rational reconstruction," but O'Donnell intends his argument as historical reconstruction—as a fair representation of Smith's ideas as *Smith* understood them. It is the historical validity of this alternative reading that is at issue, and it is to that which we now turn.

### **Chapter 5: a "pre-capitalist" economy?**

Both Khalil and O'Donnell begin their respective studies of the labor-command concept from a common point of departure: the premise that Smith's famous fifth chapter, on "the real and nominal price of commodities," is to be read as describing a single-factor world analogous to the "early and rude state" of chapter six. Khalil (pp. 34 and 35) contends that those commentators who "reasoned that LC must be greater than LE" advance a "faulty judgment," which "arises from their failure to understand that the context of Smith's discussion of LC in chapter 5 is non-capitalist

exchange.” Consequently, in Khalil’s eyes the chapter depicts “an economy of self-employed producers exchanging goods for final use, not profit.” Hence, to argue that “Smith equates LC and LE in chapter 5 ... does not mean he is confused about profit; ... there is no profit in chapter 5 to begin with” (pp. 36-7). O’Donnell, draws a rather finer distinction, applying the “pre-capitalist” reading only to the opening paragraphs of chapter five: “At the heart of this interpretation lies the recognition of the fact that the early paragraphs of Chapter v refer to a pre-capitalist economy, while the rest of the chapter refers to a capitalist economy” (p. 63). It was in these “first three paragraphs” (p. 63, though on p. 65 the “pre-capitalist” segment is expanded to include the seventh paragraph), where the alleged “relationship [between labor commanded and labor embodied] was established easily—as a direct equality of labour expended (‘toil and trouble’) to labour command (in the sense of labour ‘contained’ in goods commanded)—and this labour quantity was defined as the ‘real price’” However, because “it was of considerable importance that Smith be able to retain some relationship between difficulty of production and labour command,... a relationship between labour embodied and labour command was carried over into Smith’s discussion of capitalist exchange” as well (pp. 75-6; cf. p. 64). Unlike Khalil, O’Donnell (p. 65) does find evidence of the capitalist employer in the chapter, but that character enters only in the eighth paragraph, when we encounter a “switch in perspective ... of considerable importance,” which “involved [Smith] abandoning the point of view of the worker and examining the exchange of labour for commodities as it is seen by those who hire labour.” Apparently then, regardless of the extent of the alleged “pre-capitalist” segment of the chapter, we can be assured that Smith intended his labor-commanded measure either as equivalent to, or as an effective proxy for, the labor-embodied concept because he chose to introduce his measure in the context of a “pre-capitalist economy,” where the two concepts are obviously equivalent.

We can perhaps be forgiven if we find ourselves entertaining some doubts regarding this reading. If chapter five truly contemplates only the exchange of goods “for final use,” one wonders what to make of Smith’s evident care to exclude his measure from application to such goods. Labor command, he tells us, is employed to measure the “value of any commodity ... to the person who possesses it, and who means *not to use or consume it himself, but to exchange it for other commodities.*” Likewise, what a “thing is really worth to the man who has acquired it, *and who wants to dispose of it or exchange it for something else,* is the toil and trouble ... which it can impose upon other people” (I.v.1-2, emphasis added). As Meek (1956, pp. 65-6) pointed out long ago, this seems to take “the point of view of a capitalist employer, who organises the production of commodities not because he wishes to consume them himself or to exchange them for subsistence goods but because he wishes to sell them at a profit.” It is, of course, the function of that worthy to employ “productive hands”—that is, the class of labor whose effort “adds ... to the value of the materials which he works upon, that of his own maintenance, and of his master’s profit”, and which “fixes and realizes itself in some particular subject or vendible commodity,” which is, “as it were, a certain quantity of labour stocked and stored up to be employed ... upon some other occasion” (II.iii.1). Surely it is consistent with this view of the merchant’s role to say that the “value” of such a “vendible commodity” to the *merchant* “who possesses it and who means not to use or consume it himself” can be expressed as the quantity of labor which it permits him “to purchase or command” and thereby “put into motion ... upon some other occasion.” But if that is the case, then our merchant is a capitalist, and these opening paragraphs of chapter five cannot be said to apply to a “pre-capitalist” economy, in which the labor-commanded and labor-embodied expressions are identical.

Further troubles arise from the position of chapter five relative to the surrounding chapters. For Khalil, that seems to be the chief support for the claim that it is to be read as applying to a single-factor environment. We are to take it as apparent that “in chapter 5, Smith equates LC with LE” because “Smith does not discuss capital and the negation of the labor theory of value until chapter 6. Otherwise, Smith’s discussion would be anachronistic” (pp. 35-6). One is reminded of Blaug’s (1959, p. 150) long-ago comment that much confusion would have been avoided “if chapter 5 had followed, not preceded chapters 6 and 7.” But perhaps Smith sought to avoid confusion in another way: at each point where he makes use of the device of a single-factor economy, he is careful to warn the reader that the analysis rests on the assumption of “that early and rude state” in which labor is the sole input (I.vi.1-4; I.viii.1-5; II.intro.1). The absence of a parallel statement at the opening of chapter five is striking. If Smith was so careful to warn us in chapters six, eight and again at the opening of Book II, why did he fail to include a similarly-limiting statement in chapter five, unless of course he did not intend his remarks there to be so construed?

Finally, we find ourselves entertaining further doubts when we recollect that picture of primitive society that Smith painted for the students who attended his lectures on jurisprudence. There we learn that, of the “four distinct states which mankind pass thro,” the most primitive is “the age of hunters.” This surely is the jurisprudential analogue to the economist’s “pre-capitalist” state, for among the denizens of such a society “few laws or regulations will <be> requisite” since “there is almost no property amongst them” (LJ(A) i.27 and 33). It is clear that Smith carried these principles over to his economic analysis as well, for we are told in *The Wealth of Nations* (V.i.a.2) that “nations of hunters” comprise “the lowest and rudest state of society.” Further, while those famous beaver and deer of chapter six do indeed exchange at ratios equal to their relative labor



inputs, the point is apparently of little more than pedagogical significance for in such a “rude state of society ... there is no division of labour, [and] ... exchanges are seldom made” (II.intro.1). It is only in the second stage of development, “when flocks and herds come to be reared, [that] property ... becomes of a very considerable extent” (LJ(A) 33-4). It is this accumulation of wealth that makes this the stage “where government properly first commences”: “It is in the age of shepherds, in the second period of society, that the inequality of fortune first begins to take place, and introduces ... some degree of that civil government which is indispensably necessary for its own preservation” (LJ(A) vi.7; WN V.i.b.12). Consequently, this first transition, between the hunting and pastoral stages, is a momentous event: “The step betwixt these two is of all others the greatest in the progression of society, for by it the notion of property is extended beyond possession, to which it is in the former state confined.” When once the concept of property is so established, it “is a matter of no great difficulty to extend this from one subject to another, from herds and flocks to the land itself” (LJ(A) ii.97).

But though capital enters the story as early as the second stage of development, market exchange remains limited in scope. Even in the next stage, “the age of agriculture,” there is “little foreign commerce and no other manufactures but those coarse and household ones which almost every private family prepares for its own use” (V.i.a.6). Not until society reaches the highest stage, “the age of commerce,” does market exchange become the defining characteristic of social organization. At this level, “the severall arts, which at first would be exercised by each individual as far as was necessary for his welfare, would be seperated; some persons would cultivate one and others others, as they severally inclined. They would exchange with one another what they produced more than was necessary for their support, and get in exchange for them the commodities they stood in need of and did not produce themselves” (LJ(A) i.31). Surely it is to this advanced

state that chapter five refers, not to a “pre-capitalist” society, where, owing to the limited division of labor, “exchanges are seldom made.”

Viewed in this way, Khalil’s claim regarding the sequence of chapters five and six loses any force it might have had. The brief reference to the single-factor world at the opening of chapter six does not appear “anachronistic” if it is seen in context with its parallels elsewhere in Smith’s exposition, all of which describe a special case, introduced, with fair warning, to establish a “base-line” against which to judge certain key elements of modern society (Haakonssen, 1981, pp. 155-9). Indeed, from this perspective, the sequence appears perfectly reasonable: chapter four describes the introduction of money as the natural response to the costs of barter (I.iv.2), an advance that leads inevitably to the problem of an appropriate adjustment for alterations in the purchasing power of the monetary commodity. This problem is dealt with in chapter five, which establishes the distinction between “real and nominal” prices, permitting Smith then to turn his attention in chapter six to the “component parts” of individual prices. The treatment of neither chapter four nor five requires the device of a primitive, single-factor society. To the contrary, the merchant’s accumulation of money to facilitate exchange in chapter four implies that capital has now joined with labor in production and distribution. Indeed, the earliest form of exchange medium offered as illustration of the argument is livestock, the product of that second stage of development which marks the introduction of capital (I.iv.3). Further, the highly developed state of the economy under consideration in chapter four is made clear in the opening paragraph, where we learn that we are dealing with that stage of development “when the division of labour has been once thoroughly established, [and] ... every man thus lives by exchanging, or becomes in some measure a merchant, and the society itself grows to be what is properly a commercial society”—the most advanced of Smith’s “four distinct states” of development. When we come to chapter

five, we remain in the midst of a monetary economy, but we now turn our attention to the complication presented by the tendency of “gold and silver, ... like every other commodity, [to] vary in their value,” (I.v.7). It is therefore not surprising that we should encounter in the opening paragraph an analytical context identical to that described in the preceding chapter—that is, a society where, “after the division of labour has once thoroughly taken place, it is but a very small part of [his consumption] with which a man’s own labour can supply him,” and thus, “the far greater part ... he must derive from the labour of other people.” How can the like phrasing, which in chapter four explicitly refers to the most advanced state, suddenly in chapter five revert to the most primitive?

### **Embodied equal (or “proportional”) to commanded?**

Doubts concerning the premise that all or some portion of Smith’s infamous fifth chapter is to be read as conveying a picture of a “pre-capitalist” economy do not necessarily imply rejection of Khalil’s claim that we are to take the labor-commanded notion developed in that chapter as equal to a labor-embodied magnitude nor of O’Donnell’s slightly less demanding standard of proportionality. To be sure, there is some ambiguity as to the precise nature of O’Donnell’s claim. Occasionally, the condition is stated simply as a “proportionality between the labour commanded and the labour embodied measure of value” (p. 70), or as a “consistent relationship . . . between labour embodied and labour command” (p. 76). Indeed, at one point we are told that “the most important property which is found in Smith’s measure of value in *both* pre-capitalist and capitalist exchange is the *proportionality of labour commanded and labour embodied*” (p. 241, n. 20; emphasis in original). At other points, we find him settling for the slightly less rigorous condition of a proportional relationship between the *changes* in the two measures. Thus, as we saw earlier, his argument is introduced with the promise to demonstrate that Smith’s measure was constructed

so as to ensure that “*changes* in value measured in labour commanded will, in general, be approximately proportional to *changes* in value measured in labour embodied” (pp. 62-3; emphasis added; cf. pp. 113; 128), and we are offered as illustration “some simple numerical examples” demonstrating that “the change ... in the value of the manufactured commodity, measured in labour commanded, will be proportional to the change in its value measured in labour embodied.” In fact, the example shows the changes in the two measures as not just “proportional” but equiproportionate: “Both labour commanded and labour embodied have been halved” (p. 69). However, a few lines earlier on the same page, the condition is given a far less rigorous expression by which Smith’s assumptions are said to have permitted him to “use the change in the labour command value of a commodity as a rough indicator of the change in the labour *and other inputs* required for its production” (emphasis added).

O’Donnell has provided a useful service with his numerical example, for it helps to clarify the conflicting exegetical issues, with respect to both the interpretations of his own text and that of Smith. He defines commodity price as a function of the quantities of labor and material inputs and the rates of factor returns.<sup>7</sup> Generalizing his numerical values in the following notation:

P = price of the commodity in question

n = labor input per unit output

w = money wage

m = materials inputs per unit output

c = materials price

r = rate of profit,

his product price can be written as

$$(1) \quad P = (wn + cm)(1 + r),$$

and the “labour command value” ( $\frac{P}{w}$ ) as

---

<sup>7</sup> Because Smith failed to reduce material inputs to their own embodied labor, O’Donnell argues, quite properly, that the inclusion of those materials as a separate input gives a truer picture of Smith’s procedure; see p. 238, n. 8.

$$(2) \quad \frac{P}{w} = n + rn + \frac{cm}{w}(1+r).$$

Here is the form described in his observation that “when natural price and its component parts are measured in labour command ... the first of those component parts (wages), so measured, gives the *quantity of labour* used in production” (p. 113; emphasis in original). Here too is the analogue of his more restricted characterization of the labor-commanded unit as simply an indication of the “labour *and other inputs*” used in production: both labor and material inputs are expressed in common labor units, allowing as well for the profit earned on each. But unless we impose additional constraints on the several variables, we can claim a “proportional” relationship between neither the *levels* of labor-commanded and embodied nor the *changes* in those magnitudes.

If we presume that labor is the only variable input (unit materials requirements and all factor rewards being held constant), the change in the labor commanded magnitude over time is, of course,

$$(3) \quad \frac{d\left(\frac{P}{w}\right)}{dt} = (1+r) \frac{dn}{dt}$$

Here, the absolute changes in the labor-commanded and embodied magnitudes can be said to be “proportional” (the factor of proportionality being presumed fixed at  $1 + r$ ), but this apparently is not yet the form that O’Donnell intends. Not only does his numerical example produce equiproportionate changes in the two magnitudes, but he refers elsewhere to the additional condition of fixed factor shares (pp. 70 and 113). Clearly neither condition applies to eq. (3); if labor input is assumed to change while holding constant all other terms on the right-hand side of eq. (2), the factor shares must change as well. Of course, (2) can be rewritten as

$$(2') \quad \frac{P}{w} = n \left[ 1 + r + \frac{cm}{wn} (1+r) \right], \text{ which reduces to}^8$$

$$(4) \quad \frac{P}{w} = n \left( 1 + \frac{\theta_K}{\theta_n} \right) = \frac{n}{\theta_n}, \text{ where } \theta_n \text{ and } \theta_K \text{ are the labor and capital shares.}$$

In this form, of course, (with constant factor shares) the *proportionate* changes in the two magnitudes are equal. However, as is evident from (2'), if we are to maintain those shares constant in the face of constant factor rewards, our earlier assumption of constant unit materials requirements must be replaced by the presumption that those requirements change in proportion equal to the changing labor inputs, maintaining constant the ratio  $\frac{m}{n}$ . This apparently is the form O'Donnell intends since he tells us that "Smith frequently referred to a decrease (or increase) in the quantity of *labour* required to produce a particular commodity when he would seem to have had in mind a proportionate decrease in the quantity of labour and other inputs together" (p. 237, n.6).

There are, of course, other means to the end of constant factor shares. Ricardo ([1817] 1951, pp. 14-17) opted for inversely proportional movements in the wage rate and labor inputs, a standard which, because of its obvious incompatibility with his principle of a long-run equilibrium wage at subsistence, led to his famous accusation that Smith erroneously substituted the labor-commanded for the labor-embodied unit "as if these were two equivalent expressions" (but *cf.* O'Donnell, pp. 128-9). On the other hand, P. Sylos-Labini (1976, p. 208) proposes that "although Smith does not explicitly make the assumption of a stable wage share, that assumption seems to be consistent with his views as to what happens in the 'progressive' state ... if the wage

---

<sup>8</sup> Notice from (2') that the factor shares are defined as follows:

$$\theta_n = \frac{wn}{P} \text{ and } \theta_K = \frac{rwn + cm(1+r)}{P}.$$

rate rises and if profits and rents vary in such a way as to keep constant the overall non-labour share.” O’Donnell, however, refuses both of these options and instead pursues the remaining path to constant shares, adding to his presumption of a constant materials-labor ratio, the claim that “a fundamental feature of Smith’s approach to the study of price changes using his measure was that, in general, the rates of wages and profits were taken as given” (p. 70). Now, when considered from the perspective of his attempted rational reconstruction of Smith as a Sraffian “surplus” theorist, this allegation must strike the reader as, at best, a troubling contradiction. As Caravale (1992, p. 1124) has observed, how are we to know that the “given” rate of profit is consistent with the magnitude of the residual surplus?<sup>9</sup> Even these troubling assumptions are not quite enough, but we are offered nothing to support the remaining (implied) presumption of a constant price of materials (c). Nevertheless, leaving aside the problems plaguing his rational reconstruction, what are we to make of the historical content of O’Donnell’s claim that Smith’s labor-commanded measure rested on the presumption of constant factor rewards?

The constant wage, we are told, rests on two “key assumptions”: “First [Smith] assumed that the corn wage of common labour is constant across long periods of time (I.v.15). Second, he assumed that corn was produced at near constant cost (I.xi.e.28)” (O’Donnell 1990, p. 67). In combination, these would, of course, ensure that the money wage would be a perfect indicator of purely nominal shocks—that is, those which arise “altogether from the degradation of the value of silver,” and thus “affect all sort of goods equally” (I.xi.n.4)—thereby maintaining the labor commanded expression of eq. (2) unchanged. There can be no doubt as to the second of these

---

<sup>9</sup> To be sure, O’Donnell qualifies his claim of a “given” rate of profit with the condition that it applied “*for the purposes of determining natural prices*” (p. 90, emphasis in original). But again Caravale’s (1992, p. 1124) comment is apt: we may well “wonder on what other possible ground, different from the determination of prices, Smith might have been interested to show instead that profits should *not* be taken as given, but considered as the residual quantity left over from national product after the payment of wages.”

assumptions; the special case of constant costs in Smith's corn industry is well known. But the reliance on a constant corn wage raises misgivings. As others have noticed (Hollander, 1973, p. 129, n.46; Brewer, 1995, p. 196), Smith is constrained by a lack of wage data to employ a "corn commanded" unit as proxy for his preferred labor-commanded expression (I.v.22). Corn is suited to this role because its status as "the subsistence of the labourer" yields a roughly constant conversion ratio between the proxy and the underlying labor-commanded concept: "Equal quantities of corn ... will, at distant times, be more nearly of the same real value, or enable the possessor to purchase or command more nearly the same quantity of the labour of other people." But we must not miss the caveat: labor's exchange rate with corn is not constant but only "more nearly" so than that with "almost any other commodity; for even equal quantities of corn will not do it exactly" (I.v.15).<sup>10</sup> The corn price is an inexact substitute for the nominal wage because, over the long run, economic growth both increases the magnitude of the laborer's real compensation (I.v.15; see also I.viii.21-27) and reduces the role played by corn in that compensation. Hence, because "the wealth and revenue of the country have been continually advancing ... since the time of Henry VIII, ... the wages of labour have been continually increasing during the same period" (I.ix.6; also xi.g). One consequence of those two centuries of growth was the increase in the "many other things from which the industrious poor derive an agreeable and wholesome variety of food;" and several of these, chiefly vegetables, fruits, and "the coarser manufactures of both linen and woollen cloth" have "become a good deal cheaper," producing a further rise in the "real

---

<sup>10</sup> O'Donnell's claim of a constant corn wage rests in part on a mis-quotation of this passage, which he renders as (emphasis supplied) "equal quantities of corn, . . . will, at distant times, be more *clearly* of the same real value"; and he fails to include the sentence immediately following, which contains the qualification that even "corn will not do it exactly." Further, O'Donnell adapts to his own purpose Sylos-Labini's observation (1976, p. 202) that Smith adds to the familiar short and long run a very long run, or "stages of development." O'Donnell argues (p. 67, *cf.* p. 90) that "it is only in moving from one 'stage of development' ... to another that wages, profits and rents change." But even Sylos-Labini acknowledges (p. 203) that wages will continue to rise in the "progressive state" so long as the advancing level of wealth causes the wages fund to grow more rapidly than population.



recompence of labour ... during the course of the present century” (I.viii.35). Thus the substitution of the corn-commanded calculus for the labor-commanded expression is complicated by an acknowledged instability of the conversion ratio between the two measures. Smith is careful to remind us of this imperfection in his calculations, as when, in estimating the change in the labor-commanded value of a tod of wool between his own time and that of Edward III, he states his result with the qualification, “if the recompence of labour had been the same in both periods” (I.xi.m.8; also xi.b.36; IV.v.a.10; and xi.g.28, where the measure is applied to a cross-country comparison, again allowing for variation in the corn wage). Finally, and likewise consistent with the acknowledged rise in real wages in periods of growth, it is not to the nominal wage but to the nominal price of corn that Smith turns for his index of nominal shocks. Not the wage but “the average and ordinary price of corn,” we are told, “is regulated ... by the value of silver, by the richness or barrenness of the mines which supply the market with that metal” (I.v.16). Thus, while Smith clearly understood that his substitution of the corn price as proxy for the nominal wage in his calculations of a labor-commanded magnitude produced satisfactory results only to the extent that the corn wage remained reasonably stable over the period of analysis, he nowhere suggests that his measure meets that level of precision implied by O’Donnell’s claim of a “consistent relationship between ... labor embodied and labor command.”

O’Donnell’s suggestion that Smith rested his measure on a fixed rate of profit is similarly troubling. There is a striking contrast between Smith’s frequent warnings that his application of a “nearly” constant corn wage is to be treated as no more than a convenient approximation and his deafening silence on the matter of a “given” rate of profit. The presumption of a stable corn wage is contradicted both by his growth model and by the facts and thus must be repeatedly qualified. A presumption of a fixed profit rate is likewise contradicted on both theoretical and empirical

grounds and thus, if it were a component of his labor-commanded calculations, would require similar qualification. It is well known that his growth model implies that “as capitals increase in any country, the profits which can be made by employing them necessarily diminish,” and the implication is confirmed by the nation’s experience over the two centuries “since the time of Henry VIII,” when, coincident with rising wages, “in the greater part of the different branches of trade and manufactures the profits of stock have been diminishing” (II.iv.8 and I.ix.6; see also I.xi.p.10 and, for a recent treatment, Brewer, 1995). Surely had he intended his labor-commanded measure to be understood as grounded upon the presumption of a fixed profit rate as well as that of a fixed corn wage, we would encounter explicit qualification of the former just as we do of the latter. But we do not.

Finally, no credible support can be advanced for the implied assumption of stable materials prices. Indeed, as O’Donnell himself nicely illustrates, (pp. 76-8), one important class of materials inputs—livestock (“the principle instruments of agriculture”)—necessarily rises in relative price with economic growth (WN I.xi.b.7-8; i.3; l.1-7), and that rise in the meat-wheat price ratio is, for Smith, a key index of that growth (see also Kleer, 1996, pp. 338-9; Hueckel, 2000). Wood too rises in relative price with economic advance “nearly in the same manner, and exactly for the same reason, as the price of cattle” (I.xi.c.16); and “in carpenters and joiners work, and in the coarser sort of cabinet work, the necessary rise in the real price of barren timber, in consequence of the improvement of land, will more than compensate all the advantages which can be derived from the best machinery, the greatest dexterity, and the most proper division and distribution of work” (I.xi.o.2). On the other hand, the prices of wool and hides, building materials, and coal, show no systematic relationship to the extent of a nation’s economic progress but vary in accord with the

extent of foreign trade or (in the case of the latter, bulkier materials) with improvements in local transport and proximity to local markets (I.xi.m.1-8; c.5; c.21-2).

### **Labor command as a measure of cost: a “Malthusian” view**

It appears that our doubts are well-founded: the conditions advanced in support of the claim that Smith’s labor-commanded unit is in some meaningful way identified with the concept of embodied labor cannot be sustained without stretching his argument beyond recognition. To be sure, no objection can be raised to O’Donnell’s observation that Smith employed his measure as a means of expressing variations in the “difficulty of production” (pp. 75-6, also pp. 63 and 78). But it is a very long way from that benign characterization to the claim of a fixed relationship with embodied labor. Neither can there be any objection to O’Donnell’s observation (p. 70) that it is the assumption of constant costs in corn that especially suits Smith’s measure to this task. That assumption permits Smith to employ the corn commanded form of his measure to solve the problem of the price relative—a problem that J. S. Mill ([1848] 1976, p. 438) still found worthy of comment two generations later:

A coat may exchange for less bread this year than last, if the harvest has been bad, for more glass or iron, if a tax has been taken off those commodities, or an improvement made in their manufacture. Has the value of the coat, under these circumstances, fallen or risen? It is impossible to say.

We can, however, “say” when “the cause in which the disturbance of exchange values originated was something directly affecting the coat itself, and not the bread or the glass.” With corn excluded by assumption as a locus of cost change, Smith could be certain that any change in the corn-commanded value of another commodity was the outcome of a “disturbance ... directly affecting” that other commodity and not corn. In this respect, the assumption of constant unit cost in corn serves the same purpose for Smith as does Ricardo’s ([1817] 1951, p. 44) assumption that

in gold production “the same quantity of labour should at all times be required,” though Smith’s corn unit, unlike Ricardo’s gold, is not immune to changes in the distribution of the product as between wages and profit (*cf.* O’Donnell, pp. 102-4; 238, n.10).

Smith could, of course, have expressed his results in the corn-commanded units in which the calculation is performed and thereby avoided the imprecision arising from the conversion to the labor-commanded unit through a possibly unstable corn wage. But he insists on the labor-commanded form. Thus, when he expresses in the purchasing power of his own time the prices paid in earlier centuries for wool, fine cloth, and even the “rare birds” purchased by the Romans “in the time of their greatest grandeur,” it is the change in the nominal price of corn that is calculated, but the result is stated in labor units. In calculating the “real price” of those Roman birds, for example, a comparison of the price of wheat in ancient Sicily to that of his own time and place produces the estimate that “three ounces of silver would then have purchased the same quantity of labour and commodities which four ounces will do at present,” leading thereby to the conclusion that “their real price, the quantity of labour and subsistence which was given away for them, was about one-third more than their nominal price is apt to express to us in the present times” (I.xi.k; *cf.* m.8; o.7; and, for cross-country comparisons, xi.c.22 and g.28). As O’Donnell (p. 72) reminds us, it is labor’s role as chief productive agent that makes it for Smith so appealing a measurement unit.<sup>11</sup> Since the role of capitalists is to employ their “stock ... in setting to work

---

<sup>11</sup> The appeal of the labor-commanded unit over its corn proxy arises as well from that other characteristic which both Khalil and O’Donnell deny: the labor unit conveys for Smith a uniform expression of subjective disutility, or “toil or trouble.” As Smith puts it in a famous observation, “Equal quantities of labour, at all times and places, may be said to be of equal value to the labourer. In his ordinary state of health, strength and spirits, ... he must always lay down the same portion of his ease, his liberty, and his happiness.” Consistent with his rational reconstruction of Smith as a “surplus” theorist with no element of utility maximization that might suggest a place in the “supply and demand” tradition, O’Donnell (p. 65) insists that this passage “can be understood to state that a constant quantity of labour expended in production creates a constant quantity of value.” There can be no doubt, however, that the “value to the laborer” which Smith describes here is a subjective magnitude, quite distinct from the real wage that the laborer’s effort commands in the marketplace. It is in this sense that labor is said to be “never varying in its own value” and therefore the preferred “standard by which the value of all commodities can

industrious people, whom they ... supply with materials and subsistence," the nation's capital is properly expressed by "the quantity of productive labour which it can maintain and employ" (I.vi.5; II.vi.12). Because the annual product includes payments to land and capital as well as labor, it "will always be sufficient to purchase or command a much greater quantity of labour than what was employed in raising, preparing, and bringing that produce to market," indicating that the labor-commanded unit serves Smith also as an index of maximum potential productive capacity (I.vi.24)

It was this dimension of Smith's measure that lay at the core of T. R. Malthus's lengthy ruminations on the labor-commanded unit a generation later. Of course, Malthus, being no more immune than the rest of us to the risk that elements of contemporary theory might improperly condition the historical reconstruction of earlier texts, occasionally permitted the complications created by the Ricardo effect to influence his Smithian exegesis (for example, [1823] 1986, pp. 185 and 201). Nevertheless, when treated with care, his analysis can be illuminating for our purposes. The point at issue presented itself to Malthus in much the same way that it arose for Smith: although "the great instrument of production is labour," the role of time in production means that "it cannot ... be said with anything like an approximation towards correctness that the labour worked up in commodities is the measure of exchangeable value." We can, however, arrive at a satisfactory measure "if to the accumulated and immediate labour worked up in commodities, we add the profits upon the whole advances for the time that they are advanced," giving us simply a measure of total cost. Of course, at a given time and place, "almost every commodity may be considered as an accurate measure of the relative value of others, and what is true of labour in this respect is true of cloth, cotton, iron, or any other article." But our standard

---

at all times and places be estimated" (I.v.7). This dimension of Smith's measure is developed further in Hueckel (1998), where it is seen to be an outgrowth of his theory of property right and of his views regarding Nature's purpose in economic advance.

must express “not merely relative, but absolute and natural value” as well. This latter is that value necessary to satisfy the “conditions of the supply of commodities,” or, more precisely, that which provides “the means of obtaining those objects which will continue to the producer the same power of production and accumulation.” If, rather than labor, “the advances of capitalists consisted specifically in cloth,” then a measure expressed in cloth-commanded units would be preferred, for “the quantity of cloth advanced, with the addition of the ordinary profits estimated also in quantity of cloth, would represent both the natural and relative value of the commodity.” But, as is evident to anyone with eyes to see, “the specific advances of capitalists do not consist of cloth, but of labour; and as no other object whatever can represent a given quantity of labour, it is obvious . . . that it is the quantity of *labour* which a commodity will command, and not the quantity of any other commodity, which can represent the conditions of its supply, or its natural value.” Therefore, “if, with a view to the natural conditions of supply, we consider only the quantity of labour advanced, without reference to any other medium, we must of course estimate the profits in quantity of labour also.” Thus, our measure of total production cost is expressed in labor units in just the manner illustrated by our eq. (2) above (Malthus [1823] 1986, pp. 183-9). But this is no index of a “proportionality between the labour commanded and labour embodied” measures and still less of an equality between those magnitudes. O’Donnell’s (p. 69) single, passing reference to a far less rigorous interpretation is closer to the mark: Smith’s labor-commanded measure is employed simply “as a rough indicator of the change in the labour and other inputs required for . . . production.”

### **A price index?**

Leaving aside the apparent demands of O’Donnell’s Sraffian rational reconstruction, it is curious, in light of Smith’s frequent and unmistakable applications of his labor-commanded

measure as a rudimentary price index, that both Khalil and O'Donnell deny it that role. Indeed, in view of his repeated descriptions of that measure as an expression of the "difficulty of production" (p. 75) or of "changes in the relative value of commodities brought about by changes in methods of production" (p. 62, *cf.* p. 102), it is doubly curious that O'Donnell denies Smith's application of his measure "to deflate nominal quantities" (p. 73). Since the monetary metal is itself a commodity whose relative value is altered by "changes in the methods of [its] production," application of the labor-commanded unit as a deflator is simply a special case of its more general use in judging the "difficulty of production." As we noticed earlier, Smith was well aware that his assumption of constant costs in corn production yields the happy effect of a nominal corn price that perfectly tracks any "degradation in the value of silver," a result which, all the more curiously, O'Donnell acknowledges (pp. 70; 103-4; 109-10). Yet, as we have seen, both Khalil (p. 42) and O'Donnell (p. 73) deny that Smith's measure can be understood as expressing "the purchasing power of individual commodities or incomes." This in spite of its frequent applications to that end. Indeed like any good professor about to embark on a difficult and abstract discourse, Smith was at pains, immediately upon introducing the labor-commanded unit, to convince his audience that "the distinction between the real and the nominal price of commodities and labour, is not a matter of mere speculation, but may sometimes be of considerable use in practice." Here, he commands the attention of his reader with the warning that recipients of long-term, contractually-established rental payments will wish to substitute corn for silver as the unit of account if they are to protect their incomes from the eroding effects of inflation (I.v.10-13). Later we find a similar regard for these cost-of-living adjustments in the suggestion that his deflator "may be of some use to the Publick in regulating the pecuniary reward of some of its inferior servants," for if a rise in the price level "be owing to a fall in the value of

silver [as measured by the corn price], their pecuniary reward, provided it was not too large before, ought certainly to be augmented in proportion to the extent of this fall” (I.xi.n.10).

Of course, so long as the corn wage remains at least “nearly” constant, then the price of labor is (almost) as effective a deflator as is that of corn. Hence, for Smith, a decline in the purchasing power of the monetary metal is defined as a case when “any given quantity, a pound weight of it, for example, might gradually purchase or command a smaller and a smaller quantity of labour, or exchange for a smaller and a smaller quantity of corn, the principal part of the subsistence of the labourer.” (I.xi.d.2). This is precisely what happened “from about 1570 to about 1640; ... silver sunk in its real value, or would exchange for a smaller quantity of labour than before; and corn rose in its nominal price” (I.xi.f.2; cf. h.1). Again, the expression of the “deflated” magnitude in labor units serves to convey the extent of the owner’s command over the goods which could be produced by that labor. As Myint (1948, p. 20) observed long ago, “Smith considered labour as the ideal measure of ‘real value’ simply because he believed that while the purchasing power represented by a given sum of money might depreciate to any extent, that represented by a given quantity of labour could not fall below the amount of real goods that labour would yield when turned to direct production.” Hence, when the question at issue is a possible change in real incomes, the labor-commanded unit is the means of expressing that change. We find it, for example, in the analysis of the corn bounty, which, Smith insists, has no effect in altering the real value of agricultural incomes but serves only to raise the general price level.<sup>12</sup> In contrast, similar preferences granted to manufactures shift relative prices and thus raise the real incomes of the favored groups. By such policies, “you raise, not only the nominal, but the real price of those

---

<sup>12</sup> This result is a necessary part of Smith’s attack on the mercantilist notion that economic growth is associated with inflation, and it reflects his own complex view of the growth process, neither of which need detain us here. The matter is treated at length in Hueckel (2000).



goods. You render them equivalent to a greater quantity of labour and subsistence, you encrease not only the nominal, but the real profit, the real wealth and revenue of those manufacturers, and you enable them either to live better themselves, or to employ a greater quantity of labour in those particular manufactures” (IV.v.a.23). The measure surfaces also in an analysis of the effect that cross-country differences in agricultural yields have on rent. Because “a rice field produces a much greater quantity of food than the most fertile corn field,” in countries where rice is “the common and favourite vegetable food of the people,” the surplus left the landlord is the greater: “Whatever was the rate at which labour was commonly maintained in that country, this greater surplus could always maintain a greater quantity of it; ... the real value of his rent, his real power and authority, his command of the necessaries and conveniencies of life with which the labour of other people could supply him, would necessarily be much greater” (I.xi.b.36). Ironically, this is the very passage quoted by Hollander (1973, p. 128, n. 42) to support his observation that Smith used his measure to judge “purchasing power over consumer goods,” an observation to which both Khalil and O’Donnell object, though one wonders what other interpretation can be drawn from the reference to the landlord’s “command of the necessaries and conveniencies of life with which the labour of other people could supply him.”<sup>13</sup>

To be sure, O’Donnell offers an extensive argument in support of his objection. It apparently rests on two points: the price-index interpretation is said to be flawed first because it does not properly attend to the alleged distinction “between the early paragraphs of Chapter v and the later paragraphs” and second because it fails to account for the consequence of

---

<sup>13</sup> O’Donnell’s is a particularly weak objection to direct at Hollander in this context since it rests on the claim that “differential rates of productivity growth will sever any connection” between the labor commanded and embodied magnitudes. But the passage advanced by Hollander to illustrate his reading is a straightforward comparison between countries distinguished by differing food grains, both assumed to employ “the same or nearly the same culture” (I.xi.b.36). O’Donnell’s condition of “differential rates of productivity growth” does not apply here.

differential rates of productivity change in altering relative prices (pp. 73-4). On the strength of the claim that the early paragraphs of chapter five describe a “pre-capitalist” society, we are told that “since, in this sort of economy, commodities exchange in proportion to labour embodied, [Smith] referred to the ‘power of purchasing’ as ‘a certain command over all the labour, or over all the produce of labour which is then in the market’”<sup>14</sup> Those who advance the price index interpretation err because they implicitly “assume that the measure of value which Smith developed later in Chapter v, and used at various places in the *Wealth of Nations*, was intended to possess the same property.” Evidently, then, O'Donnell would have it that Smith understood his labor-commanded measure to be a satisfactory index of purchasing power only within a pre-capitalist context but that when the analysis shifted to a capitalist environment, “Smith *explicitly* stated that differential rates of productivity growth will sever any connection between changes in the value of an individual commodity, as measured by labour commanded (or labour embodied), and changes in its purchasing power over other commodities in general.” It was, in other words, the “relative price effects” of those “differential rates of productivity growth” that were for Smith the fatal objection

---

<sup>14</sup> As O'Donnell acknowledges, the phrase he quotes to illustrate the meaning of Smith's reference to the “power of purchasing” is drawn from v.3, a paragraph that is particularly difficult to read as limited strictly to a hypothetical, single-factor economy since it is a discussion of a comment from Hobbes, which Smith renders as “Wealth ... is power.” The phrase quoted by O'Donnell is Smith's attempt to characterize the “power” which a “great fortune ... immediately and directly conveys” to its owner, that power being said to be something different from “political power, either civil or military.” The suspicion that Smith had no intention of limiting the application of this principle to a “pre-capitalist” society is heightened when we read the paragraph in parallel with the opening pages of the “Early Draft” of *Wealth of Nations*. There (1978b, pp. 563-4) we read that “the rich and the powerful ... in a civilized society [are] better provided with the conveniencies and necessaries of life than it is possible for any person to provide himself in a savage and solitary state ... [because they] can at all times direct the labours of thousands to [their] own purposes.” Indeed, such is the inequality of a “great society” that the wealthiest one-tenth percent of families “don't labour at all and ... yet, either by violence or by the more orderly oppression of law, employ a greater part of the labour of the society than any other [decile].” The remainder of the national product is distributed according to a further hierarchy of inequality: “The opulent merchant ... enjoys a much greater proportion of the profits of his traffic than all the clerks and accountants who do the business;” the latter receive “a greater share of the produce” than do the artisans who labor “under their direction;” and the last in turn “enjoy a much greater share than the poor labourer.” When seen in light of this earlier description of the “oppressive inequality” of wealth as the power to “direct the labours of thousands,” it strains credulity to insist that the characterization of the Hobbes reference to the “power” conveyed by wealth is to be read as applicable strictly to the most primitive stage of development in which there is no division of labor and limited exchange.

to the employment of his measure as a price index within a capitalist environment. Those who persist in the “extremely dubious” price-index interpretation fail to appreciate this distinction as between a pre-capitalist context (where “Smith did indeed link labour command to purchasing power”) and a capitalist environment (where any such link is severed by “relative price effects”). Yet, according to O’Donnell, “it is a wonder that [Smith’s] extremely clear statement of this ... did nothing to halt the spread of the [price index] interpretation” (p. 74, O’Donnell’s emphasis).

Such a declaration would indeed undermine the price index interpretation, but the statement in question (identified by O’Donnell as I.viii.4) offers nothing more than the observation that prices reflect the rates at which commodities exchange for one another and not the absolute levels of input requirements—a truism that Samuel Bailey ([1825] 1967) was to repeat *ad nauseam* a half-century later. To be sure, Smith is mildly troubled by the realization that, while productivity growth reduces input requirements throughout the economy, thereby causing “all things [to] become cheaper in reality,” yet those commodities experiencing the slowest productivity advance will “in appearance ... become dearer than before, or [will] have been exchanged for a greater quantity of other goods.” But this trite observation is no evidence of an intent to preclude the transfer to a capitalist context of a price index accepted as applicable only within a pre-capitalist environment. Quite the contrary, these “relative price effects” apply with equal force to a pre-capitalist as to a capitalist regime, a fact which Smith clearly recognized, for, though it is not evident from O’Donnell’s limited quotation, the passage in question, in a remarkable irony, refers to the conditions found “in that original state of things, which precedes both the appropriation of land and the accumulation of stock” (I.viii.2). Further, these “relative price effects” are themselves no more an impediment to the employment of the labor-commanded concept as “a measure of the purchasing power of individual commodities or incomes” than they are to our own application of

any fixed-weight price index to the same purpose. Indeed Smith was quite aware of the complication raised by varying price relatives. When he considers the problem of “regulating the pecuniary reward” of public officials, he points out that the indexation of those salaries to inflation is a simple matter when “this rise in the price of some sorts of provisions be owing to a fall in the value of silver” because, as we saw earlier, “any rise in the money price of goods which proceeded altogether from the degradation of the value of silver would affect all sorts of goods equally” (I.xi.n.4). But if we are dealing with a shift in relative prices, “it becomes a much nicer matter to judge either in what proportion any pecuniary reward ought to be augmented, or whether it ought to be augmented at all” because “the extension of improvement and cultivation, as it necessarily raises more or less, in proportion to the price of corn, that of every sort of animal food, so it as necessarily lowers that of ... every sort of vegetable food” I.xi.n.10). The problem of varying price relatives does indeed make the proper adjustment of monetary payments a “nicer” judgment, as demonstrated in our own time by disputes over the magnitude and significance of the substitution bias produced by the use of a fixed-weight price index (see, for example, Boskin, Dulberger, Gordon, *et. al*, 1998, and additional sources cited there). Nevertheless, like Smith and his labor-commanded index, we continue to use such indices as (admittedly imperfect) measures of purchasing power and real incomes.

## Conclusion

Ours is a cautionary tale. No one can deny that both rational and historical reconstructions can help to illuminate the past. Our understanding of the relevant logical relationships can, indeed, be deepened by a careful analysis of the assumptions that *would have* been necessary *had* Smith *actually intended* to establish a “proportionality” between the labor commanded and labor embodied magnitudes. Likewise, there is some taxonomic merit in an attempt to clearly

delineate the common themes that define an intellectual tradition or “school.” But while it is true that rational and historical reconstructions cannot be kept absolutely distinct, our perception of the past will be more accurate if we will be guided by Blaug’s ([1990] 1997a, p. 63) plea to “try to be explicit about what we are doing when they are run together.”

We do the past a disservice when we impose upon our intellectual forebears those modern analytical categories which they cannot have known. No doubt one can find in Smith hints of a Sraffian surplus. But when we consider theory in its embryonic state, we can find “hints” of most modern analytical traditions, if we look hard enough. Rarely will an ancient author fit perfectly into our modern taxonomic categories. To employ Smith’s labor-commanded measure as a lever with which to force his system into the narrow Sraffian box is to lose much of the abundance and complexity of his thought (Blaug, 1999, pp. 216-17). To insist on reading his famous chapter five through the prism of the “early and rude state” is to ignore his delightful analysis of social and legal development. To deny the labor-commanded measure’s use as a deflator to judge changes in the purchasing power of factor incomes is to deny Smith’s frequent and ingenious applications to just that purpose, all the while fully cognizant of the applicable index number problem.

We conclude then that the long-standing conception of Smith’s labor-commanded expression remains secure for the moment. That expression is to be understood as a unit of measure and no more—as the markings on a thermometer expressing the “heat” magnitude of exchange value. But since all inputs contribute to that heat, the unit of measure bears no fixed relationship to any one of them. True, the measure is imperfect. It makes no allowance for the complications arising from changes in the distribution of the product, and its precision rests upon the assumption of a constant corn wage over the period of analysis, an assumption that even Smith acknowledges as likely to be

invalid. But there is no sin in the failure of an eighteenth-century author to anticipate the intellectual controversies of the generations who follow. The danger arises when the concepts developed by that earlier author, and reflective of his time, are distorted by those subsequent generations in their desire to force those concepts into intellectual categories reflective of later controversies and to which, therefore, the ideas of that earlier time may be ill-suited.

## REFERENCES

- [Bailey, Samuel]. [1825] 1967. *A Critical Dissertation on the Nature, Measure and Causes of Value*. New York: Augustus M. Kelley
- Blaug, Mark. 1959. "Welfare Indices in *The Wealth of Nations*," *Southern Economic Journal*, 26 (October):150-153.
- \_\_\_\_\_. [1990] 1997a. "On the Historiography of Economics," *Journal of the History of Economic Thought*, 12 (Spring). Reprinted in Mark Blaug, *Not Only an Economist: Recent Essays*. Cheltenham, England: Edward Elgar.
- \_\_\_\_\_. 1997b. *Economic Theory in Retrospect*, 5<sup>th</sup> ed. Cambridge: Cambridge University Press.
- \_\_\_\_\_. 1999. "Misunderstanding Classical Economics: The Sraffian Interpretation of the Surplus Approach," *History of Political Economy*, 31 (Summer): 213-36.
- Boskin, Michael J., Ellen R. Dulberger, Robert J. Gordon, et. al. 1998. "Consumer Prices, the Consumer Price Index, and the Cost of Living," *Journal of Economic Perspectives*, 12 (Winter): 3-26.
- Brewer, Anthony. 1995. "Rent and Profit in the *Wealth of Nations*," *Scottish Journal of Political Economy*, 42 (May):183-200.
- Caravale, Giovanni. 1992. "Review of *Adam Smith's Theory of Value and Distribution: A Reappraisal*," *Southern Economic Journal*, 58 (April): 1123-25.
- Dobb, Maurice. 1973. *Theories of Value and Distribution since Adam Smith: Ideology and Economic Theory*. Cambridge: the University Press.
- Douglas, Paul H. 1928. "Smith's Theory of Value and Distribution." In John Maurice Clark, Paul H. Douglas, Jacob H. Hollander, et. al., *Adam Smith, 1776-1926; Lectures to Commemorate the Sesquicentennial of the Publication of the Wealth of Nations*. Chicago: University of Chicago Press.
- Ekelund, Jr., Robert B. and Hébert, Robert F. 1997. *A History of Economic Theory and Method*. 4<sup>th</sup>ed. New York: McGraw-Hill.
- Garegnani, Pierangelo. 1984. "Value and Distribution in the Classical Economists and Marx," *Oxford Economic Papers*, 36 (June): 291-325.
- \_\_\_\_\_. 1987. "Surplus Approach to Value and Distribution." In John Eatwell, Murray Milgate, and Peter Newman, eds., *The New Palgrave: A Dictionary of Economics*, vol. 4. London: Macmillan.

- Haakonssen, Knud. 1981. *The Science of a Legislator: The Natural Jurisprudence of David Hume and Adam Smith*. Cambridge: Cambridge University Press.
- Hollander, Samuel. 1973. *The Economics of Adam Smith*. Toronto: University of Toronto Press.
- Hueckel, Glenn. 1998. "Smith's Uniform 'Toil and Trouble': A 'Vain Subtlety'?" *Journal of the History of Economic Thought*, 20:215-33.
- \_\_\_\_\_. 2000. "On 'the Insurmountable Difficulties, Obscurity, and Embarrassment' of Smith's Fifth Chapter," *History of Political Economy*, 32, (forthcoming).
- Khalil, Elias L. 1991. "Adam Smith's Concept of Labor-Commanded: A Study in Misinterpretation," *New York Economic Review*. 21.2:34-49.
- Kleer, Richard A. 1996. "The Decay of Trade: The Politics of Economic Theory in Eighteenth-Century Britain," *Journal of the History of Economic Thought* 18:319-46.
- Landreth, Harry, and David C. Colander. 1994. *History of Economic Thought*. 3<sup>rd</sup> ed. Boston: Houghton Mifflin Co.
- Malthus, Thomas Robert. [1823] 1986. *The Measure of Value Stated and Illustrated*. In E. A. Wrigley and David Souden, eds., *The Works of Thomas Robert Malthus*, vol. 7, pp. 179-221. London: William Pickering.
- Meek, Ronald L. 1956. *Studies in the Labour Theory of Value*. London: Lawrence & Wishart
- Mill, John Stuart. [1848] 1976. *Principles of Political Economy*. Edited by Sir William Ashley. Fairfield, New Jersey: Augustus M. Kelley.
- Myint, Hla. 1948. *Theories of Welfare Economics*. London: Longmans Green and Co.
- O'Donnell, Rory. 1990. *Adam Smith's Theory of Value and Distribution: A Reappraisal*. New York: St. Martin's Press.
- Rashid, Salim. 1998. *The Myth of Adam Smith*. Cheltenham, UK and Northampton, MA: Edward Elgar.
- Ricardo, David. [1817] 1951. *On the Principles of Political Economy and Taxation*. Vol. 1 in *The Works and Correspondence of David Ricardo*. Edited by P. Sraffa. Cambridge: Cambridge University Press.
- Rima, Ingrid Hahne. 1991. *Development of Economic Analysis*, 5<sup>th</sup> ed. Homewood, IL: Irwin.
- Schumpeter, Joseph A. 1954. *History of Economic Analysis*. New York: Oxford University Press.



Smith, Adam. [1776] 1976. *An Inquiry into the Nature and Causes of the Wealth of Nations*. 2 vols. Edited by R. H. Campbell, A. S. Skinner, and W. B. Todd. Oxford: Oxford University Press.

\_\_\_\_\_. 1978a. *Lectures on Jurisprudence (LJ)*. Edited by R. L. Meek, D. D. Raphael, and P. G. Stein. Oxford: Oxford University Press.

\_\_\_\_\_. 1978b. "'Early Draft' of Part of *The Wealth of Nations*." In Smith, 1978a, pp. 562-81.

Spiegel, Henry William. 1983. *The Growth of Economic Thought*. Revised and expanded ed. Durham, North Carolina: Duke University Press.

Sraffa, Piero. 1960. *Production of Commodities by Means of Commodities: Prelude to a Critique of Economic Theory*. Cambridge: the University Press.

Sylos-Labini, P. 1976. "Competition: The Product Markets." In T. Wilson and A. S. Skinner, eds. *The Market and the State; Essays in Honour of Adam Smith*. Oxford: The Clarendon Press.



**ADDITIONAL INSTITUTE PAPERS AVAILABLE FROM THE KRANNERT  
GRADUATE SCHOOL OF MANAGEMENT**

-1994-

- 1051 Shailendra Raj Mehta, THE LAW OF ONE PRICE AND A THEORY OF THE FIRM.
- 1052 Manohar U. Kalwani and Narakesari Narayandas, LONG-TERM MANUFACTURER-SUPPLIER RELATIONSHIPS: DO THEY PAY OFF FOR SUPPLIER FIRMS?  
(Revision of Paper No. 1042)
- 1053 Raji Srinivasan, Carolyn Y. Woo and Arnold C. Cooper, PERFORMANCE DETERMINANTS FOR MALE AND FEMALE ENTREPRENEURS.
- 1054 Kenneth J. Matheny, INCREASING RETURNS AND MONETARY POLICY.
- 1055 Kent D. Miller, MEASURING ORGANIZATIONAL DOWNSIDE RISK.
- 1056 Raymond J. Deneckere and Dan Kovenock, CAPACITY-CONSTRAINED PRICE COMPETITION WHEN UNIT COSTS DIFFER.
- 1057 Preyas Desai and Wujin Chu, CHANNEL COORDINATION MECHANISMS FOR CUSTOMER SATISFACTION.
- 1058 Preyas Desai and Kannan Srinivasan, DEMAND SIGNALLING UNDER UNOBSERVABLE EFFORT IN FRANCHISING: LINEAR AND NONLINEAR PRICE CONTRACTS.
- 1059 Preyas Desai, ADVERTISING FEE IN BUSINESS-FORMAT FRANCHISING.
- 1060 Pekka Korhonen, Herbert Moskowitz and Jyrki Wallenius, THE ROCKY ROAD FROM A DRAFT INTO A PUBLISHED SCIENTIFIC JOURNAL ARTICLE IN THE MANAGEMENT AND DECISION SCIENCES.
- 1061 Preyas Desai and Kannan Srinivasan, AGGREGATE VERSUS PRODUCT-SPECIFIC PRICING: IMPLICATIONS FOR FRANCHISE AND TRADITIONAL CHANNELS.
- 1062 Beth Allen, Raymond Deneckere, Tom Faith and Dan Kovenock, CAPACITY PRECOMMITMENT AS A BARRIER TO ENTRY: A BETRAND-EDGEWORTH APPROACH.
- 1063 John O. Ledyard, Charles Noussair and David Porter, THE ALLOCATION OF A SHARED RESOURCE WITHIN AN ORGANIZATION.
- 1064 Vijay Bhawnani, John A. Carlson and K. Rao Kadiyala, SPECULATIVE ATTACKS AND BALANCE OF PAYMENTS CRISES IN DEVELOPING ECONOMIES WITH DUAL EXCHANGE RATE REGIMES.
- 1065 Gayle R. Erwin and John J. McConnell, TO LIVE OR LET DIE? AN EMPIRICAL ANALYSIS OF VOLUNTARY CORPORATE LIQUIDATIONS, 1970-1991
- 1066 Elizabeth Tashjian, Ronald C. Lease and John J. McConnell, PREPACKS.

- 1067 Vijay Bhawnani and K. Rao Kadiyala, EMPIRICAL INVESTIGATION OF EXCHANGE RATE BEHAVIOR IN DEVELOPING ECONOMIES.
- 1068 Jeffrey W. Allen, Scott L. Lummer, John J. McConnell and Debra K. Reed, CAN TAKEOVER LOSSES EXPLAIN SPIN-OFF GAINS?

-1995-

- 1069 Sugato Chakravarty and John J. McConnell, AN ANALYSIS OF PRICES, BID/ASK SPREADS, AND BID AND ASK DEPTH SURROUNDING IVAN BOESKY'S ILLEGAL TRADING IN CARNATION'S STOCK.
- 1070 John J. McConnell and Henri Servaes, EQUITY OWNERSHIP AND THE TWO FACES OF DEBT.
- 1071 Kenneth J. Matheny, REAL EFFECTS OF MONETARY POLICY IN A 'NEOCLASSICAL' MODEL: THE CASE OF INTEREST RATE TARGETING.
- 1072 Julie Hunsaker and Dan Kovenock, THE PATTERN OF EXIT FROM DECLINING INDUSTRIES.
- 1073 Kessan Joseph, Manohar U. Kalwani, THE IMPACT OF ENVIRONMENTAL UNCERTAINTY ON THE DESIGN OF SALESFORCE COMPENSATION PLANS.
- 1074 K. Tomak, A NOTE ON THE GOLDFELD QUANDT TEST
- 1075 Alok R. Chaturvedi, SIMDS: A SIMULATION ENVIRONMENT FOR THE DESIGN OF DISTRIBUTED DATABASE SYSTEMS
- 1076 Dan Kovenock and Suddhasatwa Roy, FREE RIDING IN NON-COOPERATIVE ENTRY DETERRENCE WITH DIFFERENTIATED PRODUCTS
- 1077 Kenneth Matheny, THE MACROECONOMICS OF SELF-FULFILLING PROPHECIES
- 1078 Paul Alsemgeest, Charles Noussair and Mark Olson, EXPERIMENTAL COMPARISONS OF AUCTIONS UNDER SINGLE-AND MULTI-UNIT DEMAND
- 1079 Dan Kovenock, Casper D de Vries, FIAT EXCHANGE IN FINITE ECONOMIES
- 1080 Dan Kovenock, Suddhasatwa Roy, DYNAMIC CAPACITY CHOICE IN A BERTRAND-EDGEWORTH FRAMEWORK
- 1081 Burak Kazaz, Canan Sepil, PROJECT SCHEDULING WITH DISCOUNTED CASH FLOWS AND PROGRESS PAYMENTS

-1996-

- 1082 Murat Koksalan, Oya Rizi, A VISUAL INTRACTIVE APPROACH FOR MULTIPLE CRITERIA DECISION MAKING WITH MONOTONE UTILITY FUNCTIONS
- 1083 Janet S. Netz, John D. Haveman, ALL IN THE FAMILY: FAMILY, INCOME, AND LABOR FORCE ATTACHMENT
- 1084 Keith V. Smith, ASSET ALLOCATION AND INVESTMENT HORIZON

- 1085 Arnold C. Cooper and Catherine M. Daily, ENTREPRENEURIAL TEAMS
- 1086 Alok R. Chaturvedi and Samir Gupta, SCHEDULING OF TRANSACTIONS IN A REAL-TIME DISTRIBUTED TRANSACTION PROCESSING SYSTEMS: SCALEABILITY AND NETWORKING ISSUES
- 1087 Gordon P. Wright, N. Dan Worobetz, Myong Kang, Radha V. Mookerjee and Radha Chandrasekharan, OR/SM: A PROTOTYPE INTEGRATED MODELING ENVIRONMENT BASED ON STRUCTURED MODELING
- 1088 Myong Kang, Gordon P. Wright, Radha Chandrasekharan, Radha Mookerjee and N. Dan Worobetz, THE DESIGN AND IMPLEMENTATION OF OR/SM: A PROTOTYPE INTEGRATED MODELING ENVIRONMENT
- 1089 Thomas H. Brush and Philip Bromiley, WHAT DOES A SMALL CORPORATE EFFECT MEAN? A VARIANCE COMPONENTS SIMULATION OF CORPORATE AND BUSINESS EFFECTS
- 1090 Kenneth J. Matheny, NON-NEUTRAL RESPONSES TO MONEY SUPPLY SHOCKS WHEN CONSUMPTION AND LEISURE ARE PARETO SUBSTITUTES
- 1091 Kenneth J. Matheny, MONEY, HUMAN CAPITAL, AND BUSINESS CYCLES: A MODERN PHILLIPS CURVE-STYLE TRADEOFF
- 1092 Kenneth J. Matheny, OUTPUT TARGETING AND AN ARGUMENT FOR STABILIZATION POLICIES
- 1093 Kenneth J. Matheny, THE RELEVANCE OF OPEN MARKET OPERATIONS AS A MONETARY POLICY TOOL
- 1997-
- 1094 James C. Moore, William Novshek and Peter Lee U, ON THE VOLUNTARY PROVISION OF PUBLIC GOODS
- 1095 Michael R. Baye, Dan Kovenock and Casper G. deVries, THE INCIDENCE OF OVERDISSIPATION IN RENT-SEEKING CONTESTS
- 1096 William Novshek and Lynda Thoman, CAPACITY CHOICE AND DUOPOLY INCENTIVES FOR INFORMATION SHARING
- 1097 Vidyanand Choudhary, Kerem Tomak and Alok Chaturvedi, ECONOMIC BENEFITS OF RENTING SOFTWARE
- 1098 Jeongwen Chiang and William T. Robinson, DO MARKET PIONEERS MAINTAIN THEIR INNOVATIVE SPARK OVER TIME?
- 1099 Glenn Hueckel, LABOR COMMAND IN *THE WEALTH OF NATIONS*: A SEARCH FOR "SYSTEM"
- 1100 Glenn Hueckel, SMITH'S UNIFORM "TOIL AND TROUBLE": A "VAIN SUBTLETY"?

- 1101 Thomas H. Brush and Philip Bromiley, WHAT DOES A SMALL CORPORATE EFFECT MEAN? A VARIANCE COMPONENTS SIMULATION OF CORPORATE AND BUSINESS EFFECTS
- 1102 Thomas Brush, Catherine Maritan and Aneel Karnani, MANAGING A NETWORK OF PLANTS WITHIN MULTINATIONAL FIRMS
- 1103 Sam Hariharan and Thomas H. Brush, RESOURCES AND THE SCALE OF ENTRY CHOICE: THE COMPETITIVE ADVANTAGE OF ESTABLISHED FIRMS?
- 1104 Thomas H. Brush, Philip Bromiley and Margaretha Hendrickx, THE RELATIVE INFLUENCE OF INDUSTRY AND CORPORATION ON BUSINESS SEGMENT PERFORMANCE: AN ALTERNATIVE ESTIMATE
- 1105 Thomas Brush, Catherine Maritan and Aneel Karnani, PLANT ROLES IN THE MANAGEMENT OF MULTINATIONAL MANUFACTURING FIRMS
- 1106 Thomas H. Brush, Catherine Maritan and Aneel Karnani, THE PLANT LOCATION DECISION IN MULTINATIONAL MANUFACTURING FIRMS: AN EMPIRICAL ANALYSIS OF INTERNATIONAL BUSINESS AND MANUFACTURING STRATEGY PERSPECTIVES
- 1107 Piyush Kumar, Manohar U. Kalwani and Maqbool Dada, THE IMPACT OF WAITING TIME GUARANTEES ON CUSTOMERS' WAITING EXPERIENCES
- 1108 Thomas H. Brush, Philip Bromiley and Margaretha Hendrickx, THE FREE CASH FLOW HYPOTHESIS FOR SALES GROWTH AND FIRM PERFORMANCE
- 1109 Keith V. Smith, PORTFOLIO ANALYSIS OF BROKERAGE FIRM RECOMMENDATIONS

- 1998 -

- 1110 Charles Noussair, Kenneth Matheny, and Mark Olson, AN EXPERIMENTAL STUDY OF DECISIONS IN DYNAMIC OPTIMIZATION PROBLEMS
- 1111 Jerry G. Thursby and Sukanya Kemp, AN ANALYSIS OF PRODUCTIVE EFFICIENCY OF UNIVERSITY COMMERCIALIZATION ACTIVITIES
- 1112 John J. McConnell and Sunil Wahal, DO INSTITUTIONAL INVESTORS EXACERBATE MANAGERIAL MYOPIA?
- 1113 John J. McConnell, Mehmet Ozbilgin and Sunil Wahal, SPINOFFS, EX ANTE
- 1114 Sugato Chakravarty and John J. McConnell, DOES INSIDER TRADING REALLY MOVE STOCK PRICES?
- 1115 William T. Robinson and Sungwook Min, IS THE FIRST TO MARKET THE FIRST TO FAIL?: EMPIRICAL EVIDENCE FOR MANUFACTURING BUSINESSES
- 1116 Margaretha Hendrickx, WHAT CAN MANAGEMENT RESEARCHERS LEARN FROM DONALD CAMPBELL, THE PHILOSOPHER? AN EXERCISE IN PHILOSOPHICAL HERMENEUTICS

- 1117 Thomas H. Brush, Philip Bromiley and Margaretha Hendrickx, THE FREE CASH FLOW HYPOTHESIS FOR SALES GROWTH AND FIRM PERFORMANCE
- 1118 Thomas H. Brush, Constance R. James and Philip Bromiley, COMPARING ALTERNATIVE METHODS TO ESTIMATE CORPORATE AND INDUSTRY EFFECTS
- 1119 Charles Noussair, Stéphane Robin and Bernard Ruffieux, BUBBLES AND ANTI-CRASHES IN LABORATORY ASSET MARKETS WITH CONSTANT FUNDAMENTAL VALUES
- 1120 Vivian Lei, Charles N. Noussair and Charles R. Plott, NON-SPECULATIVE BUBBLES IN EXPERIMENTAL ASSET MARKETS: LACK OF COMMON KNOWLEDGE OF RATIONALITY VS. ACTUAL IRRATIONALITY
- 1121 Kent D. Miller and Timothy B. Folta, ENTRY TIMING AND OPTION VALUE

