Eileen DeNeeve: "The Aggregate Basic Price Spread: A Response to Tom McCallion"
and Tom McCallion: "A Reply to Eileen DeNeeve"
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THE AGGREGATE BASIC PRICE SPREAD: A RESPONSE TO TOM MCCALLION

EILEEN DENEEVE

Tom McCallion's article is a clear and much needed exploration of an important section of Bernard Lonergan's thought on economics.[1] In response I would like to discuss some points concerning Lonergan's notions of costs and profit in the aggregate basic price spread of a pure cycle. My interpretation of Lonergan's notions of costs and profit differs from McCallion's and may offer a considerable simplification to his analysis. McCallion contends that Lonergan's notions of cost and profit are no longer obverse terms (65). To set the framework for the brief discussion I will first say how I understand Lonergan's notion of the "pure cycle."

The Pure Cycle

In an economy like ours, a cycle would be "pure" when human behaviour is well adapted to the time and money constraints of production and exchange.

For Lonergan, a pure cycle "includes no slump… It is entirely a forward movement which, however, involves a [wave or] cycle inasmuch as in successive periods of time the surplus stage of the process is accelerating more rapidly and, again later, less rapidly than the basic stage" (*CWL* 21, 242-43;

[1] *JMDA* 2 (2002), 61-80. Bernard Lonergan's economic writings were first published in *Macroeconomic Dynamics: An Essay in Circulation Analysis* (*CWL* 15) and *Towards a New Political Economy* (*CWL* 21).

see also *id*., 245; *CWL* 15, 25). Lonergan also contends that "a pure cycle is at the root of the trade cycle" (*CWL* 21, 275; see also *CWL* 15, 115). As economic actors we are overadapted to the expansion phase, Lonergan's surplus expansion, and underadapted to the basic expansion; that is, the full expansion of the output of consumer goods and services that enter the standard of living.[2] For Lonergan, this failure to adapt behaviour to the lags and increments of the productive process leads to the trade or business cycle.

My understanding is that Lonergan proposes the pure cycle as a normative model of macrodynamics. It differs from the static Walrasian equilibrium model, first because it is about the dynamics of production and sale and, second, because it does not make prior assumptions about human behaviour. Walrasian equilibrium is automatic because individuals are assumed to act to maximize their utility or profit, which is regarded as rational behaviour. However, in Lonergan's pure cycle economic choices also need to take into account changes in production and their price effects. Economic behaviour needs to be based on an understanding of production lags, as well as a willingness to reinvest excess profits (Lonergan's social dividend) as widely as possible to maintain output and employment and avoid a downturn in the economy. An adequate discussion of the economic behaviour required by production dynamics cannot be undertaken here.

Why Is There No Aggregate *Surplus* Price Spread in Lonergan?

Lonergan called the price effects of the production cycle the 'cycle of the aggregate basic price spread.' Because he focuses on the emergent standard of living, or goods and services that can be consumed, his (selling) price index is the consumer price index (P'). The (selling) price of capital goods (P''), does not appear as a variable in Lonergan's analysis of the aggregate basic price spread. However, he includes in his

[2] Lonergan. *Caring About Meaning: Patterns in the Life of Bernard Lonergan*. Interview edited by Pierrot Lambert, Charlotte Tansey, Cathleen Going (Montreal: Thomas More Institute, 1982 info@thomasmore.qc.ca), 81-82.

analysis, the cost of production of capital (surplus) goods and services (p''). This variable is determined by the costs of inputs to the current production of capital goods: labour, management, and financial capital and the current costs of capital equipment (surplus goods and services). Capital goods are entirely an input to production, and their selling price, in the current period, is equal to their cost price to the producers who buy or rent them to use in their current production. In other words $P'' = p''$ in the current period. McCallion seems to make a distinction between the cost and selling price indexes of capital goods in his discussion of replacement costs. I note that McCallion's notion of replacement cost differs from Lonergan's use of that term (68).

Time Periods in Lonergan's Macroeconomic Dynamics

I would like to note briefly here my understanding of the time relation between outlays, income, sales, expenditure or receipts. In an exchange economy, production for Lonergan includes sales, at which point price is determined. Once a product is sold in the current period it either enters current production as a surplus good or enters the standard of living as a basic good. When surplus or basic goods are in production in the current period, the price of that production is still indeterminate as goods are in process until they are sold. Here I differ from McCallion who uses the current selling price index with the current production of consumer goods (68). Further, outlays for production, like wages, are paid in the period. So they become income in the period. And Lonergan does use them as an identity, as the following equations for a pure cycle indicate.

$$I' = c'O' + c''O'' = p'a'Q' + p''a''Q'' \qquad (1)^3$$

Basic income is a function of outlays for production in the current period, but it will be used to purchase the "emergent standard of living" or the results of production of the previous period. (Q'). It seems to me that Lonergan does not use notation to distinguish periods of time because he uses instead

[3] *CWL* 15, eqs. 4, 43; *CWL* 21, eqs 3, 47.

his acceleration coefficients (a'', a') to differentiate current production ($a'Q', a''Q''$) from current output or sales (Q', Q'').

The Notion of Cost in Lonergan

Lonergan's concept of cost is one that

> …would include among costs the standard of living of those who receive dividends but not the element of pure surplus in the salaries of managers; worse, it would not include replacement costs, nor the part of maintenance that is purchased at the surplus final market, nor the accumulation for sinking funds which is a part of pure surplus income. (*CWL* 15, 157; *CWL* 21, 301).

This description includes notions of both income and cost. As Lonergan himself states,

> …the greater the fraction that basic income is of total income (or total outlay), the less the remainder which constitutes the aggregate possibility of profit. But what limits profit may be termed cost. (*CWL 15*, 157; *CWL* 21, 302)[4]

I understand that outlays and income as two sides of the same transaction. Producers' outlays for labour and capital are paid out to employees and to people who lend capital and own stocks. These payouts are the basic and surplus income in the economy. Costs are essentially that part of total aggregate income that is consumed. "A very rough illustration may be had if we identify basic income with aggregate wages and aggregate wages with costs of all production and, as well, with the receipts of basic sales" (*CWL* 15, 158; *CWL* 21, 303). Basic income is fully consumed in a pure cycle to purchase the full output of basic goods and services. This is necessary in order to maintain full production in the next period. Lonergan explains this when he assumes that flows to and from the redistributive function (R) to basic or surplus demand add up to zero in a pure cycle (*CWL* 15, 64; *CWL* 21, 266).

[4] This is expressed in symbols by equations (41) and (43) in *CWL* 15 and in McCallion, as well as in *CWL* 21 equations (45) and (47)

My understanding is that this notion of cost differs from mainstream economic notions only in its exclusion of replacement costs (*CWL* 15, 25-26; *CWL 21*, 236).[5] For Lonergan replacement costs are part of surplus income sourced in basic and surplus sector outlays. ($I'' = i'O' + i''O''$). There is a difference here with McCallion (64), though it may be typographical.

Why Does Lonergan Say That Surplus Income "Constitutes the Aggregate Possibility of Profit?"

As we know from Lonergan's equation

$$O' + O'' = I' + I'' \qquad (2)^6$$

outlays of producers in both sectors of production become incomes to people who receive them, in their role as economic agents (*CWL 15*, 48; *CWL* 21, 254). This income can be divided into basic and surplus income. In all phases of a pure cycle, basic income is fully consumed in purchasing the standard of living or basic goods and services. Similarly, in all phases of a pure cycle, all surplus income must be spent in surplus final markets to maintain or increase the possibility to produce the current or rising standard of living.

Using again the quotations from the previous section, we note that surplus income includes the surplus in the payments to managers and others. It also includes "replacement costs," "the part of maintenance purchased at the surplus final market," and the "accumulation for sinking funds that is part of pure surplus income."

It is my understanding that Lonergan does not include replacement costs in his notion of cost because they are indeterminate. Until surplus expenditure occurs it is not clear whether surplus income will be used to replace or scrap or upgrade or increase the means of production. That will be decided in the capital investments (surplus expenditures) in the

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[5] On the ambiguity of replacement costs see John Maynard Keynes, *The General Theory of Employment, Interest and Money* (New York: Harcourt Brace Jovanovich, 1964[1936]), 62-63. See also Keynes' Appendix on User Costs, 66-73.

[6] *CWL* 15, eq. 2.

period. As surplus income, funds for replacement are merely potential for profit for Lonergan.

My understanding is that in a static phase the surplus income will not include pure surplus, but will include sufficient surplus income to cover simple replacement costs. But, as Lonergan notes, a static phase is merely a theoretical possibility (*CWL 15*, 115; *CWL* 21, 275). In an economic expansion, involving better means of production as a result of new ideas or innovations, as well as more means of production, Lonergan explains the existence of pure surplus income, which need not be spent in surplus or basic final markets to maintain the current level of production. However, it needs to be invested to continue an expansion to its limit in the production of consumer (basic) goods and services (*CWL 15*, 146; *CWL* 21, 293).

As it would take us into a major new section of Lonergan's economic thought, I will postpone further discussion of pure surplus income, its variation over the cycle, and the adaptive behaviour it requires.

Lonergan's Equations for the Aggregate Basic Price Spread

Lonergan's price analysis explains how the expansion of the productive process with its "time to build" lag affects the selling price level of consumer goods, P'. He proposes two equations[7] as follows:

$$P'Q' = p'a'Q' + p''a''Q'' \qquad (3)^{8}$$

where the selling price of consumer goods ($P'Q'$) is equal to the cost of the current production of consumer (basic) goods plus the cost of the current production of capital (surplus) goods. The cost price indexes for basic and surplus goods are p' and p''. Q' and Q'' are, respectively, the basic and surplus goods output or sales during the current period. Lonergan explains the acceleration coefficients a' and a" showing how they will depend on the ratio of current production to current

[7] McCallion, 67.

[8] *CWL* 15, 158, eq. 44; *CWL* 21, 302, eq. 48.

output over the cycle. He states that whereas in a stationary economy the coefficients are equal to one, in an expanding (contracting) economy they are greater (less) than one.

Then, dividing equation (3) through by $p'Q'$, the cost of the current output of consumer goods, we have Lonergan's second equation:

$$J = P'/p' = a' + a''R \qquad (4)^9$$

J is defined in the equation and represents the aggregate basic price spread, a ratio as McCallion notes. Given the assumption that all basic income is consumed in a pure cycle, these equations show precisely the dependence of the variation in the consumer price index on acceleration in production in each sector, as well as on the ratio of the output in the capital goods sector relative to that in the consumer goods sector.

By assuming that the cost prices of basic and surplus producers will tend either to move together because they have the same determinants, and that any variation will tend to reinforce the changes in quantities, bringing no distinct source of variation, Lonergan is able to eliminate the price variables from his ratio of the monetary values of current output in the surplus and basic sectors, $p''Q''/p'Q'$ (*CWL 15*, 158; *CWL* 21, 303). Thus $R = Q''/Q'$. Lonergan then has a simpler equation for the derivative of J to explain the basic price spread over the cycle. I do not understand why McCallion needed to introduce π' and π'' as cost price indexes instead of Lonergan's p' and p'' (66).

I conclude my comments on Tom McCallion's article here. The behaviour of the aggregate basic price spread over the pure cycle and the threefold possibility of the cycle's derailment through speculative behaviour, would require too extensive a discussion. However, I would note that my understanding of the sequence of phases in a cycle is: proportional, surplus, and basic—a point of difference with McCallion (75-78).[10]

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[9] *CWL* 15, 158, eq. 45; *CWL* 21, 302, eq. 49.

[10] This sequence is similar to the graphs presented for clarification by the editors of *CWL* 15, 121-125. See also *CWL* 15, 115 and *CWL* 21, 275

A REPLY TO EILEEN DENEEVE

TOM MCCALLION

Firstly, I am delighted that what I wrote has triggered any kind of response at all, even one that is a little unfavourable. I was beginning to despair that, apart from a few lone wolves like myself, hardly anybody was paying the slightest bit of attention to Lonergan's economic writings. (Perhaps, of course, this is still the case, and Eileen DeNeeve is just one more lonely addition to a very sparse set!)

DeNeeve gives an excellent summary of the central points in her section, "The Pure Cycle," (184ff) in relation to the differences between Lonergan's position and that adopted by mainstream economics. I would heartily recommend this statement as a clear headed and succinct elucidation of Lonergan's central notions.

It is in the next paragraph that she begins to outline in more detail her differences with the position I adopted. Let me list our various disagreements as she sees them, not necessarily in order of importance but in sequence as they appear in her text.[11]

1. We differ on our interpretation of Lonergan's notions of costs and profits (I claim that for Lonergan these cannot coherently be treated as obverse terms).

2. (Lonergan's) "(selling) price index is the consumer price index (P'). The (selling) price of capital goods (P'') does

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for the sequence of phases. Note that the table there differs from the text. See also *CWL* 15, 160 and *CWL* 21, 281, 305 for the phase sequence. The word "initial" has been omitted in *CWL* 15.

[11] There is one other 'difference' to which she refers. She quotes the formula: $I'' = i'O' + i''O''$ and then says, "There is a difference here with McCallion, though it may be typographical (64)." She is correct (and I am grateful for having it pointed out). The upper (surplus) flow in my diagram (on my page 63) is correctly labelled: $I'' = i'O' + i''O''$, so that this is precisely the same as what she herself asserts. But on my page 64 I made the mistake of writing "[*i.e.,* $c''O'' : c'O''$]" This should of course read, "[*i.e.,* $i'O'' : i''O''$]".

not appear as a variable in Lonergan's analysis of the aggregate basic price spread. However, he includes in his analysis, the cost of production of capital (surplus) goods and services (p'')" (186).[12]

3. My "notion of replacement cost differs from Lonergan's use of that term" (186).

4. "When surplus or basic goods are in production in the current period, the price of that production is still indeterminate as goods are in process until they are sold. Here I differ from McCallion who uses the current selling price index with the current production of consumer goods (68)" (186).

5. Her "understanding of the sequence of phases in a cycle is: proportional, surplus and basic – a point of difference with McCallion" (191).

I will discuss each of these briefly below (actually in reverse order), but it is perhaps important to notice that in her first paragraph she is purporting to be outlining an "interpretation of Lonergan's notions of cost and profit that differs from McCallion's and may offer a considerable simplification of his analysis." The ambiguity of the pronoun 'his' in this quotation, though no doubt unintentional, is significant. My own analysis is complicated because it is an attempt to follow, more or less exactly, the complicated discussion by Lonergan himself (*CWL* 15, 156-62). Apart from notational changes I have neither added nor subtracted anything from the master's discussion.

[12] At this point let me dispose of her later question as to why I introduced Greek letters π' and π'' instead of Lonergan's p' and p''. In fact I did this with many of Lonergan's symbols for those variables that are in fact ratios or indices (but not all – for example, I retained the upper case versions P' and P'' instead of the perhaps more consistent Π' and Π''). This was in an attempt to be more systematic throughout the larger text (on the whole of Lonergan's economics) on which I was then working, and I readily grant that it could represent on my part just a kind of mathematical fetishism.

DeNeeve must therefore ask why Lonergan himself thought the matter was as convoluted as he clearly did.

Let me now try to answer the five 'objections' as listed above. I will tackle number 5 first, as it is the least contentious. I do not have any difficulty with DeNeeve's particular preference in relation to the order for discussion of the three kinds of expansion. I was aware of the accidental dropping of the word "initial" before the expression "proportionate expansion" in the *CWL* 15 version of the text in question (160, beginning of last paragraph) and this required me to make a choice. Should I treat the three parts in what might be called their developmental order, or should I stick to re-interpreting and clarifying the text as I found it? I opted for the latter. I do not, however, see the matter as very significant. The analysis of each expansion type is self-standing, and the essential points made (including the discussion of the three minor cycles, Schumpeter's 'Kitchins') still applies. In a sense, the whole question is a little pointless, since it merely boils down into a discussion of the positioning of the proportionate expansion in relation to the other two. This is a concrete question. We are not thinking in terms of some kind of rigid model (heaven forefend). It is a matter of a set of explanatory tools which we apply as they fit a particular phase. At the back of my mind I retain the mathematical point that, if there are at different times a surplus expansion and a basic expansion in either order, then, between them, there must be a proportionate one, however briefly.[13]

DeNeeve is correct to make the point (see number 4

[13] Reverting to Lonergan's notation, consider the expression $dQ''/Q'' - dQ'/Q'$. This is positive for a surplus expansion and negative for a basic. In any change from one to the other, the sign changes. Reasonable continuity assumptions then necessitate that it must pass through the zero value at some point (without either of the two individual terms necessarily becoming itself zero). At that instant we have exactly the proportionate case. If, as is likely, the transition is reasonably gradual then there is a more or less prolonged period when the expansion is approximately proportionate (to first order, which is enough for Lonergan's argument to work). If, therefore, one has (with obvious notation) a cycle that goes …PSPBPSPBPSPB… it is surely just a matter of convention where one makes the first cut!

above) that there is no selling price of goods that are still in production. Prices are only set when the sale actually occurs. (In the same way Demand only means the value of what actually is sold. There are no semi-mystical 'pressures' in Lonergan's theory. Everything is quite concrete and countable.) It remains true that the values of the acceleration coefficients α' and α" are set by entrepreneurs, as risk-takers (betting people), on the basis of the information they have to hand. And that can only mean using the current price levels at the market, even though these refer to goods that are no longer in production. Thus my admixture of the two terms from, as it were, two different time periods is helpful in the limited manner I claimed, by letting us "get our heads around" the formulae I was discussing.

I simply do not understand the point she is making in number 3 above. She refers, in her footnote 5, to *CWL* 15, 25-26 (and to some discussions by Keynes which I am not in a position to evaluate). I cannot speak for how she interprets these two pages and the whole of his Section 7 of which they are an integral part, but can only say how I have understood them myself. Prior to that point (*CWL* 15, 23), Lonergan had been operating with a *descriptive* distinction between the Surplus and Basic productive processes. In full accord with his notion of science it was now necessary to switch to an *explanatory* account. Having done so, he then must meet any apparent difficulties that arise as a consequence of his definitions. It is these that are addressed in his pages 27 and 28.

Explanatory Distinction of Levels[14]

To arrive at his explanatory definitions of the two productive levels Lonergan first discusses a set of rather abstract specifications of *types of relationship* between any two sets of objects. Since purely abstract arguments are hard to follow it is best to use concrete examples, and it will be most efficient if the examples chosen are precisely those towards which we are in fact aiming. In accord with normal practice in mathematical science we are guided by keeping an eye on

[14] This section and the one following it are largely just extracts from the longer work in progress referred to in note 12 above.

where we want to go!

The first kind of relationship is *element-to-element*.[15] Consider a shoe that has just been made. Earlier in the process of its manufacture there was a small portion of a piece of hide that connected directly with just that shoe (or some part of it). Some may have been wasted in trimmings, *etc*, but there is still a direct linkage of so much hide to so much shoe. It is in fact the same material piece that persists throughout the process.[16] We are not thinking of some kind of theoretically fixed quantitative connection. Styles change, and more or less leather can be used in footwear. For the definition we only require that the relationship in this instance is one-to-one between elements, and is in principle knowable as such here and now as we hold the finished shoe.[17]

One can also envisage a more complex relationship, that between an individual element in one set and some whole *set* of other elements. I will refer to this as *element-to-set*.[18] Consider, for example, the relation between the old adage's fishing net and the ongoing catches of fish it enables.[19] It is one-to-many, since each net, one hopes, will be used to catch many fish. Or in the footwear example, one cutting tool is not

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[15] The word 'element' in mathematics denotes any one of the items that are in some set. Lonergan used the more geometrical metaphor *point-to-point*. This was all right, but what about when he later referred to *point-to-line*, for example? Was it the whole line, or just some portion? Were there continuity implications? Was it straight, or would a curve do? A set-based approach avoids such confusions.

[16] It need not be a purely material connection. Various examples are given by Lonergan (and by Philip McShane in *Economics for Everyone* (Halifax: Axial P, 1998)). One example (*CWL* 15, 25) relates train journeys to passenger miles.

[17] There is a subtle but important point here about retrospective knowledge that Lonergan discusses in *CWL* 15, 27-28. We return to this point later in the section entitled "A Real Distinction," below.

[18] Lonergan again prefers here a geometrical metaphor, and speaks of a *point-to-line* relationship. The alert reader will notice an apparent difficulty with this metaphor. The set that is the second component in the relation could have just a *single* element. This would be only notionally different from the element-to-element relation. This issue too is discussed in the section "A Real Distinction," below.

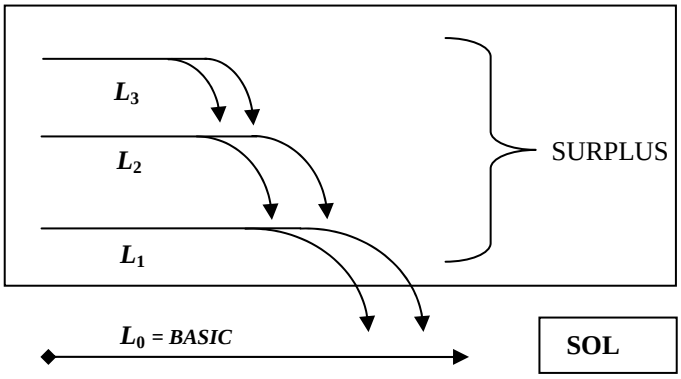
[19] Give a person a fish and you feed him for a day. Give him fishing net and you feed him for life.

used in the production of just a single shoe, but can presumably help to produce many of them.

Complexifying again, consider an *element-to-(set-of-sets)*[20] relationship. Think of a casting forge that is used to make, among other things, cutting tools for producing shoes. Any particular forge can make many different cutters, each of which in its turn will make many different individual shoes. Other higher complexity relations can be listed, but what we have seen so far will turn out to be sufficient for our purposes.

With these clarifications, we may now proceed to our *definitions* of the various levels of productive process.

Figure 1



Firstly, we will take the notion of the Standard of Living (*SOL*) as given. The lowest level, $Level_0$, consists of the aggregate of all concrete relations of the type element-to-element, where the second element is in transit to the *SOL*. The first of the higher levels, $Level_1$, is the aggregate of all concrete relations of the type element-to-set, with the elements in the set (the relation's second component) being in transit to the *SOL*. Similarly, the second higher level, $Level_2$, is the aggregate of all concrete relations of the type element-to-(set-of-sets), with the elements in the lowest level sets (within the second component in the relation) being in transit to the *SOL*.

We will henceforth refer to $Level_0$ as the ***Basic* Stage**, and

[20] In his geometrical metaphor, Lonergan refers to this as *point-to-plane*.

lump all of the higher levels together as the ***Surplus* Stage**.[21]

A Real Distinction

Consider a cutting tool for use in making shoes as an example of the element-to-set relation (and so in the *Surplus* Level of production). But is this true? Such a tool will have a finite life, and at its end it would be possible in principle (though difficult in practice) to say exactly which shoes it helped to make. Say there were 3000 such. Then we could allocate one three thousandth of the tool to each of them, relating each part to a single shoe. The element-to-set would have collapsed into a mere element-to-element. Indeed, at the tool's first introduction, past experience could tell us its expected life would be 3000 shoes, and so give us a fairly reliable estimate of what to allow in an element-to-element relation. Does this not show our distinction of the levels is ultimately vacuous?

The point, however, is that this *is* an estimate. The fact that a tool is expected to last for two years, does not guarantee that it will. It could break down after one year or last for six.[22]

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[21] Traditional economics bases itself on model of the circular flow of income. The key difference in the Lonergan approach is the recognition that we need to discuss two such circular flows, interlinked monetarily in transfers of payments from one to another (they would be leakages and injections in a single-flow system) and functionally in that actual production in one is an accelerator for production in the other. It is the consequential cyclicities in the dynamics of their interaction, and the restrictions that these impose, that are the concern of Lonergan's analysis. We could perhaps express the simple distinction of 'Surplus' and 'Basic' flows as constituting a bicameral model. But once we do this we recognise that the theory as Lonergan has presented it is only a first approximation. There is a similar bicamerality between, say, $Level_2$ and $Level_1$ in the above diagram, and indeed between each higher level and the one below it. This gives, as a first approximation, a reduplicated structure of bicamerality. But, of course, things are more complicated than that. For example, it is not just true that some of the wages paid out in $Level_2$ flow to $Level_1$. Some of them jump over it directly to $Level_0$. For higher levels there are even more complex cross-level flows. It is clear that this kind of discussion is for much more advanced work at some future stage in the ongoing development of this kind of adequate economics. For now the simple bicamerality of 'Surplus' and 'Basic' will have to suffice.

[22] But hardly ever before the item is just out of warranty! There is

It is not that we will not eventually know how long each tool actually survived, but that we did not know at the earlier time. The need for estimates (or the application of risk management techniques such as were mentioned in the last footnote) does not remove this ignorance. It merely acknowledges it. The definitions here and now of *Basic* and *Surplus* levels depend on current fact. It will remain that this *was* the current fact, even if at some future date we are able to look back and unravel the distinction that was used. Hindsight may indeed be blessed with 20-20 vision, but it can also see quite clearly what was in fact the situation way back when. The relationship of a cutting tool is, here and now, clearly and distinctly different from that between some leather hide and the shoes that will be made from it.

Note also that this point also answers, as promised, the question that was raised earlier about whether an element-to-set relation is really just the same as an element-to-element one if the image set has just a *single* element. Again, this would indeed be true in retrospect, but in advance (that is, in the present interval) we only knew that a set was involved. We did not know for certain how many elements it might have. And this is not denied by our ability to make estimates, but rather is emphasized by the need to do so.

We must distinguish this point from the truly retrospective component in the notions of *Basic* and *Surplus*. An electronic component will eventually become part of either a 'tool' or a consumer good, and so will definitively be either *Surplus* or *Basic*. But right now, when it has just been made, it may be unclear which way it will in fact be used. Only time will tell. But that telling, when it eventually occurs, will be unambiguous.[23]

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scope, of course, for deliberate forms of 'built-in-obsolescence' that pre-program the item to collapse after a fairly precisely allotted lifespan. Similarly, there can be an actuarial risk-management plan that will automatically replace a fleet of vans, say, every year, whether or not some are still in excellent condition, just because on average this will reduce the firm's overall age-related maintenance costs or at least make them more predictable.

[23] See the very clear discussion in *Beyond Establishment Economics*, Bruce Anderson and Philip McShane (Halifax: Axial P, 2002), of the

Back to My Main Reply to DeNeeve

After the explanation of the previous section, it is clear that I do not believe that Lonergan's topic here (*CWL* 15, 23-28) has anything to do with the notion of replacement (or any other) costs. Obviously this does not actually *meet* the question raised by DeNeeve, but it at least must relocate it.

Let me turn now to my point number 2 above. DeNeeve states that Lonergan's "(selling) price index is the consumer price index (P')." I cannot accept the use of the word 'the' here. Lonergan's theory *is*, as I called it, bicameral. One cannot let oneself forget this and revert to some kind of single flow model. There are inevitably and essentially *two* different consumer price indices. (Even if at some instant they happen to be equal momentarily, they remain theoretically distinct.) Indeed, Lonergan goes to a great deal of trouble to show (*CWL* 15, 70-75) that both P' and P'' (and Q' and Q'') are theoretically coherent, and so can be empirically meaningful, either as averages, in cases where change is relatively slow, or by way of a more complicated vectorial model in the general case.

It is of course true that P'' does not appear as a variable in Lonergan's analysis of the *Basic* price spread ratio. It would, however, appear in a similar analysis of the corresponding Surplus price spread ratio, as is easily checked by following through an exactly similar analysis beginning instead from $I'' = i'O' + i''O''$. It turns out that the mathematics in that case, however, is rather more intractable, and does not give equations that are particularly fecund in respect of insights into the processes involved. It is not that there *is* no "Aggregate Surplus Price Spread" (Ratio), but that it is not particularly interesting and so Lonergan does not discuss it. It seems to me that the real reason that P'' does not appear in (that is, has no direct effect on) the Basic Price Spread Ratio is that we have assumed that $E' = I'$.[24] The only way that P'' could appear

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distinction between the two levels, which emphasises this retrospective aspect. See for example the discussion of using sheet metal in automobile production on page 25.

[24] *CWL* 15, 158, just before his equation (43). This arises because we are assuming that the general condition of circuit acceleration applies whereby $D' - e'I'$ in my article (or $D' - c'I'$ in *CWL* 15) is zero. (I now

would be through combining a direct effect from E'' on E' (and so I') with the equation $E'' = P''Q''$. There is no such effect, because E'' (and so Q'') only effect E', as a result of the acceleration equations, during the *next* period.

The reader will notice how I tend to use analytical, mathematical, type arguments, rather than relying on what I have no doubt I lack, a kind of economist's 'feel' for the realities we are discussing. It is quite possible that I may be 'missing the point' here. If this is the case and I am to be led to fill in my gaps, I need a little more help from such as DeNeeve. If I am indeed wrong I am willing and eager to learn.

DeNeeve's first two points are connected. I must agree, of course, that the essential differences between her and me, and between at least one of us and Lonergan, lie in the matter of the latter's notion of costs. This area makes me nervous. Whereas DeNeeve approaches this as an economist, with some level of ease with these concepts, I am to some extent approaching it as a mathematician trying to understand a given text. (The disjunction is not, of course, complete. I have some common sense understanding of the issues, and she must obviously have a good grasp of mathematical and interpretative methods.)

In this vein, finally, and in reply to her first point, I admit also that what I was saying (in my pages 63-68) about 'costs' and 'profits' was and remains very tentative. Let me try to restate briefly what I said in a somewhat different manner so that if it still seems incorrect perhaps my respondents will be in a better position to make clear to me where I am making my mistake.

Obviously my simplified breakdown of E'' into ***NFI*** and ***Dep*** is not adequate. But it was not really intended to be so. It was just a kind of shorthand for a more correct statement. Obviously, for example, accumulations into sinking funds would have to be included with ***Dep***. The real breakdown of E'' is into ***NFI*** and '***everything else.***' The latter category consists of all the payments within the surplus flow that are needed just to maintain, sustain, and insure its steady continuance into the

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prefer the greater simplicity that comes from dropping all these subtraction terms, writing just D', for example, by, in effect, netting them out.)

future. This portion is what would be exactly sufficient to underwrite an ongoing constant (but dynamic) state. An expansion can be viewed as being a superimposition on top of such a state. During such a period of growth total surplus expenditures will therefore exceed the total of all this normal 'everything else' category. The excess is what has been called ***NFI***. It was in that extended sense that I used the word 'maintenance'. With the assumption of the continuity condition we can go on to assert that $I'' = E''$. The breakdown of E'' is then, as it were, shadowed over into that of I'', and we arrive at the distinction between Pure Surplus Income, *PSI*, and Ordinary Surplus Income. But we have as well a different breakdown of I'', in accord with the equation $I'' = i'O' + i''O''$.[25]

NFI is what Lonergan means by 'profit' in a macroeconomic sense. DeNeeve quotes Lonergan;

> The greater the fraction that basic income is of total income (or total outlay), the less the remainder which constitutes the aggregate possibility of profit. But what limits profit may be termed cost. (*CWL* 15, 158)

Indeed, but 'the remainder' is not itself identical with the profit. It is a fund out of which profit can occur. If the rest of the remainder is not to be called 'cost' (for this has been restricted to being $c'O'$) and neither is it 'profit,' then my case stands that these two terms (as Lonergan wants to use them) are not obverse.

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[25] See again my comments in note 11 above regarding my mistypes here.