

REGARDING OSLINGTON'S ASSESSMENT OF LONERGAN'S ECONOMICS

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This paper draws attention to various fundamental errors in Oslington's assessment of Lonergan's economics. The problems are not unique to Oslington but are representative of the ethos in current mainstream economics, and so the paper invites dialogue. The critique regards methods, interpretations, and heuristics. It also identifies a class of counter-examples to Oslington's tacit claim that mathematization of Lonergan's economics in modern terms is not possible.

1. INTRODUCTION

IN A PAPER published in 2011, the economist Paul Oslington shared some of his preliminary reflections on Lonergan's economics.¹ In that paper, Oslington observes that Lonergan's economics "has not attracted much attention from economists."² One purpose of that paper was to "examine various explanations that are offered for their lack of interest. . . . [He states that] [w]e are not in my view yet compelled to the residual explanation of the lack of interest – that it is not very good economics – and the final section of the paper sets out an agenda for engagement with professional economists."³ In the Conclusion of a co-authored article on Lonergan's economics, published in 2012, Oslington *et alii* state that "[o]ur argument is that Lonergan has much to contribute

¹Paul Oslington, "Lonergan's Reception among Economists: Tale of a Dead Fish and an Agenda for Future Work," *Method: Journal of Lonergan Studies*. New Series 2, No. 1 (2011): 67-78.

²Oslington, "Lonergan's Reception," 67.

³Oslington, "Lonergan's Reception," 67.

in orientating the sort of development of Catholic social teaching on economic matters that *Caritas in veritate* suggests when it calls for ‘respect for requirements intrinsic to [the economy’s] very nature.’⁴⁵ Recently, however, Oslington has reported a “largely negative finding about the coherence and contemporary value of Lonergan’s economic model”⁶; that Lonergan’s “macroeconomic model”⁷ provides a “null hypothesis”⁸ that needs to be rejected.

My experience with Lonergan’s economics has been different. For over a decade, I have been growing in my grasp of his economic theory. And in the last few years, I have been writing on its importance. I am increasingly in awe of his achievement. As in the case of any fundamental scientific breakthrough, there is the potential for follow-up. For Lonergan’s “two-circuit economic model,” follow-up will include adding to, as well as adding precision to, heuristics that Lonergan developed in his early work,⁹ the identification and development of appropriate mathematical forms (for heuristics as well as for applications), new methods of accounting, and new financial instruments to meet needs as they arise. Note that I am not excluding cultural and social dimensions of Lonergan’s economics. But for this paper, I am focusing on the “mechanical”¹⁰ structuring.

Oslington and I, then, have reached different assessments of Lonergan’s economics. With regard to economic process, one might say that currently our views are radically opposed. In fact, it is my view that both of Oslington’s papers (2011, 2022) that speak to the technical aspects of Lonergan’s economics are undermined by, and reveal, a fundamental misunderstanding of the meaning, implications, and applicability of Lonergan’s precise, concrete, verifiable, and open heuristics.

Sources of divergence in our views would seem to be both foundational

⁴Pope Benedict XVI, *Charity in Truth. Caritas in Veritate* (San Francisco: Ignatius Press, 2009), No. 45.

⁵Neil Ormerod, Paul Oslington, and Robin Koning, “The Development of Catholic Social Teaching on Economics: Bernard Lonergan and Benedict XVI,” *Theological Studies* 73, No. 2 (May 1, 2012), 421.

⁶Paul Oslington, “The Economics of Bernard Lonergan: Context, Modelling and Assessment,” *Journal of the History of Economic Thought*, April 21, 2022, 1.

⁷Oslington, “The Economics of Bernard Lonergan,” 1.

⁸Oslington, “The Economics of Bernard Lonergan,” 17.

⁹Bernard Lonergan, *For a New Political Economy*, ed. Philip J. McShane, 1st ed., vol. 21 of the *Collected Works of Bernard Lonergan* (Toronto: University of Toronto Press, 1998), xxxi.

¹⁰See, for example, Lonergan, *For a New Political Economy*, Ch. 4, 42-56.

and technical. But I am grateful for his paper, for him taking a stand and communicating his thoughts on the matter. This gives us an opportunity to invite him, and others in economics who might be either positively or negatively inclined toward Lonergan's theory, to engage in mutual encounter that would include "laying [our] cards on the table"¹¹ in what, ultimately, can be enriching progress-oriented dialogue.

For Oslington's 2011 and 2022 papers, my original plan was to focus on foundational issues. That approach would be accessible to a relatively wide readership. Also, given our different foundations, there will be endless series of differences in specifics. However, the more I worked through Oslington's papers, the more I realized that various fundamental errors needed to be discussed, sooner rather than later. The critique of those two papers, therefore, grew into three parts,¹² most aspects of which will be widely accessible, but some of which are, unavoidably, rather specialized.¹³

One of the distinguishing features of Lonergan's economics is that it is concrete in its referents. For that reason, I suspect that it will be by focusing on certain technical issues that, at least initially, some common ground may be found, although any point of entry will do. Response to an invitation to dialogue, followed by fruitful exchange, will take time. Meanwhile, global economic, cultural, societal, and ecological crises are deepening. And so, while hoping that dialogue eventually will follow, I feel the need to draw attention to what I perceive to be some of the fundamental flaws in Oslington's two papers, without delay. For otherwise, there is the risk that his dismissal of Lonergan's economics might discourage those in economics, and in Lonergan Studies, from learning what Lonergan discovered. At the same time, an immediate critique of Oslington's work also has the potential for raising fundamental issues and promoting needed dialogue.

For publication venues, two possibilities came to mind. There is the *Journal of the History of Economic Thought*, which published Oslington's

¹¹Bernard Lonergan, *Method in Theology*, eds. Robert M. Doran and John D. Dudosky, vol. 14 of the Collected Works of Bernard Lonergan (Toronto: University of Toronto Press, 2017), 180.

¹²See the outline below.

¹³Two introductions to Lonergan's economic theory are Philip McShane, *Economics for Everyone. Das Jus Kapital*, 3rd Ed. (Vancouver: Axial Publishing, 2017) and Terrance Quinn and John Benton, *Economics Actually: Today and Tomorrow. Sustainable and Inclusive* (Toronto: Island House Press, 2019).

2022 paper, wherein he dismisses Lonergan's economic theory. There is also *Method: Journal of Lonergan Studies*, in which Oslington's 2011 paper appeared. Both journals were top of mind as potentially suitable for this article. However, the *Journal of the History of Economic Thought* does not publish critiques or rebuttals except when they are written by authors whose work was discussed directly. Since part of my focus is on Oslington's view of Lonergan's economics, my article does not meet that criterion. But *Method: Journal of Lonergan Studies* invites work on Lonergan's economics and has a tradition of supporting dialectical exchange. And, as I detail below, there are also other reasons for why *Method: Journal of Lonergan Studies* is an appropriate venue for this article.

The purpose of this article, then, is threefold: (1) My observations regarding Oslington's two papers on Lonergan's economics will, implicitly, give you some indication of my present foundations and so can be taken as preliminary to my invitation to Oslington and others to "progress-oriented"¹⁴ dialogue. (2) In Section 2, I provide a critique of Oslington's assessment, in three parts: Methods; Interpretations; and Heuristics. This can serve as an alert not only to economists but also to students in Lonergan Studies who are curious about his economics. For in my view, neither the basis nor the content of Oslington's "largely negative finding"¹⁵ are economically or scientifically tenable.¹⁶ While not needed by those already familiar with mainstream economics, for the convenience of other readers, I briefly review definitions of a few terms from contemporary mainstream economic theory. (3) Oslington's 2011 paper does pose a problem that requires answering. However, the "attempt to mathematise Lonergan's model [was] abandoned."¹⁷ A better answer must be given than merely stating that "it eluded translation into a coherent system of differential equations."¹⁸ And, of course, that Oslington and his collaborators did not succeed in translating

¹⁴For readers familiar with Lonergan's work, you will find a remarkable, and remarkably brief, sketch of the main elements of progress-oriented dialogue in Lonergan, *Method in Theology*, 235, lines 12-27.

¹⁵Oslington, "The Economics of Bernard Lonergan," 17.

¹⁶By saying "not economically tenable," I am referring not to economic models but to actual economic process; and by "not scientifically tenable" I am referring, in a broad way, to the challenge of understanding experience.

¹⁷Oslington, "The Economics of Bernard Lonergan," 14.

¹⁸Oslington, "The Economics of Bernard Lonergan," 15.

Lonergan's economics into "contemporary mathematical style"¹⁹ is not evidence that suitable translation is not possible but merely that they did not succeed in their approach to the problem. In Section 3, then, I share a sampling from what at the time of writing this paper was a work in progress, *Advances in Heuristics of Two-Circuit Economics*.²⁰ I provide a class of counter-examples to Oslington's tacit negative claim. He and his collaborators raised the issue but did not share any details of their aborted efforts. To provide a positive answer to Oslington's negative assertion, the inclusion of at least some mathematical content is unavoidable. However, I have kept the mathematics in Section 3 to a minimum. Even if not immediately accessible to some readers, the results can serve as an invitation to young scholars and graduate students in both Lonergan Studies and economics to more advanced work in heuristics in two-circuit economics. In Section 4, I give some concluding remarks.

While I do not agree with either Oslington's methods or his conclusions, I am sympathetic with some of his concerns, including his desire to treat results in contemporary contexts. I also agree that there is no "secret knowledge"²¹ needed. Indeed, initial insights in Lonergan's economic theory are accessible to high school students²² and are identifiable. And a problem observed by Oslington in 2011 remains, namely, that there is a need to "engage economists."²³ On the importance of this matter, see also Philip McShane's article, "Finding an Economist: A Central Theological Challenge."²⁴ For my part, I have been making only modest gains in that respect. It is a challenging task, for we are talking at "cross-horizons." In modern economics, a major horizon shift is needed. In that sense, Oslington's work is not unique but rather is representative of the dominant contemporary ethos wherein the focus is on abstract and speculative models (mathematical or otherwise) rather than facts and data (e.g., the economics of one's own neighborhood).

¹⁹Oslington, "The Economics of Bernard Lonergan," 14.

²⁰The book is now available: Terrance Quinn, *Advances in Heuristics of Two-Circuit Economics* (Toronto: Island House Press, 2023).

²¹Oslington, "Lonergan's Reception," 77.

²²Philip McShane, "A Grade 12 Introductory Class in Economics," in *Sane Economics and Fusionism* (Vancouver: Axial Publishing, 2010), 17-25; Terrance Quinn and John Benton, *Economics Actually. Today and Tomorrow. Sustainable and Inclusive* (Toronto: Island House Press, 2019), 6-27.

²³Oslington, "Lonergan's Reception," 76.

²⁴Philip McShane, "Finding an Economist: A Central Theological Challenge," *Divyadaan: Journal of Philosophy and Education* 30, No. 1 (2019): 97-128.

I hope for and expect creative and collaborative efforts in communication and dialogue.

2. OSLINGTON'S WORK ON LONERGAN'S ECONOMICS

2.1 *Methods*

I begin where Oslington left off, namely, his assertion that Lonergan's economics provides a "[n]ull hypothesis"²⁵ that needs to be rejected. By invoking the terminology of statistical hypothesis testing, Oslington opens the door to evaluation by what purportedly is an argument based on statistical method. This approach can be seen to be invalid on two fronts.

A first observation is that whether or not Lonergan's theory is correct is not determinable by statistical sampling and confidence intervals in bibliographical studies. If obtained, these are for answering "What is it?" questions. That is, within prescribed ranges, "What are (or might be) various ratios?" But if we ask, "Is the theory correct?" that is an "Is it so?" question calling for judgment. And when – as in the case of Lonergan's economics – a proposed theory regards actual process, any number of contrary views and models can be negated by appealing to facts and data.

But this brings us to a more fundamental problem, namely, that Oslington does not appeal to facts and data but rather uses mainstream economics literature as a measure against which to assess Lonergan's new theory, and so attempts to "relate [Lonergan's] terminology to standard economic categories."²⁶ This runs throughout Oslington's two papers, but see, for example, agenda item A) in the 2011 article, where he suggests that "contextualization [of Lonergan's economics] would provide pathways for both historians of economics and contemporary theorists"²⁷; and his 2022 paper that attempts to evaluate Lonergan's "contribution in relation to mid-twentieth century macroeconomics,"²⁸ the rationale of which partly relies on a Contextual Assessment.²⁹

The approach is problematic in several ways. For one thing, economic

²⁵Oslington, "The Economics of Bernard Lonergan," 17.

²⁶Oslington, "The Economics of Bernard Lonergan," 7.

²⁷Oslington, "Lonergan's Reception," 76.

²⁸Oslington, "The Economics of Bernard Lonergan," 1.

²⁹Oslington, "The Economics of Bernard Lonergan," 13-14.

theories in the tradition are not explanatory of actual processes but rather are models, the terms of which are remote to concrete circumstances. There is an appropriate analogy: If one has never studied chemistry, one does not understand and then evaluate the work of Mendeleev, which was a breakthrough to a new science, by attempting to link it, discursively, to historical precedent. Why was the periodic table accepted by the scientific community? It was because, unlike phlogiston theory, in instances it could be used to explain actual reactions. Like the periodic table, Lonergan's economic theory was (and remains) "new" (or rather, is not yet of interest to mainstream economics), and also needs to be understood and verified (or not) in instances.

The significance of descriptive contextualization notwithstanding, another problem in Oslington's argument is that it tacitly assumes that the contemporary tradition of economic modeling provides an exemplar of "good economics."³⁰ And so, for instance, he attempts to bring Lonergan's economic theory "into dialogue with contemporary macroeconomic modelling, especially Post-Keynesian work on expectations and endogenous money."³¹ But is contemporary macroeconomic modeling an exemplar of good economics?

In other words, are we to accept or reject Lonergan's – or anyone's – proposed theory of how economies actually work based on whether or not it can be brought into dialogue with a tradition of economic modeling that (a) is utterly remote to concrete circumstances and (b) in its applications, has been a tragic failure on a global scale? While there is not yet full consensus, the failure is widely recognized, although not mentioned by Oslington. It is, in fact, a major issue in the contemporary economics literature. One aspect of the problem can be illustrated by noting, for example, that according to mainstream economics, growth in GDP is a significant metric. Adhering to that directive, that is, in fact, what has been happening globally over the last 60 years and more.³² Simultaneously, however, there has been rapidly increasing inequity and

³⁰Oslington, "Lonergan's Reception," 67.

³¹Oslington, "The Economics of Bernard Lonergan," 3. I am not suggesting that dialogue is not needed. Indeed, in broad heuristics, eventually there will be 37 classes of dialogue collaborating in a group effort to promote progress. See Notes 41, 43-46.

³²World Bank, "GDP (Current US\$)," *World Bank National Accounts Data, and OECD National Accounts Data Files* (Washington, D.C.: The World Bank, 2021), <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD>.

recurring booms and busts, debt crises,³³ volatility, extensive poverty, financial crises,³⁴ national and international debt crises,³⁵ and countless other economic difficulties.³⁶

But that is not all. The world is burning – ecologically, socially, and culturally. None of this is news, certainly not for those suffering the consequences. For many years, some leading economists have been drawing attention to the need for something better than current establishment economics. Results have included the development and application of various alternative metrics.³⁷ There is also the tradition

³³Samira Meier, Miguel Rodriguez Gonzalez, and Frederik Kunze, “The Global Crisis, the EMU Sovereign Debt Crisis and International Financial Regulation: Lessons from a Systematic Literature Review,” *International Review of Law and Economics* 65 (2021): 105945; Anneken Tappe, “The World Is Drowning in Debt,” *CNN Business*, January 2020, <https://www.cnn.com/2020/01/13/economy/global-debt-record/index.html>.

³⁴Hossein Askari and Abbas Mirakhor, “Recurring Financial Crises. The Causes,” in *The Next Financial Crisis and How to Save Capitalism* (New York: Pelgrave Pivot, 2015), 16-34, https://doi.org/10.1057/9781137544377_2; M. Ahyan Kose et al., “Debt and Financial Crises: Will History Repeat Itself?” (VOX EU CEPR, March 2020), <https://voxeu.org/article/debt-and-financial-crises-will-history-repeat-itself>; Maryam Farboodi and Péter Kondor, “Heterogeneous Global Booms and Busts” (National Bureau of Economic Research, May 2021), <https://doi.org/10.3386/w28834>; Mehmet Odekon, *Booms and Busts: An Encyclopedia of Economic History from the First Stock Market Crash of 1792 to the Current Global Economic Crisis*, 3rd Ed. (Milton Park, Abingdon, Oxfordshire: Routledge, 2010).

³⁵Meier, Gonzalez, and Kunze, “The Global Crisis, the EMU Sovereign Debt Crisis and International Financial Regulation: Lessons from a Systematic Literature Review.”

³⁶Amit Kapoor and Bibek Debroy, “GDP Is Not a Measure of Human Well-Being” (*Harvard Business Review*, 2019); Askari and Mirakhor, “Recurring Financial Crises. The Causes”; Kose et al., “Debt and Financial Crises: Will History Repeat Itself?”

³⁷See, for example, Kapoor and Debroy, “GDP Is Not a Measure of Human Well-Being”; Amartya Sen, *Poverty and Famines. An Essay on Entitlement and Deprivation* (Oxford University Press, 2003); eds. Joseph E. Stiglitz, Jean-Paul Fitoussi, and Martine Durand, *For Good Measure. An Agenda for Moving beyond the GDP* (New York: New Press, 2019). There is an extensive body of related literature. See, for example, Luca Coscieme et al., “Overcoming the Myths of Mainstream Economics to Enable a New Wellbeing Economy,” *Sustainability* 11, No. 16 (2019): 1-17; Ida Kubiszewski et al., “Beyond GDP: Measuring and Achieving Global Genuine Progress,” *Ecological Economics* 93 (September 2013): 57-68, <https://doi.org/10.1016/j.ecolecon.2013.04.019>; Steve Landefeld et al., “Beyond GDP. Panel Session,” 2020, <https://www.aeaweb.org/conference/2020/preliminary/>; Lars Osberg, “The Measurement of Economic Well-Being,” in ed. D. Laidler, *Approaches to Economic Well-Being*, Vol. 26, Royal Commission on the Economic Union and Development Prospects for Canada (Toronto: University of Toronto Press, 1985), 49-89; V. K. Shrotryia and Shashank Vikram Pratap Singh, “Measuring Progress beyond GDP: A Theoretical Perspective,” *Emerging Economy Studies* 6, No. 2 (November 2020): 143-165, <https://doi.org/10.1177/2394901520983784>. Efforts toward measuring what *does* matter have included the development and application of numerous speculative indices, many of which have been tailored to special concerns or economies. See, for example, Lorenzo Fioramonti, *The World after GDP: Economics, Politics and International Relations in the Post-Growth Era* (Cambridge, UK: Polity Press, 2017), <https://cris.unu.edu/world-after-gdp-economics->

politics-and-international-relations-post-growth-era; Giampaolo Gabbi et al., "The Biocapacity Adjusted Economic Growth. Developing a New Indicator," *Ecological Indicators* 122, March 2021, <https://doi.org/10.1016/j.ecolind.2020.107318>; Charles I. Jones and Peter J. Klenow, "Beyond GDP? Welfare across Countries and Time," *American Economic Review* 106, No. 9 (September 2016): 2426-2457, <https://doi.org/10.1257/AER.20110236>; Daniel Francois Meyer and Jacques de Jongh, "An Alternative Multi-Dimensional Regional Economic Development Index: A Provincial Application in South Africa," *International Journal of EBusiness and EGovernment Studies* 1, No. 10 (2018); Martin Ravallion, "Troubling Tradeoffs in the Human Development Index," *Journal of Development Economics* 99, No. 2 (2012): 201-209, <https://doi.org/10.1016/j.jdeveco.2012.01.003>. Some of the more well known include the GCI (global competitiveness index), the RD (recoupling dashboard), the SMI (social mobility index), the IDI (inclusive development index), the IEWB (index of economic well-being), the HDI (human development index), the GPI (genuine progress indicator), the GNH (gross national happiness index), the TPI (thriving places index), the HPI (happy planet index), the GGDP (green gross domestic product), the GPI (genuine progress indicator), the BLI (better life index), and the GINI (Gini index). For descriptions, comparisons, and additional points of entry into the literature, see, for example, Silja Baller, Till Leopold, and Saadia Zahidi, "Platform for Shaping the Future of the New Economy and Society. Dashboard for a New Economy. Towards a New Compass for the Post-COVID Recovery" (World Economic Forum, 2020), http://www3.weforum.org/docs/WEF_Dashboard_for_a_New_Economy_2020.pdf; Brent Bleys, "Beyond GDP: Classifying Alternative Measures for Progress," *Social Indicators Research* 109, No. 3 (December 2012): 355-376; Luca Coscieme et al., "Going beyond Gross Domestic Product as an Indicator to Bring Coherence to the Sustainable Development Goals," *Journal of Cleaner Production* 248 (March 2020): 119232, <https://doi.org/10.1016/J.JCLEPRO.2019.119232>; B. F. Giannetti et al., "A Review of Limitations of GDP and Alternative Indices to Monitor Human Wellbeing and to Manage Eco-System Functionality," *Journal of Cleaner Production* 87 (January 2015): 11-25, <https://doi.org/10.1016/j.jclepro.2014.10.051>; Jones and Klenow, "Beyond GDP? Welfare across Countries and Time"; Panos Kalimeris et al., "Hidden Linkages between Resources and Economy: A 'Beyond-GDP' Approach Using Alternative Welfare Indicators," *Ecological Economics* 169 (March 2020): 106508, <https://doi.org/10.1016/j.ecolecon.2019.106508>; Eloi Laurent, *Measuring Tomorrow. Accounting for Well-Being, Resilience, and Sustainability in the Twenty-First Century* (Princeton, NJ: Princeton University Press, 2017), <https://press.princeton.edu/books/hardcover/9780691170695/measuring-tomorrow>; Olivier E. Malay, "Do Beyond GDP Indicators Initiated by Powerful Stakeholders Have a Transformative Potential?" *Ecological Economics* 162 (August 2019): 100-107, <https://doi.org/10.1016/j.ecolecon.2019.04.023>; J. S. Sodhi, "Beyond GDP: The Debate on Globalization & Development," *Indian Journal of Industrial Relations* 46, No. 4 (April 2011): 562-570; Alessio Terzi, "Economic Policy-Making Beyond GDP: An Introduction" (Brussels, European Commission, June 2021), https://ec.europa.eu/info/publications/economic-policy-making-beyond-gdp-introduction_en; Jonas van der Slycken; and Brent Bleys, "A Conceptual Exploration and Critical Inquiry into the Theoretical Foundation(s) of Economic Welfare Measures," *Ecological Economics* 176 (October 2020): 106753, <https://doi.org/10.1016/J.ECOLECON.2020.106753>. Foundational to the development of alternative metrics has been a view that world process consists of three (mutually dependent) components (sometimes called "pillars"), namely, society, environment or ecology, and economy. See, for example, Giannetti et al., "A Review of Limitations of GDP and Alternative Indices to Monitor Human Wellbeing and to Manage Eco-System Functionality"; Stephen Polasky et al., "Role of Economics in Analyzing the Environment and Sustainable Development," *Proceedings of the National Academy of Sciences* 116, no. 12 (March 2019): 5233-38, <https://doi.org/10.1073/PNAS.1901616116>; Tracey Strange and Anne Bayley, *Sustainable Development: Linking Economy, Society, Environment* (Paris: OECD Publishing, 2008). In ecological economics see, for example, Robert Costanza, "Ecological

called “heterodox economics,” a subgrouping of the economics community that finds a loose unity in that its proponents challenge current mainstream premises.³⁸ Additionally, there is an extensive body of literature called “ecological economics” that goes back several decades and has some intersection with heterodox groups.³⁹ So far, however, none of these approaches have yet focused on attempting to understand “how the thing works.”⁴⁰ Nevertheless, drawing on decades of cumulative evidence, there is a general consensus that something is profoundly amiss, and that current mainstream economics has been instrumental in increasingly undermining ecologies and cultures.

In Oslington’s “Contextual Assessment of Lonergan’s Economics,”⁴¹ there is an attempt to radically simplify and single-handedly dispense with, in merely a few paragraphs, what in fact are major collaborative tasks in economics. For instance, historical analysis depends on being able to avail of interpretations (the fruit of hermeneutics); and interpretations depend on having appropriate data (the fruit of research). I am referring here to three of eight functionally distinct tasks, historically emergent in all major areas, including economics, human studies, science, and

Economics 2,” ed. Brian D. Fath, *Encyclopedia of Ecology* (Amsterdam: Elsevier, 2019), <https://doi.org/10.1016/B978-0-12-409548-9.11126-1>; Robert Costanza, “Ecological Economics 1,” ed. Brian D. Fath, *Encyclopedia of Ecology* (Amsterdam: Elsevier, January 2019), <https://doi.org/10.1016/B978-0-12-409548-9.11124-8>; Clive L Spash and Tone Smith, “Of Ecosystems and Economics: Re-Connecting Economics with Reality,” *Real-World Economics Review*, no. 87 (2019): 212–29. Pope Francis, too, has been encouraging the development of economic standards that would be both humane and ecologically responsible. (See, James Duffy, “Fratelli Tutti and Colorful Fruit to Be Borne,” *Divyadaan: Journal of Philosophy and Education* 32, no. 2–3 (2021): 203–22.) Generally, however, at this stage, attempts to develop alternative models and metrics primarily regard society, and environment and assume mainstream economic models and notions of economic growth and non-growth (measured, for example, by GDP). Evidently lacking are attempts to replace mainstream economic modeling with a concretely verifiable theory of how an economy works. See also note 39.

³⁸See, for example, Frederic S. Lee, *A History of Heterodox Economics. Challenging the Mainstream in the Twentieth Century*, 1st ed. (Abingdon, Oxfordshire: Routledge, 2011); eds. Lynne Chester and Tae-Hee Jo, *Heterodox Economics: Legacy and Prospects* (Bristol, UK: World Economics Association Books, 2022).

³⁹Marco P. V. Franco, “Searching for a Scientific Paradigm in Ecological Economics: The History of Ecological Economic Thought, 1880s–1930s,” *Ecological Economics* 153 (November 2018): 195–203; Inge Røpke, “The Early History of Modern Ecological Economics,” *Ecological Economics* 50, No. 3–4 (October 2004): 293–314; Inge Røpke, “Trends in the Development of Ecological Economics from the Late 1980s to the Early 2000s,” *Ecological Economics* 55, No. 2 (November 2005): 262–290. See also references to work in ecological economics in Note 37.

⁴⁰Lonergan, *For a New Political Economy*, Note 24, xxix.

⁴¹Oslington, “The Economics of Bernard Lonergan,” 13–14.

engineering.⁴² Oslington's attempt to collapse complex issues into a few descriptive paragraphs reveals that he is not attuned to that emergence. The gap is also evident in, for instance, his complaint that, by making a certain statement, Philip McShane was "overselling . . . Lonergan's economic model"⁴³: "Lonergan's fundamental achievement in economics is his discernment of the structure of division of labor that would meet these needs for precision and so lift effete scholarship, disoriented science, and ineffective journalism, into a humanly efficient steering of the global enterprise."⁴⁴ However, McShane is pointing here not to Lonergan's economic model but to his later work in methodology, as it pertains to economics. Issues will "be settled not by random debate about the achievements of the disciples of Schumpeter, Keynes, Kalecki, whomever, but by a deep paradigm shift to a scientifically structured division of labor within economic analysis."⁴⁵ "There is the shocking yet evident need of a discontinuous leap to economics as an eightfold collaboration of global specialists."⁴⁶ "[W]hat Lonergan remarked of theology is true also of economics."⁴⁷

Methodological errors are also found in the discussion of "mathematical" content of Lonergan's economics manuscripts: "the mathematical notation [sic] are idiosyncratic."⁴⁸ "[T]he mathematics seems to be incomplete or unclear. . . . Sometimes there were multiple unreconcilable versions of the mathematics."⁴⁹ It is true that, if you track through Lonergan's various treatments of the material – in some cases, separated by decades – there are differences in notation and in diagrams.⁵⁰ Should one expect or require otherwise? Lonergan was not developing a mathematical theory nor a logical treatise in economics. He was breaking new ground. He was making progress in understanding actual economic process and was working things

⁴²Regarding economics, see Terrance Quinn, "On the Operative Presence of Eight Tasks in Economics," *Method: Journal of Lonergan Studies. New Series*, 14, no. 1 (2023), 1-36.

⁴³Oslington, "The Economics of Bernard Lonergan," 14.

⁴⁴Lonergan, *For a New Political Economy*, xxx.

⁴⁵Lonergan, *For a New Political Economy*, xxv.

⁴⁶Lonergan, *For a New Political Economy*, xxviii.

⁴⁷Lonergan, *For a New Political Economy*, xxix.

⁴⁸Oslington, "The Economics of Bernard Lonergan," 3.

⁴⁹Oslington, "The Economics of Bernard Lonergan," 7.

⁵⁰See, for example, Patrick Byrne, "History of the Diagram," in *Macroeconomic Dynamics: An Essay in Circulation Analysis*, 1st ed., vol. 15 of the *Collected Works of Bernard Lonergan* (Toronto: University of Toronto Press, 1999), 177-202.

out. It is true that symbolisms that Lonergan used were not, and still are not, standard in economics. But that too should not be surprising, since he was getting at something new. As for the “mathematical notation” itself, while Lonergan’s use of it was creative, the notation and their meanings are traditional in mathematical sciences.

But what Lonergan was doing with mathematical symbolism was highly non-trivial. To get some hints about this, we can follow Oslington’s example⁵¹ by looking to what Lonergan himself had to say about the matter in a recorded series of conversations in 1982.⁵²

P. L.: When you went back to your manuscript, you felt you had to revise it?

B. LONERGAN: And also simplify. There was much more mathematics in earlier versions.

C. T.: It is not ripe yet?

B. LONERGAN: No, no.

N.G.: Do you feel you can dispense with the mathematics now?

B. LONERGAN: Well, if it is going to be a block, math doesn’t help, eh? I use a certain amount; I need to have that diagram. . . .

N.G.: Is it a machine?

B. LONERGAN: It is a set of interrelations.

N. G.: Natural or human?

B. LONERGAN: It has a material basis. Everything has, including yourself. And you are not just meaning; you can also be noise, eh?

N. G.: And you want to include both aspects?

B. LONERGAN: You have to.

N. G.: So there are definite natural givens in the economy?

B. LONERGAN: Yes, and statistical givens too.

⁵¹Oslington, “Lonergan’s Reception,” 70.

⁵²Pierrot Lambert, Charlotte Tansey, and Cathleen Going, *Caring About Meaning. Patterns in the Life of Bernard Lonergan*, Thomas More Institute Papers (Montreal, Canada: Thomas More Institute, 1982). The interviewers here were Pierrot Lambert (P. L.), Charlotte Tansey (C. T.), and Nicholas Graham (N. G.). See p. x.

N. G.: And the wide variations come at the human level?

B. LONERGAN: Oh, yes.

...

P. L.: Do you use some part of your own method for your book on economics?

B. LONERGAN: Well, no. It's an analysis, a construction of an economy, and a construction that meets endless variations.⁵³

Meets endless variations? In fact, the symbolism that Lonergan developed is not mathematical as such but is rather "a symbolism . . . of a mathematical economics that is relentlessly heuristic."⁵⁴ It is concretely heuristic in a way that is "opposed to abstract model-building, mathematical or not, that [remains] fashionable."⁵⁵

2.2 Interpretations

Oslington mistakenly suggests an identification between some of the current mainstream terminology and Lonergan's terminology. "Functional not proprietary relationships are [Lonergan's] focus when distinguishing basic and surplus flows. It seems to correspond to economists' distinction between consumption and capital goods, though Lonergan seems reluctant to use this terminology."⁵⁶

To shed light on the problem, let us first review both sets of definitions, current mainstream and Lonergan's. I start with Lonergan's.

Lonergan refers to "primary circuit" and "secondary circuit," "primary economy" and "secondary economy."⁵⁷ The word "primary" suggests a "primary purpose." Without presuming to know Lonergan's full meaning, this clearly is appropriate. For the primary economy is the part of an economy that produces and provides goods and services that

⁵³Lambert, Tansey, and Going, *Caring About Meaning*, 185-186.

⁵⁴Lonergan, *For a New Political Economy*, xxiii. This will be discussed and illustrated in Sections 2.3 and 3.

⁵⁵Lonergan, *For a New Political Economy*, xxv.

⁵⁶Oslington, "The Economics of Bernard Lonergan," 8.

⁵⁷For example, see Index entries in Lonergan, *For a New Political Economy*.

enter into an emergent “standard of living.”⁵⁸ Taken together, then, the adjectives “primary” and “secondary” work well as names for the two circuits⁵⁹ of an economy.

Why, though, might we also use the names “basic” and “surplus”? Like primary, the name “basic” also works well because it refers to that part of the economy that provides (or fails to provide) what is basic (or fundamental) to human living (material, cultural, and so on). However, some care is needed regarding the adjective “surplus.” In common usage, surplus can mean “excess” or “not needed.” And, in current mainstream economics, there are also “consumer surplus” and “producer surplus.”

⁵⁸In contemporary mainstream economics, “standard of living” has various definitions, depending on the models and their associated metrics. Commonly, it is defined to be the gross domestic product per capita, a ratio that is utterly remote to concrete circumstances. An increasing standard of living, then, allows for unspeakable poverty, ecological devastation, and massive inequity. In Lonergan’s work, the focus is on concrete circumstances. The terminology standard of living is in reference to actual circumstances, whatever they may be, for better or for worse. The “‘emergent standard of living’ is . . . the aggregate of rates at which goods and services pass from the productive process into the standard of living. . . . [E]ach of these rates will be a ‘so much every so often’; for instance, so much bread per year; . . . and so forth throughout the whole catalogue of elements entering into the standard of living.” Lonergan, *For a New Political Economy*, 238. See also Philip McShane, *Economics for Everyone. Das Jus Kapital*, 3rd Ed. (Vancouver: Axial Publishing, 2017), 38.

⁵⁹The primary and secondary sub-economies – concrete, and explanatorily defined – are not to be confused with various descriptive classifications using similar words. In addition to sectors and industries classified by what is produced or provided (a list that is ever in flux, changes with the times, and includes, for example, steel, energy, agriculture, financial, aviation, etc.). See, for example, “List of Industries (NAICS). Economic Analysis and Statistics” (Ottawa: Innovation, Science and Economic Development. Government of Canada, 2021), <https://www.ic.gc.ca/eic/site/eas-aes.nsf/eng/ra02139.html>; and “Industries at a Glance: NAICS Code Index” (Washington, D.C.: U.S. Bureau of Labor Statistics, 2021), https://www.bls.gov/iag/tgs/iag_index_naics.htm). Additional descriptive classification schemes identify five “general sectors” called primary, secondary, tertiary, quaternary, and quinary. “This categorization represents a continuum of distance from the natural environment. The continuum starts with primary economic activity, which concerns itself with the utilization of raw materials from the earth, such as agriculture and mining. From there, the distance from natural resources increases as sectors become more detached from the processing of raw materials.” Matt Rosenberg, “The 5 Sectors of the Economy,” *Thought Co.*, January 2020, <https://www.thoughtco.com/sectors-of-the-economy-1435795>. See also Zoltan Kenessey, “The Primary, Secondary, Tertiary and Quaternary Sectors of the Economy,” *Review of Income and Wealth* 33, No. 4 (1987): 359-385. Observe, however, that the primary and secondary sub-economies identified by Lonergan both reach back to natural resources to produce and provide goods and services. All services (including the work of government agencies and other services that sometimes are described as quinary) contribute to primary or secondary production and provision or are redistributive. Normally, either directly or indirectly (see Note 66), research and development are for goods and services that might eventually affect the standard of living. Activities in the quaternary sector also divide along functional lines, according to instances.

(Consumer surplus is defined to be the consumer's "willingness" to pay for a good minus the price at which the consumer bought the good, summed across all units in a sector; and a similar definition is provided for producer surplus.) But prior etymology (Latin) gives *super* + *plus*, "over" + "more." And the secondary economy is, in fact, a flow of production and provision "over and above" production and provision of goods and services that enter into the standard of living. In that sense, then (that is, with the prior etymology in mind), the word "surplus" works as a name for the secondary economy.

As it did for Oslington, the distinction between primary and secondary, or basic and surplus, may bring to mind the distinction in mainstream economics between "consumer" and "capital." In fact, in some cases, descriptively speaking, there is overlap. But the two pairs of terms are not equivalent. To see that, we need to look to the definitions of consumer (consumption) goods and capital (investment) goods in mainstream economics. With minor variations, definitions can be found in most any standard textbook, economics dictionary, or economics encyclopedia. From the *Cambridge Dictionary*, we get the following:

capital goods (also industrial goods); (also producer goods): In production: the buildings, machines, and equipment that are used to produce products or provide services.⁶⁰

consumer goods (also consumer products); (also consumption goods): Products that people buy for their own use.⁶¹

Let us now return to Oslington's remark about Lonergan's alleged reluctance to use the terms "consumption goods" and "capital goods." It is true that Lonergan used these words sparingly. But there is no evidence to suggest that he was reluctant to use the terminology when useful for attempting to communicate his new ideas. "Private cars are

⁶⁰"Capital Goods," in *Cambridge Dictionary* (Cambridge, UK: Cambridge University Press, 2022), <https://dictionary.cambridge.org/dictionary/english/capital-goods>.

⁶¹"Consumer Goods," in *Cambridge Dictionary* (Cambridge, UK: Cambridge University Press, 2022), <https://dictionary.cambridge.org/dictionary/english/consumer-goods>.

consumers' goods; lorries are producers' goods"⁶²; "capital equipment"⁶³; "reselling capital equipment,"⁶⁴ "new capital equipment"⁶⁵; "Consumer goods and services enter directly into the standard of living. Producer goods and services enter indirectly into the standard of living: directly, they are improvements upon nature that facilitate the productive process and increase its power and efficacy; and only indirectly, through this increased power and efficacy, do they affect the standard of living by improving and increasing the supply of consumer goods and services."⁶⁶ See also the entries for "consumer; and producer good" in the Index of *For a New Political Economy*; and for "producer goods" in the Index of *Macroeconomic Dynamics*. But Lonergan also introduced new usage of those words, with expressions such as "primary consumers" and "secondary consumers"⁶⁷; and he observed that "[f]inal buyers, then, fall into two classes, consumers and producers. It follows that we can distinguish between the basic expenditure of consumers and the surplus expenditure of producers."⁶⁸

In fact, the strategy of adjusting old terminology and, when necessary, introducing new terminology is normal when there is scientific development. Whether or not Lonergan's theory is correct, it was (and for practical purposes, remains) new. And so, any attempt to interpret Lonergan that – as Oslington requires – would insist on using prior terminologies such as "consumption and capital goods" would mistakenly suggest equivalences of Lonergan's new – or if you prefer, still relatively unknown – view with mainstream views, and thus would lead to confusion, not to mention false paradoxes.

But we need a few more details. To begin to see that "basic goods" and "surplus goods" are not merely new names for "consumer goods" and "capital goods," let us now review some aspects and implications of the mainstream definitions. Observe that consumer goods and capital goods are defined descriptively. They refer to the end-results of production

⁶²Lonergan, *For a New Political Economy*, 16.

⁶³Lonergan, *For a New Political Economy*, 117.

⁶⁴Lonergan, *For a New Political Economy*, 117.

⁶⁵Lonergan, *For a New Political Economy*, 182.

⁶⁶Lonergan, *For a New Political Economy*, 233.

⁶⁷Lonergan, *For a New Political Economy*, 71.

⁶⁸Lonergan, *For a New Political Economy*, 118.

and thus provide no foothold for a dynamical theory of the productive process itself, which is determined by rates and changes of rates internal to production-and-supply chains in an economy. The descriptions also provide little basis for explaining transactions and monetary functions in businesses, small or large, let alone aggregates of businesses constitutive of an economy. There are ambiguities involved in applications of the descriptive terms. For instance, while producer goods are said to be used to produce other goods, it is also said that producer goods can be used in the sense of being materials that go into the production of goods. The problem here is grammatical, for in common language the word "use" has an indefinite range of meanings. But in production in an economy, there is a difference between, for example, a saw used (strictly speaking) to make an indefinite number of tables, and materials used (common language) that go into the making of a table. There is also the sometimes-called "gray area," in which a house, for example, in some respects, can be considered to be a capital good while in other respects, a consumer good. The descriptive definitions also do not draw attention to the fact that there are "levels" of production and provision.⁶⁹

By contrast, basic and surplus are mutually defined in terms of accelerators, levels, and correlations. And so, by contrast with *consumer* and *capital* (discussed above), the terms *basic* and *surplus* are *well defined* and are concretely verifiable in individual instances and in actual aggregates. In what sense verifiable? Usage in the strict sense of the word is always determinate. For the example of houses, it is a matter of fact that usage can fraction, and so too can corresponding monies associated with monetary functions. Also note that the distinction between basic and surplus pertains not only to goods that are finished and sold but to any and all stages of production, from natural resources, through to intermediate goods, and on any level of production.⁷⁰ Moreover, the division between basic and

⁶⁹See Notes 71 and 72.

⁷⁰New methods of accounting will be needed. "To get data on a two-circuit economy, we will need to track production and provision from natural resources to finished goods, their sale and usage, and identify that usage as contributing to the surplus stage, or the standard of living (with mixed cases to be handled, as needed). However, in current practice, the data needed is not yet available. This is because economists and accountants do not yet advert to the functional structures identified in [Figure 1]. Note, however, with modern accounting technologies (that already support, for example, domestic and international banking and finance, and domestic and global supply chain management systems), the necessary adjustments needed would be possible. Modern statistical methods would then allow for the identification of trends – locally,

surplus cuts across descriptively defined sectors. For the division is not “based upon the properties of things: the same raw materials may be made into consumer goods or capital goods; and capital goods may be point-to-point or point-to-surface or a higher correspondence; they may have one correspondence at one time and another at another.”⁷¹ Consequently, “the same material enterprise can have functionally different significances.”⁷² The division between basic and surplus also allows for functional identifications of classes of payment.⁷³

But where, then, is there overlap in the two sets of definitions? If we keep to a descriptive account of simpler cases, then Lonergan’s finished basic goods and finished surplus goods coincide with what mainstream economics calls finished consumer goods and finished capital goods,

regionally, and globally – in primary, secondary, and redistributive activity. Production, supply, provision, and value chains would need to be tracked to sale and usage of finished goods, and the roles of services would need to be determined within, and relative to, the two-circuit economy.” Quinn, *Advances in Heuristics of Two-Circuit Economics* (12), 14.

⁷¹Patrick Byrne provides the following example: A computer “might be used at one point to design and print out wedding invitations for a customer, and then later one and the same computer can be used to create software for producing wedding invitations that can be sold to other producers of invitations” (Patrick Byrne, “The Economy: Mistaken Expectations,” *The Lonergan Review* 2, No. 1 (2010): 21), thus revealing both point-to-line and point-to-surface correspondences, determined concretely, by usage. A point-to-surface correspondence is evident in the production, sale, and usage of agricultural tractors. A tractor factory can be used to produce and sell an indefinite number of tractors over several years; and each tractor sold can be used to produce an indefinite number of seasonal yields over many years. The fact that production has “levels” was observed by Schumpeter: “[i]t is good to classify goods in ‘orders,’ according to their distance from the final act of consumption.” Joseph Schumpeter, *The Theory of Economic Development*, 1st Ed. (Piscataway, NJ: Transaction Publishers, 2012), 16. The fact that there are two main levels was observed by Kalecki: We can “subdivide the economy into two sectors providing investment goods and consumer goods, respectively. In each sector, we include the production of materials and fuel will be allocated between the sectors according to the uses that are made of them in production.” Michael Kalecki, *Collected Works of Michal Kalecki*, ed. Jerzy Osiatynski and trans. Chester Adam Kisiel (Oxford: Oxford University Press, 1990), 23.

⁷²Lonergan, *For a New Political Economy*, 16, 236-237. Adding to Byrne’s example (Note 71), rice farms mainly are for food and thus contribute to the primary economy. However, rice also enters into secondary production: “Hulls are used for fuel, packing material, industrial grinding, fertilizer manufacture, and in the manufacture of an industrial chemical called furfural”; “Rice. Cereal Grain. Description, History, Cultivation, & Uses,” in *Encyclopedia Britannica*, 2019, <https://www.britannica.com/plant/rice>. See also “Non-Edible Rice Products,” Ricepedia, accessed February 27, 2021, <http://ricepedia.org/rice-as-commodity/non-edible-rice-products>. New industrial uses of rice are currently in development, Ragab Khir and Zhongli Pan, “Rice,” *Integrated Processing Technologies for Food and Agricultural By-Products*, January 2019, 21-58.

⁷³Lonergan, *For a New Political Economy*, 246-252; Quinn and Benton, *Economics Actually*, 92-95.

respectively. Note, however, that Lonergan's definitions allow for no ambiguity and precisely account for the fact that a good (for example, a tractor) that is manufactured and sold but not used does not yet contribute to the productive process; and that materials that go into the production of goods are not *used* as such but are merely *incomplete* basic or surplus goods, as the case may be, regardless of how long, short, or complex a production chain might be.

Differences between the two sets of definitions can also be seen by examining the mainstream expenditure formula:

$$GDP = \text{consumer} + \text{capital} + \text{government} + \text{net export}. \quad (2.1)$$

Observe that the terms in the GDP expenditure formula are merely descriptive designations and, in fact, are not mutually exclusive, neither descriptively nor functionally. Government expenditures can be basic (e.g., public parks, food for the homeless), surplus (e.g., government vehicles and newly constructed buildings), and "surrogate-for-basic" (e.g., weaponry) as well as redistributive (e.g., tax offices, international debts and credits contributing to "net export").⁷⁴ And export and import each impact the basic and surplus sub-economies differently depending on what is traded and how it is used. Also note that in national reporting, quantities are counted and contribute to GDP regardless of whether or not goods are used.

In "VI. Lonergan's Analysis of the Productive Process," Oslington claims that "[m]ost of Lonergan's discussion of flows over the business cycle makes no distinction between flows of goods and services and their monetary correlatives,"⁷⁵ and that "the precise relationship between

⁷⁴Lonergan identifies functional transitions involved in international trade. See Bernard Lonergan, *Macroeconomic Dynamics: An Essay in Circulation Analysis*, eds. Charles C. Hefling, Frederick G. Lawrence, Patrick H. Byrne, 1st ed., vol. 15 of the Collected Works of Bernard Lonergan (Toronto: University of Toronto Press, 1999), 162-173; Lonergan, *For a New Political Economy*, 94-97, 308-317. The text from Lonergan's work is dense, not complete, and needs major unpacking as well as integration with contemporary issues. For pedagogical introductions to the "superposed circuits," see McShane, *Economics for Everyone. Das Jus Kapital*, 75-98; Philip McShane, "Æconomics 2: The Pedagogy of Trading Between Nations," and "Æconomics 7: International Trade: Beginnings," in *Æconomics* (Vancouver, 2019), <http://www.philipmcshane.org/economics/>; and Quinn and Benton, *Economics Actually*, 167-189. A more advanced treatment of these issues is provided in Terrance Quinn, *Advances in Heuristics of Two-Circuit Economics* (Toronto: Island House Press, 2023), 39-79.

⁷⁵Oslington, "The Economics of Bernard Lonergan," 8.

money and real activity is also unclear."⁷⁶ There is no problem with the fact that the relationship is unclear to Oslington. That is a perennial challenge for interpreters. But the claim about Lonergan's writings is remarkably false. The relationship is a key issue discussed throughout Lonergan's works on economics. For just one example, the relationship between monetary flows and real production is a main topic of Chapter 3 of *For a New Political Economy*. There is also "concomitance,"⁷⁷ not adverted to by Oslington. It is unknown and abused in contemporary theory and practice, but it is implicit in actual economic process. Adverting to concomitance will be fundamental to any future sane economics. That issue, however, is too large to treat here. For present purposes, it is enough to note that Oslington's claim is contradicted by an abundance of textual evidence throughout Lonergan's writings on economics.

In addition to Oslington's puzzlement about Lonergan's use of the words "consumer" and "capital," another interpretation problem is in his claim that "the redistributive function [identified by Lonergan is] particularly obscure."⁷⁸ Certainly it will be obscure if, as does Oslington, one restricts one's attention to the mainstream literature. The fact is that the redistributive function is not a component in those models. The redistributive function can be discovered, however, by attending to operations of any actual business.

For example, in a family-run bakery, the redistributive function is revealed in the strategy of putting monies aside in "a rainy-day fund." It is also revealed when, say, a bakery buys a secondhand delivery van.⁷⁹ But to go further in identifying the redistributive function, one needs to get into details of actual operations of modern banks (local, national, central, and international), real-estate markets, second-hand trade, stock markets, countless types of financial services including mortgages, "normal" loans that support ongoing "business as usual," loans to support innovation, short-term and long-term deposits, annuities, securities, bonds, the various ways that monies are "created" by central and commercial banks, and so on.

⁷⁶Oslington, "The Economics of Bernard Lonergan," 14.

⁷⁷Lonergan, *For a New Political Economy*, 39.

⁷⁸Oslington, "The Economics of Bernard Lonergan," 14.

⁷⁹McShane, "Chapter 1. A Grade 12 Introductory Class in Economics."

What do these operations have in common? "Redistributive exchanges form a remainder class."⁸⁰ "With respect to any exchange, one has to ask, Is it a constitutive element of current production, recurrent with the recurrence of productive routines, in correlation with other similar payments along lines defined by the physical and technical dependence of products upon their sources? If the answer is negative, the payment is redistributive."⁸¹ As observation reveals there is, in fact, a vast zone of economic activity that does not directly contribute to production or provision of either basic or surplus goods and services.⁸² In addition to examples already mentioned, there are "balances . . . held

⁸⁰Lonergan, *Essay in Circulation Analysis*, 41.

⁸¹Lonergan, *Essay in Circulation Analysis*: 43. At this point, readers with a foundational bent might wonder what kind of definition of the redistributive function is provided, or possible – descriptive, explanatory, implicit, mixed, or whatever. In that case, one is touching on the possibility of an advanced control of meaning. At this stage of history, however, relevant data (experience) is lacking. See Note 70 and the paragraph of Notes 85 and 86. For frontline scholars, the personal challenge will be to speak explanatorily and luminously, *in instances*. This will involve progress and growth in the identification of metaphysical equivalence. "So it comes about that the extroverted subject visualizing extension and duration gives place to the subject orientated to the objective of the unrestricted desire to know and affirming beings differentiated by certain conjugate potencies, form, and acts ground certain laws and frequencies." Bernard Lonergan, *Insight: A Study of Human Understanding*, eds. Frederick E. Crowe and Robert Doran, 1st ed., vol. 3, *Collected Works of Bernard Lonergan* (Toronto: University of Toronto Press, 1992), 537. That kind of growth will occur through a not-yet-operative generalized empirical method, an accurate description of which is provided in Bernard Lonergan, *A Third Collection*, 2nd ed., vol. 16, *Collected Works of Bernard Lonergan* (Toronto: University of Toronto Press, 2017), 136. In generalized (that is *adequate*) empirical method, there are two components, object, and subject. The new economics is an empirical science. In order that inquiry into the nature of provisional definitions of the redistributive function (at the level of the times) be fruitful, the new science will need to emerge, mature and, in particular, grow in understanding of the object. And might we not then also ask to what end will such growth be obtained? Unless that future achievement is to remain private, in order to contribute effectively to progress, results will need to be brought into an emergent functional collaboration. Alas, like generalized empirical method, there, too, implementation remains a remote future possibility. See also Notes 41, 43-46.

⁸²See Kee Hong Bae, Warren Bailey, and Jisok Kang, "Why Is Stock Market Concentration Bad for the Economy?" *Journal of Financial Economics* 140, No. 2 (May 2021): 436-459; Gabriel Chodorow-Reich, Plamen T. Nenov, and Alp Simsek, "Stock Market Wealth and the Real Economy: A Local Labor Market Approach," *American Economic Review* 111, No. 5 (May 2021): 1613-1657; Nir Kaissar, "I Ran the Numbers Again. Stocks Are Not the Economy," *Bloomberg Opinion*, October 2020, <https://www.bloomberg.com/opinion/articles/2020-10-27/stock-market-is-not-the-economy-by-any-yardstick>; Daisy Palacios and Kai Ryssdal, "The Stock Market Is Not the Economy," *Marketplace.Org*, September 2019, <https://www.marketplace.org/2019/09/30/the-stock-market-is-not-the-economy/>. These authors are not working within the "two-circuit" model, but they all recognize, and provide evidence, that in key respects, the stock markets are not the economy.

for redistributive purposes and eventualities. Such are the reserves assuring the liquidity of banks, insurance companies, underwriters, dealers in stocks and bonds; such also are accumulations for the purchase of land, used capital equipment, and secondhand primary products such as houses, used motorcars, and the like."⁸³ Or again, "needed additions to or subtractions from the stock of money in [basic and surplus stages are] . . . derived from the redistributive area."⁸⁴

After making some progress in identifying details of some redistributive activities in modern contexts, you will find that strategies and mechanisms of the redistributive function are not fixed but evolve with needs and circumstances. I expect that you also will "reach a healthier respect both for Lonergan's achievement in isolating the redistributive function and for the [evolving] complexity of that function in national and international economies."⁸⁵ See, now, the middle term, *R*, in Figure 1. The redistributive function is "thus named because it is the **Redistribution** [sic] area. It is not meshed directly into the flow of business, [sic] but distributes and redistributes money and ownership."⁸⁶

In reference to the redistributive function, Oslington draws attention to the following statement from Lonergan: "transactions that do no more than transfer ownership,"⁸⁷ a statement with which Oslington takes issue because "many of [Lonergan's] examples do more than this."⁸⁸ There are several errors here that need to be identified: (1) textual, (2) logic, (3) analytic, (4) method; and (5) scientific. (1) The phrase from Lonergan is part of a longer sentence and has been taken out of context. The complete statement is: "Finally, transactions that do no more than transfer titles to ownership are concentrated in a redistributive function, whence may be derived changes in the stock of money dictated by the accelerations (positive or negative) in the basic and surplus stages of the process."⁸⁹ (2) In the source text, not to mention the larger context of Lonergan's other descriptions of the redistributive function, the logic

⁸³Lonergan, *For a New Political Economy*, 58-59.

⁸⁴Lonergan, *Essay in Circulation Analysis*, 179.

⁸⁵McShane, *Economics for Everyone. Das Jus Kapital*, 93.

⁸⁶Philip McShane, "The Meaning of Credit," *Divyadaan: Journal of Philosophy and Education* 21, No. 2 (2010): 181. See also Lonergan, *For a New Political Economy*, 58.

⁸⁷Lonergan, *Essay in Circulation Analysis*, 54.

⁸⁸Oslington, "The Economics of Bernard Lonergan," 10.

⁸⁹Lonergan, *Essay in Circulation Analysis*, 54.

of the statement is not exclusive, as Oslington claims, but illustrative. (3) A more fundamental problem is that Oslington is not distinguishing functional identifications from the endless particulars of diverse transactions. Although, on the same page cited by Oslington, Lonerger reminds the reader that "the basic terms are defined by their functional relations."⁹⁰ (4) The error in method is to require of Lonerger standards of expression that do not apply to works that are breaking new ground, and where the author is not claiming to be producing a systematic treatise. (If Oslington's requirements were applied to, say, Newton's writings, or to the hastily written final documents of the young genius Galois, their contributions to science and mathematics would have been missed. The criteria Oslington is imposing also were not applied to Keynes' writings. The *General Theory*,⁹¹ as it has come to be called, is one of the most influential economics books in history, yet its lack of clarity still causes economists to debate "what Keynes was really saying."⁹²) (5) The scientific error is that, at the end of the day, or the beginning of a new day in economics, it doesn't matter how well Lonerger expressed himself, or not, or what Oslington or I have to say. For the question is, Is there, or is there not, a redistributive function in actual economic process? While progress in determining specifics remains a future scientific achievement, as examples reveal, to suggest that there is not would be in obvious contradiction to the facts.

For Oslington, the "technical restatement (Lonerger, 1999a^[93], pp. 36-38) [*sic*] presented particular interpretative difficulties despite the promising title."⁹⁴ What were Lonerger's comments regarding the purpose of those equations? "The advantage of such symbolical expression is that its brevity makes its implications more obvious."⁹⁵ Obvious, yes, to Lonerger. As in any science, one has to patiently work through ranges and layerings of instances, actual economic circumstances, historical and

⁹⁰Lonerger, *Essay in Circulation Analysis*, 54. See also Lonerger, *Essay in Circulation Analysis*, 179.

⁹¹John Maynard Keynes, *The General Theory of Employment, Interest, and Money*, 1st Ed. (Springer International Publishing, 2018).

⁹²The editors of *Encyclopedia Britannica*, "John Maynard Keynes," *Encyclopedia Britannica*, June 2021, <https://www.britannica.com/biography/John-Maynard-Keynes>.

⁹³Lonerger, *Essay in Circulation Analysis*.

⁹⁴Oslington, "The Economics of Bernard Lonerger," 15.

⁹⁵Lonerger, *For a New Political Economy*, 234-235; Lonerger, *Essay in Circulation Analysis*, 38.

contemporary. Oslington provided no evidence that he had done such work. He merely observed that he had interpretative difficulties.⁹⁶

For my part, I have found that the heuristic equations in question are precise, verifiable, and illuminating. Some familiarity with delay differential equations and recursive sequences proved helpful. However, from delay differential equations and recursive sequences to the “technical restatement”⁹⁷ requires a shift to concrete heuristics, vast aggregates, and considerable time periods. And those equations are not a stand-alone result. Indeed, it is increasingly evident to me that, from his early manuscripts onward, Lonergan was in masterly control of the mathematical symbolism that he developed for the concretely verifiable heuristics.⁹⁸

Admittedly (as McShane points out in the Editor’s Introduction to *For a New Political Economy*), Lonergan’s economic manuscripts “are grimly difficult reading.”⁹⁹ A fair comparison would be trying to read *Research Notes* in quantum fluid dynamics of solitons, vortices, and chaos without having classical, statistical, and quantum physics already under one’s belt. Further hints of the challenge are provided in the interview with Lonergan, part of which also was included in Oslington’s 2011 paper¹⁰⁰:

N. G.: Was there something peculiar about your model?

B. LONERGAN: Well yes. They had never seen anything like it. No one has that.¹⁰¹

To be sure, that “peculiarity” remains. Economists still have not seen anything like it. As I pointed to in the last paragraph of the Introduction, a major horizon shift is needed which will include breaking free from the confines of merely speculative models that are remote to concrete circumstances. Working within the current mainstream ethos, another

⁹⁶I found that a familiarity with delay differential equations and recursive sequences proved helpful in grasping the significance of the *heuristic* equations. See, for example, Quinn, *Advances in Heuristics of Two-Circuit Economics*, 18-31.

⁹⁷Lonergan, *Essay in Circulation Analysis*, Sec. 11, 36-38.

⁹⁸See also Notes 54 and 55.

⁹⁹Lonergan, *For a New Political Economy*, xxxi.

¹⁰⁰Oslington, “Lonergan’s Reception,” 70.

¹⁰¹Lambert, Tansey, and Going, *Caring About Meaning*, 183. The interviewer here was Nicholas Graham (N. G.). See Note 51.

aspect of Oslington's approach that undermines his assessment is that the negative claims are provided without offering any concrete economic evidence as to the validity, or not, of Loneragan's theory. But again, because of the theory's concrete referents, that is the fundamental issue.¹⁰²

Looking back to 2011, I empathize with the young mathematician who, at the time, was invited to collaborate on the project.¹⁰³ Without considerable experience in studying actual economic processes, Loneragan's "mathematical symbolism" could only have seemed "idiosyncratic,"¹⁰⁴ if not altogether hieroglyphic. But there is nothing sacrosanct about any particular symbolism. A symbolism can be developed to mean whatever one wishes it to mean. And Loneragan's preliminary heuristic symbolism might eventually be replaced. In the meantime, however, I have found that by starting with simple concrete examples and gradually working into more sophisticated contexts, Loneragan's notation has proven to be remarkably convenient.

2.3 Heuristics

The flawed heuristics in Oslington's assessment comes to a head in the attempt to "mathematize Loneragan's model."¹⁰⁵ Agenda item B) in the 2011 paper was to "[t]ranslate the text of the 'Essay in Circulation Analysis' [*sic*] into a clear and compact system of differential equations"¹⁰⁶ (an effort that was later abandoned¹⁰⁷).

There is, however, neither empirical nor theoretical basis for the constraint. Certainly there is no system of differential equations that can account for the day-to-day business activities of a bakery, or any other business or enterprise.¹⁰⁸ Admittedly, however, Oslington's focus was

¹⁰²To bring the theory into application in contemporary contexts of domestic and international economics will require, among other things, adjustments in modern accounting. See Note 70.

¹⁰³Oslington, "Loneragan's Reception," 77.

¹⁰⁴Oslington, "The Economics of Bernard Loneragan," 2.

¹⁰⁵Oslington, "The Economics of Bernard Loneragan," 14.

¹⁰⁶Oslington, "Loneragan's Reception," 76.

¹⁰⁷See Note 17.

¹⁰⁸Few would expect there to be such. But for completeness, there is the need to consider all possible empirical referents of Oslington's class of models.

more on “macroeconomics.”¹⁰⁹ From that perspective, one might think of the fact that in both *Macroeconomic Dynamics: An Essay in Circulation Analysis* and *For a New Political Economy*, for both production and payments, fundamental terms are rates, related rates, and related rates of rates or, in other words, related velocities and accelerations.¹¹⁰ Also, in both books, one can observe the development of a plethora of equations for related rates.

At first blush, the equations might lure one into thinking that Lonergan’s theory will allow for and perhaps require mathematization in a relatively straightforward manner. The problem, however, is that while in some respects mathematical, the equations are not merely mathematical. A superficial but not unhelpful clue to the issue is that nowhere in source texts are domains of function spaces provided, or coefficients defined, let alone are specific terms, orders, and operators identified that would be present in differential equations as such, known both now and in the decades during which Lonergan developed his theory. But that is not actually a problem. In a variety of related contexts, the various equations provide *heuristics* for related rates and rates of rates, whatever they might be in concrete circumstances.¹¹¹

But if not differential equations, then what mathematical forms might be needed in applications of the theory? Economic process is

¹⁰⁹See Note 28.

¹¹⁰For instance: “[T]he emergent standard of living is an aggregate of rates that are both qualitatively and quantitatively variable with respect to successive intervals of time.” Lonergan, *For a New Political Economy*, 238. Not for the sake of grammar but rather for meaning, notice the indefinite article preceding “aggregate.” Then, “[I]et the basic stage of the productive process be defined as the aggregate of rates of production of goods and services in process and in a point-to-point correspondence with elements in the emergent standard of living . . . [both aggregates of which are] qualitatively and quantitatively variable with respect to intervals of time.” Lonergan, *For a New Political Economy*, 238. Notice here the reaching generality of the “point-to-point correspondence,” providing thus a heuristics for such correspondences rather than specifics.

¹¹¹See also Note 54. We are touching here on the fundamental meaning of Lonergan’s heuristics. As in any science, one needs to begin with elementary, concrete, and concrete examples. I do not presume to have reached Lonergan’s heuristics and control of meaning. But I am making progress. For my part, it has been a climb through ranges and “layerings” of instances, empirical studies, and contexts (including analyzing databases from the World Bank for 10 countries over 50 years) that has led me to now be confident in my current grasp of the significance and applicability of heuristic equations in Lonergan’s manuscripts. In my view, Lonergan’s achievement is expressive of a concrete heuristics for an applicable mathematical economics that far exceeds contemporary achievement.

highly non-systematic.¹¹² One would need to look to averages, variances, and other standard (or new) statistics deemed relevant in concrete circumstances, locally, regionally, and globally. As already observed, there is no single system of differential equations (stochastic or otherwise, or other probability distributions, time-dependent or otherwise) that can account for all trends, in all economies, local or global. But observe also that looking to trends in aggregates does not relieve one of the prior scientific problem of defining individual events constitutive of those aggregates. In heuristic terms, what will be needed will be locally, regionally, and globally informed stochastic “Fourier-like” series for micro-, meso-, and macro- oscillations in two-circuit economies linked along their redistributive functions.¹¹³ Contemporary mainstream economics also provides no basis for the hypothetical mathematical constraint required by Oslington. The need to adequately define economic events notwithstanding, mainstream economics has been making use of wide ranges of different types of systems of differential equations and statistical distributions.¹¹⁴ In brief, then, the constraint on mathematical

¹¹²Bernard Loneragan, *Insight: A Study of Human Understanding*, eds. Frederick E. Crowe and Robert Doran, 1st ed., vol. 3 of the *Collected Works of Bernard Loneragan* (Toronto: University of Toronto Press, 1992), 72-92.

¹¹³This result is not accessible at the introductory level. See, for example, Quinn, *Advances in Heuristics of Two-Circuit Economics*, 31.

¹¹⁴To point to just a few, these include, for example, defining equations in equilibrium theories, random walk equations of Black, Scholes, and Merton (for financial markets), and the gravity equations (in international trade theory), equations which “have been used as a workhorse for analyzing determinants of bilateral trade flows for [more than] 50 years since being introduced by [Walter Isard, “Location Theory and Trade Theory: Short-Run Analysis,” *The Quarterly Journal of Economics* 68, No. 2 (May 1954): 305-320; Pentti Poyhonen, “A Tentative Model for the Volume of Trade between Countries,” *Weltwirtschaftliches Archiv* 90 (1963): 93-100; and] J. S. Tinbergen, *Shaping the World Economy: Suggestions for an International Economic Policy* (New York: Twentieth Century Fund, 1962); Keith Head and Thierry Mayer, “Gravity Equations: Workhorse, Toolkit, and Cookbook,” *Handbook of International Economics*, Vol. 4 (Elsevier BV, 2014), 131. A natural development in the literature on international trade has been modeling statistical clusterings of international trade by Markov-like weighted network structures, some of which incorporate gravity-type equations. See, for example, Marco Dueñas and Giorgio Fagiolo, “Modeling the International-Trade Network: A Gravity Approach,” *Journal of Economic Interaction and Coordination* 8, No. 1 (April 2013): 155-178; Dominik Hartmann et al., “International Trade, Development Traps, and the Core-Periphery Structure of Income Inequality,” *Economia* 21, No. 2 (May 2020): 255-278; Olivera Kostoska, Viktor Stokjoski, and Ljupco Kocarev, “On the Structure of the World Economy: An Absorbing Markov Chain Approach,” *Entropy* 22 (2020): 1-24; and Neave O’Clery, Muhammed Ali Yildırım, and Ricardo Hausmann, “Productive Ecosystems and the Arrow of Development,” *Nature Communications* 12, No. 1 (March 2021): 1-14.

forms required by Oslington has no basis in actual economic process, is incompatible with Lonergan's concrete heuristics, and also has no basis in contemporary mainstream economics.

Regarding the aborted attempt to mathematize Lonergan's economics, Oslington's 2022 paper unfortunately also includes an error in rationale: Not being able to solve an *invented problem that has neither empirical referents nor linkages intended by Lonergan* does not provide admissible grounds for asserting that Lonergan's proposal for understanding *actual economic process* needs to be rejected, or not. The error has two main components: (1) an attempt to prescribe and severely limit the proposed mathematization on merely speculative grounds; and (2) based on the failure to solve the problem in the artificial terms stipulated by (1), concluding that a search for a solution to the problem should be "abandoned."¹¹⁵

But failure to solve a problem can be a catalyst for new beginnings. And so, for instance, the fact that Oslington's approach did not yield positive results does provide grounds for seeking a better understanding of the empirical nature of Lonergan's theory, as well as for broadening the basis of mathematical structurings that might be needed, both in heuristics and in applications. Mathematics has been growing "exponentially." In particular, over the last three centuries, structures for time-dependent processes have gone far beyond the study of single systems of differential equations.

In modern economic process, there are, in fact, rates of two types of production, provision and financing. And that there are (statistical) mutual dependencies among these rates is not in question. (That becomes especially evident when, for example, there are delays or breakdowns in production and supply chains, or when there are overdue payments.) And so, in a larger context, Oslington and his collaborators wanting to "mathematize" (at least some aspects of) Lonergan's theory (or, rather, make progress in heuristics of a mathematical economics) is legitimate and calls for further development.

¹¹⁵See Note 17.

3. A CLASS OF TWO-CIRCUIT EQUILIBRIUM STATES

3.1. Two-Circuit Equilibria

In paleolithic times, *homo sapiens sapiens* lived together in small groups and extended families. Elementary tools were made from bone, stone, vegetation, and other materials. People survived by hunting, fishing, gathering, and, for some groups, traveling to follow migratory animals. From season to season, there were shifts in routines. For extended periods of time, however, there were no major changes in patterns of living, and each group had its own primitive economy. Primitive economy? No monies were exchanged. But people made, among other things, spears and baskets that, for example, were used for hunting and gathering food. In other words, some of their activities contributed to the surplus stage of the productive process and some to the basic stage.

Homo sapiens sapiens increased in numbers and went on to populate continents of the world. In individual groups, for as long as modes of living did not fundamentally change, on average, ratios between basic and surplus activities also did not significantly change. It is now being recognized that, to some extent, those ratios can be estimated (and also that, interestingly, hunter-gathers had significantly more leisure time than people living in today's industrialized societies¹¹⁶).

In the long run of history, however, there have been extended periods of major change. There were, for example, transitions from hunter-gatherer groups to agricultural societies. Eventually, there was the emergence of plough cultures. In northern Europe circa 1000 C.E., there was the invention of the heavy plough, which allowed for the tilling of heavy clay soils not previously tractable with older-style ploughs. This resulted in a prolonged period of population growth, increasing production of heavy ploughs, emergence of new trades, changes in culture and society, and more.¹¹⁷ Eventually, though, production of heavy ploughs settled into patterns of maintenance and replacement. Later (and while there

¹¹⁶This is touching on an extensive body of work from modern anthropology. For a point of entry, see, for example, "Farmers Have Less Leisure Time than Hunter-Gatherers," *ScienceDaily* (University of Cambridge), May 21, 2019.

¹¹⁷Thomas Barnebeck Andersen, Peter Sandholt Jensen, and Christian Volmar Skovsgaard, "The Heavy Plow and the Agricultural Revolution in Medieval Europe," *Journal of Development Economics* 118 (January 2016): 133-149.

had been prior attempts, going back almost two thousand years), by the early eighteenth century, the steam engine became widely useful and was a factor in the Industrial Revolution.

Many of these transition periods are well known and much studied. But in this section of the paper, I am not looking to transition periods but rather to the economics of periods “between transition.” I also need to bring the discussion into contact with modern economics, where by “modern economics” I do not mean modern economic models but actual modern economic process.

Let us start, then, by looking at an actual farm. One of my brothers and his wife live in rural Québec (Canada). Recently, they retired from full-time farming. But over several decades, they were in the business of growing and selling organic vegetables. Over time, strategies and methods by which they worked the farm evolved. Here, I point to just a few details. Initially, they worked the land by hand. Before long, they purchased a front-end loader and manure spreader. This increased efficiency, acreage that they could use for planting, and annual yield. Eventually, they improved irrigation. They also purchased another tractor that operated a roto-tiller, mechanical planter, and weeding machine. They built a greenhouse to extend the growing season for certain plants, such as tomatoes. Over the years, a number of trailers were purchased and used. At one point, they bought a secondhand bus that they converted so that it could be used for deliveries of vegetables, although it was also occasionally used as a family vehicle.¹¹⁸ In due course, the secondhand vehicle was replaced by a sizable delivery van. Two pick-up trucks were purchased and used. All of these changes contributed to increasing efficiency and yield, not to mention leisure time. In the barn, they built a refrigerated storage room in which produce was kept for a few days prior to weekly deliveries to customers in Montréal.

The farm was a dynamic and complex business that not only involved ongoing maintenance and replacement but also included the regular introduction of innovations and (what for the farm were) new capital goods. But let us now look to increments. For major changes in strategy and method were neither occurring every day nor were they made for their own sake. While planning for change was to some extent ongoing, for a couple of years or so at a time, farm operations mainly

¹¹⁸See Notes 71 and 72.

relied on the usage of whatever capital (surplus) goods happened to be in use. Whether it was for one year or three years, or whatever, for each such "interim period," farm activities partly were for food production. But time and effort also were given to maintenance and replacement, as needed, of tractors, the greenhouse, the irrigation system, and so on. Functionally, maintenance and replacement came from two sources. There was, of course, maintenance and replacement of capital goods used for growing and harvesting food. But there was also maintenance and replacement of tools and machinery used for the maintenance and replacement of capital goods used for growing and harvesting food.

In the periods of time between major changes in capital goods being used and, of course, allowing for statistical fluctuations and seasonal shifts, there was, on average, something like a stable ratio, or nearly stable ratio, between activities directly involved in food production and activities for maintenance and replacement. The point to grasp here is not that the time and effort needed for each was fixed, or that the "ratio" was fixed, but that, as a matter of fact, it sometimes happened that for certain periods of time, the ratio, on average (statistically), was approximately constant. Could it be otherwise? Other things being equal (in particular, excluding shifts due to innovation), if proportions of activities on a farm were increasingly needed for maintenance and replacement, there would eventually come a point where food production would begin to fail. On the other hand, if the situation were such that proportions of activities were increasingly needed for food production, then before too long, machinery and other surplus goods would begin to fail, and then eventually so also would food production begin to fail.

What about monies involved? Money flows were, of course, complex. There were employees who received incomes. Functionally speaking, those incomes sometimes were for surplus activity, but most of the time were for basic activity. In addition to the day-to-day operations of the farm and the farm's business accounts, there were family and home accounts, business-related tax returns, home-related tax returns, banking, and so on. As a business, the farm was not a "closed financial network." And so, for instance, monies for the purchase of a new chainsaw went into the surplus stage of the Canadian economy.¹¹⁹

¹¹⁹Contemporary production chains for chainsaws cross economic borders. See Note 74.

Following the money, then, takes us well beyond the scope of a single farm and brings us to the aggregate that is the modern economy. But by aggregating results and keeping our eyes on monetary functions, the patterns just described lift to the larger context. Allowing for statistical fluctuations and seasonal shifts, a *two-circuit equilibrium* in an economy is a sustained state (in the statistical sense), wherein the ratio of surplus (secondary) production to basic (primary) production is, on average, approximately constant.¹²⁰

Examples from modern economies would be helpful. However, to explore that with some precision would require financial data that is not available because the accounting needed is not yet done.¹²¹ For now, then, I must limit my observations to general heuristics. But notice that even if only for the fact that in any economy there are two circuits, then, much as in the operations of a farm, the possibility of states approximating two-circuit equilibria cannot be ruled out. And as history shows, there have been periods during which, for example, there were few major innovations influencing production patterns, and even allowing for increasing numbers, a status quo persisted for extended periods of time. However, modern economic history also shows that the situation is dynamic and massively complex. There are ongoing innovations being developed and introduced into the world's economies. Short-term and long-term surges can occur; there can be expansions and contractions. Surges in economic activity in international trade can involve and impact primary and secondary sub-economies differently.

Nevertheless, it remains that two-circuit equilibria are *critical points* (distinguished states) in any economic process: Since any economy has two circuits, then in any time interval, an economy is either moving away

¹²⁰Notice that a two-circuit equilibrium is not an "equilibrium" as defined by Walras in his mathematical theory that has been carried forward in equilibrium analysis. In that tradition, equilibria are long-term limits (time) in mathematical models. As Walras said, the "whole theory is mathematical" (Léon Walras, *Léon Walras: Elements of Theoretical Economics: Or the Theory of Social Wealth*, ed. Donald A. Walker and Jan Van Daal [Cambridge: Cambridge University Press, 2014], xi) and impossibly remote to concrete circumstances. By contrast, whether or not an economy is near to being in a two-circuit equilibrium is not a mathematical issue but rather a matter of fact. Although to determine whether or not an economy is in an equilibrium would require data and measurement strategies. See Note 70. For preliminary heuristics on the possibility of measuring aggregate dynamics of a two-circuit economy, see Lonergan, *For a New Political Economy*, 268-274.

¹²¹See Note 70.

from, converging on, passing through, in oscillation about, or persisting in some kind of two-circuit equilibrium. Consequently, for a modern economy, identifying combinations of monetary flows characteristic of two-circuit equilibria will contribute to a concrete heuristics of (critical points of) actual economic process.

3.2. Heuristics for a Class of Two-Circuit Equilibria

In much the same way that it can be helpful to have a simplified periodic table at the beginning of a high school chemistry textbook, a simplified diagram for the heuristic structure of economic process is provided in Figure 1.

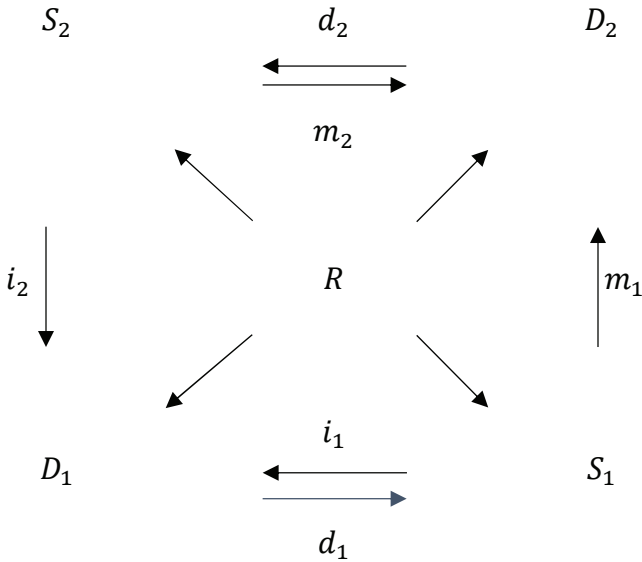


Figure 1 This is a simplified version of the diagram on page 258 of Lonergan, *For a New Political Economy*, and page 181 of *Macroeconomic Dynamics: An Essay in Circulation Analysis*. The symbols S_1 , S_2 , D_1 , D_2 are the basic, surplus, supply and demand (monetary) functions; R is the redistributive monetary function; and m_1 , m_2 , i_1 , i_2 are maintenance and replacement and more (surplus incomes) and basic incomes, respectively.

A *two-circuit equilibrium* in an economy can be identified in terms of (concomitant¹²²) monetary flows in the aggregate. In such an equilibrium, quantitative aspects are statistical. Assuming that payments to and from the redistributive function mainly balance over time (for example, through structured repayments of loans), and allowing for statistical and seasonal variations, the approximately constant ratio of a two-circuit equilibrium means that, over long enough periods of time, monetary flows for maintenance and replacement of surplus goods and services m_1 (for basic production) are, on average, approximately equal to monetary flows for incomes for individuals involved in surplus production i_2 . Furthermore, for as long as there is no ongoing buildup of unused capital goods, monetary flows for surplus demand d_2 are the sum of monetary flows for maintenance and replacement for basic and surplus production $m_1 + m_2$; and basic demand d_1 is given by the sum $i_1 + i_2$.

These relations can be expressed in the following three equations:

$$\begin{aligned} m_1 &= i_2 \\ d_2 &= m_1 + m_2 \\ d_1 &= i_1 + i_2 \end{aligned} \tag{3.1}$$

Rearrangements of terms are possible, the need and possibility of each of which will depend on circumstances. For example, given monetary flows for maintenance and replacement of surplus goods and services m_2 , and basic incomes i_1 and i_2 , the equations provide corresponding basic and surplus demand d_1 , d_2 flows and maintenance and replacement flows m_1 that together would yield a two-circuit equilibrium. To see that, we can substitute $m_1 = i_2$. This gives us that

$$\begin{aligned} m_1 &= i_2 \\ d_1 &= i_1 + i_2 \\ d_2 &= i_1 + m_2 \end{aligned} \tag{3.2}$$

In matrix notation, this becomes

$$\begin{bmatrix} m_1 \\ d_1 \\ d_2 \end{bmatrix} = \begin{bmatrix} 0 & 1 & 0 \\ 1 & 1 & 0 \\ 1 & 0 & 1 \end{bmatrix} \begin{bmatrix} i_1 \\ i_2 \\ m_2 \end{bmatrix} \tag{3.3}$$

¹²²See Index entries in, Lonergan, *For a New Political Economy*.

The matrix is invertible and so, mathematically, it provides a one-to-one correspondence between triples. But what is the empirical significance of equation (3.3)? In the present context, the structuring is a statistical heuristic for monetary flows in economic aggregates. Such aggregates allow for vast "layerings," combinations, oscillations, possibilities, and potentialities locally, regionally, and globally. Just as for mathematical equations in Lonergan's source texts,¹²³ the meaning of the linear system here also is heuristic and, in the present case, statistical.

But what, then, in practice, do the symbols m_1 , m_2 , d_1 , d_2 , i_1 , i_2 represent? Depending on context, the symbols in Figure 1 can refer to either individual events or aggregates of events, as the case may be. In the present context, they represent solutions of equation (3.3), which is a heuristic for a two-circuit equilibrium state. The terms here, therefore, do not represent individual rates but rather (some kind of) random variables¹²⁴ for rates determined by aggregates of aggregates in concrete

¹²³See Notes 53 and 54 and Section 2.3.

¹²⁴*Some kind* of random variable? It is an empirical problem that depends on circumstances. Note also that the terminology "random variable" is meant in the sense defined in modern statistical analysis, referring thus to empirically verifiable trends in "so much every so often," in non-systematic process. In statistical analysis, one also investigates correlations between random variables. Such correlations also are in reference to trends in aggregates of frequencies and relative frequencies. (For example, random variables X and Y satisfy $X = Y$ if and only if, under suitable constraints [determined empirically], differences between aggregates vary only non-systematically.) Notice, then, that contrary to common parlance, in scientific contexts the adjective "random" is not in reference to individual events or even individual large aggregates. It refers, rather, to determinate aggregates of aggregates and to non-systematic divergences from provisionally identified centers. See, for example, Philip McShane, *Randomness, Statistics, and Emergence*, eds. James Duffy and Terrance Quinn, 2nd Ed. (Vancouver: Axial Publishing, 2021). An illustration may help. At present (year 2023), the number of motor vehicles on Toronto's Highway 401 is more than 500,000 per day. That number is a random variable, say M . By all accounts, the variation of actual frequencies per day is random. At the same time, each driver is on the road for their own definite purpose. There is no contradiction: (a) actual frequencies are a matter of fact; (b) variation in actual frequencies is a matter of fact; (c) drivers heading to their determinate destinations is a matter of fact, and (d) the term "random" is not in reference to individual vehicles but (through inverse insight) to a provisionally ascertained lack of intelligibility in variations in actual frequencies in aggregates of aggregates of actual frequencies. To go further than preliminary impressions, however, and then to reach something like the precision and control of meaning that will be needed in applications in economic process, one will need to make progress in heuristics of modern statistical method and empirical probability. Key features of the climb are described in doctrinal density, in Lonergan, *Insight*. Alas, one will need to appropriate (become luminous in) a considerable range of instances. For examples, points of entry into modern contexts, and pedagogy, see McShane, *Randomness, Statistics, and Emergence*.

circumstances locally, regionally, and in international trade.¹²⁵ In a two-circuit equilibrium, then, there could be various types of randomness, distributions, and variances so long as in nested aggregates, within permissible error bounds, they are statistically correlated by equations (3.1), (3.2), or (3.3).

If a two-circuit equilibrium is not yet attained but is desired, the general structuring indicated in Figure 1 allows for indefinite ranges of factors and circumstances locally, regionally, and globally, whatever happens to be possible and desired by a community, as well as whatever is possible and sustainable (minimally, long enough for a two-circuit equilibrium to emerge) ecologically, economically, societally, locally, regionally, and globally. Notice also that in addition to the fact that there can be transitions between different two-circuit equilibria there can also be changes to an equilibrium in the sense that both basic and surplus flows increase or decrease proportionately so long as, over time, and *statistically speaking*,¹²⁶ correlations indicated by the equations (3.1), (3.2), or (3.3) are preserved.¹²⁷

4. CONCLUSIONS

Section 2 draws attention to three sets of fundamental errors in Oslington's assessment of Lonergan's economics. The flawed heuristics comes to a head in the attempt to "mathematize Lonergan's model,"¹²⁸ an effort, however, that was "abandoned" by Oslington and his collaborators. But the fact is that, to some extent, rates of aggregates of

¹²⁵See Note 73.

¹²⁶See, for example, Note 124.

¹²⁷A farm might increase or decrease acreage tilled but do so without changing methods. Similarly, in the aggregate that is an economy, statistically, a common ratio between the surplus stage and the basic stage could be maintained during an expansion or a contraction. A "macroequilibrium may be static or dynamic. When it is static, the crossovers are constant; they are neither increasing equally nor decreasing equally; and so there results the stationary state. On the other hand, when the crossovers are increasing equally or decreasing equally, there is a dynamic macroequilibrium which may be an expansion or a contraction." Lonergan, *Essay in Circulation Analysis*, 77; see also Lonergan, *For a New Political Economy*, "Accelerations, Cycles, Phases," Ch. 17, 259-284. In the more general case, then, for a two-circuit equilibrium, the form of equations (3.1), (3.2), and (3.3) would remain the same, but increment by increment, the terms would be time-dependent random variables. See Note 124.

¹²⁸See Note 104.

doubly-grouped events (defined in terms of five monetary functions) are (statistically) mutually dependent. This provides evidence that some kind of mathematical and statistical heuristics are possible and needed.

In reply to Oslington's tacit claim that translating Lonergan's economics into "contemporary mathematical style"¹²⁹ is not possible, Section 3 provides concrete heuristics for a class of counter-examples. The results also provide a glimpse into how mathematical heuristics for two-circuit economics can be further developed. Admittedly, the two-circuit equilibrium discussed is a special case. But it sheds light on the nature of the mathematical heuristics and, in particular, leads naturally to heuristics for the non-static two-circuit equilibrium.¹³⁰ Always to be informed by concrete circumstances and real possibilities, further development of mathematical and statistical heuristics is needed for more general (dynamical) economic states, including combinations of short-term and long-term surges and international trade.¹³¹

It seems to me that, at this time, the most fundamental differences between Oslington's assessing of Lonergan's economics and my approach to reading Lonergan's economics are foundational. By his own account, Oslington's focus is on the mainstream literature, which is utterly remote to concrete circumstances. Lonergan's theory, however, is intended to explain actual economic process and thus provide a basis for practical control. And so, I have taken Lonergan's pointings quite differently: In order to understand economic process, we need advert to facts and data, in instances. With that approach, it can soon become evident that any economy is "double-circuited and credit-centered."¹³² To ignore that structuring will block the possibility of understanding and of intelligently guiding economic process. An economist might be unaware

¹²⁹See Note 19.

¹³⁰See Note 127.

¹³¹See Note 73.

¹³²Lonergan, *For a New Political Economy*, xxvii. Because Lonergan's work is advanced and compactly written, it is good to begin with pedagogical introductions. See Note 22 as well as Bruce Anderson, "Basic Economic Variables," *Journal of Macrodynamical Analysis* 2 (2002): 37-60; Patrick Brown et al., "Do You Want a Sane Global Economy?" ed. Philip McShane, *Divyadaan: Journal of Philosophy and Education* 21, No. 2 (2018, 2010), <https://journals.library.mun.ca/ojs/index.php/jmda/issue/view/134>; Patrick Brown et al., "Do You Want a Sane Global Economy?" *Journal of Macrodynamical Analysis* 11 (2018), <https://journals.library.mun.ca/ojs/index.php/jmda/issue/view/134>; and James Duffy, "Minding the Economy of Campo Real," *Divyadaan: Journal of Philosophy and Education* 29, No. 1 (2018): 1-24.

of relevant facts and data. But if an economist attempts to communicate the view that the two circuits are not relevant to the internal dynamics of actual economic process, the fact that they lived long enough to do so will be partly thanks to there being a basic stage of the economy, and the communication of their claim will have been made possible by using some kind of pen, e-pen, keyboard, internet, or other goods and services provided by the surplus stage of the economy.