

# Metzler and the History of Economics

## A Preliminary Investigation of the Lloyd Metzler Papers

---

Grant Fleming\*

---

### I Introduction

The purpose of this note is to inform historians of economics of the extent of the Lloyd Metzler Papers, which form part of the Economists' Papers Project at Duke University, and to suggest possible areas of research in light of these papers.<sup>1</sup>

Lloyd Metzler was born in Lost Springs, Kansas in 1913. He completed degrees in economics and business at the University of Kansas (B.S. Economics 1935, M.B.A. 1938) before moving to Harvard in 1938. For the next six years Metzler studied and taught during the period Paul Samuelson has called "the Golden Days of the Harvard Yard"; the age of Alvin Hansen, Joseph Schumpeter, Wassily Leontief to say nothing of the young stable of economists - Paul Samuelson, John Kenneth Galbraith, Alan and Paul Sweezy, Richard Musgrave, Wolfgang Stopler, James Tobin (to name only a few).<sup>2</sup> After graduating MA (1941) and PhD (1942) Metzler joined the Washington wartime administration, serving as economist and consultant for various federal departments.<sup>3</sup>

Metzler left Washington in 1946 for an Assistant Professorship at Yale. In 1947 he accepted an Associate Professorship at Chicago, arriving just as its "golden age" was unfolding; the now famous activities of Frank Knight, Cowles Commission senior staff members Jacob Marschak and Tjalling Koopmans, younger faculty members Milton Freidman, D. Gale Johnson, H. Gregg Lewis and, within the next three years, Kenneth Arrow, John Chipman, Evsey Domar, Franco Modigliani and Don Patinkin.<sup>4</sup> At Chicago Metzler continued the Jacob Viner tradition in international trade and served as the "token New Dealer Keynesian", although he communicated with all points of view and was "equally at home with Keynesian and neoclassical economics".<sup>5</sup> In the late 1940s and early 1950s Metzler made seminal contributions to economics in the areas of money and prices, and international trade, and added to his earlier successes in stability theory and business cycle theory.

Metzler travelled to Scandinavia in 1951-1952, lecturing at the Universities of Stockholm, Gothenburg, Lund, Copenhagen and Oslo. On returning home he suffered a brain tumour. While he was able to continue teaching and corresponding with colleagues, it was not until the early 1960s that he regained the desire to publish.<sup>6</sup> In 1973 he published his collected papers which contained his seminal contributions to economics from the 1940s and early 1950s, and several unpublished papers from the 1960s.<sup>7</sup> On the occasion of his sixtieth

birthday he was presented with a collection of essays in his honour.<sup>8</sup> Metzler died on 26 October 1980.

## II Metzler and the History of Economics

In the early 1940s a good deal of research was under way on the international aspects of the Keynesian model. Metzler's doctoral thesis, "Interregional Income Generation", worked out the essential properties of the foreign trade multiplier in a two country case.<sup>9</sup> The opening chapter investigated the comparative statics and stability properties of a two-country world where both countries exhibited Keynesian internal conditions, and was subsequently published in *Econometrica* (April 1942). The second chapter approached the classic problem of inter-country transfers from a Keynesian perspective and was published in the *Journal of Political Economy* (June 1942).<sup>10</sup> These articles soon gained Metzler a reputation as one of the discipline's leading young scholars, a reputation that was to be enhanced by a series of vintage papers from his pen in the late 1940s and early 1950s. As Samuelson was to later state, "[a]t mid-century, Lloyd Metzler was one of the half dozen leading economists in the world" and although only thirty-seven "his creative works...made it inevitable that he would win for himself the highest prizes in our subject".<sup>11</sup>

Metzler's contributions to economics can be organised into four areas: theory of international trade; money, interest and prices; business cycles and economic fluctuations; and mathematical economics and statistics.<sup>12</sup> In order to place the LMP in context, a short note on each aspect of Metzler's work is provided.

On international trade, three aspects of Metzler's work deserve mention.

(i) the transfer problem: as we have seen, Metzler's doctoral thesis analysed the classic transfer problem in the context of a Keynesian two-country model. The general implication drawn out from the subsequent article was that when two countries are stable in isolation a capital transfer will always be undereffected, leaving a deficit in the paying country's balance of payments. Thus, "there is no reason to expect spending in the two countries to be altered by just the amount of the transfer. It then becomes clear that adjustment to the transfer will depend on public policy affecting this financing".<sup>13</sup> Metzler extended his analysis of the transfer problem in 1951 to the more general multiple country case and, after a series of correspondence with Meade and Johnson, to investigate important special cases (flexible exchange rates and the balanced budget theorem, raw material imports).

(ii) survey of international trade theory: Metzler was commissioned by the American Economic Association to write a survey of international trade theory for the Howard Ellis edited *A Survey of Contemporary Economics* (1949). This article became a "lamppost providing both support and illumination to a generation of graduate students" and helped

popularise what is known as the Robinson-Metzler condition of stability in the foreign exchange market.<sup>14</sup>

(iii) tariffs and the terms of trade: in two papers in 1949 Metzler explored the links between tariffs, the terms of trade and the distribution of income. In what was a challenge to the famous Stolper-Samuelson theorem, he showed that a tariff can cause sufficient improvement in country's terms of trade to prevent a distribution of income to the country's "scarce" factor of production (in this case, labour). Indeed, Metzler found that under some circumstances the country's terms of trade may improve to such an extent that the Stolper-Samuelson income-distribution predictions were reversed. These results generated much economic comment in subsequent years.<sup>15</sup>

On money, interest and prices, Metzler's most influential article was the 1951 *Journal of Political Economy* piece, "Wealth, Saving, and the Rate of Interest". Here, Metzler examined the controversy over the neutrality of money and showed that the effect of a change in the money supply on the rate of interest and on relative prices depended upon whether "inside" or "outside" money creation was involved. This comparison of the macroeconomic effects of different monetary policies has been more recently described as "pathbreaking" and "opening the way for a quarter-century of work up to the debate about what Karl Brunner has christened 'monetarism'".<sup>16</sup> Indeed, as John Wood stated, Metzler's JPE article became "a 'must' for reading lists and collections of contributions to monetary thought" and its framework "served as the basis for a wide variety of extensions of monetary theory that have themselves been influential in greater or lesser degree".<sup>17</sup> Other papers by Metzler on money, interest and prices include a study of the rate of interest and the marginal product of capital (1950) and specific defences of his JPE arguments (1973).

Metzler's interest in business cycle theory may well have been initiated by Schumpeter's lectures in Fall 1938 (Schumpeter took his students through a history of cycle theory from Jevons to Frisch and himself) although the topic was also one of current interest in the discipline. The 1930s and 1940s saw a proliferation of formal, essentially endogenous business cycle models which used various versions of the investment accelerator and the consumption multiplier.<sup>18</sup> Metzler's contribution to this area of economics was to show that variation of desired inventories with expected sales, via an inventory accelerator, could impose severe limitations on the stability of an economy. Metzler's two papers in the 1940s investigating the nature and stability of inventory cycles laid the groundwork for much subsequent investigation in this area.<sup>19</sup>

Finally, Metzler's interests and influence in mathematical economics. As several commentators have noted, Metzler's interest in the stability of markets and his desire to unify comparative static stability (of the type Hicks was discussing in his *Value and Capital*) with

dynamic stability analysis (see Samuelson's 1941 and 1944 *Econometrica* articles) led him to results that became fundamental in a variety of fields: multiple-sector multiplier analysis; gross-substitution models; and input-output matrices.<sup>20</sup> This interest stayed with Metzler throughout his life. In the mid 1960s he sought funds from the Social Science Research Council for a book "The Mathematical Basis of Dynamic Economics"; the purpose of the book was "to show the relation between differential and difference equations, and, in particular, to contrast the stability conditions for these two types of dynamic systems". A tentative outline indicates chapters (in Metzler's order) on simultaneous equations and determinants, determinantal identities, differential and difference equations (two chapters), the algebra of complex numbers, the theory of equations (two chapters) and matrix algebra (two chapters). Each chapter was "to be supplemented by an economic application, either in price theory or in the theory of business cycles".<sup>21</sup>

We turn now to examine the LMP in more detail and, in light of the above discussion, show how evidence contained in these papers may shed light on the development of Metzler's ideas.

### III The Lloyd Metzler Papers

The LMP comprise drafts and corrections of articles and books, correspondence with colleagues and students, lecture notes and early student notes, policy documents from war and immediate postwar administration and general biographical information. In this author's opinion, the items of particular importance are Metzler's correspondence and his policy documents from wartime consultancies. The following is an example of how the LMP can aid our understanding of Metzler's contributions to economics.

#### (i) Theoretical Origins of Metzler's Ideas

Metzler's class notes from Harvard in the late 1930s provide both an insight to teaching at Harvard and clues as to the more important influences on Metzler in his formative years. Metzler's notes cover courses by J. Schumpeter on economic principles, on business cycles and on topics in the history of economic thought, O.H. Taylor on modern theory and its critics, Leontief on price analysis and Haberler on international trade.<sup>22</sup> The courses by Schumpeter and Leontief seem the closest to Metzler's later interests - in particular, his work in inventory cycles and in mathematical economics - although early contact with Haberler no doubt would have influenced Metzler on international trade; the two maintained a correspondence at least until the late 1960s.<sup>23</sup>

Another avenue open to investigate some of the intellectual influences on Metzler is correspondence. Two examples from the correspondence files (boxes 5 and 6) will suffice.

Metzler's inventory cycle research was not only influenced by the enthusiasm for the subject shown by Schumpeter and Haberler at Harvard, but at a more technical level, by E. Lundberg's work. Metzler's letter to Lundberg makes this very clear:

As you probably know, I am greatly indebted to you for a considerable part of my research work. Most of the work that I have done on inventory cycles has evolved directly from the work which you did before the war on the theory of economic expansion.<sup>24</sup>

Metzler's research in the late 1940s on the economic effects of the tariff and the terms of trade (the challenge to the Stolper-Samuelson theorem) profited from a translation from Swedish of E.F. Heckscher's earlier work:

I doubt whether I could have written it [the JPE 1949 article] without knowing the contents of your own article on a similar subject, and owing to my inability to read Swedish it was impossible for me to know your article until it was translated by Mr. and Mrs. Laursen.<sup>25</sup>

It remains for the historian of economics to explain in more detail the theoretical connections between these economists' research and Metzler's ideas.

#### (ii) **Development of Metzler's Ideas**

The development of Metzler's ideas between the 1940s and the 1960s on inventory cycles and money, interest and prices is well documented in the LMP. Metzler's 1940s papers on inventory cycles dealt largely with real fluctuations and how finished goods production was subject to changes reflecting errors in businessmen's sales forecasts. Later studies were to show that if the inventory cycle model was disaggregated by stage of fabrication and type of production then the behaviour of stock varied systematically between categories. Inventories consisting mainly of goods-in-process depended positively on the rate of output and on materials (which themselves depended on cyclical changes in supply conditions); disaggregated models showed that desired inventories depend importantly on other variables in addition to sales.<sup>26</sup> Although most of the research on disaggregated inventory cycle models was not to appear until the 1960s and 1970s, evidence from LMP shows that Metzler, in collaboration with Moses Abramovitz, was working on these issues in the 1950s.<sup>27</sup> As he was to comment to Abramovitz, he was persuaded to consider goods-in-process by Arthur Burns:

I changed my mind about what to write because a remark by Arthur Burns convinced me that your book raised some problems for my theory of inventory cycles which were more serious than those which I had originally taken into account. He convinced me, in particular, that the great difference in behaviour between inventories of finished goods, inventories of goods in process, and inventories of raw materials was something

which ought to be taken into account in any theory of inventory cycles. On the basis of the facts which you have uncovered, I have worked out a revised theory of inventory cycles which takes into account the combined effects of goods in process and finished goods.<sup>28</sup>

Metzler's research on the transfer problem in international trade theory set straight the multicountry multiplier controversies. As we have seen, he analysed the Keynesian two-country model and showed that there was no reason to expect that spending in the two countries would be altered by just the amount of the transfer. The extension of Metzler's work by James Meade (incorporating the importation of raw materials) in the late 1940s and by Harry Johnson (on exchange stability and the transfer problem) in the 1950s form the background to the most complete series of correspondence in LMP - between Metzler and Meade on the differences in their results, definitions of national income and the importance of imported raw materials for the transfer problem<sup>29</sup> and between Metzler and Johnson on imported raw materials and definitions of national income.<sup>30</sup> These exchanges culminated in Metzler convincing both Meade and Johnson that the qualifications that they had made to his earlier work (with regard to transfer payments and the importation of raw materials) did not substantially change his results. In what was the final exchange on the matter, Metzler wrote to Johnson:

I come at last, to the problems which you raised when raw material imports are included...To be sure, the raw materials will alter the manner in which the conditions are expressed, but they will not change the essence of the problem.<sup>31</sup>

Johnson replied:

I think the trouble is that Meade and possibly I too have drawn a red herring across the path by mention of the import content of production...you are quite right in asserting that imported raw materials make no difference. I did in fact make this point, very cryptically, in a footnote to my J.P.E. paper on the transfer problem. As for Meade, I don't think he tried to analyse the problem with raw material imports, but instead assumed them away.<sup>32</sup>

Discussion of the importance of raw material imports and of definitions of national income for the transfer problem prompted Metzler to write up, in more formal fashion, his ideas. The essence of the Meade-Johnson-Metzler discussion appeared as "Imported Raw Materials, the Transfer Problem, and the Concepts of Income".<sup>33</sup>

### (iii) **Scientific Exegesis: Reactions to Metzler's Research**

Stigler argues that the history of economic ideas should be analysed by "scientific exegesis" rather than "personal exegesis"; that is, what should be relevant for historians of

economics is not what writers intended, which may be uncovered by personal or textual exegesis, but how those writers' works were perceived by their contemporaries.<sup>34</sup> Correspondence in the LMP includes reactions to Metzler's research that may permit scientific exegesis; in particular, reactions to his papers on tariffs and the terms of trade, his JPE article on wealth, saving and the rate of interest, and his contributions to stability analysis.

Metzler's article challenging the Stolper-Samuelson theorem included an application of his results to trade policies in Latin America, nineteenth century United States and Australia. Haberler's response to this article is typical:

I have read once more - this time carefully - your paper in the J.P.E. and should like to make a few comments. The theoretical part is really beautifully done...I must say, however, that I have rather grave doubts with respect to the tentative application of your theory in the last part of the article.<sup>35</sup>

Haberler continued by outlining the difficulties in applying Metzler's theory to the Australian tariff case. As Metzler was to state in reply, these observations were perceptive:

Dear Gottfried,

I am beginning to think that it is extremely hazardous to attempt to make any practical applications of Economic Theory at all. I have received a number of letters concerning my article in the *Journal of Political Economy*, and all of them referred, in one way or another, to that section of my article where I attempt to apply the conclusions reached to the trade of Australia, the Latin American countries, and the United States in the nineteenth century.<sup>36</sup>

Similar letters to those above can be found which provide economists' reactions to Metzler's JPE article on wealth, saving and the rate of interest.<sup>37</sup> On stability analysis, E. Roy Weintraub's analysis of the history of economic dynamics makes little mention of Metzler's work.<sup>38</sup> However, a long, reflective letter from Paul Samuelson to Metzler on the latter's contribution to stability analysis suggests that perhaps Metzler's work deserves more attention. Samuelson summarises Hicks's stability analysis, compares his own analysis with Metzler's and then points out where Metzler "did Hicks a great service, relating his comparative statics conditions to dynamic conditions".<sup>39</sup> In summary, in all the examples above, Metzler's theoretical work seemed to be well received by his contemporaries and, if not praised, certainly generated debate.

#### (iv) Metzler as Applied Economist

As one reads the files of the LMP one comes to an appreciation of the importance Metzler placed on his wartime consultancies. Metzler regarded government as a favourable research environment and during those years completed his famous papers on market stability.

Indeed, as Horwich and Samuelson noted, "when called to Yale after the war, [Metzler] seriously wondered why one should leave the excellent research and secretarial facilities of a government office for the committee meetings of academic life".<sup>40</sup> But the wartime years meant more to Metzler than support services; as a large volume of correspondence shows, he was to maintain contact with the Board of Governors of the Federal Reserve System postwar and contemplated moving back into government in 1948 and 1949.<sup>41</sup> Between 1950 and 1953 he was consultant for the United States Department of State and, after his illness, consultant to the United States Secretary of the Treasury (1961- ?). Files from Metzler's participation in the postwar US-England conference on the British balance of payments deficit (marked confidential and dated 13 September 1945) and on currency reform in postwar Germany (Spring 1946) are but two deposits that deserve further analysis.

#### IV Concluding Remarks

The Lloyd Metzler Papers present historians of economics with a variety of topics for future research in several sub-disciplines of economics; international economics, monetary economics, business cycle theory and mathematical economics. In general, the Lloyd Metzler Papers are an excellent example of the fruit of the acquisitional talents of Duke University historians of economics and archivists, talents that serve well historians of economics in all continents.

#### Appendix

##### Lloyd A Metzler Papers Preliminary Box List

This list is a revised version of a box list written in October 1991. The Metzler Papers are an unprocessed holding (14 lin. feet) but are in particularly good order; the papers comprise manila files (with subject headings) boxed as follows.

Box 1: Copies of unpublished papers by economists other than Metzler; for example, pre-versions of the Cowles papers for the activity analysis conference, K. Arrow's early version of the impossibility theorem.

Box 2: Draft versions of academic papers and reviews, and includes comments from colleagues on Metzler's work; for example, one paper has hand-written comments by J. Viner.

Box 3: Teaching Notes; classroom lecture material (see also boxes 10 and 11) and correspondence related to student matters. Also assorted minor correspondence about earlier papers.

Box 4: Draft versions of Metzler's papers and projects from the late 1940s and the 1950s. Also drafts of chapters for his *Collected Papers*.

Box 5: Correspondence, late 1940s to 1960s; files ordered alphabetically by surname A-S (see also box 13).



Box 6: Correspondence, late 1940s to 1960s; files ordered alphabetically by surname T-Z (see also box 13). Also reprints of published papers, papers marked as chapters for his *Collected Papers* and policy papers (marked top secret) on the USA-England conference 13 September 1945 concerning the British balance of payments deficit (J.M. Keynes present) (see also boxes 8 and 11).

Box 7: Draft versions of academic papers (many of which were not published), and data and charts for topics like "empirical material on inventory cycles".

Box 8: Policy papers and reports on Britain's postwar debt to USA including Metzler's notes as participant (see also box 11). Also Harvard class notes from G. Haberler, W. Leontief, J.A. Schumpeter and O.H. Taylor (1937 to 1939).

Box 9: Material for *Collected Papers* and final manuscript.

Box 10: Teaching notes (handwritten), reading lists, syllabi and examinations from Chicago in the 1960s (see also boxes 3 and 11). Also examination papers and readings from his Harvard years 1938-39 (Econ A).

Box 11: Federal Reserve material, mimeos on postwar economic policy issues, the IMF-Marshall Plan. Also book galley proofs for *Collected Papers* and teaching notes (mostly international economics course and class notes for the 1950s).

Box 12: Non-Metzler material from the Federal Reserve, 1945 to 1970s; for example, working papers by staff members, brochures, bulletins, research memoranda.

Box 13: Miscellaneous Correspondence and Student Files; formal biographical information (curriculum vitae, research reports from the 1950s, research applications from the 1960s) and assorted 1960s correspondence.

---

\* Department of Economic History, Australian National University, ACT 0200.

## Notes

<sup>1</sup> An edited preliminary box list of the Lloyd Metzler Papers (LMP) is provided in the appendix. Further information on the LMP, or on the Economists' Papers Project, is available from the author, or from the Manuscripts Department, William R. Perkins Library, Duke University, Box 90185, Durham, North Carolina 27708-0185 (telephone (919) 660-5820; fax (919) 684-2855).

<sup>2</sup> See Samuelson (1986, pp. 827-828), Horwich and Samuelson (1974, p. xv) and Horwich and Pomery (1987, p. 458). Biographical details can be found in LMP Boxes 5 and 13.

<sup>3</sup> Office of Strategic Services (1943-44), President's Committee to Investigate the Cost of Living (1944), Board of Governors of the Federal Reserve System (1944-46) (and during that time the House of Representatives, Special Committee on Postwar Economic Policy and Planning 1945), and the United States Military Government, Berlin (1946).

<sup>4</sup> On the early years of the Chicago "tradition" see Patinkin (1981, pp. 3-51).

<sup>5</sup> Horwich and Samuelson (1974, p. xvi).

<sup>6</sup> Several of Metzler's 1960s papers were not published until his *Collected Papers* appeared in 1973; "Imported Raw Materials, the Transfer Problem, and the Concepts of Income" (pp. 70-94), "Flexible Exchange Rates, the Transfer Problem, and the Balanced-Budget Theorem" (pp. 95-111), "The Structure of Taxes, Open-Market Operations, and the Rate of Interest" (pp. 345-362) and "Partial Adjustment and the Stability of Inventory Cycles" (pp. 428-439) (page numbers refer to Metzler 1973). In addition, Metzler was working on a book on dynamic economics, presenting elements of difference and differential equations in a simplified form for the "working economist" (proposed title, "The Mathematical Basis of Dynamic Economics") ("Proposal for a Social Science Research Council research grant", LMP Box 13).

<sup>7</sup> Metzler (1973).

<sup>8</sup> Horwich and Samuelson (1974).

- <sup>9</sup> The thesis was accepted by Harvard University in 1942 and won the Wells Prize for the year 1944-45 (Metzler 1973, p. vii).
- <sup>10</sup> The final chapter of Metzler's thesis dealt with financial equilibrium in the context of international capital transfers and was to provide the genesis for his famous *Journal of Political Economy* paper "Wealth, Saving and the Rate of Interest" (April, 1951).
- <sup>11</sup> Samuelson (1986, p. 827).
- <sup>12</sup> See Metzler (1973, pp. vii-xiii) and Horwich and Pomery (1987). The following notes are largely derived from these source.
- <sup>13</sup> *ibid.*, p. vii.
- <sup>14</sup> *ibid.*, p. x.
- <sup>15</sup> A concomitant to work on the Stopler-Samuelson theorem was Metzler's joint paper (with Svend Laursen) on flexible exchange rates and employment in which they investigated the links between the terms of trade and the level of savings in real terms. Specifically, Metzler and Laursen examined the argument that flexible exchange rates would insulate the level of domestic employment from disturbances emanating from a current account imbalance and concluded that the "principal value of such a system will probably be found...in its ability to insulate industrial countries against economic fluctuations in other industrial countries" (emphasis added). However, as flexible exchange rates did not "reduce the amplitude of the cyclical movements in the primary producers' terms of trade...a system of flexible exchange rates cannot...be regarded as a means of insulating the countries producing primary products from business cycles in the industrial countries" (Metzler 1973, pp. 293-294, 293). The connection between the terms of trade and real savings has since "preoccupied a generation of model-builders seeking to explore the full price- and income-effects of devaluation" (*ibid.*, p. x).
- <sup>16</sup> Niehans (1978, p. 87). Niehans makes the following conclusion on Metzler's influence: "It was Metzler who first raised the explicit question whether it makes a difference how money is created, answering it with the 'yes' that later became characteristic for non-monetarists. It took about 20 years before it was widely realized that pure fiscal policy can be regarded as the difference between two alternative monetary policies, and that as a consequence, Metzler, in effect, also raised the question about the effectiveness of fiscal policy. Metzler's contribution is not that he answered these questions, but that he raised them" (p. 93).
- <sup>17</sup> Wood (1980, p. 135) argues that the influence of Metzler's paper is unwarranted; specifically that his argument is marred by inconsistencies that invalidate his conclusion and thus invalidate the conclusions of models based on his framework.
- <sup>18</sup> For a review of business cycle theory to 1985 see Zarnowitz (1985).
- <sup>19</sup> See Metzler (1973, pp. xii-xiii), Zarnowitz (1985, pp. 541-542) and Horwich and Pomery (1987, p. 458).
- <sup>20</sup> Metzler (1973, p. xiii) and Horwich and Pomery (1987, p. 460). As Horwich and Pomery (*ibid.*) state, "Metzler's work provided a crucial synthesis of stability literature and an important step in the evolution of matrix theory as applied in economics."
- <sup>21</sup> "Proposal for a Social Science Research Council research grant" LMP Box 13, pp. 2, 3.
- <sup>22</sup> LMP Boxes 8 and 10; Schumpeter's course on principles was Economics 101 (1937-38). Metzler took Taylor's course in 1937-38 and Leontief's course in 1938-39. There is no indication when Metzler took Haberler's course. Boxes 8 and 10 also contain examination question sheets from Schumpeter's principles course.
- <sup>23</sup> See Metzler to Haberler, 17 December 1969 (LMP Box 5). Unfortunately, a complete series of correspondence between Metzler and Haberler is not available. Two interchanges prior to 1969 survive: 1948 (on Metzler's AEA international trade theory survey article) and 1949-1950 (on Metzler's views on tariffs and the terms of trade).
- <sup>24</sup> Metzler to Lundberg, 6 June 1951 (LMP Box 5).
- <sup>25</sup> Metzler to Huckster, 25 January 1950 (LMP Box 5).
- <sup>26</sup> Zarnowitz (1985, p. 542).
- <sup>27</sup> See Metzler to Abramovitz, 11 January 1951; Abramovitz to Metzler, 16 January 1951; Metzler to Abramovitz, 6 February 1951; and Abramovitz to Metzler, 8 December 1951 (LMP Box 5). On a related issue, Metzler also attempted to revise his inventory cycle theory by incorporating partial inventory adjustment. This research was published in his *Collected Papers* (pp. 428-439).
- <sup>28</sup> Metzler to Abramovitz, 6 February 1951 (LMP Box 5).

- <sup>29</sup> Meade to Metzler, 4 May 1949; Metzler to Meade, 11 July 1949; Meade to Metzler, 20 March 1950; Metzler to Meade, 11 April 1950; Meade to Metzler, 7 June 1950; Metzler to Meade, 26 June 1951 (all correspondence LMP Box 5). Correspondence between the two in the intervening years 1951-1960 is not filed in LMP, although Metzler's 18 May 1960 comment that Meade must be "a little tired of hearing from me so frequently" suggests contact. Two final letters in LMP are Metzler to Meade, 18 May 1960 and Metzler to Meade, 25 July 1960.
- <sup>30</sup> Metzler to Johnson, 26 July 1955; Johnson to Metzler, 11 December 1955; Metzler to Johnson, 12 March 1958; Johnson to Metzler, 11 April 1958 (LMP Box 5).
- <sup>31</sup> Metzler to Johnson, 12 March 1958 (LMP Box 5).
- <sup>32</sup> Johnson to Metzler, 11 April 1958 (LMP Box 5).
- <sup>33</sup> This paper was first delivered before a student-faculty seminar at Massachusetts Institute of Technology, 11 December 1963, and a revised version published in Metzler (1973, pp. 70-94). Metzler (*ibid.*, p. 90) acknowledged the input of Meade and Johnson in his conclusion: "When I first began my examination of the transfer problem, I had no clear idea of the distinction between factor income and national output... Nor did I understand the significance of imported raw materials... It was Meade and Johnson who first called my attention to the complexities which arise when output requires the importation of raw materials and to the necessity of distinguishing between one type of income and another. For this increase in the sophistication of my elementary theory, I am greatly indebted to both these distinguished economists."
- <sup>34</sup> For example, "science consists of the arguments and the evidence that leads other men to accept or reject scientific views" Stigler quoted in Blaug (1990, p. 30).
- <sup>35</sup> Haberler to Metzler, 25 April 1949 (LMP Box 5).
- <sup>36</sup> Metzler to Haberler, 23 May 1949 (LMP Box 5). Both Henry Spiegel and Eli Heckscher pointed out to Metzler difficulties in applying his analysis to Latin American countries (see comment in Metzler to Haberler, 23 May 1949; Heckscher to Metzler, 27 December 1949; LMP Box 5).
- <sup>37</sup> For example, Hansen to Metzler, 25 April 1951 (LMP Box 5).
- <sup>38</sup> Weintraub (1991).
- <sup>39</sup> Samuelson to Metzler, 25 November 1968 (LMP Box 13).
- <sup>40</sup> Horwich and Samuelson (1974, p. xvi).
- <sup>41</sup> See R. Hinshaw to Metzler, 12 January 1948; Metzler to Hinshaw, 26 January 1949 (LMP Box 5). Hinshaw stated that he thought Metzler "would have a splendid opportunity to participate very directly in the formation of Administration policy in the international field" (Hinshaw to Metzler, *ibid.*).

## References

- Blaug, M., 1990, 'On the Historiography of Economics', *Journal of the History of Economic Thought*, 12, Spring, pp. 27-37.
- Horwich, G. and Paul A. Samuelson, (eds), 1974, *Trade, Stability, and Macroeconomics: Essays in Honor of Lloyd A. Metzler*, New York, Academic Press.
- \_\_\_\_\_ and John Pomery, 1987, 'Metzler, Lloyd Appleton', in Eatwell, J Milgate, M and Newman, P (eds) *The New Palgrave: A Dictionary of Economics*, MacMillan, Volume 3, pp. 458-461.
- Metzler, L.A., 1973, *Collected Papers*, Cambridge, Mass., Harvard University Press.
- Niehans, J., 1978, 'Metzler, Wealth, and Macroeconomics: A Review', *Journal of Economic Literature*, XVI, March, pp. 84-95.
- Patinkin, D., 1981, *Essays On and In the Chicago Tradition*, Durham, Duke University Press.
- Samuelson, P.A., 1986, *The Collected Scientific Papers of Paul A. Samuelson Volume V*, K. Crowley (ed), Cambridge, Mass., The MIT Press.
- Weintraub, E.R., 1991, *Stabilizing Dynamics: Constructing Economic Knowledge*, Cambridge, Cambridge University Press.
- Wood, J.H., 1980, 'Metzler on Classical Interest Theory', *American Economic Review*, 70 (1), pp. 135-148.

Zarnowitz, V., 1985, 'Recent Work on Business Cycles in Historical Perspective: A Review of Theories and Evidence', *Journal of Economic Literature*, XXIII, June, pp. 523-580.