Business Cycle Theory: Selected Texts 1860–1939

Saving, Investment and Expectations

Edited by

Mauro Boianovsky

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VOLUME VII

Saving, Investment and Expectations

Routledge
Taylor & Francis Group
LONDON AND NEW YORK

First published 2005 by Pickering & Chatto (Publishers) Limited

Published 2016 by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN
605 Third Avenue, New York, NY 10017

Routledge is an imprint of the Taylor & Francis Group, an informa business

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BRITISH LIBRARY CATALOGUING IN PUBLICATION DATA

Business cycle theory: selected texts, 1860–1939
Part 2
1. Business cycles
I. Boianovsky, Mauro
338.5'42

LIBRARY OF CONGRESS CATALOGUING-IN-PUBLICATION DATA

A catalogue record for this title is available from the Library of Congress

ISBN 13: 978-1-138-75146-0 (hbk)
ISBN-13: 978-1-85196-726-1 (set)

Facsimile cleanup and typesetting by Pickering & Chatto (Publishers) Limited

DOI: 10.4324/9781003549789

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INTRODUCTION

This volume collects classic contributions that approach economic fluctuations from the double perspective of market failures to coordinate the intertemporal decisions of consumers and producers about their saving and investment plans, and of the role of expectations in driving economic – especially investment – decisions. The main concern of most of these texts is not the presentation of a fully worked out explanation of the business cycle in its several phases, but the analysis of the main determinants of economic depressions centred on the saving-investment process and the expectation formation mechanism. Part of that literature was inspired by Knut Wicksell's ([1898] 1936; see also Volume II of this collection) detailed discussion of the macroeconomic consequences of maladjustments of the interest rate, a theme that has been aptly called the 'Wicksell Connection' by Axel Leijonhufvud (1981, chapter 7) and that has made a recent come-back in modern monetary economics (see Woodford 2003). In the same vein, some aspects of the Lavington-Pigou-Keynes's notion that the business cycle is driven by waves of optimism and pessimism have been discussed in the recent literature (see e.g. Howitt and McAfee 1992). The concern with the saving-investment process was already visible in incipient form in Walter Bagehot's writings between the 1850s and the 1870s, as well as in a developed shape (but independently of Wicksell) in the investigations of Frederick B. Hawley and Nicholas Johannsen in the first decade of the 20th century. Much of the material covered in the present volume has been the subject of David Laidler's (1999) magisterial study of the interwar literature on business cycles.

Walter Bagehot's (1826–77)[1] classic 1873 *Lombard Street* is an account of the working of the money market in a gold-standard economy, informed by his position as editor of *The Economist* between 1860 and 1877. Chapter 6 of that book, reproduced here, grew out of Bagehot's dissatisfaction with the treatment of the cyclical succession of 'good and bad times' by mid-century economists. His main concern was the

1 See Buchan (1959) for Bagehot's biographical background.

investigation of the causes behind the oscillations of credit in the English monetary market, and the role of the Bank of England in preventing financial crises. From the theoretical point of view, the business cycle is, according to Bagehot, a manifestation of the role of time in the economic system. This is shown by the gradual 'multiplication' throughout the economy of an autonomous decrease in the production of an important single sector (especially agriculture), and by the faster circulation of goods when the confidence and the 'state of credit' are good (see Hegeland 1954, pp. 3–5). During a depressed period, when prices of agricultural goods are high, the saving flow goes on steadily, which causes a surplus of loanable capital in the form of accumulation of bank gold reserves. Such an accumulation of gold is behind the reduction of interest rates and the rise of the price level in the prosperity phase, but the demand for loanable funds only starts to pick up after an autonomous increase in the production of some trade takes place. As pointed out by Rostow (1948), a recurrent theme in Bagehot's articles in the *Economist*, only partly developed in *Lombard Street*, was the relation between saving and investment, although, in contrast to Wicksell and the macroeconomics of the 1930s, the notion of the demand curve for investment as a negative function of the interest rate was not part of his framework.

The American economist and businessman Frederick B. Hawley's (1843–1929)[1] main contribution to business cycle theory was the concept of the 'period of readjustment' that takes place in depressions. It is defined in chapter 8 (reproduced in this volume) of *Enterprise and the Productive Process* (1907) as the process of falling output until excess aggregate supply is eliminated by the income reduction itself and the economy temporarily settles at less than full employment income level. Hawley based his argument about the equilibration process on the notion that expenditure does not decline to the full extent in which income is reduced, which brings saving into equality with investment and interrupts the contraction in output. Hence, the slope of the consumption function is such that, as real income falls, the forces making for contraction weaken, which prevents a continuously cumulative downward movement in the depression. Hawley had discussed these ideas already in his *Capital and Population* (1882), but it was only in *Enterprise and the Productive Process* that they were fully developed. The upper turning point is explained by the fact that saving tends to exceed investment in the prosperity phase, under the double assumption that the ratio of consumption to income (average propensity to consume)

1 See Bigelow (1932) for Hawley's biographical background.

decreases when income grows and that the investment/income ratio is roughly constant. The concept of the period of readjustment made no impact on the business cycle literature of his time, but the striking similarity between the role of the consumption function – and even the wording of some passages – in Keynes's 1936 *General Theory* and in Hawley suggests that the English economist might have come across *Enterprise and the Productive Process* (see Boianovsky 1996).

Like Hawley, the German-born American economist Nicholas Johannsen (1844–1928)[1] developed his interpretation of the business cycle around the notion that consumption and saving are primarily functions of income. In the 'investment chart' of the circular flow of money and in chapters 3 and 5 of his *A Neglected Point in Connection with Crises* (1908), included in the present volume, Johannsen investigated what happens to unused excess saving in the depression, a topic that had attracted the attention of Bagehot, Tugan-Baranovsky, Spiethoff and Wicksell, among others. However, instead of Hawley's stabilisation mechanism through income changes, Johannsen put forward the concept of 'impair savings' (surplus of planned saving over planned investment) invested by savers in the purchase of assets previously held by economic agents who attempt unsuccessfully to protect themselves from the negative effects of excess aggregate saving on their income and consumption levels (see also Hagemann and Rühl 1987). Furthermore, Johannsen introduced his 'multiplying principle' to show how the existence of impair savings of a certain magnitude brings about a larger reduction in income in the depression through the interaction between different groups of agents until excess saving is eventually absorbed and the contraction process is interrupted (see Hegeland 1954, pp. 5–14). Johannsen's concept of impair savings was discussed by some business cycle theorists at the time (Mitchell 1913, pp. 18–19, 580–1; J. A. Hobson (1910) chapter 18, reproduced in Volume VI of this collection), but his notion of the multiplier mechanism was only appreciated after the full development of the concept in the 1930s by Richard Kahn and other authors.

The Cambridge economist Frederick Lavington (1881–1927)[2] based his interpretation of economic fluctuations on a combination of the expectational element stressed by Alfred Marshall and Mary P. Marshall (1879, reproduced in Volume I of this collection) and Arthur C. Pigou (1912, part 4, chapter 7) together with the essentially endogenous theories of Albert Aftalion ([1908–9] included in Volume VI of

1 See Dorfman (1949, pp. 408–13) for Johannsen's biographical background.
2 See Wright (1927) for Lavington's biographical background.

this collection) and Wesley C. Mitchell (1913). In the three chapters from his *The Trade Cycle* (1922) selected for this volume, Lavington investigated what are the observable factors that determine changes in the level of business confidence and, by that, influence investment in the upward and downward directions (see Haberler 1937, chapter 6). Although expectations may have a rational foundation, it is necessary to introduce errors of optimism and pessimism in order to bring about movements of the economy beyond its equilibrium level. Lavington suggested that isolated 'impulses' are 'propagated' to the rest of the economic system through a cumulative 'contagion of confidence'. The error of optimism affects directly and indirectly (through its influence on credit and therefore on price level changes) the estimates of future demand, especially in the investment sector. The prosperity phase ends when the gestation period of the new capital goods is concluded and entrepreneurs realise that the actual yield of investment is lower than anticipated, which Lavington deemed a more likely cause of the upper turning point than a scarcity of saving. The ensuing contraction of investment in the depression leads to a fall in income and consumption, which reacts back cumulatively on investment and leads to symmetrical errors of pessimism. The downswing is further amplified by the effects on the demand for money of the downward shift of confidence (a topic carefully studied by Lavington in his *The English Capital Market* (1921)) and therefore on aggregate demand.

Lavington's theme was further developed by Arthur C. Pigou (1877–1959)[1] in the chapters from his *Industrial Fluctuations* (1927; revised edition 1929) included in this volume. Pigou's starting point was the assumption that shifts in the (discounted) demand for labour in the short-period are caused mainly through changes in expectations about yield, not by changes in the rate of discount (provoked, in its turn, by changes in the size of the income stream). Variations in profit expectations are set off by impulses which may be of 'real', 'psychological' or 'monetary' kinds. Although Pigou discussed carefully the 'mutual generation of errors of optimism and pessimism' associated with psychological impulses (regarded as his main contribution to business cycle theory; see Haberler 1937, chapter 6; Hansen 1951, pp. 362–8), he did not, in contrast to Lavington, claim that industrial fluctuations would largely disappear if such causes were eliminated; other factors

1 See Robinson (1968) for Pigou's biographical background. Although Pigou (1912) had discussed errors etc., it was only in 1927 that he investigated the business cycle as a whole.

(such as changes in harvests and in money supply) were also important.

Moreover, Pigou assumed that the three sorts of impulses would react upon one another in the course of the cycle. However, the real impulse based on correct expectations cannot (in contrast with the psychological one) account for the turning points in Pigou's business cycle (see Collard 1996). He rejected the argument that generalised errors of forecast are impossible in the sense that widespread wrong expectations about the movement of a variable are necessarily fulfilled through the interaction between agents. Pigou adopted Lavington's distinction between 'impulses' and 'propagation', but he gave those terms a meaning closer to what would become standard in business cycle literature, which he applied to the alternation of optimistic and pessimistic errors that are able to produce cyclical waves because of their mutual generation and the gestation period of capital goods.

Richard F. Kahn's (1905–89)[1] 1931 article 'The Relation of Home Investment to Unemployment', included in this volume, was not a contribution to business cycle theory *per se*, but it provided a new analytical instrument – the multiplier, although the term was not used by him – that would be extensively deployed by other authors in that field. Albeit written within the conceptual framework of Keynes's 1930 *Treatise*, Kahn went beyond Keynes's theory by showing how the 'secondary employment' created by an increase in public works could be expressed as a convergent geometrical series. The multiplier was then derived by summing up this infinite series, based on the assumption that the marginal propensities to import and save are positive. Kahn showed that, contrary to the so-called Treasury view, the funds required to finance the increased employment would be forthcoming as a result of the employment expansion itself (see Patinkin 1982, pp. 197–9; Kahn 1984, fourth lecture). In a comment to Kahn's paper, the Danish economist J. Warming ([1932] 2002) improved the argument by showing that, under the assumption of a marginal propensity to consume less than unit, the multiplier is of such magnitude that the income increase caused by a higher investment level is just enough to bring about the amount of saving that matches investment exactly. Warming's contribution was more than an 'extremely important linguistic breakthrough', as described by Kahn (1984, p. 101), since it pointed the way to Keynes's formulation of the effective demand problem in 1936 (see Cain 1979).

1 See Pasinetti (1994) for Kahn's biographical background.

John M. Keynes (1883–1946) belonged very much to the Cambridge tradition of Marshall-Lavington-Pigou in his writings on economic fluctuations between the 1910s and mid 1920s. However, in his 1930 *A Treatise on Money* Keynes (probably under the influence of Robertson 1926) changed his mind and argued that changes in expectations and confidence are an erroneous explanation of what drives the 'credit cycle' (see Bateman 1996, chapters 4 and 5). Instead, he claimed that economic fluctuations are caused by disequilibria between the market and the Wicksellian 'natural' (which equilibrates saving and investment) rates of interest as revealed by his 'fundamental equations' of changes in prices. Income oscillates around a normal level E, at which investment is equal to saving ($I = S$). Saving S is defined as that part of normal income E which is not consumed. Actual income is equal to the price level times the output of final goods and services O. Therefore, $(I - S)$ indicates how far actual income O departs from the normal income E, according to the equation $O = E + (I - S)$. When I exceeds S there is a boom, the price level goes up, actual income rises above normal income and windfall profits are earned. And vice-versa in the depression. The market rate of interest differs from the equilibrium or natural rate because of the action of bear and bull speculators in the 'financial circulation'. Although these equations provide a description of the business cycle, they do not actually explain it (see Hansen 1951, pp. 335–6; Meltzer 1988, pp. 81–5). Keynes (1930, chapter 18) attempted such an explanation, by discussing the turning points and by associating the length of the boom and of the depression to the gestation period, and to the life time of capital goods plus the duration of contracts in the labour market, respectively. The upper turning point comes about when the increased supply of consumption goods inaugurates the downward price phase of the cycle. Another important factor is the overshooting of the market rate of interest beyond the natural rate due to the end of the bullish unanimity in the financial circulation and the effects of higher money-wages on money demand in industrial circulation.

The 1933 survey of business cycle theory by Alvin H. Hansen and his Minnesota colleague Herbert Tout came out in the new journal *Econometrica*. Hansen and Tout discussed the main novelty in the field at the time, that is, the interpretation of aggregate fluctuations as a result of intertemporal coordination problems. Hansen's own approach to business cycles had been since his *Business-Cycle Theory: Its Development and Present Status* (1927) (see Volume V of this collection) in the continental tradition of Spiethoff, Cassel and Schumpeter, with emphasis on the instability of investment. As pointed out in the

survey, the new literature of the early 1930s added to the discussion the interpretation of the integration of the monetary and real phenomena that are behind economic oscillations. Hansen and Tout focused their survey on Friedrich A. Hayek's *Prices and Production* (1931, first edition; see also Volume II of this collection) and Keynes's *Treatise* (1930), the two main contributors to the saving-investment approach at the time, who, however, reached different conclusions about the nature of the business cycle. According to Hansen and Tout, Keynes's 'fundamental equations' express a truism and, therefore, cannot be used to explain the causal forces at work. In particular, it is not possible, on the basis of the equations, to conclude that the cause of the depression is an excess of saving, since the excess of saving is just a reflection of the fall in prices. The main positive contribution of the *Treatise* to business cycle theory was the clarification of the role played by hoarding (demand for saving deposits) in the determination of the market rate of interest as distinct from the natural rate.

Hansen and Tout's detailed assessment of Hayek's business cycle theory started with a careful statement of the main theses in Hayek's *Prices and Production* (see also Hansen 1951, pp. 384–93). Hayek had claimed that the depression is a shrinkage in the structure of production caused by an interruption of forced saving in the upper turning point. In particular, a permanent lengthening of the process of production through forced saving in the upswing cannot be achieved, because a reversal in the relative prices of capital and consumption goods would come about following a cessation of credit supply growth and the return to previous voluntary saving patterns. Hansen and Tout rejected the thesis that depressions are necessarily associated with negative net investment, as well as the 'paradoxical' notion that a general increase in the demand for consumers' goods should have an adverse influence on the production of capital goods in general. Their most powerful criticism, however, was that it was theoretically conceivable that the supply of credit could continue to grow at a steady rate indefinitely, thus maintaining a persistent forced saving and robbing Hayek of his explanation of the upper turning point.

Keynes did not react to Hansen and Tout's survey, since by 1933 he was already following a different path that would lead to his 1936 *General Theory*. Friedrich A. Hayek (1899–1992),[1] on the other hand, reacted strongly in a reply the year after in *Econometrica* (reproduced below; appended to the second 1935 edition of *Prices and Production*), which provided the most vigorous attempt to defend his point that forced

1 See Caldwell (2004) for Hayek's biographical background.

saving could not render viable a permanent change in the intertemporal production structure. In particular, Hayek had to show that the new roundabout methods of production have not been brought to completion when credit expansion is interrupted. Hayek claimed in his reply that merely a steady rate of credit growth and inflation is not enough to maintain a constant rate of forced saving and lengthening of the production structure; it is necessary to expand credit at an increasing rate, which would be accompanied by the acceleration of the rate of price increase and the danger of collapse of the monetary system. However, Hayek's 1934 argument conceded that a steady rate of credit expansion and inflation, although unable to produce an increasing capital stock, could be enough to bring about a discrete permanent increase (see Laidler 1999, pp. 45–6). Furthermore, Hayek tried without success to counterattack a corollary of Hansen and Tout's criticism, that is, the rejection of the 'neutral money' view that monetary expansion must bring about inflation and produce a rate of capital formation in excess of the maintainable rate even in a growing economy. Hayek was more successful in his argument that the apparent paradox – that an increase in demand for consumers' goods should affect negatively the production of capital goods – could be explained under the double assumption that full employment prevails and that the demand for consumers' goods rises relatively to the demand for capital goods (see Haberler 1937, pp. 47–53).

Dennis H. Robertson's 1934 article 'Industrial Fluctuation and the Natural Rate of Interest' included here represents the culmination of his interpretation of economic fluctuations developed since his *A Study of Industrial Fluctuation* (1915, see Volume V of this collection). The article introduced the diagrammatic representation of the market for loanable funds and brought out for the first time the connection between the twin notions of a natural rate of interest and a natural (or normal) rate of unemployment, which equilibrate the market for goods and the market for labour respectively (see Boianovsky and Presley 2002). Robertson's (1926, 1933) dynamic method was based on period analysis, also known as the 'step-by-step approach'. He assumed the existence of a period of time, called a 'day', which is finite but nevertheless so short that the income which an individual receives on a given day can only be spent or saved in the next unit period – the 'Robertsonian lag'. The normal or equilibrium level of employment is positive because the curve of investment demand shifts upwards and downwards over the business cycle, due to the combined effects of productivity shocks and the accelerator mechanism.

The central message of the 1934 article is that convergence to the equilibrium rate of unemployment depends on the strength of the forces that bring the bank rate of interest to its 'natural' level. Starting from a long-period equilibrium position, a shift upwards in the curve of demand for investment brings about monetary disequilibrium and rising prices. Given the 'Robertsonian lag', forced saving comes about because consumption by the public is below its expected value ('automatic lacking'), and because individuals seek to restore the real value of their money balances ('induced lacking'). Another source of forced saving is provided by the distortion of contracts in the labour market, which causes a displacement of the saving curve. Robertson coined the phrase 'quasi-natural rate of interest' to describe the rate that would equilibrate saving and investment under the new conditions. This 'quasi-equilibrium' is temporary though, since excess demand for labour will provoke an increase in money-wages in the next period and shift the saving curve back. In the meantime, capital accumulation will reduce the marginal productivity of capital and cause a displacement downwards of the investment curve. The ensuing process of falling prices in the depression phase is accompanied by symmetrical effects ('dislacking' and a shift to the left of the saving curve), with the bank rate of interest following the new quasi-natural rate with a lag.

The proliferation of divergent views about the causes of economic fluctuations was tackled by Gottfried Haberler in his 'Some Reflections on the Present State of Business Cycle Theory' (1936) reproduced below. Haberler's article was a preview of his classic survey *Prosperity and Depression* published by the League of Nations in 1937 (see Volume VI of this collection; and Boianovsky 2000). It conveys in a nutshell the central message of that book, that is, the idea that it is possible to combine seemingly conflicting theories to explain the different phases of the business cycle. According to Haberler, there was considerable agreement about the cumulative processes of expansion and contraction. The main area of disagreement was the explanation of the upper turning point. Haberler dismissed Ralph G. Hawtrey's purely monetary theory (see Volume III of this collection) for neglecting the central role of intertemporal coordination problems. Most of the debate was organised around what Haberler called 'vertical' maladjustments in the structure of production, which included undersaving and oversaving as rival explanations of the breakdown of the boom. The former states that the investment boom collapses because the supply of capital becomes too small to complete the new roundabout processes of production, whereas the latter claims that the breakdown comes about because consumers' demand is insufficient to sustain the increased

productive capacity. The choice among alternative theories was made difficult by the fact that there was no single unfailing statistical test able to sort out valid from invalid explanations of the upper tuning point, as Haberler was aware.

The publication of John M. Keynes's *The General Theory of Employment, Interest and Money* in 1936 changed the terms of the debate in macroeconomics in general and in business cycle theory in particular. Although not primarily concerned with the cyclical character of economic activity as such (in contrast with his 1930 *Treatise*), the *General Theory* had important implications for the development of business cycle theory (see L. Metzler 1947; Patinkin 1982, chapter 1). The 'equilibrium' level of output, around which the economy tends to oscillate, was defined by Keynes as the level of income at which saving and investment are made equal through changes in income itself (due to a marginal propensity to consume less than unit), not as the full-employment level as in much of the former business cycle literature. In chapter 22 of his book Keynes discussed the implications of his *General Theory* for the interpretation of economic fluctuations. Some factors mentioned before in the *Treatise* are still present (e.g. the gestation period of capital goods) while others are dismissed (e.g. the pivotal role of changes in the interest rate). Crises are caused by the collapse of profit expectations, explained by the negative effects of an increasing capital stock on (over-optimistic) long-term expectations of demand, and by the downfall of stock market prices followed by a rise in liquidity preference.[1] The duration of the cyclical downswing is explained by the length of life of durable capital goods and by the carrying-costs of surplus stocks of unfinished goods (see Hansen 1951, pp. 336–46; Chick 1983, chapter 16). Keynes's concern with severe depressions, characterised by an abrupt collapse of investment and a fall in the stock of capital, reflected his effort to interpret historical episodes of major depressions such as the early 1930s (see Zarnowitz 1985, pp. 535–7).

While most of the business cycle literature discussed the theme of expectations mainly in connection with the saving-investment process, the English economist D. G. Champernowne (1912–2000)[2] focused on the role of price-expectations for the formation of real wages and the determination of employment in the labour market. His 1936 article

1 Bateman (1996) points out that Keynes came back to the theme of expectations because of policy debates and the poor performance of financial markets in the early 1930s.

2 See Harcourt (2001) for Champernowne's biographical background.

included in this volume advanced the notion that the economy oscillates around its 'basic rate of unemployment', a concept very close to Milton Friedman's (1968) later 'natural rate of unemployment' (see Boianovsky, forthcoming, 2005). Champernowne suggested that Keynes's (1936) assumption that workers are more sensitive to changes in money-wage rates than to changes in prices only applies in the short run. As time goes by, workers realise that prices are changing and adjust their money-wage claims accordingly. When there are no unanticipated price changes, the economy will settle at the 'basic rate of unemployment' decided by the equilibrium between the curves supply and demand of labour written as functions of real wages only. Champernowne pointed out that real wages will move in the same direction as money-wages only if aggregate demand changes in the process. A crucial element in Champernowne's analysis is the argument that the central bank will eventually change the rate of interest as a reaction to accelerating inflation (and deflation) when the unemployment rate diverges from its basic level, which will turn movements in money-wages into corresponding movements in real wages and bring employment back to its 'basic' level.

Keynes's 1936 tentative notes on the trade cycle did not attract the attention of the macroeconomic literature at the time, in contrast to the analysis of the determination of the equilibrium income level in the rest of the book. This is clear in Bertil Ohlin's (1899–1979)[1] 1937 article selected for this volume, which claimed that the dynamic approach of the 'Stockholm Theory' (as called by Ohlin) is better suited to investigate fluctuations through time in the price level and output than Keynes's essentially static formulation. According to Ohlin, the main feature of the Swedish approach to macroeconomics, from Wicksell to Lindahl and Myrdal, was the introduction of dynamic methods to analyse processes in which disequilibria between *ex ante* decisions to save and to invest provoke unexpected changes in income and prices that bring about equality between saving and investment *ex post*. As mentioned by Ohlin, Erik Lundberg's *Studies in the Theory of Economic Expansion* (1937, see Volume V of this collection) showed how that approach could be used to build a model of the business cycle. Before that, Ohlin (1934) had contributed a discussion of processes of contraction and expansion in his report to the Swedish Unemployment Committee (see Brems 1978). Chapters 1 and 2 of that study form the basis for part I of the 1937 'Some Notes on the Stockholm Theory of Savings and Investment', where Ohlin discussed how differences

1 See Samuelson (1981) for Ohlin's biographical background.

between aggregate demand and supply in the current period involve changes in both quantity and prices, which affect price and income expectations in the next period. In particular, he pointed out that autonomous changes in consumers' demand could be a source of disequilibrium, even if saving and investment are equal *ex ante*. Moreover, investment is endogenous in the sequence process, as illustrated by Ohlin's (1934, chapter 3) use of the multiplier–accelerator interaction to explain the end of the expansion period. This is reflected in Ohlin's dismissal of Keynes's equilibrium analysis of the multiplier for overlooking the feedback effect of output changes on profit expectations and investment. However, the indetermination of the final outcome of different sequence processes was often a weakness of Ohlin's approach to business cycles.

Richard F. Kahn's critical review (1937) of Haberler, reproduced in this volume, illustrates how difficult it was to reach a consensus in business cycle theory in the 1930s. Kahn was critical of Haberler's notion – which represented the view of many macroeconomists – that business cycle theory should be built on the disequilibrium between saving and investment and its consequences for movements of prices, output and the rate of interest. Kahn invoked his own multiplier theory, as further developed by Keynes, to argue that the concepts of 'forced saving' and 'hoarding' cannot be substantiated, and that the rate of interest is determined separately by liquidity preference. He suggested that 'oversaving' should be understood as a propensity to save too high to generate full-employment income when investment is at a low level, not as excess of saving over investment as in Haberler. Moreover, Haberler's discussion of aggregate demand in terms of the quantity theory of money tradition was rejected by Kahn, who claimed that Haberler's treatment of hoarding as a fall in the velocity of circulation of money was quite different from and inferior to Keynes's discussion of the effects on income of shifts in liquidity preference. The lack of precise implications of Haberler's 1937 report for economic policy was also picked out by Kahn, especially the fact that the book provided no clear-cut answer to the 'critical question' whether an increase or decrease of saving would prevent a depression.

Haberler (1938) reacted to Kahn's criticism, but it was in the new chapter 8 added to the second 1939 edition of *Prosperity and Depression* that he tried to come to terms with the relation between Keynesian analysis and the rest of the business cycle literature. In the chapter's sections included in this volume Haberler argued that Keynes's theory, in contrast to most business cycle theories, was an essentially static macroeconomic representation of the general equilibrium of the econ-

omy. Although the *General Theory* did not solve the riddle of the business cycle, it was not incompatible with the theories of the cycle examined in Haberler's book, in the sense that those theories could be expressed in Keynesian language. The only apparent exception was Keynes's notion of unemployment equilibrium, but Haberler claimed that there is no such position once the effects of wage reductions on liquidity and, therefore, on investment and consumption are taken into account. Haberler's chapter also provided an illuminating survey of the different notions of investment and saving by Robertson, the Swedes, and Keynes. Haberler preferred Robertson's period analysis and was critical of Keynes's contradictory claims, on one side, that changes in income (instead of the interest rate) ensure equality between saving and investment and, on the other, that saving and investment are identically defined. More generally, Haberler criticised the emphasis by both Keynes and the Stockholm theory on expectations, since it is not explained how expectations are formed in the first place.

REFERENCES

Bateman, B. (1996), *Keynes's Uncertain Revolution*, Ann Arbor: University of Michigan Press.

Bigelow, K. (1932), 'Hawley, Frederick Barnard' in vol. 7 of *Encyclopaedia of Social Sciences*, London: Macmillan.

Boianovsky, M. (1996), 'Anticipations of the General Theory: the Case of F. B. Hawley', *History of Political Economy*, 28, pp. 371–90.

Boianovsky, M. (2000), 'In Search of a Canonical History of Macroeconomics in the Interwar Period: Haberler's *Prosperity and Depression* Revisited' in M. Psalidopoulos (ed.), *The Canon in the History of Economics*, London: Routledge, chapter 9.

Boianovsky, M. (2005), 'Some Cambridge Reactions to the General Theory: David Champernowne and Joan Robinson on Full Employment', *Cambridge Journal of Economics*, 29 (forthcoming).

Boianovsky, M. and Presley, J. R. (2002), 'On the Natural Rates of Unemployment and Interest: the Robertson Connection', Research Paper # 8, Loughborough University: Department of Economics.

Brems, H. (1978), 'What was New in Ohlin's 1933–34 Macroeconomics?', *History of Political Economy*, 10, pp. 398–412.

Buchan, A. (1959), *The Spare Chancellor. The Life of Walter Bagehot*, London: Chatto & Windus.

Cain, N (1979), Cambridge and its Revolution: a Perspective on the Multiplier and Effective Demand, *Economic Record*, 55, pp. 108–17.
Caldwell, B. (2004), *Hayek's Challenge – An Intellectual Biography of F. A.Hayek*, Chicago: University of Chicago Press.
Chick, V. (1983), *Macroeconomics After Keynes*, Cambridge, MA: MIT Press.
Collard, D. (1996), 'Pigou and Modern Business Cycle Theory', *Economic Journal*, 106, pp. 912–24.
Dorfman, J. (1949), *The Economic Mind in American Civilization*, vol. 3, New York: Viking.
Friedman, M. (1968), 'The Role of Monetary Policy', *American Economic Review*, 58, pp. 1–19.
Haberler, G. (1937). *Prosperity and Depression.* Geneva: League of Nations.
Haberler, G. (1938), 'Some Comments on Mr. Kahn's Review of *Prosperity and Depression*', *Economic Journal*, 48, pp. 322–33.
Hagemann, H. and Rühl, C. (1987), 'Nicholas Johannsen's Early Analysis of the Saving-Investment Process and the Multiplier', *Studi Economici*, 42, pp. 99–143.
Hansen, A. H. (1951), *Business Cycle and National Income*, New York: Norton.
Harcourt, G. C. (2001), 'David Gawen Champernowne, 1912–2000: In Appreciation', *Cambridge Journal of Economics*, 25, pp. 439–42.
Hawley, F. B. (1882), *Capital and Population*, New York: D. Appleton & Co.
Hegeland, H. (1954), *The Multiplier Theory*, Lund: C.W.K. Gleerup.
Howitt, P. and McAfee, R. P. (1992), 'Animal Spirits', *American Economic Review*, 82, pp. 493–507.
Kahn, R. F. (1984), *The Making of Keynes' General Theory*, Cambridge: Cambridge University Press for the Raffaele Mattioli Foundation.
Keynes, J. M. (1930), *A Treatise on Money*, 2 vols, London: Macmillan.
Keynes, J. M. (1936), *The General Theory of Employment, Interest and Money*, London: Macmillan.
Laidler, D. (1999), *Fabricating the Keynesian Revolution*, Cambridge University Press.
Lavington, F. (1921), *The English Capital Market*, London: Methuen.
Leijonhufvud, A. (1981), 'The Wicksell Connection: Variations on a Theme' in A. Leijonhufvud, *Information and Coordination – Essays in Macroeconomics*, New York: Oxford University Press, chapter 7.
Meltzer, A. H. (1988), *Keynes' Monetary Theory – A Different Interpretation*, Cambridge: Cambridge University Press.

Metzler, L. (1947), 'Keynes and the Theory of the Business Cycle' in S. E. Harris (ed.), *The New Economics*, New York: Alfred Knopf, chapter 33.

Mitchell, W. C. (1913), *Business Cycles*, Berkeley: University of California Press.

Ohlin, B. (1934), *Penningpolitik, offentliga arbeten, subventioner och tullar som medel mot arbetslöshet. Bidrag till expansionens teori*, Stockholm: Statens offentliga utredningar.

Pasinetti, L. (1994), 'Richard Kahn, 10 August 1905 – 6 June 1989', *Cambridge Journal of Economics*, 18, pp. 3–6.

Patinkin, D. (1982), *Anticipations of the General Theory?*, Oxford: Basil Blackwell.

Pigou, A. C. (1912), *Wealth and Welfare*, London: Macmillan.

Robertson, D. H. (1926), *Banking Policy and the Price Level*, London: P. S. King & Son.

Robertson, D. H. (1933), 'Saving and Hoarding', *Economic Journal*, 43, pp. 399–413.

Robinson, A. (1968), 'Pigou, Arthur Cecil' in *International Encyclopaedia of Social Sciences*, vol. 12, London: Macmillan.

Rostow, W. W. (1948), 'Bagehot and the Trade Cycle' in W. W. Rostow, *British Economy of the Nineteenth Century*, Oxford: Clarendon Press, chapter 8.

Samuelson, P. A. (1981), 'Bertil Ohlin (1899–1979)', *Scandinavian Journal of Economics*, 83, pp. 355–71.

Warming, J. (1932), 'International Difficulties Arising Out of the Financing of Public Works During Depressions', *Economic Journal*, 42, pp. 211–24. Reproduced in R. Dimand (ed.) (2002), *Origins of Macroeconomics*, vol. 2, London: Routledge, chapter 24.

Wicksell, K. ([1898] 1936), *Interest and Prices.* Trans. by R. F. Kahn, London: Macmillan.

Woodford, M. (2003), *Interest and Prices*, Princeton: Princeton University Press.

Wright, H. (1927), 'Frederick Lavington', *Economic Journal*, 37, pp. 503–5.

Zarnowitz, V. (1985), Recent Works on Business Cycles in Historical Perspective: A Review of Theories and Evidence', *Journal of Economic Literature*, 23, pp. 523–80.

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Volume VII
Saving, Investment and Expectations

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Bagehot

from *Lombard Street*

Walter Bagehot, 'Why Lombard Street is Often Very Dull and Sometimes Extremely Excited' in *Lombard Street; a Description of the Money Market* (London: John Murray, [1873] 1931), pp. 118–52.

DOI: 10.4324/9781003549789-1

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CHAPTER VI

WHY LOMBARD STREET IS OFTEN VERY DULL, AND SOMETIMES EXTREMELY EXCITED

ANY sudden event which creates a great demand for actual cash may cause, and will tend to cause, a panic in a country where cash is much economised, and where debts payable on demand are large. In such a country an immense credit rests on a small cash reserve, and an unexpected and large diminution of that reserve may easily break up and shatter very much, if not the whole, of that credit. Such accidental events are of the most various nature: a bad harvest, an apprehension of foreign invasion, the sudden failure of a great firm which everybody trusted, and many other similar events, have all caused a sudden demand for cash. And some writers have endeavoured to classify panics according to the nature of the particular accidents producing them. But little, however, is, I believe, to be gained by such classifications. There is little difference in the effect of one accident and another upon our credit system. We must be prepared

DOI: 10.4324/9781003549789-2

for all of them, and we must prepare for all of them in the same way—by keeping a large cash reserve.

But it is of great importance to point out that our industrial organisation is liable not only to irregular external accidents, but likewise to regular internal changes; that these changes make our credit system much more delicate at some times than at others; and that it is the recurrence of these periodical seasons of delicacy which has given rise to the notion that panics come according to a fixed rule,—that every ten years or so we must have one of them.

Most persons who begin to think of the subject are puzzled on the threshold. They hear much of "good times" and "bad times," meaning by "good" times in which nearly every one is very well off, and by "bad" times in which nearly every one is comparatively ill off. And at first it is natural to ask why should everybody, or almost everybody, be well off together? Why should there be any great tides of industry, with large diffused profit by way of flow, and large diffused want of profit, or loss, by way of ebb? The main answer is hardly given distinctly in our common books of political economy. These books do not tell you what is the fund out of which large general profits are paid in good times, nor do they explain why that fund is not available for the same purpose in bad times.

Our current political economy does not sufficiently take account of *time* as an element in trade operations; but as soon as the division of labour has once established itself in a community, two principles at once begin to be important, of which time is the very essence. These are—

First. That as goods are produced to be exchanged, it is good that they should be exchanged as quickly as possible.

Secondly. That as every producer is mainly occupied in producing what others want, and not what he wants himself, it is desirable that he should always be able to find, without effort, without delay, and without uncertainty, others who want what he can produce.

In themselves these principles are self-evident. Every one will admit it to be expedient that all goods wanting to be sold should be sold as soon as they are ready; that every man who wants to work should find employment as soon as he is ready for it. Obviously also, as soon as the "division of labour" is really established, there is a difficulty about both of these principles. A produces what he thinks B wants, but it may be a mistake, and B may not want it. A may be able and willing to produce what B wants, but he may not be able to find B—he may not know of his existence.

The general truth of these principles is obvious,

but what is not obvious is the extreme greatness of their effects. Taken together, they make the whole difference between times of brisk trade and great prosperity, and times of stagnant trade and great adversity, so far as that prosperity and that adversity are real and not illusory. If they are satisfied, every one knows whom to work for, and what to make, and he can get immediately in exchange what he wants himself. There is no idle labour and no sluggish capital in the whole community, and, in consequence, all which can be produced is produced, the effectiveness of human industry is augmented, and both kinds of producers—both capitalists and labourers—are much richer than usual, because the amount to be divided between them is also much greater than usual.

And there is a partnership in industries. No single large industry can be depressed without injury to other industries; still less can any great group of industries. Each industry when prosperous buys and consumes the produce probably of most (certainly of very many) other industries, and if industry A fail and is in difficulty, industries B, and C, and D, which used to sell to it, will not be able to sell that which they had produced in reliance on A's demand, and in future they will stand idle till industry A recovers, because in default of A there will be no one to buy the

commodities which they create. Then as industry B buys of C, D, etc., the adversity of B tells on C, D, etc., and as these buy of E, F, etc., the effect is propagated through the whole alphabet. And in a certain sense it rebounds. Z feels the want caused by the diminished custom of A, B, and C, and so it does not earn so much; in consequence, it cannot lay out as much on the produce of A, B, and C, and so these do not earn as much either. In all this money is but an instrument. The same thing would happen equally well in a trade of barter, if a state of barter on a very large scale were not practically impossible, on account of the time and trouble which it would necessarily require. As has been explained, the fundamental cause is that under a system in which every one is dependent on the labour of every one else, the loss of one spreads and multiplies through all, and spreads and multiplies the faster the higher the previous perfection of the system of divided labour, and the more nice and effectual the mode of interchange. And the entire effect of a depression in any single large trade requires a considerable *time* before it can be produced. It has to be propagated, and to be returned through a variety of industries, before it is complete. Short depressions, in consequence, have scarcely any discernible consequences; they are over before we think of their effects. It is only in the case of continuous and considerable

depressions that the cause is in action long enough to produce discernible effects.

The most common, and by far the most important, case where the depression in one trade causes depression in all others, is that of depressed agriculture. When the agriculture of the world is ill off, food is dear. And as the amount of absolute necessaries which a people consumes cannot be much diminished, the additional amount which has to be spent on them is so much subtracted from what used to be spent on other things. All the industries, A, B, C, D, up to *Z*, are somewhat affected by an augmentation in the price of corn, and the most affected are the large ones, which produce the objects in ordinary times most consumed by the working classes. The clothing trades feel the difference at once, and in this country the liquor trade (a great source of English revenue) feels it almost equally soon. Especially when for two or three years harvests have been bad, and corn has long been dear, every industry is impoverished, and almost every one, by becoming poorer, makes every other poorer too. All trades are slack from diminished custom, and the consequence is a vast stagnant capital, much idle labour, and a greatly retarded production.

It takes two or three years to produce this full calamity, and the recovery from it takes two

or three years also. If corn should long be cheap, the labouring classes have much to spend on what they like besides. The producers of those things become prosperous, and have a greater purchasing power. They exercise it, and that creates in the class they deal with another purchasing power, and so all through society. The whole machine of industry is stimulated to its maximum of energy, just as before much of it was slackened almost to its minimum.

A great calamity to any great industry will tend to produce the same effect, but the fortunes of the industries on which the wages of labour are expended are much more important than those of all others, because they act much more quickly upon a larger mass of purchasers. On principle, if there was a perfect division of labour, every industry would have to be perfectly prosperous in order that any one might be so. So far, therefore, from its being at all natural that trade should develop constantly, steadily, and equably, it is plain, without going farther, from theory as well as from experience, that there are inevitably periods of rapid dilatation, and as inevitably periods of contraction and of stagnation.

Nor is this the only changeable element in modern industrial societies. Credit — the disposition of one man to trust another—is singularly varying. In England, after a great calamity,

everybody is suspicious of everybody; as soon as that calamity is forgotten, everybody again confides in everybody. On the Continent there has been a stiff controversy as to whether credit should or should not be called "capital": in England, even the little attention once paid to abstract economics is now diverted, and no one cares in the least for refined questions of this kind; the material practical point is that, in M. Chevalier's language, credit is "additive," or additional—that is, in times when credit is good productive power is more efficient, and in times when credit is bad productive power is less efficient. And the state of credit is thus influential, because of the two principles which have just been explained. In a good state of credit, goods lie on hand a much less time than when credit is bad; sales are quicker; intermediate dealers borrow easily to augment their trade, and so more and more goods are more quickly and more easily transmitted from the producer to the consumer.

These two variable causes are causes of real prosperity. They augment trade and production, and so are plainly beneficial, except where by mistake the wrong things are produced, or where also by mistake misplaced credit is given, and a man who cannot produce anything which is wanted gets the produce of other people's labour upon a

false idea that he will produce it. But there is another variable cause which produces far more of apparent than of real prosperity and of which the effect is in actual life mostly confused with those of the others.

In our common speculations we do not enough remember that interest on money is a refined idea, and not a universal one. So far indeed is it from being universal, that the majority of saving persons in most countries would reject it. Most savings in most countries are held in hoarded specie. In Asia, in Africa, in South America, largely even in Europe, they are thus held, and it would frighten most of the owners to let them out of their keeping. An Englishman—a modern Englishman at least—assumes as a first principle that he ought to be able to "put his money into something safe that will yield 5 per cent.;" * but most saving persons in most countries are afraid to "put their money" into anything. Nothing is safe to their minds; indeed, in most countries, owing to bad government and a backward industry, no investment, or hardly any, really is safe. In most countries most men are content to forego interest; but in more advanced countries, at some times there are more savings seeking investment than there are known investments for; at other times there is no

* Something safe that will yield 4 to 4½ per cent. would better represent the ideal now.

such superabundance. Lord Macaulay has graphically described one of the periods of excess. He says:—"During the interval between the Restoration and the Revolution the riches of the nation had been rapidly increasing. Thousands of busy men found every Christmas that, after the expenses of the year's housekeeping had been defrayed out of the year's income, a surplus remained; and how that surplus was to be employed was a question of some difficulty. In our time, to invest such a surplus, at something more than 3 per cent., on the best security that has ever been known in the world, is the work of a few minutes. But in the seventeenth century, a lawyer, a physician, a retired merchant, who had saved some thousands, and who wished to place them safely and profitably, was often greatly embarrassed. Three generations earlier, a man who had accumulated wealth in a profession generally purchased real property, or lent his savings on mortgage. But the number of acres in the kingdom had remained the same; and the value of those acres, though it had greatly increased, had by no means increased so fast as the quantity of capital which was seeking for employment. Many too wished to put their money where they could find it at an hour's notice, and looked about for some species of property which could be more readily transferred than a house or a field. A capitalist might lend on bottomry or on

personal security; but, if he did so, he ran a great risk of losing interest and principal. There were a few joint stock companies, among which the East India Company held the foremost place; but the demand for the stock of such companies was far greater than the supply. Indeed the cry for a new East India Company was chiefly raised by persons who had found difficulty in placing their savings at interest on good security. So great was that difficulty that the practice of hoarding was common. We are told that the father of Pope, the poet, who retired from business in the City about the time of the Revolution, carried to a retreat in the country a strong box containing near twenty thousand pounds, and took out from time to time what was required for household expenses; and it is highly probable that this was not a solitary case. At present the quantity of coin which is hoarded by private persons is so small, that it would, if brought forth, make no perceptible addition to the circulation. But, in the earlier part of the reign of William the Third, all the greatest writers on currency were of opinion that a very considerable mass of gold and silver was hidden in secret drawers and behind wainscots.

"The natural effect of this state of things was that a crowd of projectors, ingenious and absurd, honest and knavish, employed themselves in devising new schemes for the employment of

redundant capital. It was about the year 1688 that the word 'stockjobber' was first heard in London. In the short space of four years a crowd of companies, every one of which confidently held out to subscribers the hope of immense gains, sprang into existence—the Insurance Company, the Paper Company, the Lutestring Company, the Pearl Fishery Company, the Glass Bottle Company, the Alum Company, the Blythe Coal Company, the Swordblade Company. There was a Tapestry Company, which would soon furnish pretty hangings for all the parlours of the middle class, and for all the bedchambers of the higher. There was a Copper Company, which proposed to explore the mines of England, and held out a hope that they would prove not less valuable than those of Potosi. There was a Diving Company, which undertook to bring up precious effects from shipwrecked vessels, and which announced that it had laid in a stock of wonderful machines resembling complete suits of armour. In front of the helmet was a huge glass eye like that of a Cyclops; and out of the crest went a pipe through which the air was to be admitted. The whole process was exhibited on the Thames. Fine gentlemen and fine ladies were invited to the show, were hospitably regaled, and were delighted by seeing the divers in their panoply descend into the river and return laden with old iron and ship's tackle. There was a

Greenland Fishing Company which could not fail to drive the Dutch whalers and herring busses out of the Northern Ocean. There was a Tanning Company, which promised to furnish leather superior to the best that was brought from Turkey or Russia. There was a society which undertook the office of giving gentlemen a liberal education on low terms, and which assumed the sounding name of the Royal Academies Company. In a pompous advertisement it was announced that the directors of the Royal Academies Company had engaged the best masters in every branch of knowledge, and were about to issue twenty thousand tickets at twenty shillings each. There was to be a lottery—two thousand prizes were to be drawn; and the fortunate holders of the prizes were to be taught, at the charge of the Company, Latin, Greek, Hebrew, French, Spanish, conic sections, trigonometry, heraldry, japanning, fortification, bookkeeping, and the art of playing the theorbo."

The panic was forgotten till Lord Macaulay revived the memory of it. But, in fact, in the South Sea Bubble, which has always been remembered, the form was the same, only a little more extravagant; the companies in that mania were for objects such as these:—"'Wrecks to be fished for on the Irish Coast—Insurance of Horses and other Cattle (two millions) — Insurance of Losses by Servants—To make Salt Water Fresh—For building

of Hospitals for Bastard Children—For building of Ships against Pirates—For making of Oil from Sun-flower Seeds—For improving of Malt Liquors —For recovery of Seamen's Wages—For extracting of Silver from Lead—For the transmuting of Quicksilver into a malleable and fine Metal—For making of Iron with Pit-coal—For importing a Number of large Jack Asses from Spain—For trading in Human Hair—For fatting of Hogs—For a Wheel of Perpetual Motion.' But the most strange of all, perhaps, was 'For an Undertaking which shall in due time be revealed.' Each subscriber was to pay down two guineas, and hereafter to receive a share of one hundred, with a disclosure of the object; and so tempting was the offer, that 1000 of these subscriptions were paid the same morning, with which the projector went off in the afternoon." In 1825 there were speculations in companies nearly as wild, and just before 1866 there were some of a like nature, though not equally extravagant. The fact is, that the owners of savings not finding, in adequate quantities, their usual kind of investments, rush into anything that promises speciously, and when they find that these specious investments can be disposed of at a high profit, they rush into them more and more. The first taste is for high interest, but that taste soon becomes secondary. There is a second appetite

for large gains to be made by selling the principal which is to yield the interest. So long as such sales can be effected the mania continues; when it ceases to be possible to effect them, ruin begins.

So long as the savings remain in possession of their owners, these hazardous gamblings in speculative undertakings are almost the whole effect of an excess of accumulation over tested investment. Little effect is produced on the general trade of the country. The owners of the savings are too scattered and far from the market to change the majority of mercantile transactions. But when these savings come to be lodged in the hands of bankers, a much wider result is produced. Bankers are close to mercantile life; they are always ready to lend on good mercantile securities; they wish to lend on such securities a large part of the money entrusted to them. When, therefore, the money so entrusted is unusually large, and when it long continues so, the general trade of the country is, in the course of time, changed. Bankers are daily more and more ready to lend money to mercantile men; more is lent to such men; more bargains are made in consequence; commodities are more sought after; and, in consequence, prices rise more and more.

The rise of prices is quickest in an improving state of credit. Prices in general are mostly

determined by wholesale transactions. The retail dealer adds a percentage to the wholesale prices, not, of course, always the same percentage, but still mostly the same. Given the wholesale price of most articles, you can commonly tell their retail price. Now wholesale transactions are commonly not cash transactions, but bill transactions. The duration of the bill varies with the custom of the trade; it may be two, three months, or six weeks, but there is always a bill. Times of good credit mean times in which the bills of many people are taken readily; times of bad credit, times when the bills of much fewer people are taken, and even of those suspiciously. In times of good credit there are a great number of strong purchasers, and in times of bad credit only a smaller number of weak ones; and, therefore, years of improving credit, if there be no disturbing cause, are years of rising price, and years of decaying credit years of falling price.

This is the meaning of the saying, "John Bull can stand many things, but he cannot stand two per cent.:" it means that the greatest effect of the three great causes is nearly peculiar to England; here, and here almost alone, the excess of savings over investments is deposited in banks; here, and here only, is it made use of so as to affect trade at large; here, and here only, are prices gravely affected. In these circumstances, a low

rate of interest, long protracted, is equivalent to a total depreciation of the precious metals. In his book on the effect of the great gold discoveries, Professor Jevons showed, and so far as I know was the first to show, the necessity of eliminating these temporary changes of value in gold before you could judge properly of the permanent depreciation. He proved, that in the years preceding both 1847 and 1857 there was a general rise of prices; and in the years succeeding these years, a great fall. The same might be shown of the years before and after 1866, *mutatis mutandis*.

And at the present moment we have a still more remarkable example, which was thus analysed in the *Economist* of the 30th December, 1871, in an article which I venture to quote as a whole:—

"THE GREAT RISE IN THE PRICE OF COMMODITIES.

"Most persons are aware that the trade of the country is in a state of great activity. All the usual tests indicate that—the state of the Revenue, the Bankers' Clearing-house figures, the returns of exports and imports are all plain, and all speak the same language. But few have, we think, considered one most remarkable feature of the present time, or have sufficiently examined its consequences. That feature is the great rise in the price of most of the leading articles of trade

during the past year. We give at the foot of this paper a list of articles, comprising most first-rate articles of commerce, and it will be seen that the rise of price, though not universal and not uniform, is nevertheless very striking and very general. The most remarkable cases are—

		January. £	s.	d.	December. £	s.	d.
Wool—South Down hogs	per pack	13	0	0	21	15	0
Cotton—Upland ordinary	per lb.	0	0	7¼	0	0	8⅜
No. 40 mule yarn, etc.	„	0	1	1½	0	1	2½
Iron—Bars, British . . .	per ton	7	2	6	8	17	6
Pig, No. 1 Clyde . . .	„	2	13	3	3	16	0
Lead	„	18	7	6	19	2	6
Tin	„	137	0	0	157	0	0
Copper—Sheeting . . .	„	75	10	0	95	0	0
Wheat (GAZETTE average)	per qr.	2	12	0	2	15	8

—and in other cases there is a tendency upwards in price much more often than there is a tendency downwards.

"This general rise of price must be due either to a diminution in the supply of the quoted articles, or to an increased demand for them. In some cases there has no doubt been a short supply. Thus in wool, the diminution in the home breed of sheep has had a great effect on the price—

In 1869 the home stock of sheep was . . .	29,538,000
In 1871 „ „ „ . . .	27,133,000
Diminution	2,405,000
Equal to 8·1 per cent.	

—and in the case of some other articles there