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## Mythical Expectations

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## Chapter 7

### Mythical Expectations

#### Robert Leeson and Warren Young

According to the conventional account, economists have relied on three types of expectations: static (contained in the original Keynesian Phillips curve); adaptive (introduced by Milton Friedman's in the course of his Monetarist counter-revolution) and rational (part of Robert Lucas's natural rate New Classical counter revolution). This chapter argues that there a fourth expectational type: the myths associated with these natural rate counter revolutions.

The conventional chronology regarding the relationship between expectations and the Phillips curve is that Friedman's 1967 AEA Presidential Address (Friedman, 1968a) transformed macroeconomics by focusing on the *neglect* of expectations in the Keynesian Phillips curve. However, the archival evidence reveals this conventional account to be both inadequate and inaccurate. In this chapter, it will be shown that Phillips allocated a more destabilising role to inflationary expectations than did Friedman and that the adaptive expectations formula used to undermine the original Phillips curve was actually provided to Friedman by Phillips.

In the late 1940s, Phillips (a sociology undergraduate) came to the attention of his economics teachers at the LSE by suggesting how a figure in Kenneth Boulding's (1948, 117, Fig. 9) *Economic Analysis* could be extended (Dorrance 2000; Barr 2000). The figure represented the process by which prices rise in response to excess demand, measured by the change in stocks in response to flow disequilibrium. Boulding's

'liquid' model led to one of the first physical (and highly 'liquid') macroeconomic models: the Phillips Machine (2000 [1950], chapter 10).

Phillips' (2000 [1950], 73, 76-7) first appearance in the literature involved a brief discussion of the destabilising influence of expectations about prices: "This simple model could be further developed, in particular by making a distinction between working and liquid stocks, introducing lags into the production and consumption functions, and linking the demand curve for liquid stocks to the rate of change of price through a co-efficient of expectations. Each of these developments would result in an oscillatory system. They will not be considered further here..."<sup>1</sup> The "simple model" assumed that prices were constant, or that values were measured in "some kind of real units". Phillips demonstrated that it was possible to "introduce prices indirectly into the system", allowing real and nominal magnitudes to be considered (and graphed) separately.

Dennis Robertson "practically danced a jig" when he saw the Phillips Machine in operation. When the Chancellor of the Exchequer and the Governor of the Bank of England attended a dinner at LSE, they adjourned to the Machine room where the Chancellor was given control of the fiscal levers and the Governor control of the monetary ones (Dorrance 2000).

The correspondence between Phillips and Robertson on the efficacy of the "Phillips Machine" provides a good illustration of the significance of "the essential stuff" of archival research in economics. In reply to Robertson's critique of the treatment of prices" and the "multiplier formula" in the "Phillips Machine approach" (cited in Robertson to Meade 27 August 1950), Phillips wrote to Robertson (19 September 1950): "I agree entirely with your criticism of the multiplier formula under

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conditions of full employment ... But the machine will deal with curves of any shape ... If the price rise is so great that confidence in the monetary system is lost altogether, savings will actually drop to zero ... If now income rises beyond the region of full employment, the slopes of the curves, and therefore of the multiplier change. When the stage is reached at which, for a given increase in income, investment increases more than savings, the process becomes 'explosive' ... Machines could be designed by a competent engineer (but not by me!) to deal with far more complex price effects than this, if economists could agree on what they wanted to happen."

In fact, what can be termed "the theoretical Phillips curve" was, as Phillips related, an extension of the unfinished research program that emanated from his "Machine" (Yamey 2000). Early on, Phillips (2000 [1954], 187) had criticised Michel Kalecki's *Theory of Economic Dynamics* (1954) for attaching "no causal significance ... to price movements". The opening sentence of the theoretical Phillips curve (2000 [1954], 134) addressed Robertson's letter: the method of "comparative statics ... does not provide a very firm basis for policy recommendations [because] the time path of income, production and employment during the process of adjustment is not revealed. It is quite possible that certain types of policy may give rise to undesired fluctuations, or even cause a previously stable system to become unstable, although the final equilibrium position as shown by a static analysis appears to be quite satisfactory. Secondly, the effects of variations in prices and interest rates cannot be dealt with adequately with the simple multiplier models which usually form the basis of the analysis". Thus Phillips' academic career was, from the start, associated with the attempt to explain the instabilities and discontinuities associated with rising prices. As David Vines (2000) put

it in his discussion of the “Phillips tradition”, there is “more in the Machine ... than is allowed for in macroeconomic conventional wisdom”.

Phillips enrolled for a PhD under James Meade. His LSE colleagues turned to him for assistance with the analysis of inflationary expectations. Henry Phelps Brown, for example, acknowledged a specific debt to Phillips for “the form of the argument” about inflationary expectations and profit expectations - the situation where “the price level itself is taking the initiative, and moving under the influence of a preponderant expectation about the likelihood and feasibility of rises and falls in product prices, which has itself been built up by such factors as changes in ... ‘the market environment’ ... [which impart] a gentle but continuing motion to the price level” (Phelps Brown and Weber 1953, 279).

In recognition for his contribution to macroeconomic analysis (including presumably the analysis of inflationary expectations), Friedman (1955, no specific date) wrote to offer Phillips a visiting position in Chicago: “I only know how stimulating I would myself find it to have you around for a year; and I venture to believe that the change in environment might be stimulating to you as well”. Friedman hoped that Phillips would teach a course in economic fluctuations and added that the theoretical Phillips curve (2000 [1954], chapter 16) was “a stimulating prologue. The difficulty is that it could be a prologue to a number of different lines of work and I am led to wonder which of these you are in the process of pursuing. This is highly relevant from the point of view of its possible relation to various research undertakings in process here”. In a letter to Friedman (22 January 1955), Phillips declined on the grounds that he hoped to get “a small group together under Professor Kendall, to review the problems involved in obtaining better empirical knowledge of behaviour responses”. It was Kendall who

edited the volume in which Phillips first outlined his econometric policy evaluation critique.

Friedman tried to recruit Phillips again in 1960. In his answer to Friedman, Phillips (25 January 1961) once again declined. He wrote: “The reason is that the theoretical work I have been doing over the last three or four years on dynamic processes and statistical estimation still progressing and absorbing most of my energy and I have been forced to realise that I cannot do this intensive theoretical work alongside anything substantial in the way of empirical research. It will probably take another three or four years to push the theoretical work as far as I am capable of doing and I hope then to use it to get to grips with real problems in the way you are doing. I should like to do the two types of work together but physical and mental limitations prevent it, so I had better clear up what I can in the one field before having a try at the other”. Phillips described Chicago as a “notable ... centre of empirical research in economics”, which Friedman, in his reply (14 February 1961) appeared to take exception to: “Heaven preserve us if Chicago should not offer as hospitable an environment for theoretical as to empirical research, and conversely”.

One of the reasons that Friedman was keen to recruit Phillips was that Friedman had just launched his Workshop in Money and Banking (1953), and Phillips had just solved a problem for Friedman concerning the analysis of inflationary expectations. At least one of the economists-- pivotal to the second generation Chicago School-- had previously despaired of the theory of expectations. In a review of Albert Hart's *Anticipations, Uncertainty and Dynamic Planning*, George Stigler (1941, 358-9) referred to expectations as “the promised land to some economists and a mirage to others. The reviewer must admit that he leans towards the latter view: much of the literature on expectations consists of obvious and uninformative generalisations of static analysis”.

With respect to “the revision of anticipations ... progress depends much more on the accumulation of data (of a type almost impossible to collect!) than on an increase in the versatility of our technical apparatus”. Friedman himself (1953 [1946], 277-300) had attacked Oskar Lange on similar grounds: “An example of a classification that has no direct empirical counterpart is Lange's classification of monetary changes ... An explicit monetary policy aimed at achieving a neutral (or positive or negative) monetary effect would be exceedingly complicated, would involve action especially adapted to the particular disequilibrium to be corrected, and would involve knowledge about price expectations, that even in principle, let alone in practice, would be utterly unattainable”.

Robbins invited Friedman to deliver two lectures at the LSE on 1<sup>st</sup> and 6<sup>th</sup> May 1952 assuring him that “I think you find that there are so many people here who have questions to put to you that if you are willing to sit about and talk you’ll never find any difficulty in filling the rest of your days” (4<sup>th</sup> March 1952). Friedman (correspondence to one of the authors 25 August 1993) had questions to ask as well, raising with Phillips the question of “how to approximate expectations about future inflation”. Phillips then wrote down the adaptive inflationary expectations equation, which would later transform macroeconomics. At the time, economists were in no doubt about Phillips’ implicit assumption about inflation: “*Implicitly* [emphasis added], Phillips wrote his article for a world in which everyone anticipated that nominal prices would be stable” (Friedman 1968a, 8). Friedman (correspondence to one of the authors 25 August 1993) explained that “the ‘implicitly’ is really needed ... Phillips himself understood that his analysis depended on a particular state of expectations about inflation ... Phillips’ (2000 [1954], chapter 16) *Economic Journal* article made a very real impression on me. However, his discussion of inflationary expectations in that article is very succinct”.

In 1952 Friedman returned to Chicago where he provided Phillip Cagan with the adaptive inflationary expectations formula. Cagan (1956), Mark Nerlove (1958, 231), Arrow and Nerlove (1958, 299) used this formula to transform economic analysis. This formula is generally known as the Friedman-Phelps formula; but Cagan (2000) calls it “Phillips’ Adaptive Expectations Formula”. It was this formula that Friedman (1956, 19-20) predicted would transform whole sections of economics: Cagan’s “device for estimating expected rates of change of prices from actual rates of change, which works so well for his data, can be carried over to other variables as well and is likely to be important in fields other than money. I have already used it to estimate “expected income” as a determinant of consumption (Friedman 1957) and Gary Becker has experimented with using this “expected income” series in a demand function for money...”.

The final and most crucial sub-sections of Phillips' stabilisation model (2000 [1954], 153-7) were 'Inherent Regulations of the System' and 'Stabilisation of the System' which began with: "Some examples will be given below to illustrate the stability of this system under different conditions of price flexibility *and with different expectations concerning future price changes*" [emphasis added]. The theoretical Phillips curve was then tested against a variety of scenarios: inflationary expectations being a crucial factor in determining whether the system has satisfactory outcomes or not: “Demand is also likely to be influenced by the rate at which prices are changing, or have been changing in the recent past, as distinct from the amount by which they have changed, this influence on demand being greater, the greater the rate of change of prices ... The direction of this change in demand will depend on expectations about future price changes. If changing prices induce expectations of further changes in the same direction, as will probably be the case after fairly rapid and prolonged movements,



demand will change in the same direction as the changing prices ... there will be a positive feed-back tending to intensify the error, the response of demand to changing prices thus acting as a perverse or destabilising mechanism of the proportional type”.

Even if Phillips’ saw inflationary expectations as destabilising aggregate demand alone, this by itself would destroy the possibility of a stable trade-off because the expectation of further inflation “tend[s] to introduce fluctuations”: “The strength of the integral regulating mechanisms increases with the increasing degree of price flexibility, while the total strength of the proportional regulating mechanisms decreases as demand responds perversely to the more rapid rate of change of prices, and both these effects tend to introduce fluctuations when price flexibility is increased beyond a certain point. When price expectations operate in this way, therefore, the system ... becomes unstable ...” (2000 [1954], 155).

Phillips’ path-breaking contributions caught his contemporaries unaware: his work is a precursor to at least one expectations research project. Charles Holt together with Franco Modigliani, John Muth and Herbert Simon were working along similar lines to Phillips (Holt *et al.* 1960). When Merton Miller left the LSE and joined the Carnegie Institute of Technology, he prompted Holt to contact Phillips. Holt (2000) subsequently spent eighteen month working with Phillips at the LSE. The visit had been prompted by some correspondence: “Many useful techniques have been developed in Electrical Engineering and the field of Automatic Control which could profitably be translated into the field of Economics. Since prior to coming into Economics my background was in the fore mentioned fields, I was interested in doing this job. However, in many instances **you have anticipated me** and thus saved me the trouble” (Holt to Phillips, 6 July 1956) [our emphasis].

Phillips (15 October 1956) replied to Holt: “Your work on the control of inventories and production by individual firms and the relation between these decisions and aggregate economic relationships seems to me of major importance. I have very much neglected these matters so far in my own work and concentrated on the sort of problem that would face a central bank or other regulating authority in attempting to control the aggregates in a system. I think this is justified in the early stages of an investigation and we are, I feel sure, only at the beginning of systematic research work in this field, but it will certainly be necessary to develop the analysis of the relation between micro- and macro-economic relationships”.<sup>1</sup> Phillips did not go on to provide these microeconomic foundations, but the Phelps (1970) volume was a continuation - not a critique - of Phillips’ research agenda.

In the early 1960s, Phillips spent six months at the University of Wisconsin with Holt. Phillips’ (2000 [1962], 218) policy proposal was to locate the economy in the low or zero “compromise” zone, while “trying to shift the relation” inwards through labour market reform. Thereafter he worked “on the central theoretical problems” of the Ford Foundation funded ‘Project on Dynamic Process Analysis’ (May 1956-April 1963). The objective was to specify and estimate models for the control of economic systems. In this period, he presented some empirical illustrations of his stabilisation proposals, while continuing to pursue the matter theoretically. The theoretical Phillips curve was published in June 1954; in the three years to June 1957, Phillips became familiar with the Nyquist stability criterion and experimented with electronic simulations of stabilisation proposals using equipment at the National Physical Laboratory (NPL) and Short Brothers and Harland Ltd. From about 1952, Phillips interacted with Richard Tizard at the NPL; and, in 1956, Tizard resigned as Head of the NPL Control Mechanisms and Electronics Division to take up a two-year

Fellowship at the London School of Economics to work full-time with Phillips (Swade 2000). These collaborations led Phillips (2000 [1957], 169) to conclude that “the problem of stabilisation is more complex than appeared to be the case”. An empirical agenda was needed: “improved methods should be developed for estimating quantitatively the magnitudes and time-forms of economic relationships in order that the range of permissible hypotheses may be restricted more closely than is at present possible”. It seems likely that around June 1957, he began to work on the first empirical Phillips curve (2000 [1958], chapter 25).

Having pioneered the destabilising effects of inflationary expectations, Phillips provided very little discussion of this topic in his 1958 empirical curve. His second explanatory variable (the rate of change of unemployment) in Phillips’ (2000 [1958], 243) model influenced wage changes through the expectation that the business cycle will continue moving upwards (or downwards). Lipsey (1960, 20) labelled this “an expectation effect ... the reaction of *expectations* [emphasis in text], and hence of competitive bidding, to changes in  $u$ ”. But there is no systematic analysis of inflationary expectations. It is possible that Phillips instructed Friedman, Phelps Brown and others how to model adaptive inflationary expectations in their empirical work, but decided to ignore it in his own. An alternative explanation is that Phillips was primarily interested in the low inflation “compromise” zone where inflationary expectations are not a dominating force.

There is a distinct continuity between the 1954 theoretical Phillips curve, the 1958, 1959 and 1962 empirical Phillips curves and his growth model. In a ‘Simple Model of Employment, Money and Prices in a Growing Economy’, Phillips (2000 [1961], 201-2) described his inflation equation as being “in accordance with an

obvious extension of the classical quantity theory of money, applied to the growth equilibrium path of a steadily expanding economy”. His steady state rate of interest,  $r_s$  (“the real rate of interest in Fisher's sense, i.e., as the money rate of interest minus the expected rate of change of the price level”) was also “independent of the absolute quantity of money, again in accordance with classical theory.” His interest rate function was “only suitable for a limited range of variation of  $YP/M$ ”. With exchange rate fixity the domestic money supply (and hence the inflation rate) become endogenously determined; the trade-off operates only within a narrow low inflation band.

This was exactly how Phillips (2000 [1961], 201) described the limits of his model: he was only “interested” in ranges of values in which actual output ( $Y$ ) fluctuates around capacity output ( $Y_n$ ) by a maximum of five per cent: “In order to reduce the model with money, interest and prices to linear differential equations in  $x$  [ $=Y/Y_n$ ],  $y_n$  and  $p$  it is necessary to express  $\log Y \dots$  in terms of  $\log Y_n$  and  $x$ . For this purpose we shall use the approximation

$$\begin{aligned} \log Y &\cong \log Y_n + (Y - Y_n)/Y_n \\ &= \log Y_n + x - 1 \end{aligned}$$

The approximation is very good over the range of values of  $(Y - Y_n)/Y_n$ , say from -0.05 to 0.05, *in which we are interested* [emphasis added].” Since Phillips (2000 [1961], 196) stated that these output fluctuations were “five times as large as the corresponding fluctuations in the proportion of the labour force employed”, this clearly indicates that Phillips limited his analysis to outcomes in the compromise zone of plus or minus one percentage point deviations of unemployment from normal capacity output. Phillips was re-stating the conclusion of his empirical work; normal

capacity output (and approximately zero inflation) was consistent with an unemployment rate “a little under 2½ per cent” (2000 [1958], 259).

Although Phillips drew an average curve representing the trajectory of the British economy as it swung from bust to boom and back again, at no stage did he suggest that *high* inflation would reduce unemployment for anything other than a temporary period. Yet Phillips’ historical investigations had produced an average curve that encompassed 32 per cent wage inflation and 22 per cent unemployment (2000 [1958], 253, Fig. 25.9). Wage inflation in excess of 27 per cent occurred in 1918 and this observation falls on Phillips’ curve. But Phillips’ empirical analysis also reveals that 1918 was followed by two decades of extraordinarily high unemployment - hardly an augury of a stable high inflation trade-off. Phillips did not state or imply that any point on his average curve could be targeted for stabilisation purposes.

But underpinning the original Phillips Curve was the argument that “One of the important policy problems of our time is that of maintaining a high level of economic activity and employment *while avoiding a continual rise in prices*” [emphasis added]. Phillips explained that there was “fairly general agreement” that the prevailing rate of 3.7 per cent inflation was “undesirable. It has undoubtedly been a major cause of the general weakness of the balance of payments and the foreign reserves, and if continued it would almost certainly make the present rate of exchange untenable”. His objective was, if possible, “to prevent continually rising prices of consumer goods while maintaining high levels of economic activity ... the problem therefore reduces to whether it is possible to prevent the price of labour services, that is average money earnings per man-hour, from rising at more than about 2 per cent per year ... one of the main purposes of this analysis is to consider what levels of demand for labour the monetary and fiscal authorities should seek to maintain in their attempt to reconcile

the two main policy objectives of high levels of activity and stable prices. I would question whether it is really in the interests of workers that the average level of hourly earnings should increase more rapidly than the average rate of productivity, say about 2 per cent per year” (2000 [1959], 261, 269-80; [1962], 208; [1961], 201; [1962], 218; [1958], 259).

Like Phillips, Friedman (1968a, 9-11) described the initial expansionary effects of a reduction in unemployment. But when inflation became high enough to influence expectational behaviour, Friedman later argued that expansion “describes only the initial effects”. Modern macroeconomics has several explanations for the existence of a temporary trade-off (involving monetary misperceptions and intertemporal substitution). Friedman’s version of the Phillips-Friedman-Phelps Critique suggested a temporary trade-off between unanticipated inflation and unemployment lasting “two to five years”, taking “a couple of decades” to return to the natural rate of unemployment. Friedman’s mechanism involved real wage resistance in response to the initial “simultaneous fall *ex post* in real wages to employers and rise *ex ante* in real wages to employees”. Thus real wage resistance plays an equilibrating role in Friedman’s version.

Unlike Friedman, Phillips was highly sceptical about equilibrating forces. In a Robbins seminar paper on ‘Stability of ‘Self-Correcting’ Systems’ (21<sup>st</sup> May 1957) Phillips examined a system in which the rate of change of prices was proportional to excess demand. Phillips concluded that “If the ‘equilibrating forces’ are too strong they will make the system unstable ... The argument extends without difficulty to any system, in which there are ‘equilibrating’ or ‘self-correcting’ forces operating through time lags”.

Phillips' version of the Phillips-Friedman-Phelps Critique was a far more potent constraint on policy makers than Friedman's version: inflation had far more serious consequences for Phillips than for Friedman. For Friedman, the (purely internal) imbalance corrected itself through utility maximising labour supply adjustments, as inflation ceased to be incorrectly anticipated. Only a temporary boom would result, and would soon be eroded by real wage resistance. But in Phillips' model, external imbalance (driven by only minor inflation differentials) could be addressed by exchange rate adjustment, leaving the internal imbalance in need of still greater attention. In addition, the role Friedman allocated to inflationary expectation was benign, whereas the role allocated to inflationary expectations by Phillips (2000 [1954]) was far more destabilising, denying the possibility of a stable target in the presence of such expectations.

Not only was there "fairly general agreement" (Phillips 2000 [1962], 207-8) that non-trivial (3.7 per cent) inflation was intolerable; but the assumption of low (but unspecified) and stable inflation rates was commonly invoked by model builders in the pre-stagflation era. For example, the Lucas and Rapping (1969, 748) model of 'Real Wages, Employment and Inflation' was assumed to hold "only under reasonably stable rates of price increase. To define what is meant by reasonable stability, and to discover how expectations are revised when such stability ceases to obtain, seems to us to be a crucial, unresolved problem". Friedman (1968a, 6; 1968b, 21) also stated that the "price expectation effect is slow to develop and also slow to disappear. Fisher estimated that it took several decades for a full adjustment and recent work is consistent with his estimate". Friedman presented evidence about the time it took for "price anticipations" to influence behaviour that was "wholly consistent with Fisher's". Phillips' opposition to inflation was axiomatic: an

expression of one of the eternal truths that separate economists from monetary cranks. Nevertheless, he clearly stated the assumptions under which small amounts of inflation could be traded-off for small amounts of unemployment in the “compromise” zone. He did not suggest that a permanent trade-off existed outside the “compromise” zone.

In the 1950s Phillips was aware of an explicit examination of the process by which inflationary expectations shifts a ‘Phillips curve’. John Black (1959, 145, n1), the author of an article in *Economica* (of which Phillips was a co-editor) on ‘Inflation and Long-Run Growth’, thanked Phillips for “comments and suggestions”. Black (1959, 147-50) apologised for being “unable to think of any other name” (other than aggregate supply curve) for his function relating the “behaviour of prices over time which will result from any given level of employment”. Black’s ‘Phillips curve’ was a rectangular hyperbola with full employment as one asymptote and a deflationary floor as the other. The location of Black’s ‘Phillips curve’ was dependent on three parameters: first,  $A$ , the size of the rectangle linking the curve to the asymptotes which was determined by (among other factors) the “strength or weakness of general fears of inflation”; second,  $I$ , an investment function; and third,  $P$ , “the price expectations function, which relates vertical shifts in the aggregate supply curve to the price changes experienced by price and wage setters in recent periods ... the position of the supply curve can be made to shift vertically in a way determined by the rate of change of the price level over some past period. This implies that as both buyers and sellers get attuned to regarding a given rate of increase of prices as normal, and come to expect it to continue, the whole supply curve shifts upwards ... The position of the aggregate supply schedule in any period, however, will itself reflect the effects of earlier price changes on price expectations ... the adverse effect on the level of output



at any time via the upward shift in the schedule due to price increases in earlier periods". The possibilities for growth depended on the empirical size of the lags, including "the lags in the effects of current price changes on price expectations".

Phillips was also aware of Bent Hansen's *A Study in the Theory of Inflation* and recommended the text to Lipsey: "Bill first put me on to this source and I came to accept this view of the Phillips curve as being a Hansen-type reaction curve for the labour market" (correspondence from Lipsey to one of the authors 19 February 1993). Hansen (1951, 249, 139) offered the "explicit inclusion of disequilibrium in the labour market in the analysis" and also discussed the relationship between inflation and the supply side: "during inflation quite drastic changes in productivity". He also analysed expectations. In "Final Remarks", Hansen (1951, 246-8) concluded that "... price expectations do disturb the analysis in so far as they can render the price-reaction equations unusable... it is clear that in practical forecasting, price expectations and their changes are a difficulty of the first order, and that a policy which aims to maintain monetary equilibrium is forced to accord a great deal of weight to holding expectations in check".

Thus, orthodoxy continued to allow an important role for expectations. For example, in their seminal extension of Phillips' analysis, Samuelson and Solow (1960, 193, 189) entertained the possibility that a switch in policy regime might alter the shape of the Phillips curve. They also allowed for a vague and loosely defined role for expectations: policies producing "low pressure of demand could so act upon wages and other expectations so as to shift the curve downwards in the long run". Alternatively, this might increase structural unemployment, shifting the menu of choice upwards. The expectation of a continuation of full employment, they believed, might have been responsible for an upward shift in their Phillips curve in the 1940s

and 1950s. Samuelson and Solow were not ignorant of inflationary expectations; neither did they believe it was policy invariant. For example, in December 1965, Samuelson acknowledged that targeting a point on a Phillips curve could shift the curve itself: "One ought to admit that the overausterity of the Eisenhower Administration may have done something to give America a better Phillips curve" (cited by Haberler 1966, 130).

Inflationary expectations played an important role in Phillips' dynamic stabilisation exercise; the archival evidence reinforces this conclusion. The narrow inflation-unemployment trade-off that implicitly underlies current inflation targeting regimes corresponds to the narrow compromise trade-off section of his curve in "*which we are interested*" [emphasis added] (Phillips 2000 [1961], 201). Targeting low inflation (typically between 1-3%) is a "better Phillips curve" than those curves which alluded to the possibility of outcomes outside this low inflation zone of "interest". The lack of interest in the dynamics of knowledge creation and destruction has allowed economists to be led by the nose into believing an expectational story of mythical proportions.

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