

## 5. Policy Ineffectiveness

A direct implication of the Lucas model is the policy ineffectiveness proposition (PIP), in which the totally anticipated monetary expansion is exactly countered by the instantaneous upwards shift of the SAS curve as price level expectations immediately adjust. The central result of the PIP is that policy-makers will be able to affect the level of output ( $Y$ ) only if their actions are not anticipated by the public. The PIP seems to mark the demise of a regular *feedback rule*, which sets stabilisation policy to respond in a regular way to a macroeconomic event, such as an increase in unemployment or inflation.

But, as with the Friedman model, critics of the Lucas information model claim that the information lags are too short for it to be the only source of business-cycle movements in real GDP.

## 6. Real Business Cycle Model

The real business cycle (RBC) model retains the assumption of continuous market clearing and rational expectations, but specifies that business cycles are the result of “real” supply shocks rather than demand shocks. In response to an adverse supply shock, *both* the production function and the labour demand (marginal product of labour) curve shift down, as in Gordon Figure 7-4. The degree an economy’s level of output is reduced by an adverse supply shock greatly depends on the slope of the labour supply curve. The original Keynesian model and the Friedman model require real wages ( $W/P$ ) to move countercyclically, while the RBC model requires real wages to move procyclically. The fact that real wages show no systematic fluctuations suggest that none of these models is complete in explaining the movement of GDP over the business cycle.

## **7. New Classical Macroeconomics: Pluses and Minuses**

Positive contributions include:

- the ability of rational expectations to explain movements of asset prices in financial markets, and
- adding to our understanding of the “micro-foundations” of macroeconomics.

## Wage and Price Stickiness: New Keynesianism Explanations

### 8. Essential Features

Original Keynesianism explained the persistence of unemployment and business cycles through the imposition of nominal wage rigidity, but it has not been able to explain how and why rigidity in nominal wages ( $W$ ) exists.<sup>1</sup> Moreover, nominal wages are observed to change by differing amounts each year.

Lucas' new classical model assumes rational behaviour and rational expectations (good) but its market-clearing assumption and reliance on imperfect information as the single source of business cycles is unsatisfactory, especially since information lags are too short to explain the existence of large and lengthy fluctuations in GDP.

The new Keynesian models (NKM) are attempting to justify the rigidity of nominal wages by finding microeconomic explanations of how and why wage and price rigidity exists.

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1. A *nominal rigidity* is a factor that inhibits the flexibility of the nominal price level due to some factor, such as menu cost — any expense associated with changing prices, including costs of printing menus or distributing new catalogues — and staggered contracts, which make it costly for firms to change the nominal price or wage level.

Both new and original Keynesian models are known as *non-market-clearing models*, since workers are not continuously on their demand and supply schedules, but rather are pushed off by the gradual adjustment of prices: the GDP deflator ( $P$ ) is defined as nominal GDP ( $X$ ) divided by real GDP ( $Y$ ):

$$P \equiv X / Y \text{ or } Y \equiv X / P$$

or taking logarithms and differentiating with respect to time

$$y \equiv x - p$$

where  $y$  is the proportional change in real GDP ( $\dot{Y}/Y$  or  $\Delta Y/Y$ ),  $x$  is the proportional change in nominal GDP ( $\dot{X}/X$  or  $\Delta X/X$ ), and  $p$  is the inflation rate ( $\dot{P}/P$  or  $\Delta P/P$ ). In other words, the percentage change in real GDP equals the percentage change in nominal GDP minus the inflation rate.

## 9. Small Nominal Rigidities and Large Macroeconomic Effects

The new Keynesian model attempts to provide the microeconomic foundations of a macroeconomy with the assumption of rational behaviour on the part of both profit-maximising firms and utility-maximising individuals, by using these assumptions to explain the slow adjustment of wages and prices which leads to non-market-clearing in both the product and labour markets.

The NKM not only offers a theory of nominal rigidities but also of *real rigidities*.<sup>2</sup> These are distinct: the latter does not necessarily provide a theory of the former.

A monopolistic firm (with market power, or facing a downwards-sloping demand curve) chooses output to set marginal cost ( $MC$ ) equal to marginal revenue ( $MR$ ). After a fall in demand, the firm will continue to maximise its profit by adjusting its output so that  $MC$  continues to equal  $MR$ , unless the “menu costs” to the firm associated with changing prices is sufficiently large to offset any gains in profit. In this case, the firm may decide to keep its price level fixed.

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2. A factor that makes firms reluctant to change the real wage, the relative wage, or the relative price.

## 10. Long-Term Labour Contracts

Long-term labour contracts may provide a source of “sticky” marginal costs. The labour market is very important as a possible source of sticky marginal cost. It is also institution-specific, which is to say that different societies have evolved different ways of labour-market operation, and this is a highly political issue, as witness the Coalition’s plans for abandonment of the Accord for collective bargaining between workers (as opposed to the union) and individual firms (as opposed to industries or the economy as a whole).

Read Borland’s article, “Incomes policies in Australia”, (Package 33) for a summary of the Accord. The Accord is just the latest of the manifestations of the regulated Australian labour market, dating back to the first years of the twentieth century and the young federation and the “Harvester” decision.

Once the place and manner of nominal wage rigidities in the economy have been specified, the model must explain why rational workers and firms enter into arrangements which may impose a *macroeconomic externality*<sup>3</sup> and allow the economy to deviate from the natural level of output.<sup>4</sup>

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3. A cost incurred by society as a result of a decision by an individual economic agent (worker or firm).
  4. Also read Calmfors and Driffill’s paper, “Bargaining structure, corporatism, and macroeconomic performance,” (Package 34), for a comparative view of labour-market institutions across the OECD.

## **11. Appeal of Long-Term Contracts**

Long-term labour contracts are desired by both workers and firms because their existence helps avoid the costs of frequent and lengthy strikes and renegotiation of wage agreements.

The Australian National Wage Cases in front of the Industrial Relations Commission (the erstwhile Arbitration Commission) have revealed that workers, through their unions, have attempted to achieve nominal wage increases to fully adjust the real wage rates back to their levels before the period under focus. That is, National Wage Cases have revealed a strong tendency to Cost Of Living Agreements (COLAs).

Firms, through their peak bodies in front of the IRC, have argued against full COLA protection because:

- price increases could be generated by a supply shock which would require firms to increase wages without any corresponding increase in the demand for their product, and
- aggregate-demand-induced price increases do not guarantee the demand for that particular firm's output is any higher, and workers will not want their wages indexed only to the price of that particular firm's output.



## 12. Markup Pricing and Long-Term Price Agreements

Because it is advantageous for firms to enter into long-term agreements on the price of their purchased input factors, there is also price rigidity in the input factors markets. Moreover, the commonly used procedure of firms to adjust their output price in constant proportion to changes in the price of input materials and labour costs — the notion of *markup pricing* — will result in rigid output prices as well.

But the prices of certain raw materials which are sold on *auction markets*<sup>5</sup> with perfectly flexible prices, which means that the markup for the economy as a whole is not constant — a *variable price markup* process, instead of the *fixed price markup* process which follows from the assumption that all factor inputs exhibit rigidity.

The variable price markup process allows some response of the firm's output price to changes in the level of GDP. These two concepts of price markup process are important in the new Keynesian explanation of business cycles.

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5. A centralised location where professional traders buy and sell a commodity or financial security.

### 13. “Real” Sources of Wage Stickiness

The implicit contract model explanation of Keynesian unemployment is that it only justifies fixed-income contracts rather than stable-wage–variable-employment contracts. The *efficiency wage model* establishes a relationship between the real wages paid to workers and their efficiency. Other possible reasons for marginal revenue to move differently from marginal cost with real-wage rigidity include *coordination failures*<sup>6</sup> and the absence of indexation (where it occurs, as it has done under the Accord).

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6. When there is no private incentive for firms to act together to avoid actions that impose costs on society: when the “invisible hand” fails.

## 14. The Business Cycle

The new Keynesian model of business cycles maintains consistency with the original Keynesian model by assuming non-market-clearing in the labour market arising from rigid nominal wages ( $W$ ) and also in the product market. It is possible for workers to be off their labour supply curves and for firms to be off their labour demand curves *simultaneously*.

Gordon analyses the effect of a fall in aggregate demand with, first, a *fixed price markup SAS curve*, and, second, with a *variable price markup SAS curve*.

In the fixed price markup model, a fall in aggregate demand doesn't imply any change in the marginal productivity of labour, so that the amount of labour the firm desires to employ at a fixed real wage ( $W/P$ ) remains unchanged.

But because of the fall in aggregate demand, the firm will be unable to sell all the output it wants at the fixed price level ( $P$ ) (remember: non-market-clearing in the product market) and it thus will be forced to employ fewer workers at the fixed real wage.

This moves the firm from the "notional" labour demand curve to the non-market-clearing "effective" labour demand curve.

The only difference in the variable price markup model is that, because prices exhibit some responsiveness to the output level, real wages ( $W/P$ ) will rise somewhat owing to the fall in

prices associated with the fall in aggregate demand.

The principal implication of the new Keynesian model to business cycles is that recessions in which firms face an involuntary sales constraint and workers face an involuntary unemployment constraint arises from the microeconomic theoretically justified assumption of nominal wage and price rigidity. Countercyclical movements in the real wage need not be a consequence of business cycle movements in this framework.

## **15. Implications of the New Keynesian Model**

The new Keynesian theory explicitly explains why prices and wages are slow to adjust, and provides symmetry of non-market-clearing for both workers and firms. It also seems to overcome the many criticisms that have been brought against the other theories of business cycles.

It has been criticised, however, for not being able to explain the existence of business cycles before the era of explicit union contracts. Moreover, overlapping-staggered labour contracts may be less relevant in countries where policy-makers pursue inflationary policies.