Another derivation of the constant mark-up comes from the neoclassical tradition. (See Nordhaus, 1972.) For the mark-up to be constant, an aggregate Cobb-Douglas production function must be assumed. Very few economists are willing to make this assumption at this point. And, as argued in section 5.1, the entire neoclassical theory of aggregate production functions is badly flawed.

The theory of the constant mark-up appears in another form in Rowthorn's (1977) contribution to the conflict theory of inflation. His analysis suggests that class conflict does not lead to a squeeze on profits, since full employment, though it strengthens labor in absolute terms, does not affect labor’s relative bargaining strength. Rowthorn argues that at low levels of capacity utilization firms will be pushed to pursue a cautious pricing policy because they fear that other firms (which find themselves in a similar position) will invade their markets. When, on the other hand, high levels of utilization are reached, each firm can more freely raise its prices since the other firms also have relatively full utilization and are unable to "launch a major invasion of their markets." (p. 219.) Thus, if full capacity utilization corresponds to full employment, capital is strong at the same time that labor is strong and there is no reason to expect that the distribution of income will shift in labor's favor.

This argument implicitly assumes that the product market is organized as competition among monopolists that produce similar goods but act under tacit market division agreements. Empirically, this assumption seems unreasonable. Even in a world of monopolies, we would expect excess capacity to deter entry, since potential entrants will fear that insiders will exploit consumer brand loyalty, cut prices,
and increase production to drive out any newcomers. Second, excess capacity coincides with low rates of cash flow and credit availability. If a firm wishes to invade another's market and that market is for goods different from those normally produced by the entrant, new investment will be needed. But tight money will discourage investment, and thus, entry. In sum, Rowthorn's view that capital's power to raise prices in response to money wages increases is especially poor at low rates of utilization seems of very limited validity. Similarly, capitalists must worry most about entry when utilization rates are high, because there is more room for newcomers and these newcomers have more funds with which to finance entry. Thus, it seems unlikely that full utilization strengthens capitalists' power to pass on costs.

In addition, many markets are relatively competitive. The logic of strategic pricing cannot apply in these markets because these capitalists have little power to price and little sense of the interdependencies among capitalists. The analysis of disequilibrium suggests that competitive capitalists have more pricing power when there is excess capacity; these markets act more like monopolistic competitive markets.

We will assume that excess capacity neither increases nor decreases capitalists' ability to pass on costs through higher prices. So, how does relative bargaining strength change? In the case of excess capacity, the cost of idling existing capacity is not especially high when competitors are also suffering from excess capacity. Therefore, lock-outs are not especially expensive to the employers. But if there is a high unemployment rate, workers are more dependent on capitalists for jobs — especially on their current employers, if they have them.
At high rates of utilization, capitalists do not want to refrain from production and investment. They will suffer more from lock-outs and strikes. On the other hand, low rates of unemployment mean that workers are less dependent on their current employers. So the capitalists face cost inflation. The question of whether or not capitalists can pass these costs on is the question of the existence of ceilings on price increases.

In conclusion, we should reject the constant mark-up as a determinant of the ex post distribution of income. Nor should we expect that the class conflict will produce results similar to those of the constant mark-up theory. If it is not constant, the mark-up should be remeasured the profit margin. If the margin can be squeezed, then we go beyond the standard Phillips curve framework. Whereas the introduction of the conflict theory of inflation changed the form of equation (1), the rejection of the constancy of the mark-up changes our interpretation of the entire system of equations. Cost inflation need not cause price inflation and the issue of ceilings on price inflation arises.

As the discussion in section 2.3. suggested, there are ceilings on prices due to monetary policy and foreign competition. For the former, there is first the equation of exchange:

\[ p Q = M V \]  

(11)

where \( M \) is the money supply (using any of the popular definitions) and \( V \) is the velocity of money. Next, the money supply is proportional to the monetary base (\( b \)) where the proportionality factor is the money multiplier (\( b \)), so that

\[ M = b b \]  

(12)
Therefore, from (11) and (12):

\[ \dot{p} = \dot{\pi} + \pi \dot{\pi} - \pi \dot{\pi} \]  

(13)

Both \( b \) and \( V \) depend on the general level of business activity: an increase in prices, by allowing an increased rate of profit, can cause an increase in business activity and thus, cause an increase in \( b \) and \( V \). We assume, however, that there are upper limits on these variables that are determined by the structure of the banking system and by government policy. When the economy hits these limits, \( \dot{b} = \dot{V} = 0 \).

Assume that the economy continues to grow at a rate \( \dot{\pi} \) independent of changes in the rate of profit because of either lags in the investment process or a government commitment to steady growth. Given these assumptions, (13) can be restated as

\[ p \leq p_{\text{max}} \text{ where } p_{\text{max}} = \dot{\pi} - \dot{\pi} \]  

(14)

This shows that government policymakers (which have some control over \( \dot{\pi} \)) can set a limit on price inflation.

International competition sets another limit. The complex interaction of the balance of payments constraint and international price competition will be summarized as follows:

\[ p \leq p_{\text{max}2} \text{ where } p_{\text{max}2} = RE + p_{f} \]  

(15)

where \( RE \) is the exchange rate (dollars per unit of foreign currency, or for the gold-exchange standard, per unit of gold) and \( p_{f} \) is the price of the same basket of goods produced abroad and priced in foreign currency (or gold). \( RE \) is a policy variable, though neither it nor \( \pi \) is under complete government control.
These two limits on the rate of inflation are highly interdependent. Since a high rate of growth of the money supply will put an upward pressure on RE. Therefore, assume that there is only one limit ($p_{\text{max}}$) which is indirectly set by government policy.

Assume that the economy is hitting this limit. From equations (2), (7), and (9),

$$\hat{m} = \hat{p}_{\text{max}} - w(u^*) + q(u^*)$$

(16)

Thus, if $\hat{u} > u^*$, and assuming that $m'$ is initially constant, $m'$ will fall after $p$ hits the ceiling. If $\hat{q} > \hat{q}_p$ (that is, if $C_e > C$), the fall of $m'$ will accelerate since $U$ will fall, and with it, $U^*$. If $u^* > u^*$, $m'$ will rise as long as $p$ is on the ceiling. If $\hat{q} < \hat{q}_p$, this rise will accelerate as $U$ rises. In addition to falls in $m$ due to a low $U^*$ and accelerating falls due to a high $\hat{q}$, there is another problem: if $\hat{q} = \hat{q}_p$ and $U < U^*$, inflation of costs, and thus, falls of $m$ will accelerate as $U$ has greater and greater effects on $U^*$ (unless, by chance, $U^* < U$ initially). Finally, inflationary expectations (not shown in the equation) may increase the rate of wage inflation, increasing the rate at which the margin is squeezed.\(^8\)

A polar situation in the expansion occurs when the government acts to protect profit margins by validating inflation. Here, the standard Phillips curve analysis applies, modified by only the introduction of conflict as an explanation of the wage Phillips curve. With $u^* > u^*$, inflation accelerates due to the accumulation of working class power and, perhaps, inflationary expectations. If $\hat{q} > \hat{q}_p$, $U^*$ will be falling so there is further reason to predict accelerating inflation.

It is possible to have a combination of squeezes on $m'$ and
inflation. In fact, in the late expansion phase of the business cycle (phase B, where $q > \bar{q}$ and $\bar{u} < u^*$) we see a trade-off between a full employment profit squeeze and accelerating inflation. From (15) we see that

\[
\Delta a^* = \Delta \bar{p}^* = (w' - q^*) \Delta \bar{u}^*
\]

\[
= \Delta \bar{p}^* = (w' - q^*) (\Delta u + \eta \Delta u_{-1} + \eta \Delta u_{-2} + \ldots) \quad (17')
\]

where

\[
\Delta u_{-1} = (1 - \bar{u}_{-1}) (1 + \beta_1 + \beta_2 + \ldots) (\bar{u}_{-1} - \bar{p}^*)
\]

from equation (5.45), modified to allow price changes.

Therefore, the government can choose to protect profits — and the economic boom — so that there is accelerating inflation, or they can allow profits to be squeezed so that the boom ends. Or they can protect profits a little, extending the boom a little, so that a small amount of acceleration occurs. The trade-off (\(\Delta a^* - \Delta \bar{p}^*\)) gets worse as the economy grows faster than \(\bar{q}^*\), stays at a rate of unemployment less than \(u^*\), or allow inflationary expectations to accumulate. One way of restating this worsening trade-off is to say that the rate of inflation necessary to maintain a constant profit margin will get larger and larger.

This trade-off implies that profit squeezes will in general be associated with inflation (the polar cases will be avoided). Thus, government policy-makers can legitimate managed recessions in terms of the fight against inflation. (Indeed, they will be sincere in their belief that they are fighting inflation.) Workers will be more willing to support profit-saving policies in this guise, especially if they
are receiving the brunt of inflation.

So far in this chapter, we have only considered the constraints on inflation. A more complete picture requires the analysis of section 5.3.6c. Restate equation 5.11':

\[ p = \min(p_{\text{max}}, \hat{p}_{\text{mkt}}); \text{ when } \hat{p}_{\text{mkt}} = p_{\text{max}}, \hat{p} = p_{\text{max}} \]  \hspace{1cm} (19)

Also recall equation (5.59) which represents the downward stickiness of prices:

\[ \hat{p}_{\text{mkt}} = \max(\hat{p}_{\text{npr}}, k \hat{p}_{\text{npr}}) \hspace{1cm} \text{ (1 \geq k > 0)} \]  \hspace{1cm} (5.59)

When inflation has been occurring, it might be the rate of inflation rather than the price level that becomes stickily downward. In an oligopoly, we might see each capitalist afraid to lower the rate of growth of his prices because that would undermine tacit agreements with his competitors. In that case, a different equation is needed, for example,

\[ \hat{p}_{\text{mkt}} = \hat{p}_{\text{mkt}}(-1) + \max(\hat{p}_{\text{npr}} - \hat{p}_{\text{mkt}}(-1), k(\hat{p}_{\text{npr}} - \hat{p}_{\text{mkt}}(-1))) \]  \hspace{1cm} (5.59')

where \( \hat{p}_{\text{mkt}}(-1) \) is a lagged value of \( \hat{p}_{\text{mkt}} \).

But more important here is the issue not addressed in the last chapter, the exact formula for \( \hat{p}_{\text{npr}} \), (the rate of inflation corresponding to capitalists' desires to have a normal rate of profit at \( z = 1 \)).

This conception of pricing behavior is similar to that of the constant mark-up hypothesis except that the capitalists care about the rate of profit instead of profit margins and that \( \hat{p} \) need not equal \( \hat{p}_{\text{npr}} \). In addition to the role of the rate of profit in the determination of aggregate rate of investment, capitalists want to get a
"decent" rate of profit on existing capital. Capitalists care about the rate of profit at a given rate of utilization because it is unlikely that they can raise prices to compensate for inadequate aggregate demand. (Some may be able to do so (see Eckstein and Wys, 1972) but in the aggregate this is extremely unlikely.) As argued above, capacity utilization has little effect on the capitalists' ability to pass on increased costs. This view is akin to that of Godley and Nordhaus (1972) except that "normality" is more narrowly defined, as full capacity utilization.

Given equation (2) what is the capitalists' desired profit margin? It can be derived from the formula for the potential rate of profit:

\[ r^P = (1 - (1 + g_1)) w' n - (g_2 / P) h \]

\[ = (1 - (1 + g_1)/n' - (g_2 / P) h \]

(3.20)

where the second step follows from the definition of \( m' \). We can thus solve for the actual profit margin:

\[ m' = h (1 + g_1) / ((1 - g_2 / P) h - r^P) \]

(21)

We can use exactly the same logic to derive the desired (normal profit rate) profit margin from the formula for the normal profit rate:

\[ m_{nP} = h (1 + g_1) / ((1 - g_2 / P) h - r^N) \]

(22)

where \( r^N \) is the normal rate of profit.

Capitalists desire to change margins according to the difference between the desired and actual margins:
\[
\begin{align*}
\frac{s^*}{n}\frac{\epsilon}{n} &= \frac{(m^* - m^*)}{m^*} \\
&= \frac{(r^B - r^0)}{[(1 - g^2/P) h - r^B]}
\end{align*}
\]  

The denominator of (23) is positive in all relevant cases. Therefore, the rate of inflation that results if capitalists succeed in moving to \( r^P = r^B \) is wage-cost inflation plus desired mark-up change:

\[
\frac{s^*}{n}\frac{\epsilon}{n} = \frac{(r^0 - r^B)}{[(1 - g^2/P) h - r^B] + w(U^+) - q(U^+)}
\]  

Equation (24) shows that if the potential rate of profit is less than the normal rate of profit (that is, if costs are greater than "normal") there can be inflation even if \( U^+ = U^* \) and there are no inflationary expectations. A second implication is that we can introduce the role of non-labor costs by noting that a fall in the terms of trade or the capacity-capital ratio will raise the first term of (24). That is, if unit raw-material costs rise or if full capacity output per unit capital falls, capitalists will want to have a higher profit margin on unit labor costs.

A continuous process of inflation does not result, however, unless there exist imbalances which keep \( r^0 \) from equally \( r^B \) for a period of time (until the imbalances are purged). In this context, an imbalance can be defined as a situation where there exists a squeeze on the profit rate that is not solved within the inflationary process. A recession (or direct state intervention) is necessary to cleanse the economy of these imbalances. The most familiar case is that emphasized by the conflict theory: the working class is so strong that it can raise money wages to compensate for rising prices and rising real needs. (This imbalance is incorporated in the wage-Phillips curve and productivity...
terms of equation (24)). But there are other sorts of imbalances besides the wage-price spiral.

First, consider the case where the terms of trade have fallen. Inflation can simply imply a fall in the value of the dollar (a rise in RE) so that the domestic price of raw materials \( p_m \) and the terms of trade stays constant. \( P = p/p_m = RE (p_t/RE) p_{ml}/p_{ml} = p_t/p_{ml} \) where \( p_{ml} \) is the price of raw materials stated in foreign currency. If \( p_t/p_{ml} \) is given, so is \( P \). It is true that for an economy as large as that of the U.S., the international terms of trade \( (p_t/p_{ml}) \) is highly dependent on the behavior of the U.S. economy. But that dependence is largely one of being dependent on the rate of growth of the U.S. economy. Thus, a recession would be necessary to improve the terms of trade.

Second, if the capacity-capital ratio is low — due to past over-investment or stagnant productivity — there is nothing that inflation can do to solve the problem. Inflation will be associated with a higher \( p_1 \), so that \( p/p_1 \) stays constant (or falls if \( G > 0 \)). To raise \( h \), it is necessary to raise \( Q/PMP \) (the real capacity-capital ratio). Again, a recession is necessary to solve the imbalance.

Further, note that if the boom is allowed to persist, the build-up of imbalances will also persist. The strength of the working class accumulates — as do inflationary expectations. Raw material prices rise and the possibility of their being sticky downward increases. Horizontal maladjustments develop and backward firms with low productivity that would have gone bankrupt in the normal business cycle do not do so. While the inflation may allow the boom to persist so that the problems of delayed pay-off and bottlenecks are no longer important,
the other factors that depress the capacity-capital ratio continue to
develop. Inflation also encourages wasteful investment such as specula-
tion, as does a low rate of profit on nonwasteful investment.

In an empirical study it is difficult to measure individual
imbalances. This is especially true since the importance of any single
imbalance depends on the size of others (because several factors com-
bine to determine the rate of profit). But the aggregate effects of
imbalances can be measured by calculating $r^p$ or the rate of profit at
any given rate of utilization. The variable $r^p$ is more of a problem for
empirical analysis. It is a purely hypothetical number. If it can be
assumed constant, there are no problems for empirical analysis, how-
ever. It might be measured as the average value of $r^p$ over a long
period of time.

There is an important implication of this analysis for econometric
investigation. Consider the standard price Phillips curve:

$$\pi = w(U) + f^p$$

Assume that this equation has been estimated. Then the NAIRU, $U^*$,
can be calculated by determining where $w(U) = 0$. But if the economy
in fact behaves according to equation (24), wage inflation has been
largely validated and $q(U) = 0$, and $r^p$ has been greater than or equal
to $r^p$, $U^*$ will have been over-estimated. If imbalances have accu-
mulated outside the labor-power market during the period under
consideration, so that there was a downward trend in $r^p$, then these
estimates of $U^*$ will increase in the trend. This rise of the estimate
of $U^*$ will reflect events outside the labor-power market that caused
the declining $r^p$ and will indicate the rate of unemployment necessary
to raise $r^p$ if the labor-power market is to bear the entire burden of adjustment. Empirical analysis should be done to discover the importance of this effect. It is suspicious, however, that in the post-World War II period, that the decline in the rate of profit (see the data presented in the next section) coincided with rises in the estimates of the "natural rate of unemployment." (For one estimate of $U^*$ in different years, see R.J. Gordon, 1978, Appendix B.)

Tobin (1980, p. 58-62) has a similar hypothesis. After discussion of several factors in the labor-power market that might have caused the upward drift in the measured NAIRU, he concludes that

...little of the alleged increases in the NAIRU has been credibly explained in terms of the labor market itself, as voluntary leisure disguised as unemployment, or rational job search, or friction, or persistent misinformation. For the most part, the apparent rise in the NAIRU merely describes but does not explain the chronic acceleration of inflation.

(p. 60)

Key for Tobin is that

...the ratio of capacity to labor force has declined; recoveries encounter bottlenecks earlier; labor productivity falls and markups rise when unemployment is still high. The stagnation of the 1970s discouraged capital formation, and businesses positioned themselves to survive higher average unemployment.

(p. 59-60)

He also lists other non-labor factors that influence the measured NAIRU such as intersectoral demand and supply shocks.

Finally, if we treat the labor-power market in the same way that we did the raw materials markets and the determination of the capacity-capital ratio, we can employ a simpler formula for $p$. That is, if we separate the determination of the wage-Phillips curve from the determination of the price inflation rate, we get the following:
where the derivation is similar to that of (23). (Rather than solving (3.20) for \( n' \), it is solved for \( p \). \( p^n \) is calculated in a similar way. 
\[ p_{npr} = \frac{(p^n - \bar{p})}{(r^n - r^p)} \] (23)

As equation (19) indicates, the inflation rate need not be equal to \( p_{npr} \). But that number tells us the rate of inflation necessary to save the rate of profit.

The conclusions of this section are as follows. First, because of imperfections and immobilities in the labor-power market, inflation cannot simply be seen in terms of supply and demand. A conflict theory adds to our understanding of the inflationary process. Second, conflict can lead to a decline in the profit rate at low levels of unemployment. Thus, the standard Phillips curve analysis must be supplemented by allowing profit margins to be squeezed when cost inflation is not validated. This implies that, third, at low levels of unemployment there is a trade-off between accelerating inflation and profit squeezes. A profit squeeze can be avoided by validating inflation or inducing a recession. Fourth, the validation of inflation may imply that the cost inflation that caused the squeeze of the rate of profit is simply reproduced. Worse yet, the imbalances can be intensified, leading to a worsening trade-off between
accelerating inflation and profit squeezes. In other words, the rate of inflation necessary to protect the rate of profit will accelerate. Fifth, wage cost inflation must be seen in conjunction with the other factors that determine the rate of profit. In turn, these factors must be seen in the context of the process of capitalist accumulation.

The above analysis suggests that the rr curve used in the previous chapters can be replaced by diagram 6.1 if the government validates inflation. Instead of falling when above a certain rate of growth of the economy, the rate of profit stays constant. It does not rise because of the real limits on the amount of surplus value that can be produced.

For a rate of growth $A$, the rate of profit is not hurt but the rate of inflation is above the underlying rate of inflation ($p_0$). As the economy stays in this situation, the inflation rate accelerates as (1) the underlying rate of inflation increases to $p_0$ and (2) the slope of the inflation curve increases. The former represents relatively permanent imbalances while the latter reflects less permanent bottlenecks. If the economy stays in this situation, the inflation curve will become more and more vertical.

Imbalances can be purged from the system if the government encourages the economy to sink to a point such as $B$. Here $p_0$ will fall and the inflation curve will become flatter.

If the government does not validate inflation completely, then we see an intermediate situation. The rr curve has a negative slope after a certain point (though not as steep as in the diagrams of the rr curve drawn before) and the inflation curves are flatter.
Diagram 6.1: The rr Curve when Inflation is Validated.
Finally, as noted in the introduction to this chapter, the uncontrolled development of credit-creating institutions and the chaos in world money-markets imply that government policy will have a smaller and smaller effect on the inflationary process. It is very likely, therefore, that inflation will be validated. This brings us to the next subject of this chapter, the limits on government demand-management.