falls by 15%. This is enough to cause riots (Graph 25) eliminating all executive influence in the legislature and drastically curtailing Executive Power (Graph 22). This leaves only the opposing factions of the populace and the aristocracy to vie for control of government policy. As can be seen, these two opposing actors constitute a natural oscillatory system. Policy swings too far in one direction are met by an equally powerful reaction. In the scenario presented here, these oscillations are eventually damped. However, tests showed that for cases where the shock is greater than 20% of normal production, the amplitude of the output oscillations can become great enough to drive the system unstable. In short, the aristocrats seize a disproprtionate amount of legislative influence, driving the output allocated to the populace so low that Economic Welfare falls significantly. This impairs the ability of the populace to protest or rebel (Figures 3.3, 3.11), simultaneously reducing productive capacity (Figure 3.7). Lower total production decreases the output received by the aristocracy, who remedy the situation by adjusting Economic Law in their favor (they now control the legislature). This simply decreases the output allocated to the populace, accelerating the downward spiral (this situation is similar to hyperinflation induced by the "inflation tax").

One of the causes of these fluctuations in economic distribution is the lack of any executive influence to mitigate excesses. Under normal conditions, the executive acts as a natural stabilizer. When some unforseen event causes economic distribution to swing too far in one direction, his influence upon the actual government policy (see Figure 3.6) causes this extreme to be mitigated. Thus, the presence of a strong executive serves to damp the system (assuming his desires lie in between those of the aristocrats and the executive). If we consider the extreme case, when Executive Power is equal to 1 (a Tyranny), neither the popular nor the aristocratic legislative input can have any effect on the government policy making process. Thus, oscillations such as those we see above are impossible.

However, even with the aid of a sophisticated mathematical model, policy analysis can be difficult. For example, after the discussion above, one would naturally expect an increase in the strength of the executive to result in a more stable reponse to the production shock. However, this is not necessarily the case. If we increase the level of Executive Competence (which is a measure of how effectively the executive is able to aggrandize both Executive Legislative Power and Executive Power), we find that this actually exacerbates the fluctuations (see Graphs 26-30). Thus, we appear to have ignored some crucial process. The important overlooked process here is the effect of executive desires immediately following the production shock.

After the shock, there is less total output to be distributed, however, the executive is still formulating policies in order to maintain Economic Welfare equal to its pre-shock equilibrium

level. Because the executive is monitoring the level of popular welfare, and not aristocratic welfare, his influence is apt to cause the output fraction allocated to the populace to increase (see Graph 29 and Figure 4.2). This causes discontent to build up among the aristocracy, leading to an increase in political involvement and eventually resulting in a swing in the other direction. The stronger the power of the executive, the stronger this effect is. Thus, any stabilizing policy must include an adjustment of executive economic desires.

Unfortunately, this task is not easily accomplished without undesired side effects. In order to prevent exacerbating the economic turmoil, it is necessary for the executive to lower his own economic expectations with the decline of productivity, thereby holding the respective output fractions of the populace and aristocracy constant. Ideally, he needs to adjust instantaneously to the production shock, lowering his own economic desires by 15%. However, this elicits a response identical to that shown in Figure 4.2, increasing drastically the level of popular unrest and quickening the downfall of the current executive adminstration. With the executive's influence gone, the system is again free to oscillate.

Here the political leader faces the classic dilemma. He can either continue with his current policies and inevitably worsen the turmoil that is to ensue, or he can attempt to adjust rationally in order to arrive at the new equilibrium state--accepting a much higher amount of controversy and risking the disintegration of his political power base. It must of course be noted that no provisions have been made in this model for aristocratic revolt, and if there were, the analysis would be even more complex. However, in spite of this simplification, the message is clear. Policy makers caught in this sort of situation are faced with a very difficult task, probably beyond the comprehension of most men. It is likely that under certain combinations of events, there is no solution.

As one last example of the difficulty of executive economic policy formulation, Graphs 31-35 present one possible set of counter-cyclical policies. At the time of the shock, executive desires are gradually decreased by 10% over the space of 15 months in order to attenuate the initial disparity between output allocated to aristocrats and output allocated to the populace. Then, at M=135, executive desires increase sharply by +10% in order to prevent an overshoot of output to the aristocrats. We see in Graph 34 that this set of policies does decrease the magnitude of the fluctuations, but not substantially. Moreover, in order to accomplish this policy, Executive Power is set constant. If this were not the case, opposition to the executive would negate many of the benefits derived from his policies. Thus, we see from this analysis the true complexity of the issues at hand.