4.1 Attempts to Affect State Affairs Through Executive Policy

Having established an initial frame of reference, we can now proceed to explore the dynamic behavior of this system. The first set of experiments to be presented here involve the response of the system to attempts by the executive to alter the state of the populace. This is reasonable because, of the three major political actors which have been modeled, it is the desires of the executive which are most subject to change. Over the course of 400 months, even if shifting personal interests did not cause a change in the desired policy of the executive, succession almost certainly would.

Suppose the executive wished to change the economic distribution in society, increasing the amount allocated to the aristocrats and depriving the populace. There are a number of different ways which he might go about the process. Consider an instantaneous and extreme change in executive desires. Within the space of a month the executive begins to drastically raise taxes, rents, and fees (this could conceivably happen due to the succession to power of a reactionary unfriendly to the popular cause). This policy can be represented in our model as a step change in Executive Desired Economic Welfare. In Figure 4.1, the executive attempts to reduce the amount of production allocated to the populace by 60% with an instantaneous change in government policy during month 50 of the simulation.

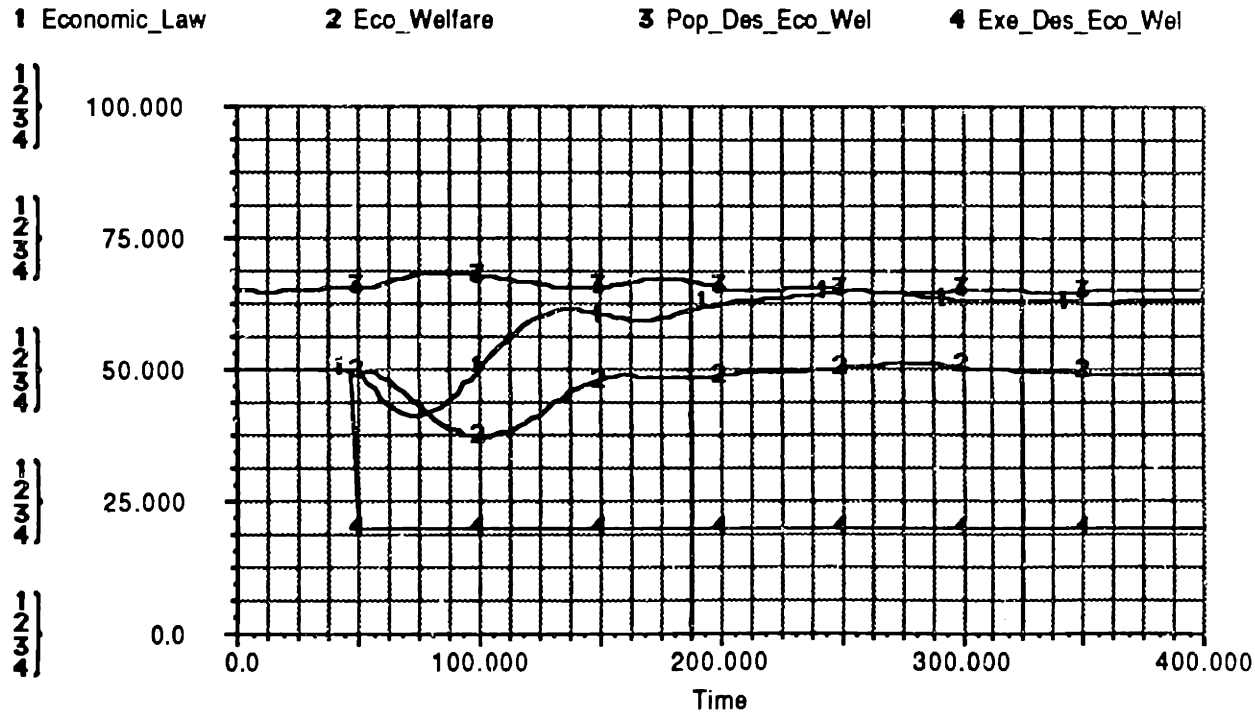

Figure 4.1: Rebellion Resulting from Radical Executive Economic Policy Change.

Initially, the executive is successful. Due to his legislative influence, laws pertaining to economic distribution are changed and he is able to "interpret" these laws even further in his favor. However, it is evident that at some point he begins to lose control of this process. Economic Law reaches a minimum during month 75 and begins to move counter to the executive's policies quite strongly. By month 100 Economic Welfare has reached its low point and is also beginning to rise. Of course, by this point, the executive has completely lost control of the political apparatus (Graph 2), however, because of the delays involved, the economic situtation of the populace continues to degenerate even after his policies have been nullified.

In the long run, the level of Economic Welfare returns to its previous state, and Economic Law actually ends up higher than it was previous to the policy shock--due to the shift of the legislative balance of power in favor of the populace. This incident literally forces the populace into the political arena. The only real loser is the executive, who is violently stripped of all power due to his unpopular action.

The most important reason for the failure of the executive's attempt to deprive the people of economic wealth is the speed with which the change is attempted. Popular opposition is very sensitive to political turmoil. It is very difficult to change long-standing institutions all at once without an overwhelming amount of brute force. Thus, one is prone to speculate that the executive would be more successful if his policy initiatives were implemented in a gradual fashion. The populace is much more likely to adjust favorably to change if it is not forced so quickly upon them. Within the model, more time allows for the adjustment of the traditional levels of opposition, unrest, and popular desires. It also allows the executive to take greater advantage of the propaganda apparatus. Together, these things help reduce the level of protest and opposition to government policies, making success more likely.

The effects of a gradual executive economic policy are simulated by converting the step function used in Figure 4.1 to a ramp function. Starting at month 50, the value of Executive Desired Economic Welfare begins to decrease by -1/3 each month, until it has reached the value of 20 during month 140. Thus, the same change of -30 is spread over a 90 month period with the ramp function. The results of this run demonstrate what was suspected. This policy provokes no great rash of popular opposition to government policies, and the executive retains a fair degree of power in spite of an unpopular policy (see Graphs 6-10). However, in spite of its marginal improvement in performance, executive policy can hardly be called effective in this circumstance. The desired change in Economic Welfare is -30, the actual change achieved by this policy is -7.

This prompts one to wonder which is the path of least resistance through this "policy space." It is here that the non-linear characteristics of this system show their effects. An change in Executive Desired Economic Welfare of -15 results in nearly as much success (ΔEconomic Welfare= -5) as does the much more extreme policy discribed above (see Graphs 16-20). This is due to the effect of the many non-linear compensating feedback loops which influence the political process. In particular, the attempt by the executive to enact radical changes activates popular opposition to government policies (a feedback loop which is normally latent) in addition to conventional protest.

4.2 Production Shocks

Another interesting test of the properties of our political model can be observed through the addition of a production shock (or supply shock). It is evident that the system can exist in a stable fashion under "normal" conditions, but what are the effects of external disturbances? A decline in the amount of produce available for distribution might result from a number of exogenous events, including war, famine, pestilence, fire, etc. How stable is the Machiavellian political system in the face of such shocks?

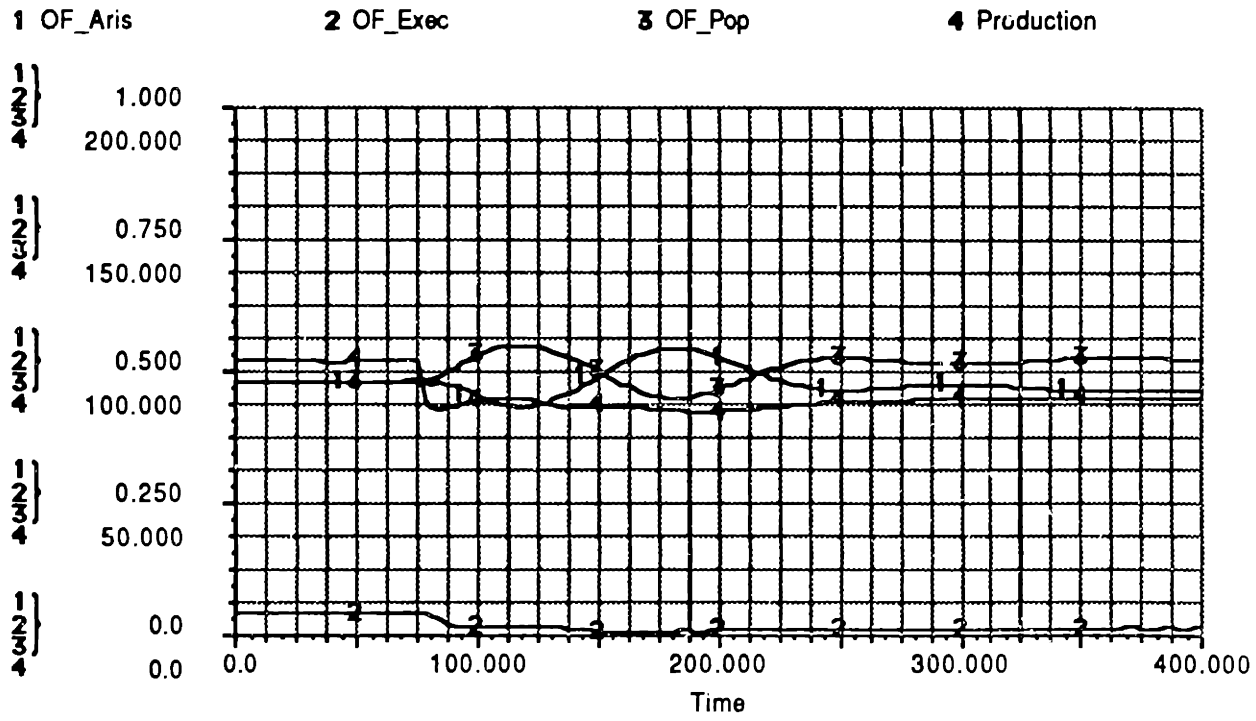

Figure 4.2: Oscillations Caused by a Production Shock

In Figure 4.2 we see the results of a slight production shock. During month 75 Production