Chapter Five: Conclusion

5.0 General System Tendencies

There are a number of conclusions expressed by Machiavelli which are easily explained in light of the system dynamics model presented here. One is the concept of social inertia. Machiavelli points out:

> "And one should bear in mind that there is nothing more difficult to execute, nor more dubious of success, nor more dangerous to administer than to introduce a new system of things; for he who introduces it has all those who profit by the old system as his enemies, and he has only lukewarm allies in those who might profit from the system." (*The Prince*, 94)

This is a characteristic which follows quite naturally from the structure of political interaction which exists in the present model. Factions are motivated by discontent. There are no 'rational' forecasts involved. In a world of competing priorities, political participation atrophies when the current state of affairs is deemed appropriate. Thus, the executive seeking to institute change is prone to experience great difficulty. Consider the efforts of the executive to lower the level of economic and political welfare simulated in Graphs 11-15. These policies incite strong resistance from the populace which is evident in Graph 12. Here we can see that they begin to sieze a greater portion of legislative influence in order to combat executive tendencies. The aristocrats have everything to gain from this policy, however, their legislative involvement begins to fall. This 'lukewarm' response is a classic case of shifting the burden to the intervenor. As Freedom and Economic Welfare decline, aristocratic discontent drops. Since Aristocratic Legislative Influence is a function of discontent, it also decreases. Likewise, the populace exhibits a similar indifference when conditions are improving.

It is interesting that Machiavelli presents this concept of resistance to change in a negative light in The Prince because if we consider it closely, we realize that it is nothing other than pluralism in its malignant form. It is precisely this characteristic of resistance to change which

makes it possible for a republic to attain longivity.

> Among those who deserve great praise for having established such constitutions is Lycurgus, who organized his laws in Sparta in such a manner that, assigning to the king, the aristocrats, and the people their respective roles, he created a state which lasted more than eight hundred years, to his everlasting credit, and resulted in the tranquillity of that city. (*Discourses*, 180)

Here we see that it is these factions which stabilize the government in the face of change. This is Machiavelli's principal argument throughout the Discourses and our model seems to support it well. However, it is evident by the discussion in the preceding paragraph that pluralism's greatest strengths can lead to its downfall. If we accept the premise that the tendency of a political faction is to work against those policies threatening to its interests, then as the number of factions increases, the system becomes more and more constrained. Eventually this leads to a government paralyzed by "special interests." Thus, no one idea--even one as versatile as pluralism, is sufficient to solve the political problem.

Under certain conditions, the tendency of political participation to be proportional to discontent can actually be destabilizing. Consider the results of a production shock initially producing an unequal distribution of output. While the output allocated to one faction is higher, higher levels of discontent cause the other faction to obtain a disproportionate level of legislative influence. This forces an adjustment which is too large, perpetuating a sequence of political fluctuations which can lead to instability. The tendency of this political system to go unstable due to fluctuating legislative balance is a strong function of the speed with which legislative influence changes hands. As legislative power shifts become slower, the system becomes much more stable. This finding offers mathematical rationale for the existance of the United States Senate in its present form, with senators being elected once every six years. The Senate was meant to be a conservative body; our model offers another interpretation of conservative--stable.

5.1 Areas for Further Study

This model constitutes only a initial attempt to quantify the complex dynamic behavior observed in political systems. Due to the nature of this study, very little time was available to perform extensive research into all of the processes which must be included in even the most simple political model. Thus, much could be gained from extensive research into the relevant characteristics of each of the sectors presented. Through scrutiny of production methods and commerce, many of the economic assumptions could be improved. A study of the history of this period might provide more insight into the frequency and extent of popular uprisings. Assumptions concerning the ratio of aristocrats to populace could almost certainly be checked, although the true power distribution among the three political factions would probably be much

harder to determine. Information concerning actual legislative and executive practices in different Renaissance states would help further define the structure and parameters in this part of the model. Finally, a thorough knowledge of the laws of this period and how they varied would be invaluable in assessing their effect on living conditions and the degree to which they reflected popular desires. This by no means represents a complete list of the information which needs to be gathered, but rather constitutes a reasonable start for the next phase of this endeavor.

Methodologically, the behavior presented here has consisted of strictly deterministic phenomena. The next step should be to add noise. The model currently has this capability built into its structure, and some testing with noise was done in the intermediate stages of this study in order to assure that no unrealistic assumptions were being made. However, comprehensive testing of this model with noise will require a great deal more effort than has been expended so far. Each deterministic simulation produces a unique set of numerical data which can be compared to the results of a simulation with different initial conditions and assumptions. In the non-deterministic case, it is the statistical distribution of a various scenarios' output which must be compared. Thus, the computational intensity increases by orders of magnitude. The software utilized to perform this study (STELLA™) is not well suited for this sort of analysis beyond allowing simple observations of a system's characteristic modes of oscillation when noise is added. Perhaps future innovations in software will allow studies to proceed in this direction. In any event, I believe this thesis demonstrates that there is much fertile ground to be explored in the area of political dynamics.