**Chapter 21 Summary**

In this chapter we have discussed multivariate multiple regression models, that is models in which there are two or more dependent variables with several regressors, which may be quantitative or qualitative or both. In principle, we can estimate each equation by OLS, but it may be more efficient to estimate them jointly if the dependent variables are correlated with each other.

We distinguished two types of MRMs. In the first, the dependent variables are different, but they all have the same regressors. In the second, as in SURE, the dependent variables and the explanatory variables may both be different. To estimate the first type, we used the *mancova* and *mreg* commands in *Stata* 12. To estimate the second type, we used the *sureg* command in *Stata* 12. We illustrated both these models with numerical examples.

Although each equation in both of these models can be estimated by OLS, there are advantages in jointly estimating the equations in each model. We discussed these advantages. Of course, if the error terms of the equations in the model are uncorrelated, there is no advantage in estimating them jointly over estimating them individually by OLS. In addition, if SURE contains the same explanatory variables, OLS and SURE estimates of the parameters will be the same.