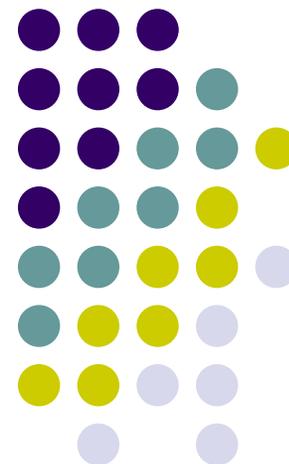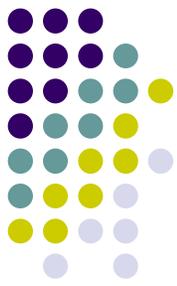# Some concluding remarks

# Choosing the level of aggregation

- This a difficult design issue
  - How many sectors and regions to use?
- natural desire to make it as detailed as possible in an attempt to increase realism
- Too few regions or sectors can mean aggregation bias
- but more detail may not always be beneficial
  - May be time-consuming to solve
  - Too much information in solutions

- Go for more detail in the areas of crucial interest to your analysis – Asian? Agriculture? Manufacturing? A particular RTA?

Benefits of CGE analysis

- Computable general equilibrium (CGE) models can be used to simulate and analyse policy changes having economy-wide impacts. Many policy reforms such as trade liberalization -- even if directed to just one sector -- affect other sectors of the economy. These interactions can only be captured in a multi-sectoral model.
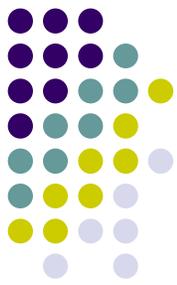
- CGE models have tight theoretical specifications and, unlike econometric models, can provide insights into changes for which there is no historical experience

- Insights could sometimes have been obtained in other ways, but once the CGE model has been constructed, we have a powerful tool for modelling the results of a wide range of possible policy changes
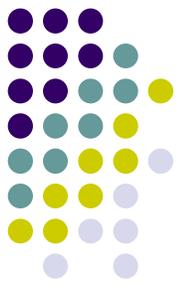
- easy to miss the many complex and often indirect effects of a policy
  - empirical modelling can help reveal them
- CGE modelling enables quantification of trade-offs
- better-informed policy debates
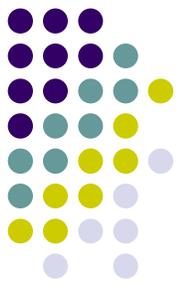
- quantitative modelling allows us to examine the key behavioural assumptions and important parameter values

- GTAP contains a powerful tool for sensitivity analysis
  - Specify probability distributions for selected parameters
  - Solution gives upper and lower bounds
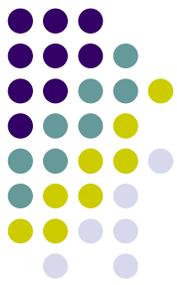
Limitations of CGE models

- CGE models summarize and aggregate a huge amount of knowledge, but can't be used to answer every question
- technical constraints - difficult to disaggregate to sufficient detail for all policy requirements
- other approaches will at times be more appropriate on theoretical grounds
  - if no intersectoral or macroeconomic effects, may not be much to gain from GCE analysis
  - if pure macroeconomic analysis, may not be much gain from the detailed sectoral and market specifications

When not to use CGE models
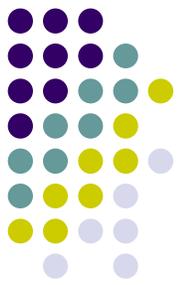
- don't be committed to addressing every issue as a modelling problem
  - some issues are not appropriately dealt with by CGE models
  - it the theory and data that you need to address the problem are not available, might be better to do a theoretical or qualitative study
  - an economist has a wide-ranging tool-kit

GTAP is ongoing!
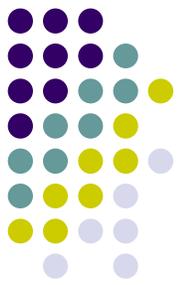
- progress over time
  - assumptions can change with new theory available
    - New GTAP models are available (dynamic, imperfect competition, better farm input substitution)
  - the model can accommodate new or improved data
    - GTAP database is updated every few years
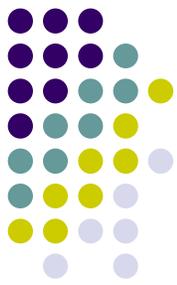   - If your country is not there, you can contribute the I-O data!
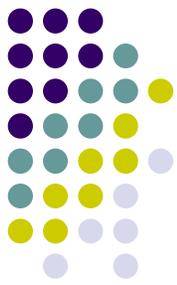
CGE models

"are nothing more nor less than analytical tools designed to assist in reaching a better informed understanding of issues to which judgements must ultimately be applied"

[Alan Powell, 1977]

Lessons I hope you gained from the course:

1. Experience in applied economics e.g.
   - Policy analysis
   - Working with data
   - Using economic theory to help solve real problems
   - Insights into the political economy of policy

2. Understanding of the importance of general equilibrium effects

3. An introduction to CGE modelling

4. Introduction to using global data (GTAP database)

5. Introduction to using the GTAP model