

# NY projections using Cohort Component Method

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## Characteristics

- Cohort Component Method
- By sex and 5-yr age categories
  - 0-4, ..., 85+
- County level
- Base 2005, projected 2010, 2015, ..., 2035
- Parameters constant
  - “What if the future looks like the recent past”

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## Model environment

- Written in SAS
- Input parameters in Excel workbook
  - Allows for varying parameters and scenario definitions
- Output to Excel
- Default output accessible online

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## Cohort Component Method

### Cohort size at t1

+ births between t1 and t2 (only youngest cohort)

- deaths between t1 and t2

+ in-migration between t1 and t2

- out-migration between t1 and t2

= Cohort size at t2

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## Births

- Based on Age Specific Fertility Rates
- Assumptions calculated as:  
$$\text{Rate}_{\text{agegroup}} = \frac{(\text{Births}_{\text{agegroup}} \text{ from Oct 1998} - \text{Oct 2001}) / 3}{\text{divided by } \# \text{female}_{\text{agegroup}}}$$
- Birth data from NY Department of Health
- Age group size from Census 2000

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## Deaths

- Based on calculated lifetable
- Death rates calculated as:  
$$\text{Rate}_{\text{agegroup}} = \frac{(\text{Deaths}_{\text{agegroup}} \text{ from Oct 1998} - \text{Oct 2001}) / 3}{\text{divided by } \# \text{population}_{\text{agegroup}}}$$
- Death data from NY Department of Health
- Age group size from Census 2000

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## Migration

- Multi step process
  - Calculate age/sex distribution of in- and out-migration
    - Based on 'Where did you live 5 years ago'
  - Calculated total Net-migration independently
    - Based on residual method (average over 1990-1995, 1995-2000, 2000-2005)
  - Calculate in-migration and out-migration counts by sex and cohort

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## Base population

- Project Census 2000 population to 2005 and rake to 2005 total population estimates
  - 2005 Census Bureau Population estimates by sex and age gave some unexplainable results

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## Special Populations

- Temporary residents can cause problems
  - For example:
    - Student population aging in college towns
    - Same for prisons, military installations, etc.
- Possible solution:
  - Define Special Population by age/sex
  - Remove them from demographic processes
  - Add them back in for total population counts
  - Drawback: Need for adjusted rates

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## Special Populations

- New York solution:
  - Only look at change in the size of Special Populations
  - Only correct migration counts for those changes
  - Also correct assumed migration for changes in the past
  - Drawback: significant change in special population could distort projected birth/deaths

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## Output

- Detailed output to Excel
  - includes all projected components of change
- Summarized data available online
  - <http://pad.human.cornell.edu/che/BLCC/pad/data/projections.cfm>
  - Includes tables, charts and population pyramids
  - Assumptions, methodology and detailed output available for download

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## Future ideas

- Projections by race
- Annual projections by single year of age
- Derive migration rates from the ACS
- Look at possible/probable trends in demographic processes
- Look at spatial correlations
- Look at connections with Economic projections

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