# Algorithm

* theta\_update.m
  + Inputs
    - parameters
    - wages

: prior sex ratios among singles

* + Outputs
    - : updated sex ratio among singles
    - : reservation match qualities for marriage
    - : Pareto weights for the wife that implement Egalitarian Bargaining solution
  + Calls:
    - submkt\_pree.m
      * Inputs
        + parameters
        + : expected sex ratio among singles
        + : wage for females
        + : wage for males
        + : mean of the distribution of match quality draws
      * Outputs
        + reservation match quality for marriage
        + : Pareto weight for the wife that implements the Egalitarian Bargaining solution
        + : value of being single for females
        + : value of being single for males
      * Calls:
        + egalbarg\_pw.m

Inputs

parameters

Outputs

: Pareto weight for the wife that implements the Egalitarian Bargaining solution

Calls:

mgains\_diff.m

Inputs:

parameters

: expected sex ratio among singles

: reservation match quality

: Pareto weights for the wife

Outputs:

Calls:

uflow\_singles.m

uflow\_married.m

v\_singles\_submkts.m

* + - * + uflow\_singles.m
        + v\_singles.m
    - match\_prob.m
    - entry\_pree.m
      * Inputs:
        + parameters
        + and : wages for males and females of all types in , i.e. for all types.
        + : value of being single for females of all types in
        + : value of being single for males of all types in
      * Outputs:
        + : reservation match qualities for all possible combinations of female-male types of entrants
        + : Pareto weights for the wife that implement the Egalitarian Bargaining solution for all possible combinations of female-male types of entrants
      * Calls:

uflow\_married.m

# Basic functions

* match\_prob.m
  + Inputs:
    - parameters
    - : sex ratio among singles
  + Outputs:
    - for : the probability of receiving a match in each period
* cond\_exp\_q.m
  + Inputs:
  + Outputs:
    - when
* per\_sol\_singles.m
  + Inputs:
    - parameters
    - : wages for agents of sex for all types in , where possibly , i.e., possibly for all types
  + Outputs:
    - For a person of sex and type , returns the optimal quantities of:
      * : consumption of market goods
      * : leisure time
      * : consumption of household-produced goods
      * : housework time
      * : home equipment use
      * : paid work time
* per\_sol\_married.m
  + Inputs:
    - parameters
    - and : wages for males and females of all types in and , possibly with and , i.e. for all types.
    - : Pareto weights for the female for all combinations of male and female types
  + Outputs:
    - For each combination of couples with wife’s type and husband’s type , and the specified Pareto weights for the wife, returns the optimal quantities of:
      * : consumption of market goods for wife
      * : consumption of market goods for husband
      * : leisure time for wife
      * : leisure time for husband
      * : consumption of household-produced goods
      * : wife’s housework time
      * : husband’s housework time
      * : home equipment use
      * : wife’s paid work time
      * : husband’s paid work time
* uflow\_singles.m
  + Inputs:
    - parameters
    - and : wages for males and females of all types in and , possibly with and , i.e. for all types.
  + Outputs:
    - for : utility flow for single agents for all types and for both males and females
  + Calls:
    - per\_sol\_singles.m
* uflow\_married
  + Inputs:
    - parameters
    - and : wages for males and females of all types in and , possibly with and , i.e. for all types.
    - : Pareto weights for the female for all combinations of male and female types
  + Outputs:
    - for : indirect utility of marriage (excluding companionship) for people in all types of marriages
  + Calls:
    - per\_sol\_married.m
* v\_singles\_submkts.m
  + Inputs:
    - parameters
    - : expected sex ratio among singles
    - for : indirect utility flow (excluding companionship) when married for both sexes
    - for : indirect utility flow when single for both sexes
    - : reservation match quality for marriage
    - : mean for the distribution of match quality draws
  + Outputs:
    - for : value of being single for both sexes
  + Calls:
    - match\_prob.m
    - cond\_exp\_q.m

# Parameters