Speed Tests

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|  | Method 1 (seconds) | Method 2 (seconds) |
| Solve for SS with bad init guess | 25.8 | 29.9 |
| Loop calibration (10 iterations) | 24.3 | 42.0 |
| Minimizer (4 iterations) | 1511.7 | 340.3 |
| Solve for SS with good guesses, except replacement rates are new | 7.7 | 9.4 |
| Total Time | 1568.9 | 421.7 |

Note, the loop calibration usually does 2300 iterations. The minimizer would then need to iterate 26 times to match the same number of solving for the steady state as the loop minimizer (as it does 87 for each iteration). Since the minimizer does much more than 26 iterations, method 2 being around 4 times as fast as method 1 in the minimizer stage makes up for method 1 being less than twice as fast in the loop calibration stage.

However, we don’t know how method 2 does when the minimizer makes a large jump. If it has to iterate for a while to match the big jump, then once every 87 minimizer calls (every iteration) will take a long time, the rest will be fast.

Robustness

* Loop calibration
  + Bigger loop steps
    - Can do any loop step up to 10,000
  + Get rid of loop calibration altogether – can the minimizer now push it where it needs to go?
    - Got rid of loop, and can just start out at huge values
* Test large sigma values
  + Can easily do sigma=3.5 and 4.0
* **Tax experiments**
* Minimizer
  + **Run the full minimizer without any changes – does it do better?**
  + **Start big and see how it does**