**Entry Point:**

Compile\_mexSolveModelGivenParms.m

* For compilation we will need the following files:
  + mexSolveGivenParms.cu
  + liquidity\_mex\_defs.cu
  + normaldist\_mex.cu
  + tauchen\_mex.cu
  + liquidity\_vfi\_mex.cu

mexSolveGivenParms.cu

* This is a mexfile and serves as the main link between the C++/CUDA and MATLAB.
* How this function is called in MATLAB to solve the model given the parameters:
  + For us to run this function, we need to have arguments, the arguments are given in:
    - Fit\_params\_10302020\_turnover\_1998\_2004\_run2.m
      * This file does not run mexSolveGivenParms.cu directly.
      * It calls FitParmsExactID\_Parallel\_5moments.m
        + This is the function that calls mexSolveModelGivenParms
        + Then computes moments using SimSinglePath\_mex\_output.m

Does this function use other functions?

* How is this function constructed in terms of the C++ code?
  + Once parameters are read into the model, the mexfunction calls the function SolveModel
  + This function is defined in liquidity\_vfi\_mex.cu along with other functions.
* What other things does this file do?
  + Read parameters and translate them to C.
  + Store the parameters in a class defined in the host.
  + Calls SolveModel and stores all the results in host memory.
  + Creates an output structure in MATLAB and exports the results to MALTAB.

liquidity\_vfi\_mex.cu

* This file creates several functions:
  + Ggq\_topdown
  + Vfi\_iterate\_policy
  + Vfi\_iterate
  + Vfi\_interpolate
  + Vfi\_update1
  + Vfi\_update2
  + Update\_compute\_errors
  + Vfi
  + SolveModel
    - This function oversees allocation of device memory.
    - Initializing device memory.
    - Initializing value functions.
    - Running vfi
    - Running vfi\_iterate\_policy
    - Copying memory to host
    - Freeing memory.
  + initValueFuns