Problem 1. Intro: This page takes the declared variables in the Fortran code from WorldModel WORKING fortran file. I organize it into the following table:

I)Integers Parameters. These are typically what sets up the ground work for demographics rules.

II)Integer. These are typically indicates the trans year, iterations, etc.

III)Real Scalars

IV)1D Arrays

V) 2D Arrays

VI) 3D Arrays

VII) 4D Arrays

Problem 2. INTEGER PARAMETERS

Solution. Countries=7
FirstCountry=1
LastCountry=7
FirstFertilityYear=23
LastFertilityYear=45
FirstWorkYear=21
Gens=90
LastEducationYear=20
YClasses=2
Years=300
FirstYear=2008

□

Problem 3. INTEGERS

Solution. FirstSolutionYear
IRUN
TransYear
Iter
Niter

There is also a 2 dimensional integer array that stores each of the respective countries' retirement ages by year and by country.
First Dimension: From -1 to Years
Second Dimension: Country number

□

Problem 4. REAL SCALARS

Solution. ALP
Alpha
Damp
DampK
DampR
Del
ExogNpop
Gamma
Hours
Rho
SigFig
Tech
Theta

□

Problem 5. 1D Arrays

Solution.
Shape (Number of Countries X 1): Governments

Shape (Number of Countries X 1): Population Scale, Total Fertility Steady State

Shape (Years from -1 to 300 X 1): AggregateAssetsWorld, AP, DDWorld, ForeignAssetsWorld, RG, TradeBalanceWorld, YYWorld, TotGovEndowShare, TotGovEndow Revenue, NetEndowInvest, Endowment

Shape (Number of Classes X 1): Beta

Shape (Years from -1 to 300 plus 1 X 1): Pvendowment

□

Problem 6. 2D Arrays

Solution.
Shape (-90 to 300, number of countries) : Average Birth Age, Total Fertility

Shape (number of classes, number of countries) : Consumption Share

Shape (-1 to 300, number of countries) : Debt level, disability benefits ind, inheritance tax, mu1, mu2gov, mu2tax, mu3, mu4, contribution ceiling, government discretionary spending

Shape (-1 to 300, number of countries) : Aggegrate assets, aggegrate disability tax rate, aggregate health tax, aggregate pension, avg labor earnings, capital, capital tax rate, CC, consumption price, corp tax, DD, Debt, disability benefits, education expenditures, foreign assets, government expenditures, health benefits, invest, npop, pension benefits, pop efficient, R, trade balance, yy, yy0, deficit, trf, government ednowment share, total expenditures.

Shape (years of eduction, number of countries) : Education expenditures IND

Shape (number of generations, number of countries) : Health expenditures profile

Shape (number of generations, number of countries) : Migrants

Shape (range of fertility ages, number of countries) : Fertility steady state

Shape (-1 to 300, number of countries) : GDP, NationalIncome, Country Endow share
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Problem 7. 3D Arrays

Solution.
Shape (-1 to 300, number of classes, number of countries) : aggregate assets for bequests, average indexed earnings, consumption share migrants, wage index class

Shape (-1 to 300, number of classes, number of countries) : Productivity C

Shape (-1 to 300, number of classes +1, number of countries) : Aggregate assets for migrants, aggregate average disability tax rate, aggregate average health tax rate, aggregate average pension tax rate, aggregate average wage tax rate, aggregate marginal disability tax rate, aggregate marginal health tax rate, aggregate marginal pension tax rate, aggre marg wage tax rate, labor

Shape (0 to 90, -1 to 300, number of countries) : Health benefits ind, survival probability

Shape (1 to 90, -1 to 300, number of countries) : Migration scale

Shape (**3**, -1 to 300, number of countries) : ALEPH, BETH

Shape (**6**, -1 to 300, number of countries) : Tax Revenues

Shape (range of fertility years, -90 to 300, number of countries) : Fertility

Shape (start work to death, -1 to 300, number of countries) : delta

Shape (**3**,-1 to 300, number of countries) : endogenous tax ratio

Shape (from starting work to death, number of classes, number of countries) : assets initial year, base assets

Shape (from starting work to death, number of classes, number of countries): ZXI

□

Problem 8. 4D Arrays

Solution.
Shape (0 to 90, -1:years, number of classes, number of countries) : Pension replacement rate

Shape (0 to 90 + 1,-1 to 300, number of classes +1, number of countries) : POP

Shape (begin work to death, -1 to 300, number of classes, number of countries) : Age efficiency, assets, average disability tax rate, average health tax rate, average pension tax rate, average wage tax rate, consumption, consumption (kids), leisure, marg disability tax rate, marg health tax rate, marg pension tax rate, marg wage tax rate, pension benefits ind, shadow wage, utility, transfer

Shape (**4**,**2**, -1 to 300, number of countries) : TaxRate

Shape (start work to death, 0 to 300, number of classes, number of countries) : Utility0

□

Problem 9. 5D Arrays

Solution.
Shape (start work to death, -1 to 300, number of classes, number of countries, number of countries) : H transfers

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