**Benchmark Inter-province IO tables to key statistics of China’s National Account and their rebalance**

***Note****: When running the MATLAB code, do add the root folder ‘Benchmark IRIO\_code and data’ and the path of GAMS installation to path.*

*When running ‘MRIO2IRIO\_multiyear.m’, do add file path in the script of where the folder 'Benchmark IRIO\_code and data' is located. For example, if the folder is located in 'D:\paper\_review\', please assign 'D:\paper\_review\' to the variable 'filepath'.*

1. **Calibrate the National Account Data**

Code file:

1. MacroCtrl\_1997\_2017.gms

Data file:

Input: Benchmark IRIO\_code and data\1. Calibrate the National Account Data\initialMacrodata97\_17.gdx

Output: results\_MacroCtrl.gdx

1. **Estimate Tibet IOT**

Done in excel.

Data file:

Tibet\_initial\_IO\_structure\_1997.xlsx

Tibet\_initial\_IO\_structure\_2002.xlsx

Tibet\_initial\_IO\_structure\_2007.xlsx

1. **Benchmark the Provincial IOT to the Calibrated National Account Data**

Code file:

1997: 3. Calibrate\_PMRIO1997

2002: 3. Calibrate\_PMRIO2002

2007: 3. Calibrate\_PMRIO2007

2012: 3. Calibrate\_PMRIO2012

2017: 3. Calibrate\_PMRIO2017

Data file:

*(Please copy the output of year 2007 to the folders of 1997 and 2002 before running the gms files for 1997 and 2002)*

1997:

Input: Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\1997\BPIOT\_1997.gdx

Benchmark IRIO\_code and data\1. Calibrate the National Account Data\results\_MacroCtrl\_97\_17.gdx

Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\1997\TibetIOT\_mapped2012for1997.gdx

Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\1997\est\_total\_Tibet\_mappedfor1997.gdx

Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\1997\Calibrate\_PMRIO2007\_rslt.gdx

Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\1997\total\_2007\_rslt.gdx

Output: Calibrate\_PMRIO1997\_rslt.gdx

total\_1997\_rslt.gdx

2002:

Input: Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\2002\BPIOT\_2002.gdx

Benchmark IRIO\_code and data\1. Calibrate the National Account Data\results\_MacroCtrl\_97\_17.gdx

Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\2002\TibetIOT\_mapped2012for2002.gdx

Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\2002\est\_total\_Tibet\_mappedfor2002.gdx

Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\2002\Calibrate\_PMRIO2007\_rslt.gdx

Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\2002\total\_2007\_rslt.gdx

Output: Calibrate\_PMRIO2002\_rslt.gdx

total\_2002\_rslt.gdx

2007:

Input: Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\2007\BPIOT\_2007.gdx

Benchmark IRIO\_code and data\1. Calibrate the National Account Data\results\_MacroCtrl\_97\_17.gdx

Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\2007\TibetIOT\_mapped2012for2007.gdx

Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\2007\est\_total\_Tibet\_mappedfor2007.gdx

Output: Calibrate\_PMRIO2007\_rslt.gdx

total\_2007\_rslt.gdx

2012:

Input: Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\2012\BPIOT\_2012.gdx

Benchmark IRIO\_code and data\1. Calibrate the National Account Data\results\_MacroCtrl\_97\_17.gdx

Output: Calibrate\_PMRIO2012\_rslt.gdx

total\_2012\_rslt.gdx

2017:

Input: Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\2017\BPIOT\_2017.gdx

Benchmark IRIO\_code and data\1. Calibrate the National Account Data\results\_MacroCtrl\_97\_17.gdx

Output: Calibrate\_PMRIO2017\_rslt.gdx

total\_2017\_rslt.gdx

1. **Rebalance Inter-provincial Trade**

Code file:

1997: 4. Calibrate\_PMRIO1997\_BTM

2002: 4. Calibrate\_PMRIO2002\_BTM

2007: 4. Calibrate\_PMRIO2007\_BTM

2012: 4. Calibrate\_PMRIO2012\_BTM

2017: 4. Calibrate\_PMRIO2017\_BTM

Data file:

1997:

Input: Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\1997\Calibrate\_PMRIO1997\_rslt.gdx

Benchmark IRIO\_code and data\4. Rebalance Inter-provincial Trade\1997\ProvTrd\_1997.gdx

Output: Calibrate\_PMRIO1997\_BTM\_rslt.gdx

2002:

Input: Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\2002\Calibrate\_PMRIO2002\_rslt.gdx

Benchmark IRIO\_code and data\4. Rebalance Inter-provincial Trade\2002\ProvTrd\_2002.gdx

Output: Calibrate\_PMRIO2002\_BTM\_rslt.gdx

2007:

Input: Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\2007\Calibrate\_PMRIO2007\_rslt.gdx

Benchmark IRIO\_code and data\4. Rebalance Inter-provincial Trade\2007\ProvTrd\_2007.gdx

Benchmark IRIO\_code and data\4. Rebalance Inter-provincial Trade\2007\VAT\_TRD\_2007.gdx

Output: Calibrate\_PMRIO2007\_BTM\_rslt.gdx

2012:

Input: Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\2012\Calibrate\_PMRIO2012\_rslt.gdx

Benchmark IRIO\_code and data\4. Rebalance Inter-provincial Trade\2012\ProvTrd\_2012.gdx

Benchmark IRIO\_code and data\4. Rebalance Inter-provincial Trade\2012\VAT\_TRD\_2012.gdx

Output: Calibrate\_PMRIO2012\_BTM\_rslt.gdx

2017:

Input: Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\2017\Calibrate\_PMRIO2017\_rslt.gdx

Benchmark IRIO\_code and data\4. Rebalance Inter-provincial Trade\2017\ProvTrd\_2017.gdx

Benchmark IRIO\_code and data\4. Rebalance Inter-provincial Trade\2017\VAT\_TRD\_2017.gdx

Output: Calibrate\_PMRIO2017\_BTM\_rslt.gdx

1. **Convert MRIO to IRIO**

Code file:

MRIO2IRIO\_multiyear.m

(Internally call ‘TrdShare1997\_v2.m’, ‘TrdShare2002\_v2.m’, ‘TrdShare2007\_v2.m’, ‘TrdShare2012\_v2.m’, ‘TrdShare2017\_v2.m’)

Data file:

Input:

Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\1997\Calibrate\_PMRIO1997\_rslt.gdx

Benchmark IRIO\_code and data\4. Rebalance Inter-provincial Trade\1997\Calibrate\_PMRIO1997\_BTM\_rslt.gdx

Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\2002\Calibrate\_PMRIO2002\_rslt.gdx

Benchmark IRIO\_code and data\4. Rebalance Inter-provincial Trade\2002\Calibrate\_PMRIO2002\_BTM\_rslt.gdx

Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\2007\Calibrate\_PMRIO2007\_rslt.gdx

Benchmark IRIO\_code and data\4. Rebalance Inter-provincial Trade\2007\Calibrate\_PMRIO2007\_BTM\_rslt.gdx

Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\2012\Calibrate\_PMRIO2012\_rslt.gdx

Benchmark IRIO\_code and data\4. Rebalance Inter-provincial Trade\2012\Calibrate\_PMRIO2012\_BTM\_rslt.gdx

Benchmark IRIO\_code and data\3. Benchmark the Provincial IOT to the Calibrated National Account Data\2017\Calibrate\_PMRIO2017\_rslt.gdx

Benchmark IRIO\_code and data\4. Rebalance Inter-provincial Trade\2017\Calibrate\_PMRIO2017\_BTM\_rslt.gdx

Benchmark IRIO\_code and data\5. Convert MRIO to IRIO\ProIOT\_Totals.mat

Benchmark IRIO\_code and data\5. Convert MRIO to IRIO\TrdShare.mat

Output:

CalibIRIO1997.mat

CalibIRIO2002.mat

CalibIRIO2007.mat

CalibIRIO2012.mat

CalibIRIO2017.mat