The code begins here (adjust according to our variables)

use PanelData.dta

format Date %tq

qui:{

xtset ID Date

tabulate Country, generate(Country)

tabulate Continent, generate(Continent)

tabulate Incomegroup, generate(Incomegroup)

tabulate DevelopmetLevel, generate(DevelopmetLevel)

tabulate Date, generate(Date)

tabulate Year, generate(Year)

tabulate ID, generate(ID)

tabulate PandemicWave, generate(PandemicWave)

}

**Second: exogenous condition (independence of the error terms) a is the p-value of the explanatory variables. a1 the R2 threshold. a2 is the maximum correlation between the error term and the exogenous variables. iter refers to the number of iterations (models).**

local a=0.1

local a1=0.8

local a2=0.1

local d=3

local iter=0

putexcel set Second\_Const\_NOD1

tuples Transmission RecoveryRate MortalityRate PandemicNumber PandemicGrowth M3 MobilityRate EmploymentRate LongInterestRate ShortInterestRate SharePrices HousePrices ProductionPrices Inflation PrivateSpending GovernmentSpending GDP Exports Imports Termsoftrade FDI HealthExpenditure GoldPriceoz LifeExpectancy OilBrent, min(1) max(7)

quietly forval i=1/`ntuples' {

local iter=`iter' + 1

local gg=0

regress ConstructionIndustry `tuple`i''

if e(r2)>`a1' {

matrix result=r(table)

local dim (`=colsof(result)')

local dimension=`dim'

quietly forval j=1/`dimension' {

local h=result[4,`j']

if `h'<=`a' {

local gg=`gg'+1

}

}

if `gg'==`dimension' {

predict residuals, residuals

local f=1

foreach var in Transmission RecoveryRate MortalityRate PandemicNumber PandemicGrowth M3 MobilityRate EmploymentRate LongInterestRate ShortInterestRate SharePrices HousePrices ProductionPrices Inflation PrivateSpending GovernmentSpending GDP Exports Imports Termsoftrade FDI HealthExpenditure GoldPriceoz LifeExpectancy OilBrent {

quietly {

corr(residuals `var')

if abs(r(rho))<=`a2' {

if `f'==1 {

putexcel A`d'=(1)

}

if `f'==2 {

putexcel B`d'=(1)

}

if `f'==3 {

putexcel C`d'=(1)

}

if `f'==4 {

putexcel D`d'=(1)

}

if `f'==5 {

putexcel E`d'=(1)

}

if `f'==6 {

putexcel F`d'=(1)

}

if `f'==7 {

putexcel G`d'=(1)

}

if `f'==8 {

putexcel H`d'=(1)

}

if `f'==9 {

putexcel I`d'=(1)

}

if `f'==10 {

putexcel J`d'=(1)

}

if `f'==11 {

putexcel K`d'=(1)

}

if `f'==12 {

putexcel L`d'=(1)

}

if `f'==13 {

putexcel M`d'=(1)

}

if `f'==14 {

putexcel N`d'=(1)

}

if `f'==15 {

putexcel O`d'=(1)

}

if `f'==16 {

putexcel P`d'=(1)

}

if `f'==17 {

putexcel Q`d'=(1)

}

if `f'==18 {

putexcel R`d'=(1)

}

if `f'==19 {

putexcel S`d'=(1)

}

if `f'==20 {

putexcel T`d'=(1)

}

if `f'==21 {

putexcel U`d'=(1)

}

if `f'==22 {

putexcel V`d'=(1)

}

if `f'==23 {

putexcel W`d'=(1)

}

if `f'==24 {

putexcel X`d'=(1)

}

if `f'==25 {

putexcel Y`d'=(1)

}

if `f'==26 {

putexcel Z`d'=(1)

}

if `f'==27 {

putexcel AA`d'=(1)

}

}

local f=`f'+1

}

}

local d=`d'+1

drop residuals

}

}

}

**Third parametric evaluation of instruments. Substitute the variables with more frequency of being uncorrelated with the error in the var1 (see below). The previous step generated an Excel file. Copy the variables from the tuples in the second condition as headings of the Excel file. Count the number of variables being identified as exogenous. We selected the nine variables adding more in the column sums.**

putexcel set Third\_Const

local d=1

local a1=0.7

local a2=1

quietly {

foreach var in Transmission RecoveryRate MortalityRate PandemicNumber PandemicGrowth M3 MobilityRate EmploymentRate LongInterestRate ShortInterestRate SharePrices HousePrices ProductionPrices Inflation PrivateSpending GovernmentSpending GDP Exports Imports Termsoftrade FDI HealthExpenditure GoldPriceoz LifeExpectancy OilBrent {

foreach var1 in **EmploymentRate LongInterestRate SharePrices GDP Imports FDI HealthExpenditure RecoveryRate PandemicGrowth** {

corr(`var' `var1')

if abs(r(rho))>=`a1' {

if abs(r(rho))<=`a2' {

putexcel A`d'=("`var'")

local d=`d'+1

}

}

}

}

}

**GMMs: copy the predictors (third condition) in the tuples and the instruments (second condition) in the GMM model**

tuples L.RecoveryRate L.PandemicGrowth L.EmploymentRate L.LongInterestRate L.ShortInterestRate L.ProductionPrices L.Inflation L.PrivateSpending L.GovernmentSpending L.GDP L.Exports L.Imports L.FDI L.HealthExpenditure L.LifeExpectancy, min(1) max(9)

putexcel set Results\_Const

local a=0.0

local b=100

local a1=1

local a2=0.10

qui forval i = 1/`ntuples' {

gmm(ConstructionIndustry -{xb:`tuple`i''}-{b0}), instruments( L.EmploymentRate L.LongInterestRate L.SharePrices L.GDP L.Imports L.FDI L.HealthExpenditure L.PandemicGrowth L.RecoveryRate) vce(robust) level(90)

local iter=`iter' + 1

local gg=0

local ggg=0

matrix result=r(table)

local dim (`=colsof(result)')

local dimension=`dim'

quietly forval j=1/`dimension' {

local h=result[4,`j']

local hh=result[1,`j']

if `h'<=`a2' {

if abs(`hh')<=`b' {

local gg=`gg'+1

}

}

}

if `gg'==`dimension' {

predict double r if e(sample), residuals

matrix W = e(W)

local l=1

foreach var of varlist L.EmploymentRate L.LongInterestRate L.SharePrices L.GDP L.Imports L.FDI L.HealthExpenditure L.PandemicGrowth L.RecoveryRate {

generate double r`l' = r\*`var'\*sqrt(W[`l', `l'])

local `++l'

}

quietly forval m=1/9 {

gen h`m'=(r`m'/r)

egen avg\_quan`m' = mean(h`m')

if avg\_quan`m'>=45 {

local ggg=`ggg'+1

}

}

drop r r1 r2 r3 r4 r5 r6 r7 r8 r9 h1 h2 h3 h4 h5 h6 h7 h8 h9 avg\_quan1 avg\_quan2 avg\_quan3 avg\_quan4 avg\_quan5 avg\_quan6 avg\_quan7 avg\_quan8 avg\_quan9

if `ggg'==0 {

estimates save Const\_ExplanatoryVars`i'

putexcel A`a1'=("`tuple`i''")

local dimm=`dimension'-1

forval k=1/`dimm' {

local n=result[1,`k']

if `k'==1 {

putexcel B`a1'=(`n')

}

if `k'==2 {

putexcel C`a1'=(`n')

}

if `k'==3 {

putexcel D`a1'=(`n')

}

if `k'==4 {

putexcel E`a1'=(`n')

}

if `k'==5 {

putexcel F`a1'=(`n')

}

if `k'==6 {

putexcel G`a1'=(`n')

}

if `k'==7 {

putexcel H`a1'=(`n')

}

if `k'==8 {

putexcel I`a1'=(`n')

}

if `k'==9 {

putexcel J`a1'=(`n')

}

}

estat overid

putexcel K`a1'=(`r(J\_p)')

local a1=`a1'+1

}

}

}