**SIDS_RE_uptake_master copy**

```
    /* Do file purpose: Master do-file for analysis of RE
uptakein three SIDS. The do-file allows for reproducing
all work and facilitate collaboration.
    *Creation date: 09.02.2021
    *Created by: Paulina Flores-Martinez
    *Last modification: 11.02.21
    */

    gl sidsfiles "/Users/PaulinaFlores/Documents/A. Phd
19_22/1General 2020/003 Other papers/005 SIDS Ginelle"

    clear

    do "1 Import dataset and clean.do"
    do "2 Statistical descriptives and correlation matrix.do"
    do "3 RE Uptake models_v0.do"
    do "3.1 RE Uptake models_v1.do"
    do "3.1.1 Recoding dummies.do"
    do "3.2 RE Uptake models_v2.do"
    do "3.3 RE Uptake models_v3.do"
    do "3.4 RE Uptake models_v4.do"
    do "4 RE Uptake models_1st diff and lags.do"
    do "5 RE Uptake models_vfinal.do"
```

## 1 Import dataset and clean.do

```
/***********************************************
SIDS GREEN ENERGY POLICIES
Filename: 1 Exploratory data analysis
Purpose: Exploratory data analysis.

* Author: Paulina Flores Martínez
* Created: 4th November, 2020.D
* Modified: 15th November, 2020.
***********************************************/

gl sidsfiles "/Users/PaulinaFlores/Documents/A. Phd 19_22/1 General 2020/003 Other papers/005 SIDS Ginelle"

clear

import excel "/Users/PaulinaFlores/Documents/A. Phd 19_22/1 General 2020/003 Other papers/005 SIDS Ginelle/Datasets/GET variables_deflated.xls", sheet("GET variables") firstrow

*Rename variables.
rename REUptake re_up
rename RealDebtin2015terms real_debt
rename Domesticcredit domestic_cred
rename CorruptionIndex corrupt_i
rename REroadmap re_road
rename Netdevelopmentassistance dev_assist
rename RealNDAin2015terms real_nda
rename Sugarproduction sugar_prod
rename CivilSocietyParticipation civil_part
rename ImpartialAdministration impar_admin
rename Ruleenforcement rule_enf
rename Utilityownershipstatus utility_stat
rename GlobalOilPrice gop
rename RealGOPin2015terms real_gop
rename Country country

label var re_up "RE uptake"
label var debt "Debt percapita"
label var real_debt "Real Debt 2015"
label var corrupt_i "Corruption index"
label var re_road "RE roadmap"
label var real_nda "Real NDA 2015"
label var dev_assist "Net development assitance"
label var sugar_prod "Sugar production"
label var civil_part "Civil Society Participation"
label var impar_admin "Impartial Administration"
label var rule_enf "Rule enforcement"
label var utility_stat "Utility Ownership"
label var real_gop "Real GOP 2015"
label var oil_price "Global Average Oil Price USD"
label var country "Country"


save "$sidsfiles/Datasets/GET variables_deflated.dta", replace

/// Rename vars in Barbados single dataset

gl sidsfiles "/Users/PaulinaFlores/Documents/A. Phd 19_22/1 General 2020/003 Other
```

```
papers/005 SIDS Ginelle"

	clear

	import excel "$sidsfiles/Datasets/Barbados.xlsx", firstrow clear

	rename Year year
	rename REUptakeGwh re_up
	rename DebtpercapitaUSD debt
	rename Domesticcredit2private credit
	rename CorruptionIndex corrupt_i
	rename REroadmap re_road
	rename developmentassistanceUSD dev_assit
	rename Sugarprodtonnes sugar_prod
	rename CivilSocietyParticipation civil_part
	rename ImpartialAdministration impar_admin
	rename Ruleenforcement rule_enf
	rename Utilityownershipstatus utility_stat
	rename GlobalavOilPriceUSbarrel oil_price

	label var year "Year"
	label var re_up "RE uptake"
	label var debt "Debt percapita"
	label var corrupt_i "Corruption index"
	label var re_road "RE roadmap"
	label var dev_assit "Net development assitance"
	label var sugar_prod "Sugar production"
	label var civil_part "Civil Society Participation"
	label var impar_admin "Impartial Administration"
	label var rule_enf "Rule enforcement"
	label var utility_stat "Utility Ownership"
	label var oil_price "Global Average Oil Price USD"

	drop N


	save "$sidsfiles/Datasets/Barbados.dta", replace

	/// Rename vars in Mauritius single dataset


	gl sidsfiles "/Users/PaulinaFlores/Documents/A. Phd 19_22/1 General 2020/003 Other
papers/005 SIDS Ginelle"

	clear

	import excel "$sidsfiles/Datasets/Mauritius.xlsx", firstrow clear

	rename Year year
	rename REUptakeGwh re_up
	rename DebtpercapitaUSD debt
	rename Domesticcredit2private credit
	rename CorruptionIndex corrupt_i
	rename REroadmap re_road
	rename developmentassistanceUSD dev_assit
	rename Sugarprodtonnes sugar_prod
	rename CivilSocietyParticipation civil_part
	rename ImpartialAdministration impar_admin
	rename Ruleenforcement rule_enf
```

```
rename Utilityownershipstatus utility_stat
rename GlobalavOilPriceUSbarrel oil_price

label var year "Year"
label var re_up "RE uptake"
label var debt "Debt percapita"
label var corrupt_i "Corruption index"
label var re_road "RE roadmap"
label var dev_assit "Net development assitance"
label var sugar_prod "Sugar production"
label var civil_part "Civil Society Participation"
label var impar_admin "Impartial Administration"
label var rule_enf "Rule enforcement"
label var utility_stat "Utility Ownership"
label var oil_price "Global Average Oil Price USD"

save "$sidsfiles/Datasets/Mauritius.dta", replace

/// Rename vars in Jamaica single dataset

gl sidsfiles "/Users/PaulinaFlores/Documents/A. Phd 19_22/1 General 2020/003 Other papers/005 SIDS Ginelle"

clear

import excel "$sidsfiles/Datasets/Jamaica.xlsx", firstrow clear

rename Year year
rename REUptakeGwh re_up
rename DebtpercapitaUSD debt
rename Domesticcredit2private credit
rename CorruptionIndex corrupt_i
rename REroadmap re_road
rename developmentassistanceUSD dev_assit
rename Sugarprodtonnes sugar_prod
rename CivilSocietyParticipation civil_part
rename ImpartialAdministration impar_admin
rename Ruleenforcement rule_enf
rename Utilityownershipstatus utility_stat
rename GlobalavOilPriceUSbarrel oil_price

label var year "Year"
label var re_up "RE uptake"
label var debt "Debt percapita"
label var corrupt_i "Corruption index"
label var re_road "RE roadmap"
label var dev_assit "Net development assitance"
label var sugar_prod "Sugar production"
label var civil_part "Civil Society Participation"
label var impar_admin "Impartial Administration"
label var rule_enf "Rule enforcement"
label var utility_stat "Utility Ownership"
label var oil_price "Global Average Oil Price USD"

save "$sidsfiles/Datasets/Jamaica.dta", replace
```

**2 statistical descriptives and correlation matrix.do**

```
/* Do file purpose: Modelling energy uptake
*Creation date: 10.12.2020
*Created by: Paulina Flores-Martinez
*Last modification: 11.12.20
*/

gl sidsfiles "/Users/PaulinaFlores/Documents/A. Phd 19_22/1 General 2020/003 Other papers/005 SIDS Ginelle"

use "$sidsfiles/Datasets/GET_transformed_logn_percents.dta"

* Generate statistics descriptives and correlation matrix for numerical variables.

*Correlation matrix, general and by country with stars for significative corr
pwcorr y x1 x2 x3 x5 c1 c2 c3 c6, print(0.1)  star(0.01)
pwcorr y x1 x2 x3 x5 c1 c2 c3 c6 if i==1, print(0.1)  star(0.01)
pwcorr y x1 x2 x3 x5 c1 c2 c3 c6 if i==2, print(0.1)  star(0.01)
pwcorr y x1 x2 x3 x5 c1 c2 c3 c6 if i==3, print(0.1)  star(0.01)

*mkcorr for table with statistics descriptors and correlation matrix into a log file to open in Excel or Word.

mkcorr y x1 x2 x3 x5 c1 c2 c3 c6 , log(correl_gral) label means mdec(2) cdec(3)
mkcorr y x1 x2 x3 x5 c1 c2 c3 c6 if i==1, log(correl_barbados) label means mdec(2) cdec(3)
mkcorr y x1 x2 x3 x5 c1 c2 c3 c6 if i==2, log(correl_jamaica) label means mdec(2) cdec(3)
mkcorr y x1 x2 x3 x5 c1 c2 c3 c6 if i==3, log(correl_mauritius) label means mdec(2) cdec(3)
```

**3 RE Uptake models_v0.do**

```
/* Do file purpose: Modelling energy uptake
        *Creation date: 19.11.2020
        *Created by: Paulina Flores-Martinez
        *Last modification: 22.11.20

        *Notes:
        We aim to identify the correlation between corr(y,x)!=0 modelling as:
        y_it=a+bX_it+e_it

        Panel database
        i=Country=3
        t=Year= 19

        Model #1 OLS
        Model #2 OLS controlling for year
        Model #3 GLM and sigmoid s(x)=1/(1+e^-x)
        glm y X, family() link(cloglog), where family: distribution of depvar and link:link function

        Xs=14 --> The number of observations needed 1*X. Thus 14*3=42 min
        n=57

        */

        *EXAMPLE

        clear all

        gl sidsfiles "/Users/PaulinaFlores/Documents/A. Phd 19_22/1 General 2020/003 Other papers/005 SIDS Ginelle"

        capture log close

        log using "$sidsfiles/REUptake_models_v0_pfm.log", replace

        import excel "$sidsfiles/Datasets/GET variables_deflated.xls", sheet("GET variables") firstrow

        *Rename variables and distinguish between numeric and categorical. First group goes from x1 to x6, and the second from x7 to x11.

        renvars RealDebtin2015terms Domesticcredit CorruptionIndex RealNDAin2015terms Sugarproduction RealGOPin2015terms / x1 x2 x3 x4 x5 x6

        renvars REroadmap CivilSocietyParticipation ImpartialAdministration Ruleenforcement Utilityownershipstatus /  x7 x8 x9 x10 x11

        renvars Year Country REUptake / t i y

        gl xs x1 x2 x3 x4 x5 x6  // X vector

        gl control  x7 x8 x9 x10 x11 // control vector

        *Identify missing values.
        tabmiss  y $xs // Missing values !!!


        ***Declare a time-series dataset
```

```
tsset i t

*Descriptives
*=======================
*Raw values
xtline y, overlay scheme(plotplainblind) name(y)
*graph export "$sidsfiles/y.png", width(2000) replace


forvalues i=1/6{
xtline x`i' ,  overlay scheme(plotplainblind) name(x`i')
*graph export "$sidsfiles/x`i'.png", width(2000) replace
}

*Moving Averages (MA)
tssmooth ma ma_y=y , window(1 1 1) // moving averages for y. The smoother applied
was:(1/3)*[x(t-1) + 1*x(t) + x(t+1)]; x(t)=ma_y

forvalues i=1/6{
tssmooth ma ma_x`i'=x`i' , window(1 1 1)
xtline ma_x`i' , overlay   scheme(plotplainblind) name(ma_x`i')
}

*Descriptives
*=======================
*Smooth values
xtline ma_y, overlay scheme(plotplainblind) name(ma_y)
graph export "$sidsfiles/ma_y.png", width(2000) replace

*Graphs Y
graph combine y ma_y,   rows(1)  title("Y")     ///
xsize(5) ysize(2.6)              ///
  plotregion(margin(medsmall) style(none))                      ///
  graphregion(margin(zero) style(none))                         ///
  scheme(plotplainblind) note("Note:ma_y=(1/3)*[x(t-1) + 1*x(t) + x(t+1)]; x(t)", size(*0.8))
graph export "$sidsfiles/yma_y.png", width(2000) replace

*Graphs Xs
forvalues i=1/6{
graph combine x`i' ma_x`i',   rows(1)  title("X`i'")     ///
xsize(5) ysize(2.6)              ///
  plotregion(margin(medsmall) style(none))                      ///
  graphregion(margin(zero) style(none))                         ///
  scheme(plotplainblind) note("Note:ma_y=(1/3)*[x(t-1) + 1*x(t) + x(t+1)]; x(t)", size(*0.8))
graph export "$sidsfiles/x`i'ma_x`i'.png", width(2000) replace
}



*Models  First attempt.
*================================

*M#1
reg y $xs

*M#2
reg y $xs i.i // controlling for country

*M#3
```

```
glm  y $xs i.i , family(gamma) link(log)  vce(robust) eform nolog

*Link test
linktest, family(gamma) vce(robust) nolog // test for the link funtion. The test is based on the significance of hatsq
predict yhat if e(sample)


* Park test
gen e2=(y-yhat)^2
gen lnyf=log(yhat)
gen lne2=log(e2)
regress lne2 lnyf, robust //Park using robust OLS


test lnyf==0 // Gaussian
test lnyf==1 // Poisson
test lnyf==2 // Gamma ---> This one
test lnyf==3 // Inverse Gaussian

*M#4
glm  y $xs , family(gamma) link(log)  vce(robust)


nl log4: y x1 if i==2

nl log4: y x1
curvefit y x1 if i==2, f(r)


*Models  Second attempt.
*================================

*M#1
xtreg y $xs , re  // panel and random effect


*M#2
gen log_y=log(y)
xtreg log_y $xs , re  // panel, log_y and random effects


*M#3
forvalues i=1/6{
gen log_x`i'=log(x`i')
}
xtreg log_y log_x*, re // panel, log_y and log_Xs and random effects

*M#4
xtreg log_y $xs  $control, re  // panel, log_y and random effects

*Time-series operators
*========================
bysort i: gen D1_Y=D.y
bysort i: gen L1_Y=L.y

*Graphs
xtline y, overlay scheme(plotplainblind) name(y)
xtline D1_Y, overlay scheme(plotplainblind) name(D1y)
```

```
graph combine y D1y,   rows(1)  // Simple graph

bysort i: egen L1_Yi=total(L1_Y) // accumulated Li_y

*M#5
 xtgee log_y $xs, family(gaussian) link(log)


log close
-
```

**3.1 RE Uptake model_v1**

```
/* Do file purpose: Modelling energy uptake
	*Creation date: 03.12.2020
	*Created by: Paulina Flores-Martinez
	*Last modification: 04.12.20
	*/

	clear all
	gl sidsfiles "/Users/PaulinaFlores/Documents/A. Phd 19_22/1 General 2020/003 Other papers/005 SIDS Ginelle"

	import excel "$sidsfiles/Datasets/GET variables_deflated.xls", sheet("GET variables") firstrow


	/*Variable naming*/

	renvars RealDebtin2015terms RealNDAin2015terms Sugarproduction REroadmap Domesticcredit / x1 x2 x3 x4 x5

	renvars CorruptionIndex CivilSocietyParticipation ImpartialAdministration Ruleenforcement Utilityownershipstatus RealGOPin2015terms / c1 c2 c3 c4 c5 c6

	renvars Year Country REUptake / t i y

	/*Variable transforming*/

	*Ln
	foreach var of varlist y x1 x2 x3  {
	gen ln_`var'=ln(`var')
	}

	*Percentage
	foreach var of varlist x5 c1 c2 c3 {
	gen p_`var'=`var'*(100)
	}

	recode x4 (1=1) (2=0) //
	recode c4 (2=0) (3=1) //
	recode c5 (1=0) (2=1) //

	*Rename label variables
	label var ln_y "RE uptake (ln)"
	label var ln_x1 "Real Debt 2015"
	label var ln_x2 "Real NDA 2015"
	label var ln_x3 "Sugar production"
	label var x4 "RE roadmap"
	label var p_x5 "Domestic credit"
	label var p_c1 "Corruption index"
	label var p_c2 "Civil Society Participation"
	label var p_c3 "Impartial Administration"
	label var c4 "Rule enforcement"
	label var c5 "Utility Ownership"
	label var c6 "Real GOP 2015"

	* Save dataset in .dta file
	use "/Users/PaulinaFlores/Documents/A. Phd 19_22/1 General 2020/003 Other papers/005 SIDS Ginelle/Datasets/GET_transformed_logn_percents.dta"

	gl xs  ln_x1 ln_x2 ln_x3 x4 p_x5  // X vector
```

```
gl control  p_c1 p_c2 p_c3 c5 c6 // control vector


/*Correlation matrix*/
pwcorr y $xs $control , print(0.1)  star(0.01) // high correltion between Ind var


tabmiss  y $xs // Missing values !!!


***Declare a time-series dataset
tsset i t

/*Panel models fixed effects*/

xtreg ln_y ln_x1, fe
est store M1

xtreg ln_y ln_x1 ln_x2, fe
est store M2

xtreg ln_y ln_x1 ln_x2 ln_x3, fe
est store M3

xtreg ln_y ln_x1 ln_x2 ln_x3 x4, fe
est store M4

xtreg ln_y ln_x1 ln_x2 ln_x3 x4 p_x5, fe
est store M5

xtreg ln_y ln_x1 ln_x2 ln_x3 x4 p_x5 $control, fe

xtreg ln_y ln_x3 ln_x1 ln_x2 x4 p_x5 $control, fe

est store M6

/*Panel models random effects*/

xtreg ln_y ln_x1, re
est store M7

xtreg ln_y ln_x1 ln_x2, re
est store M8

xtreg ln_y ln_x1 ln_x2 ln_x3, re
est store M9

xtreg ln_y ln_x1 ln_x2 ln_x3 x4, re
est store M10

xtreg ln_y ln_x1 ln_x2 ln_x3 x4 p_x5, re
est store M11

xtreg ln_y ln_x1 ln_x2 ln_x3 x4 p_x5 $control, re
est store M12


/*ARDL by country */
```

```
forvalues i=1/3 {
ardl y ln_x1 if i==`i', lags(1)
est store M13`i'

ardl y ln_x1 ln_x2 if i==`i', lags(1)
est store M14`i'

ardl y ln_x1 ln_x2 ln_x3 if i==`i', lags(1)
est store M15`i'

ardl y ln_x1 ln_x2 ln_x3 p_x5 if i==`i', lags(1)
est store M16`i'

ardl y ln_x1 if i==`i', lags(1) ec
est store M17`i'

ardl y ln_x1 ln_x2 if i==`i', lags(1) ec
est store M18`i'

ardl y ln_x1 ln_x2 ln_x3 if i==`i', lags(1) ec
est store M19`i'

ardl y ln_x1 ln_x2 ln_x3 p_x5 if i==`i', lags(1) ec
est store M20`i'
}

outreg2 [M1 M2 M3 M4 M5 M6 M7 M8 M9 M10 M11 M12 M131 M132 M133  M141 M142 M143
M151 M152 M153 M161 M162 M163 M171 M172 M173 M181 M182 M183 M191 M192 M193 M201
M202 M203  ] using "$sidsfiles/Modellingv1.7.xls", label(insert) se  alpha(0.001, 0.01, 0.05, 0.1)
symbol(***, **, *, +)  bdec(3) sdec(1) rdec(2) sortvar(ln_x1 ln_x2 ln_x3 x4 p_x5 $control ) replace

_
```

### 3.1.1. Recording dummies.do

```
/* Do file purpose: Cleaning or recoding some of the categorical variables.
*Creation date: 15.12.2020
*Created by: Paulina Flores-Martinez
*Last modification: 15.12.20
*/

clear all
gl sidsfiles "/Users/PaulinaFlores/Documents/A. Phd 19_22/1 General 2020/003 Other papers/005 SIDS Ginelle"

use "$Datasets/GET_transformed_logn_percents.dta"

*Recode binomial and categorical variables properly.

*Originally no roadmap was represented with 2 and now it must be with 0. Conversely, a roadmap was with 1, this remains like that.
recode x4 (1=1) (2=0) //  means no RE roadmap is available wen x4==0
recode c4 (2=0) (3=1) // Rule of enforcement is non-participatory when ==0 and partially participatory when ==1
recode c5 (0=1) (1=0) // The State owns the electricity grid = 1 and the privates own it = 0

*Save this dataset version for final model fitting
save "/Users/PaulinaFlores/Documents/A. Phd 19_22/1 General 2020/003 Other papers/005 SIDS Ginelle/Datasets/GET_transformed_logn_percents.dta", replace
```

**3.2 RE Uptake models_v2.do**

```
/* Do file purpose: Modelling energy uptake
	*Creation date: 15.12.2020
	*Created by: Paulina Flores-Martinez
	*Last modification: 15.12.20
	*/

	clear all
	gl sidsfiles "/Users/PaulinaFlores/Documents/A. Phd 19_22/1 General 2020/003 Other papers/005 SIDS Ginelle"

	use "$sidsfiles/Datasets/GET_transformed_logn_percents.dta"

	*Define a X and a control vector

	gl xs  ln_x1 ln_x2 ln_x3 x4 p_x5  // X vector

	gl control p_c1 p_c2 p_c3 c4 c5 c6 // control vector

	***Declare a time-series dataset
	xtsset i t

	/*Panel models fixed effects*/

	xtreg ln_y ln_x1, fe
	est store M1

	xtreg ln_y ln_x1 ln_x2, fe
	est store M2

	xtreg ln_y ln_x1 ln_x2 ln_x3, fe
	est store M3

	xtreg ln_y ln_x1 ln_x2 ln_x3 x4, fe
	est store M4

	xtreg ln_y ln_x1 ln_x2 ln_x3 x4 p_x5, fe
	est store M5

	xtreg ln_y ln_x1 ln_x2 ln_x3 x4 p_x5 $control, fe
	est store M6

	/*Panel models random effects*/

	xtreg ln_y ln_x1, re
	est store M7

	xtreg ln_y ln_x1 ln_x2, re
	est store M8

	xtreg ln_y ln_x1 ln_x2 ln_x3, re
	est store M9

	xtreg ln_y ln_x1 ln_x2 ln_x3 x4, re
	est store M10

	xtreg ln_y ln_x1 ln_x2 ln_x3 x4 p_x5, re
	est store M11
```

```
xtreg ln_y ln_x1 ln_x2 ln_x3 x4 p_x5 $control, re
est store M12
```

```
outreg2 [M1 M2 M3 M4 M5 M6 M7 M8 M9 M10 M11 M12] using "$sidsfiles/Modellingv2.0.xls", label(insert) se  alpha(0.001, 0.01, 0.05, 0.1) symbol(***, **, *, +)  bdec(3) sdec(1) rdec(2) sortvar(ln_x1 ln_x2 ln_x3 p_x5 $control ) replace
```

```
_
```

**3.3 Uptake models_v3.do**

```
/* Do file purpose: Modelling energy uptake
	*Creation date: 17.12.2020
	*Created by: Paulina Flores-Martinez
	*Last modification: 17.12.20
	*/

	clear all
	gl sidsfiles "/Users/PaulinaFlores/Documents/A. Phd 19_22/1 General 2020/003 Other papers/005 SIDS Ginelle"

	import excel "$sidsfiles/Datasets/GET variables_deflated.xls", sheet("GET variables") firstrow

	/*Variable cleaning*/

	drop Ruleenforcement

	/*Variable naming*/

	renvars RealDebtin2015terms RealNDAin2015terms Sugarproduction REroadmap Domesticcredit / x1 x2 x3 x4 x5

	renvars CorruptionIndex CivilSocietyParticipation ImpartialAdministration Ruleenforcement Utilityownershipstatus RealGOPin2015terms / c1 c2 c3 c4 c5 c6

	renvars Year Country REUptake / t i y

	*Define a X and a control vector

	gl xs  ln_x1 ln_x2 ln_x3 x4 p_x5  // X vector

	gl control p_c1 p_c2 p_c3 c4 c5 c6 // control vector

	***Declare a time-series dataset
	tsset i t

	/*Panel models fixed effects*/

	xtreg ln_y ln_x1, fe
	est store M1

	xtreg ln_y ln_x1 ln_x2, fe
	est store M2

	xtreg ln_y ln_x1 ln_x2 ln_x3, fe
	est store M3

	xtreg ln_y ln_x1 ln_x2 ln_x3 x4, fe
	est store M4

	xtreg ln_y ln_x1 ln_x2 ln_x3 x4 p_x5, fe
	est store M5

	xtreg ln_y ln_x1 ln_x2 ln_x3 x4 p_x5 i.i $control, fe
	est store M6

	/*Panel models random effects*/
```

```
xtreg ln_y ln_x1, re
est store M7

xtreg ln_y ln_x1 ln_x2, re
est store M8

xtreg ln_y ln_x1 ln_x2 ln_x3, re
est store M9

xtreg ln_y ln_x1 ln_x2 ln_x3 x4, re
est store M10

xtreg ln_y ln_x1 ln_x2 ln_x3 x4 p_x5, re
est store M11

xtreg ln_y ln_x1 ln_x2 ln_x3 x4 p_x5 $control, re
est store M12
```

```
outreg2 [M1 M2 M3 M4 M5 M6 M7 M8 M9 M10 M11 M12] using "$sidsfiles/Modellingv2.0.xls", label(insert) se  alpha(0.001, 0.01, 0.05, 0.1) symbol(***, **, *, +)  bdec(3) sdec(1) rdec(2) sortvar(ln_x1 ln_x2 ln_x3 p_x5 $control ) replace
```

**3.4 RE Uptake models_v4.do**

```
/* Do file purpose: Modelling RE uptake in three SIDS - Third Version.
	*Creation date: 07.01.2021
	*Created by: Paulina Flores-Martinez
	*Last modification: 11.01.21
	*/

	clear all
	gl sidsfiles "/Users/PaulinaFlores/Documents/A. Phd 19_22/2 General 2020/003 Other papers/005 SIDS Ginelle"

	use "$sidsfiles/Datasets/GET_jan2021.dta"

	/* Generate a new variable to explore variation with respect to a BASELINE YEAR (2000)*/

	foreach x of var x1 x5 x2 x3 c_5 y {
	bysort i: gen bl2000_`x'=`x' if t== 2000
	label var bl2000_`x' "`x'_Baseline year (2000) for variations"
	bysort i: carryforward bl2000_`x', gen(bly_`x')

	gen vbl_`x'= (`x'/bly_`x')-1
	replace vbl_`x'=. if t== 2000
	label var  vbl_`x' "`x'_variations with respect to bly 2000"
	}

	xtset i t
	foreach x of var x1 x5 x2 x3 c_5 y {
	/* Generate a new variable to explore ANNUAL variations (Growth rate)*/
	gen v_`x'=D.`x'/L.`x'
	label var v_`x' "`x'_annual variations"

	}

	/*Panel model with dependent and independent vars transformed to log - Fixed effects*/

	xtreg ln_y ln_x1 ln_x2 ln_x3 x4 c_3 c_4 p_x5 pc1 pc2 c_5, fe
	est store M1

	/*Panel model with variations with respect to a baseline year (2000) - Fixed effects*/

	xtreg vbl_y vbl_x1 vbl_x2 vbl_x3 x4 c_3 c_4 vbl_x5 pc1 pc2 vbl_c_5, fe
	est store M2

	/*Panel model with dependent and independent vars transformed to annual growth rate - Fixed effects*/

	xtreg v_y v_x1 v_x2 v_x3 x4 c_3 c_4 v_x5 pc1 pc2 v_c_5, fe
	est store M3

	* Hausman test for Basline year estimations - named: M_2 and M_22*

	xtreg vbl_y vbl_x1 vbl_x2 vbl_x3 x4 c_3 c_4 vbl_x5 pc1 pc2 vbl_c_5, fe
	est store M_2

	xtreg vbl_y vbl_x1 vbl_x2 vbl_x3 x4 c_3 c_4 vbl_x5 pc1 pc2 vbl_c_5, re
	est store M_22

	hausman M_2 M_22, sigmamore /* Hausman results reject H0, thus FE is preferred*/
```

```
* Hausman test for m3 and m33*

xtreg v_y v_x1 v_x2 v_x3 x4 c_3 c_4 v_x5 pc1 pc2 v_c_5, fe
est store M_3

xtreg v_y v_x1 v_x2 v_x3 x4 c_3 c_4 v_x5 pc1 pc2 v_c_5, re    /* Hausman results accepts H0, thus RE is preferred*/
est store M_33

hausman M_3 M_33, sigmamore


outreg2 [M1 M2 M3 M_33] using "$sidsfiles/Modelling_3.3.xls", label(insert) se  alpha(0.001, 0.01, 0.05, 0.1) symbol(***, **, *, +)  bdec(3) sdec(1) rdec(2) sortvar(ln_x1 ln_x2 ln_x3 x4 c_3 c_4 p_x5 pc1 pc2 c_5) replace


-
```

**4 RE Uptake models_1st diff and lags.do**

```
/* Do file purpose: Modelling RE uptake in three SIDS - Third Version.
	*Creation date: 07.01.2021
	*Created by: Paulina Flores-Martinez
	*Last modification: 11.01.21
	*/

	clear all
	gl sidsfiles "/Users/PaulinaFlores/Documents/A. Phd 19_22/2 General 2020/003 Other papers/005 SIDS Ginelle"

	use "$sidsfiles/Datasets/GET_jan2021.dta"

	/* Generate a new variable to explore variation with respect to a BASELINE YEAR (2000)*/

	foreach x of var x1 x5 x2 x3 c_5 y {
	bysort i: gen bl2000_`x'=`x' if t== 2000
	label var bl2000_`x' "`x'_Baseline year (2000) for variations"
	bysort i: carryforward bl2000_`x', gen(bly_`x')

	gen vbl_`x'= (`x'/bly_`x')-1
	replace vbl_`x'=. if t== 2000
	label var  vbl_`x' "`x'_variations with respect to bly 2000"
	}

	xtset i t
	foreach x of var x1 x5 x2 x3 c_5 y {
	/* Generate a new variable to explore ANNUAL variations (Growth rate)*/
	gen v_`x'=D.`x'/L.`x'
	label var v_`x' "`x'_annual variations"

	}

	/* Sensitivity analysis. Panel model with variations with respect to a baseline year (2000) - Fixed effects*/

	xtreg vbl_y vbl_x1, fe
	est store M1

	xtreg vbl_y vbl_x1 vbl_x2, fe
	est store M2

	xtreg vbl_y vbl_x1 vbl_x2 vbl_x3, fe
	est store M3

	xtreg vbl_y vbl_x1 vbl_x2 vbl_x3 x4, fe
	est store M4

	xtreg vbl_y vbl_x1 vbl_x2 vbl_x3 x4 c_3, fe
	est store M5

	xtreg vbl_y vbl_x1 vbl_x2 vbl_x3 x4 c_3 c_4, fe
	est store M6

	xtreg vbl_y vbl_x1 vbl_x2 vbl_x3 c_3 c_4 p_x5, fe
	est store M7

	xtreg vbl_y vbl_x1 vbl_x2 vbl_x3 c_3 c_4 p_x5 pc1, fe
```

```
est store M8

xtreg vbl_y vbl_x1 vbl_x2 vbl_x3 x4 c_3 c_4 p_x5 pc1 pc2, fe
est store M9

xtreg vbl_y vbl_x1 vbl_x2 vbl_x3 x4 c_3 c_4 p_x5 pc1 pc2 c_5, fe
est store M10

/*Panel model with variations with respect to a baseline year (2000) - Fixed effects*/

xtreg vbl_y vbl_x1 vbl_x2 vbl_x3 x4 c_3 c_4 vbl_x5 pc1 pc2 vbl_c_5, fe
est store M11

/*Panel model with dependent and independent vars transformed to annual growth rate - Fixed effects*/

xtreg v_y v_x1 v_x2 v_x3 x4 c_3 c_4 v_x5 pc1 pc2 v_c_5, fe
est store M12

/*Panel model with dependent and independent vars transformed to log - Fixed effects*/

xtreg ln_y ln_x1 ln_x2 ln_x3 x4 c_3 c_4 p_x5 pc1 pc2 c_5, fe
est store M13

* Hausman test for m2 and m22*

xtreg vbl_y vbl_x1 vbl_x2 vbl_x3 x4 c_3 c_4 vbl_x5 pc1 pc2 vbl_c_5, fe
est store M_2

xtreg vbl_y vbl_x1 vbl_x2 vbl_x3 x4 c_3 c_4 vbl_x5 pc1 pc2 vbl_c_5, re
est store M_22

hausman M_2 M_22, sigmamore


* Hausman test for m3 and m33*

xtreg v_y v_x1 v_x2 v_x3 x4 c_3 c_4 v_x5 pc1 pc2 v_c_5, fe
est store M_3

xtreg v_y v_x1 v_x2 v_x3 x4 c_3 c_4 v_x5 pc1 pc2 v_c_5, re
est store M_33

hausman M_3 M_33, sigmamore


outreg2 [M1 M2 M3 M4 M5 M6 M7 M8 M9 M10 M11 M12 M13] using
"$sidsfiles/Modelling_3.2.xls", label(insert) se  alpha(0.001, 0.01, 0.05, 0.1) symbol(***, **, *, +)
bdec(3) sdec(1) rdec(2) sortvar(ln_x1 ln_x2 ln_x3 x4 c_3 c_4 p_x5 pc1 pc2 c_5) replace


-
```

**5 RE Uptake Models_vfinal**

```
/* Do file purpose: Modelling RE uptake in three SIDS - Third Version.
*Creation date: 07.01.2021
*Created by: Paulina Flores-Martinez
*Last modification: 11.01.21
*/

clear all
gl sidsfiles "/Users/PaulinaFlores/Documents/A. Phd 19_22/1 General 2020/003 Other
papers/005 SIDS Ginelle"

use "$sidsfiles/Datasets/GET_transformed_logn_percents.dta"

/*Variable renaming*/
* Corruption index is eliminated. Correction of var names.

drop c1 p_c1
rename c2 c_1
renvars c3 c4 c5 c6 / c_2 c_3 c_4 c_5
renvars p_c2 p_c3 / pc1 pc2
drop Debtpercapita Netdevelopmentassistance GlobalOilPrice

* Save dataset in .dta file
save "/Users/PaulinaFlores/Documents/A. Phd 19_22/1 General 2020/003 Other papers/005
SIDS Ginelle/Datasets/GET_jan2021.dta"

-
***Declare a time-series dataset
tsset i t

/*Panel model with fixed effects*/

xtreg ln_y ln_x1, fe
est store M1

xtreg ln_y ln_x1 ln_x2, fe
est store M2

xtreg ln_y ln_x1 ln_x2 ln_x3, fe
est store M3

xtreg ln_y ln_x1 ln_x2 ln_x3 x4, fe
est store M4

xtreg ln_y ln_x1 ln_x2 ln_x3 x4 c_3, fe
est store M5

xtreg ln_y ln_x1 ln_x2 ln_x3 x4 c_3 c_4, fe
est store M6

xtreg ln_y ln_x1 ln_x2 ln_x3 x4 c_3 c_4 p_x5, fe
est store M7

xtreg ln_y ln_x1 ln_x2 ln_x3 x4 c_3 c_4 p_x5 pc1, fe
est store M8

xtreg ln_y ln_x1 ln_x2 ln_x3 x4 c_3 c_4 p_x5 pc1 pc2, fe
est store M9
```

```
xtreg ln_y ln_x1 ln_x2 ln_x3 x4 c_3 c_4 p_x5 pc1 pc2 c_5, fe
est store M10

/*Panel models random effects*/
xtreg ln_y ln_x1 ln_x2 ln_x3 x4 c_3 c_4 p_x5 pc1 pc2 c_5, re
est store M11

/*Hausman test for M10 and M11*/
hausman M10 M11, sigmamore


outreg2 [M1 M2 M3 M4 M5 M6 M7 M8 M9 M10 M11] using "$sidsfiles/Modelling_3.0.xls", label(insert) se  alpha(0.001, 0.01, 0.05, 0.1) symbol(***, **, *, +)  bdec(3) sdec(1) rdec(2) sortvar(ln_x1 ln_x2 ln_x3 x4 c_3 c_4 p_x5 pc1 pc2 c_5) replace
```