

# 1 First Sample Split

## 1.1 Testing for a Sample Split, Using GDP\_1960

### Test of Null of No Threshold Against Alternative of Threshold

Allowing Heteroskedastic Errors (White Corrected)

Number of Bootstrap Replications: 1000

Trimming Percentage: 0.15

Threshold Variable: GDP\_1960

Threshold Estimate: 833

LM-test for no threshold: 12.60184

Bootstrap P-Value: 0.091

## 1.2 Testing for a Sample Split, Using Literacy

### Test of Null of No Threshold Against Alternative of Threshold

Allowing Heteroskedastic Errors (White Corrected)

Number of Bootstrap Replications: 1000

Trimming Percentage: 0.15

Threshold Variable: Literacy

Threshold Estimate: 10

LM-test for no threshold: 10.78627

Bootstrap P-Value: 0.208

## 1.3 Estimate Sample Split, Using GDP\_1960

### 1.3.1 Global OLS Estimation, Without Threshold

Dependent Variable: GDP\_Gwth

Heteroskedasticity Correction Used

Variable	Estimate	St Error
Const	2.8262	0.72473
Log_GDP_1960	-0.2816	0.05335
Log_Inv/GDP	0.4919	0.10435
Log_Pop_Gwth	-0.5467	0.23278
Log_School	0.2395	0.06560

Observations: 96

Degrees of Freedom: 91

Sum of Squared Errors: 9.622743

Residual Variance: 0.1057444

R-squared: 0.4805041

Adjusted R-squared: 0.4576691

AIC: -210.821

BIC: -197.9993

HQC: -205.6382  
Heteroskedasticity Test (P-Value): 0.2008698

### 1.3.2 Threshold Estimation

Threshold Variable: GDP\_1960  
Threshold Estimate: 863  
0.9 Confidence Interval: [594, 1794]  
0.95 Confidence Interval: [594, 1794]  
0.99 Confidence Interval: [539, 4802]  
Sum of Squared Errors: 8.024881  
Residual Variance: 0.09331257  
Joint R-squared: 0.5667667  
Joint Adjusted R-squared: 0.5214283  
Joint AIC: -216.2529  
Joint BIC: -188.0451  
Joint HQC: -204.8509  
Heteroskedasticity Test (P-Value): 0.1565995

#### Regime 1: $\text{GDP}_{1960} \leq 863$

##### Parameter Estimates

Variable	Estimate	St Error
Const	4.31203	1.62680
Log_GDP_1960	-0.65697	0.21762
Log_Inv/GDP	0.22774	0.07160
Log_Pop_Gwth	-0.29487	0.33678
Log_School	0.01806	0.09686

##### 0.9 Confidence Regions for Parameters

Variable	Low	High
Const	1.18837	8.9645
Log_GDP_1960	-1.20170	-0.2184
Log_Inv/GDP	0.06085	0.5363
Log_Pop_Gwth	-1.37220	0.7700
Log_School	-0.21504	0.4116

##### 0.95 Confidence Regions for Parameters

Variable	Low	High
Const	0.68755	9.5624
Log_GDP_1960	-1.25007	-0.1465
Log_Inv/GDP	0.02471	0.5740
Log_Pop_Gwth	-1.51316	0.9225
Log_School	-0.24701	0.4397

##### 0.99 Confidence Regions for Parameters

Variable	Low	High
Const	-0.31408	10.75843
Log_GDP_1960	-1.34682	-0.00266
Log_Inv/GDP	-0.04758	0.64950
Log_Pop_Gwth	-1.79508	1.22748
Log_School	-0.31094	0.49604

Observations: 18

Degrees of Freedom: 13

Sum of Squared Errors: 0.6742722

Residual Variance: 0.05186709

R-squared: 0.5165107

Adjusted R-squared: 0.3677448

AIC: -49.12088

BIC: -44.66902

HQC: -48.50703

## Regime 2: GDP\_1960>863

### Parameter Estimates

Variable	Estimate	St Error
Const	3.6631	0.71905
Log_GDP_1960	-0.3234	0.06144
Log_Inv/GDP	0.4957	0.14497
Log_Pop_Gwth	-0.4877	0.25532
Log_School	0.3569	0.08997

### 0.9 Confidence Regions for Parameters

Variable	Low	High
Const	2.15721	5.48302
Log_GDP_1960	-0.50226	-0.20099
Log_Inv/GDP	0.22373	0.91018
Log_Pop_Gwth	-0.98136	-0.05348
Log_School	-0.05371	0.52305

### 0.95 Confidence Regions for Parameters

Variable	Low	High
Const	1.8448	5.79544
Log_GDP_1960	-0.5230	-0.18203
Log_Inv/GDP	0.1823	0.95436
Log_Pop_Gwth	-1.0685	0.03369
Log_School	-0.0848	0.54919

### 0.99 Confidence Regions for Parameters

Variable	Low	High
Const	1.21994	6.4203
Log_GDP_1960	-0.56451	-0.1441
Log_Inv/GDP	0.09581	1.0427
Log_Pop_Gwth	-1.24285	0.2080
Log_School	-0.14698	0.6015

Observations: 78

Degrees of Freedom: 73

Sum of Squared Errors: 7.350609

Residual Variance: 0.1006933

R-squared: 0.5492007

Adjusted R-squared: 0.5244994

AIC: -174.2302

BIC: -162.4467

HQC: -169.513

### Threshold Regression Table

Variable	GDP_Gwth			
	Regime 1		Regime 2	
	GDP_1960* $\leq$ 863		GDP_1960* $>$ 863	
	Estimate	Std error	Estimate	Std error
Const	4.312**	(1.627)	3.663***	(0.719)
Log_GDP_1960	-0.657***	(0.218)	-0.323***	(0.061)
Log_Inv/GDP	0.228**	(0.072)	0.496***	(0.145)
Log_Pop_Gwth	-0.295	(0.337)	-0.488*	(0.255)
Log_School	0.018	(0.097)	0.357	(0.090)
#Obs	18		78	
$R^2_{adj}$	0.368		0.524	

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

## 2 Second Sample Split: Subsample, Incomes below 863

### 2.1 Testing for a Sample Split, Using GDP\_1960

#### Test of Null of No Threshold Against Alternative of Threshold

Allowing Heteroskedastic Errors (White Corrected)

Number of Bootstrap Replications: 1000

Trimming Percentage: 0.15

Threshold Variable: GDP\_1960

Threshold Estimate: 594

LM-test for no threshold: 7.103181

Bootstrap P-Value: 0.401

## **2.2 Testing for a Sample Split, Using Literacy**

### **Test of Null of No Threshold Against Alternative of Threshold**

Allowing Heteroskedastic Errors (White Corrected)

Number of Bootstrap Replications: 1000

Trimming Percentage: 0.15

Threshold Variable: Literacy

Threshold Estimate: 10

LM-test for no threshold: 5.16476

Bootstrap P-Value: 0.844

## **3 Second Sample Split: Subsample, Incomes above 863**

### **3.1 Testing for a Sample Split, Using GDP\_1960**

#### **Test of Null of No Threshold Against Alternative of Threshold**

Allowing Heteroskedastic Errors (White Corrected)

Number of Bootstrap Replications: 1000

Trimming Percentage: 0.15

Threshold Variable: GDP\_1960

Threshold Estimate: 1410

LM-test for no threshold: 11.00934

Bootstrap P-Value: 0.157

### **3.2 Testing for a Sample Split, Using Literacy**

#### **Test of Null of No Threshold Against Alternative of Threshold**

Allowing Heteroskedastic Errors (White Corrected)

Number of Bootstrap Replications: 1000

Trimming Percentage: 0.15

Threshold Variable: Literacy

Threshold Estimate: 57

LM-test for no threshold: 12.09135

Bootstrap P-Value: 0.073

### **3.3 Estimate Sample Split, Using Literacy**

#### **3.3.1 Global OLS Estimation, Without Threshold**

Dependent Variable: GDP\_Gwth

Heteroskedasticity Correction Used

Variable	Estimate	St Error
Const	3.6631	0.71905
Log_GDP_1960	-0.3234	0.06144
Log_Inv/GDP	0.4957	0.14497
Log_Pop_Gwth	-0.4877	0.25532
Log_School	0.3569	0.08997

Observations: 78  
 Degrees of Freedom: 73  
 Sum of Squared Errors: 7.350609  
 Residual Variance: 0.1006933  
 R-squared: 0.5492007  
 Adjusted R-squared: 0.5244994  
 AIC: -174.2302  
 BIC: -162.4467  
 HQC: -169.513  
 Heteroskedasticity Test (P-Value): 0.362994

### 3.3.2 Threshold Estimation

Threshold Variable: Literacy  
 Threshold Estimate: 45  
 0.9 Confidence Interval: [29, 57]  
 0.95 Confidence Interval: [19, 57]  
 0.99 Confidence Interval: [14, 62]  
 Sum of Squared Errors: 6.198249  
 Residual Variance: 0.09115072  
 Joint R-squared: 0.6198728  
 Joint Adjusted R-squared: 0.5695619  
 Joint AIC: -175.5305  
 Joint BIC: -149.6067  
 Joint HQC: -165.1527  
 Heteroskedasticity Test (P-Value): 0.551557

#### Regime 1: Literacy $\leq$ 45

Parameter Estimates		
Variable	Estimate	St Error
Const	2.0923	1.8702
Log_GDP_1960	-0.1163	0.1649
Log_Inv/GDP	0.1726	0.2161
Log_Pop_Gwth	-0.3902	0.5161
Log_School	0.4525	0.1168

0.9 Confidence Regions for Parameters

Variable	Low	High
Const	-1.2736	5.5508
Log_GDP_1960	-0.4185	0.2859
Log_Inv/GDP	-0.2427	0.5956
Log_Pop_Gwth	-1.4324	0.7110
Log_School	0.2389	0.7024

#### 0.95 Confidence Regions for Parameters

Variable	Low	High
Const	-1.8538	6.1610
Log_GDP_1960	-0.4709	0.3447
Log_Inv/GDP	-0.3182	0.6555
Log_Pop_Gwth	-1.5932	0.8683
Log_School	0.1954	0.7460

#### 0.99 Confidence Regions for Parameters

Variable	Low	High
Const	-3.0144	7.3815
Log_GDP_1960	-0.5756	0.4623
Log_Inv/GDP	-0.4692	0.7878
Log_Pop_Gwth	-1.9149	1.1831
Log_School	0.1083	0.8331

Observations: 30

Degrees of Freedom: 25

Sum of Squared Errors: 2.609994

Residual Variance: 0.1043998

R-squared: 0.5780366

Adjusted R-squared: 0.5105224

AIC: -63.25548

BIC: -56.24949

HQC: -61.0142

### Regime 2: Literacy>45

#### Parameter Estimates

Variable	Estimate	St Error
Const	4.31048	0.96516
Log_GDP_1960	-0.39503	0.06103
Log_Inv/GDP	0.83364	0.13937
Log_Pop_Gwth	-0.41801	0.26957
Log_School	0.09458	0.13489

#### 0.9 Confidence Regions for Parameters

Variable	Low	High
Const	1.9302	5.92850
Log_GDP_1960	-0.5140	-0.26693
Log_Inv/GDP	0.4820	1.08602
Log_Pop_Gwth	-1.0204	0.03267
Log_School	-0.2868	0.36155

#### 0.95 Confidence Regions for Parameters

Variable	Low	High
Const	1.5819	6.2292
Log_GDP_1960	-0.5354	-0.2495
Log_Inv/GDP	0.4271	1.1319
Log_Pop_Gwth	-1.1133	0.1146
Log_School	-0.3443	0.4021

#### 0.99 Confidence Regions for Parameters

Variable	Low	High
Const	0.8853	6.8305
Log_GDP_1960	-0.5783	-0.2147
Log_Inv/GDP	0.3174	1.2307
Log_Pop_Gwth	-1.2992	0.2784
Log_School	-0.4594	0.4985

Observations: 48

Degrees of Freedom: 43

Sum of Squared Errors: 3.588255

Residual Variance: 0.08344778

R-squared: 0.5821175

Adjusted R-squared: 0.5432447

AIC: -114.4897

BIC: -105.1337

HQC: -110.954

#### Threshold Regression Table

Variable	GDP_Gwth			
	Regime 1		Regime 2	
	Literacy* $\leq 45$		Literacy* $> 45$	
	Estimate	Std error	Estimate	Std error
Const	2.092	(1.870)	4.310***	(0.965)
Log_GDP_1960	-0.116	(0.165)	-0.395***	(0.061)
Log_Inv/GDP	0.173	(0.216)	0.834***	(0.139)
Log_Pop_Gwth	-0.390	(0.516)	-0.418	(0.270)
Log_School	0.453***	(0.117)	0.095	(0.135)
#Obs	30		48	
$R^2_{adj}$	0.511		0.543	

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$



## **4 Third Sample Split: Subsample, Incomes above 863, Literacy below 45**

### **4.1 Testing for a Sample Split, Using GDP1960**

#### **Test of Null of No Threshold Against Alternative of Threshold**

Allowing Heteroskedastic Errors (White Corrected)

Number of Bootstrap Replications: 1000

Trimming Percentage: 0.15

Threshold Variable: GDP1960

Threshold Estimate: 1618

LM-test for no threshold: 7.423359

Bootstrap P-Value: 0.529

### **4.2 Testing for a Sample Split, Using Literacy**

#### **Test of Null of No Threshold Against Alternative of Threshold**

Allowing Heteroskedastic Errors (White Corrected)

Number of Bootstrap Replications: 1000

Trimming Percentage: 0.15

Threshold Variable: Literacy

Threshold Estimate: 26

LM-test for no threshold: 9.233321

Bootstrap P-Value: 0.174

## **5 Third Sample Split: Subsample, Incomes above 863, Literacy above 45**

### **5.1 Testing for a Sample Split, Using GDP1960**

#### **Test of Null of No Threshold Against Alternative of Threshold**

Allowing Heteroskedastic Errors (White Corrected)

Number of Bootstrap Replications: 1000

Trimming Percentage: 0.15

Threshold Variable: GDP1960

Threshold Estimate: 3493

LM-test for no threshold: 9.415477

Bootstrap P-Value: 0.21

## **5.2 Testing for a Sample Split, Using Literacy**

### **Test of Null of No Threshold Against Alternative of Threshold**

Allowing Heteroskedastic Errors (White Corrected)

Number of Bootstrap Replications: 1000

Trimming Percentage: 0.15

Threshold Variable: Literacy

Threshold Estimate: 83

LM-test for no threshold: 9.327215

Bootstrap P-Value: 0.183