

Table 9. Unit root test
(D-F t-statistic)

Variable	PI	FGDP	UGDP
Level	1.16	2.65	0.93
1st Difference	-3.91 ^a	-2.86 ^b	5.26 ^c

- a. Significant at 95 percent level.
b. Significant at 90 percent level.
c. Significant at 99 percent level.

Table 10. Cointegration equations

	Dependent Variable		Dependent Variable	
	UGDP	PI	UGDP	PI
Constant	100347.63	1819.04	Constant	28035.63 10440.23
PI	3.41	...	PI	0.28 ...
FGDP	...	0.07	UGDP	... 0.03
Trend	11514.56	486.20	Trend	3453.77 1550.07
D-F t-statistic	-2.03	-4.85 ^a	D-F t-statistic	-4.75 ^a -3.87

- a. Significant at 95 percent level.

Table 11. Unit root test of residuals

	Eq. 6		Eq. 7		Eq. 8		Eq. 9	
	D(resid)	D(resid)	D(resid)	D(resid)	D(resid)	D(resid)	D(resid)	
Resid(-1)	-0.56	-1.02	Resid(-1)	-3.30	-0.69	Resid(-1)	-3.30	-0.69
	(-2.03)	(-4.85)		(-4.75)	(-3.87)		(-4.75)	(-3.87)
D(Resid(-1))	...	0.59	D(Resid(-1))	1.92	-0.57	D(Resid(-1))	1.92	-0.57
		(3.49)		(3.45)	(-2.97)		(3.45)	(-2.97)
D(Resid(-2))	D(Resid(-2))	1.69	...	D(Resid(-2))	1.69	...
				(3.71)			(3.71)	
D(Resid(-1))	D(Resid(-1))	0.88	...	D(Resid(-1))	0.88	...
				(2.55)			(2.55)	
R ²	0.22	0.65	R ²	0.81	0.55	R ²	0.81	0.55
D-W	1.50	1.59	D-W	1.60	1.57	D-W	1.60	1.57

VII. Conclusion:

This paper has demonstrated the existence of large UE in Pakistan. The size of the UE and its rapid growth have had an adverse effect on development efforts in the country. The UE caused a significant loss of resources and contributed to the country's fiscal problems. While eliminating the underground economy totally is nearly impossible, efforts to reduce its size and growth rate are imperative. The results suggest that a long-run strategy based on sustained efforts at economic liberalization and fiscal discipline will be effective in achieving this objective. In the short-run, the government could achieve a relatively quick reduction in the growth rate of the UE by liberalizing the foreign trade sector which was, in recent years, a major contributor to the growth of the UE. Encouraging private investment by opening more investment opportunities in the formal sector would also be instrumental in stopping the leakage into the UE. Policies designed to stimulate private investment without opening such opportunities would only increase the possibility of similar leakage. Fiscal discipline and tax reform would help restrain the growth of UE and break the deficit-UE cycle. The expected decline in UE growth, resulting from economic liberalization and fiscal discipline, would transfer, as evident from the size of the UE, significant resources to the formal economy, reduce economic inefficiency, and advance the country's economic development.