



U.S. Inflation Trends And the 2008 Recession

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- **Study Purpose**

The purpose of this study is to determine if the 2008 recession materially alters the long term trend in inflation

- **Research Design**

- **Inflation measures:**

- (1) CPI
- (2) PCE- ALL (PCE- 1)
- (3) PCEX F&E (PCE- 2)

- **Periods of Analysis:**

- (1) 1999- 2007 (T1)
- (2) 2009- 2017 (T2)
- (3) T1&T2 In Months

- **Regression Models:**

- (1) $CPI = A1 + B1(T1)$
- (2) $CPI = A2 + B2(T2)$
- (3) $PCE-1 = A3 + B3(T1)$
- (4) $PCE-1 = A4 + B4(T2)$
- (5) $PCE-2 = A5 + B5(T1)$
- (6) $PCE-2 = A6 + B6(T2)$
- (7) $LN\ CPI = A7 + B7(T1)$
- (8) $LN\ CPI = A8 + B8(T2)$
- (9) $LN\ PCE-1 = A9 + B9(T1)$
- (10) $LN\ PCE-1 = A10 + B10(T2)$
- (11) $LN\ PCE-2 = A11 + B11(T1)$
- (12) $LN\ PCE-2 = A12 + B12(T2)$

- **Model Tests:**

- (1) $B1(T1) > B2(T2)$
- (2) $B3(T1) > B4(T2)$
- (3) $B5(T1) > B6(T2)$
- (4) $B7(T1) > B8(T2)$
- (5) $B9(T1) > B10(T2)$
- (6) $B11(T1) > B12(T2)$

Table 1: Recession Effect						
Pre/ Post 2008 B coefficient Analysis						
Inflation Measure	1999-2007			2009-2017		
	r ²	B	t-stat	r ²	B	t-stat
CPI	0.99	0.41	89	0.96	0.30	51
PCE ex F&E	0.99	0.14	118	0.97	0.14	239
PCE All	0.79	0.16	81	0.97	0.13	62

Table 2: Recession Effect						
LOGN Models: Annualized Growth Rates						
Inflation Measure	1999-2007			2009-2017		
	r ²	GR	t-stat	r ²	GR	t-stat
CPI	0.99	1.81%	80	0.98	1.00%	53
PCE ex F&E	0.99	1.25%	119	1.00	1.01%	240
PCE All	0.99	1.52%	78	0.99	1.00%	63

Conclusions:

Table 1: Post 2008 B coefficients lower for CPI, PCE- All

Table 2: Post 2008 Annualized growth rates lower for all inflation measures

Table 1: Recession effect most pronounced for CPI

Table 2: Recession effect most pronounced for CPI

Fed Target Rate: Given target rate of 2% actual inflation rates below target rate for both pre and post 2008 time periods

Summation: Both types of regression models indicate a noticeable change in the CPI and PCE- All inflation measures post 2008 recession. When F&E is excluded, the recession effect is not as robust.