

Current Account Reversals and Structural Change in Developing and Industrialized Countries

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QAC Summer Program 2011
Wesleyan University

INTRODUCTION

The size and persistence of the U.S. deficit may leave many people wondering whether a U.S. current account reversal will be an orderly adjustment or will bring large dislocations to its economy. Large current account reversals have received much study in the past few years, but not enough attention has been geared towards the implications of reversal episodes on sectoral allocation and on output within economies.

Previous research conducted by Craighead and Hineline (2011) examined 14 current account reversal episodes for 55 sectors in OECD countries. Their study found that investment-related sectors, notably construction, suffered significant declines. Some sectors, however, underwent a more orderly adjustment and either suffered less or benefited from current account reversals. The primary commodities sectors, for example, performed relatively well.

Similarly, this study examines the effects of current account reversals, but uses a larger sample of 55 reversals. In addition to observing OECD countries, we included developing countries into our sample. Furthermore, our study observes the relationship between reversals and currency crises. Recent studies suggest that exchange rate crises are associated with output declines that are deeper than average.

DATA

The Groningen Growth and Development Centre provided the annual series valued added, price deflators, and employment for the eleven sectors. The GGDC distinguish between the eleven sectors of the economy as: agriculture, mining, manufacturing, construction, public utilities, retail and wholesale trade, transport and communication, finance and business services, other market services, government services, and sectoral sum.

The World Bank’s World Development Indicators (WDI) and The Economist (2010, 2011) provided data for current account as a percentage of GDP.

We used Reinhart and Rogoff’s (2003) annual classification of exchange rate regimes to identify countries that had undergone a foreign exchange crisis. Currency crises are generally dominant in *free falling* regimes, which are defined as “macroeconomic distresses associated with inflation over forty percent annum” (Reinhart and Rogoff, 2003).

METHOD AND MODEL

The empirical model has the form:

$$\Delta y_{i,j,t} = \alpha_i \Delta y_{i,j,t-1} + \sum_{s=-3}^3 \beta_{i,R+s} d_{j,R+s} + \gamma_{i,j} + \mu_t + \varepsilon_{i,j,t}$$

Where Δy is the percentage growth rate of the dependent variable-real value added, employment and the relative price deflator, respectively- indexed by sector (*i*), country (*j*), and year (*R*) and each of the three years before and after, γ is a fixed effect for each sector-country pair and μ is a calendar year dummy which captures global effects. The β coefficients differ across sectors; we ran separate regressions for each sector with data pooled across countries and time periods. We included a lagged dependent variable, where the coefficient was statistically significant in most cases.

RESULTS AND CONCLUSION

Table 1: Median Growth Rates of Output (Real Value Added)

Sector	Industrialized			Developing		
	2 yrs before	2 yrs after	change	2 yrs before	2 yrs after	change
Agriculture, Forestry, Fishing	1.87	0.99	-0.87	2.33	1.78	-0.55
Mining and Quarrying	2.25	1.59	-0.65	4.13	2.31	-1.82
Manufacturing	2.27	-0.01	-2.28	5.61	2.23	-3.38
Public Utilities	2.99	3.85	0.86	6.85	4.90	-1.95
Construction	2.30	-2.70	-5.00	7.26	-5.70	-12.96
Whole and Retail Trade, Hotels and Restaurants	2.57	1.63	-0.94	5.44	-0.12	-5.56
Transport, Storage, Communication	4.37	3.21	-1.16	6.89	2.56	-4.33
Finance, Insurance, Real Estate	3.72	2.53	-1.19	6.86	2.74	-4.11
Community, Social, Personal Services	2.29	1.27	-1.02	4.56	2.67	-1.89
Government	1.54	1.81	0.28	-	-	-
Total	3.31	1.17	-2.15	5.19	1.53	-3.67

Table 2: Median Growth Rates of Employment

Sector	Industrialized			Developing		
	2 yrs before	2 yrs after	change	2 yrs before	2 yrs after	change
Agriculture, Forestry, Fishing	-3.20	-3.03	0.18	-0.50	1.02	1.52
Mining and Quarrying	-3.71	-4.13	-0.42	1.16	2.37	1.21
Manufacturing	-0.54	-3.07	-2.53	3.39	0.40	-2.99
Public Utilities	0.00	-0.30	-0.30	4.03	2.20	-1.83
Construction	1.65	-2.92	-4.57	7.41	-0.71	-8.12
Whole and Retail Trade, Hotels and Restaurants	1.53	-1.01	-2.54	4.88	4.41	-0.47
Transport, Storage, Communication	0.59	0.55	-0.04	4.61	2.70	-1.91
Finance, Insurance, Real Estate	4.41	1.79	-2.63	7.58	3.43	-4.14
Community, Social, Personal Services	1.58	0.79	-0.79	3.95	3.59	-0.36
Government	2.75	1.64	-1.11	-	-	-
Total	1.44	-0.49	-1.93	3.09	2.39	-0.70

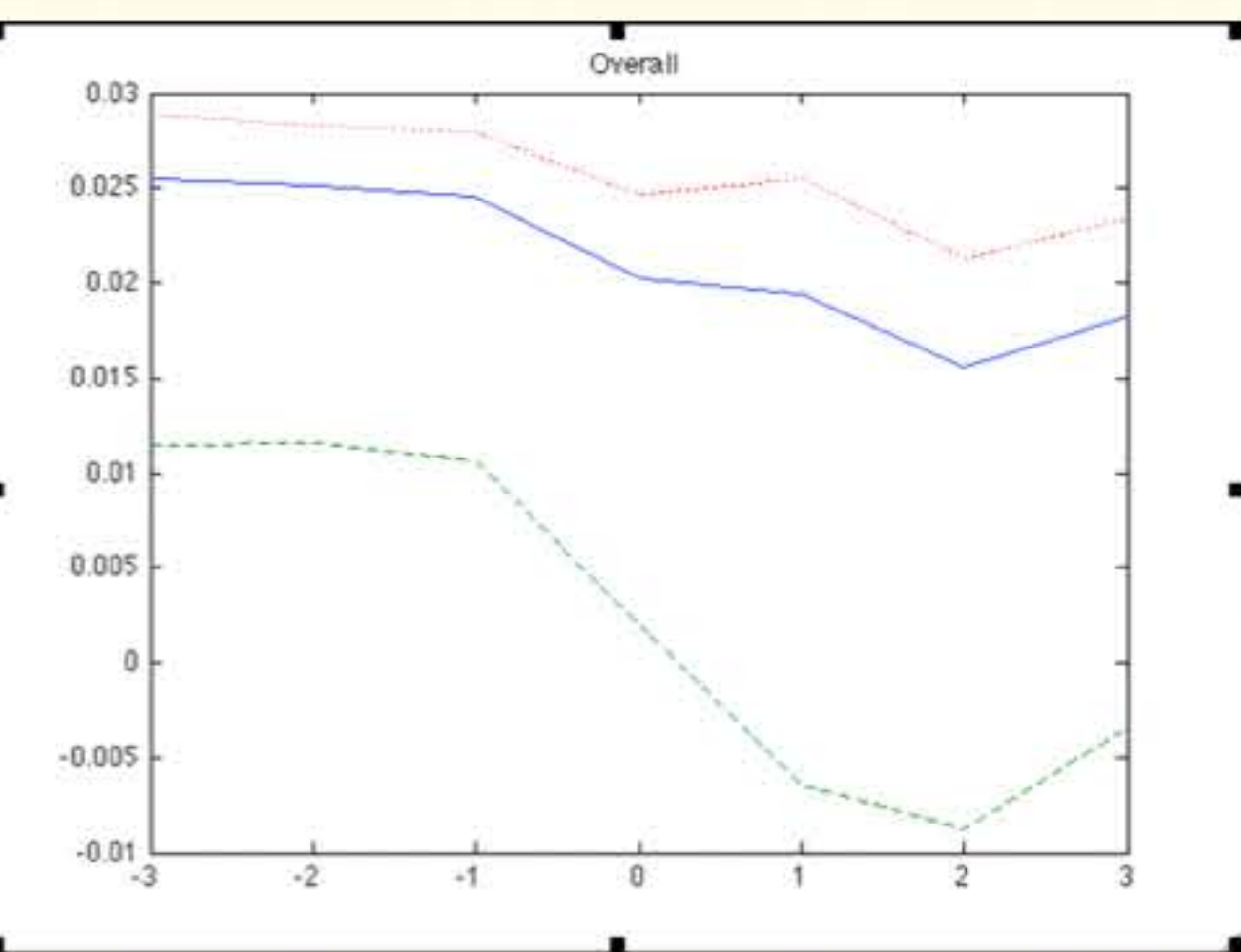
Table 3: Median Growth Rates of Output (Real Value Added)

Developing Sector	Currency Crisis			No Currency Crisis		
	2 yrs before	2 yrs after	change	2 yrs before	2 yrs after	change
Agriculture, Forestry, Fishing	1.54	0.04	-1.50	2.54	2.04	-0.51
Mining and Quarrying	4.13	2.15	-1.98	4.66	3.44	-1.22
Manufacturing	5.13	-3.38	-8.51	6.05	2.50	-3.55
Public Utilities	7.51	5.01	-2.50	7.12	5.03	-2.08
Construction	6.51	-11.58	-18.09	8.48	-1.42	-9.90
Whole and Retail Trade, Hotels and Restaurants	3.66	-3.90	-7.56	6.57	1.52	-5.05
Transport, Storage, Communication	5.47	0.68	-4.79	7.90	4.08	-3.82
Finance, Insurance, Real Estate	6.12	2.00	-4.11	7.74	4.43	-3.31
Community, Social, Personal Services	4.53	2.82	-1.72	4.58	2.67	-1.91
Government	-	-	-	-	-	-
Total	4.88	-1.05	-5.93	-5.93	5.47	-3.01

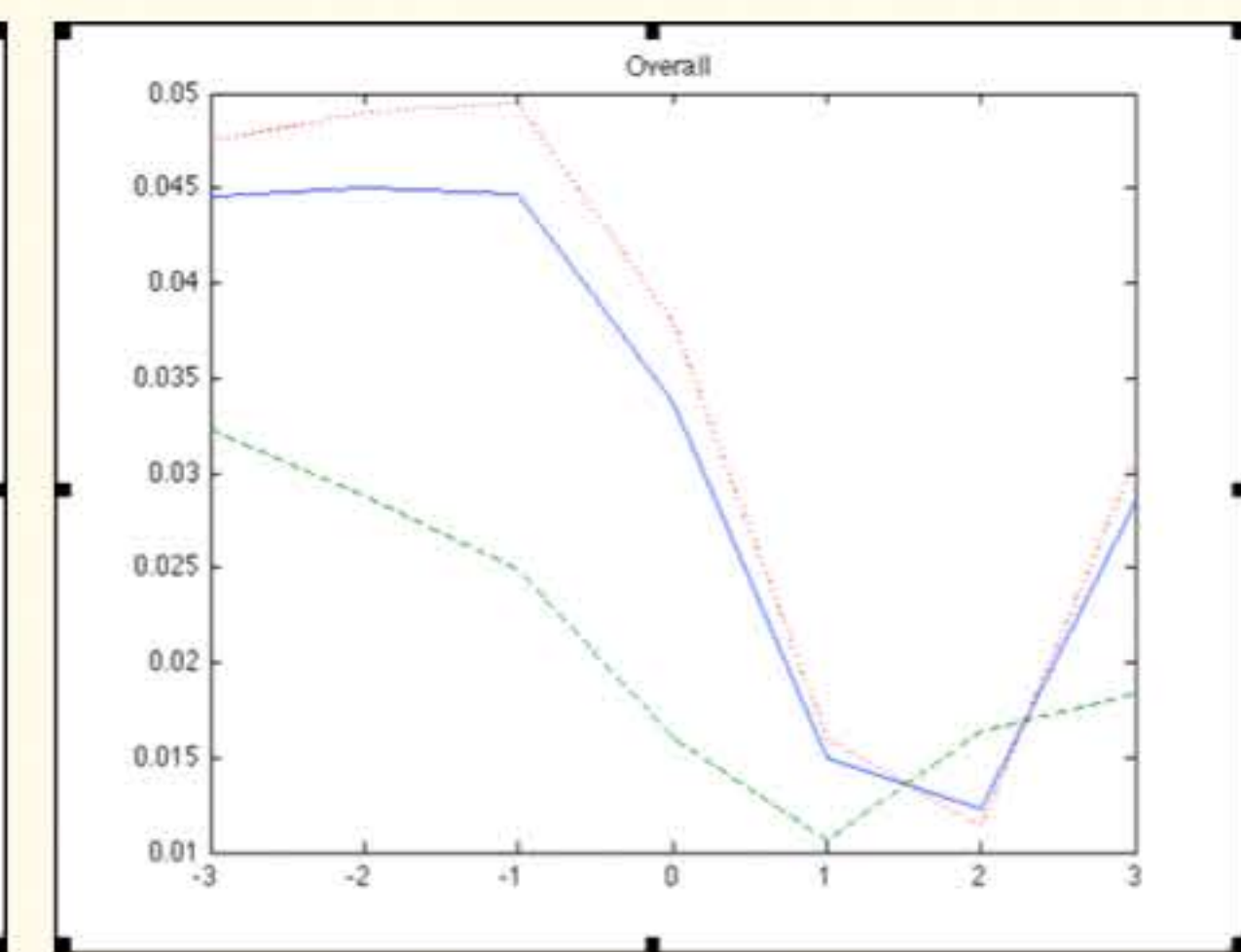
Table 4: Median Growth Rates of Employment

Developing Sector	Currency Crisis			No Currency Crisis		
	2 yrs before	2 yrs after	change	2 yrs before	2 yrs after	change
Agriculture, Forestry, Fishing	0.11	2.03	1.92	-1.75	0.62	2.37
Mining and Quarrying	2.43	3.95	1.52	1.33	1.10	-0.23
Manufacturing	2.89	-1.12	-4.02	3.87	0.58	-3.28
Public Utilities	2.98	4.56	1.58	5.25	2.20	-3.05
Construction	6.51	-3.19	-9.70	8.11	-0.64	-8.75
Whole and Retail Trade, Hotels and Restaurants	4.63	4.36	-0.27	4.97	4.50	-0.47
Transport, Storage, Communication	3.35	3.20	-0.16	5.43	3.06	-2.38
Finance, Insurance, Real Estate	7.58	2.68	-4.89	6.20	4.43	-1.77
Community, Social, Personal Services	5.51	4.02	-1.49	3.21	3.16	-0.05
Government	-	-	-	-	-	-
Total	3.16	2.06	-1.11	3.14	2.63	-0.51

Average Growth (Employment)



Average Growth (Value Added)



Blue: overall Red: developing Green: industrialized

Regression Analysis:

- Overall, employment is statistically significant and negative in industrialized countries. For developing countries, the employment coefficients for only a few sectors are significant. This underscores the relatively muted nature of employment dynamics around reversals. This is despite the fact that four sectors have significant, negative value added coefficients in each of the two years after a reversal. On the other hand, in industrialized countries, five sectors possess negative employment coefficients in the year after reversals and four sectors in the second year after reversals.
- For industrialized countries, the coefficients for the construction sector in the two years before reversals are significant and positive. For developing countries, the coefficients are significant and positive as well in the reversal year and the year before reversals.
- The positive and statistically significant coefficients for the agriculture, forestry, and fishing and mining and quarrying sectors suggest that these sectors benefit or suffer less following reversals in developing countries.

Table 1 and Table 2:

- In our sample, current account reversals were more frequent in developing countries. This indicates that current accounts in these countries tend to be more volatile and peak current account deficits tend to be significantly larger than developed countries.
- Consistent with previous findings, our results show that current account reversals tend to be followed by slowdowns in output growth and employment. In developing countries, the median slowdown in output growth is larger, but the decrease in employment growth is less severe relative to industrialized countries. This indicates that current account adjustments are associated with declines in labor productivity.
- The sharpest slowdowns in employment and output growth occur in construction in both developing and industrialized country reversal episodes.
- The agriculture, forestry, and fishing and mining and quarrying sectors did relatively well and employment growth actually increased in developing countries.

Table 3 and Table 4:

- Countries experiencing currency crisis episodes tend to have sharper output declines. Even with the exclusion of currency crisis episodes, countries experience output and employment decline.
- Crisis episodes seem to have increased the effects of decline in construction associated with reversals.

REFERENCES AND ACKNOWLEDGMENTS:

Craighead, W.D. and D.R. Hineline. 2011. "As the Current Account Turns: Disaggregating the Effects of Current Account Reversals in Industrialized Countries" Working paper, Wesleyan University.
Croke, H., S.B. Kamin and S. Leduc. 2006. "An Assessment of the Disorderly Adjustment Hypothesis for Industrial Economies." *International Finance* 9: 37-61.
Freund, C. 2005. "Current Account Adjustment in Industrial Countries." *Journal of International Money and Finance* 24: 1278-1298.
Reinhart, C.M. and K.S. Rogoff. 2004. "The Modern History of Exchange Rate Arrangements: A Reinterpretation." *Quarterly Journal of Economics* 119: 1-48.
❖ My thanks go to Professor Bill Craighead and Professor Manolis Kaparakis. Without their help, this project would not exist.