

APPENDIX D: VOLATILITY OF IRISH REAL GDP GROWTH RATES

A large literature examines the volatility of Irish macroeconomic data and the associated propensity for large revisions to macroeconomic aggregates (Conroy, 2015; Casey and Smyth, 2015; Quill, 2008; Bermingham, 2006; McCarthy, 2003; and Ruane, 1975).

Measuring the Mean Absolute Deviation (MAD) of growth rates, Conroy (2015) notes that volatility in quarterly GNP and GDP in Ireland is amongst the highest in the OECD. This is attributed to a number of sectors, predominantly those with strong multinational corporate presences such as the manufacturing sector, and the distribution, transport, software and communications sectors. Their finding of a positive correlation between average real GDP growth rates and the MAD might be expected given that the MAD will itself be inflated by higher growth rates:

$$MAD = \sum \frac{|x_i - \bar{x}|}{n}$$

...where x is the real GDP growth rate in period i and \bar{x} is the average over the sample n periods.

To account for this correlation and to attempt to look through cross-country differences in growth rates, one can use the Coefficient of Variation (CoV), which divides the sample standard deviation (σ) by the sample mean (μ):

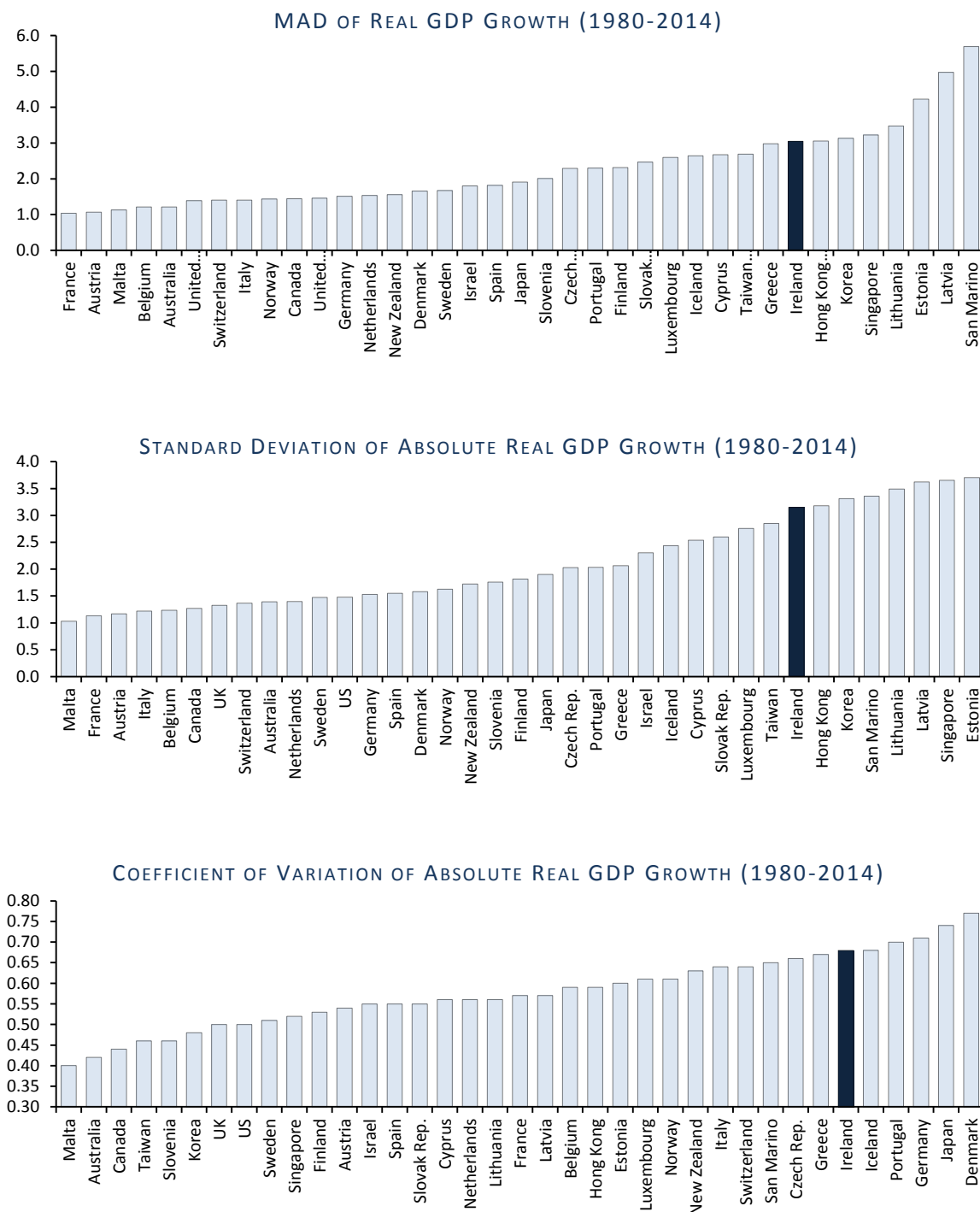
$$Standard\ Deviation = \sigma = \sum \frac{|x_i - \bar{x}|}{n}$$

$$CoV = \frac{\sigma}{\mu}$$

On the basis of all three measures – the MAD, the sample standard deviation and the CoV, Irish real GDP growth rates rank among the most volatile of the advanced economies observed over the period 1980-2014. This finding holds even when comparatively high growth rates are controlled for under the CoV measure.

The extent of the volatility of Irish real GDP poses challenges for forecasters as well as policy makers. Heightened volatility around current economic activity means that error margins are also much wider. In such an environment, it is essential to account for higher degrees of uncertainty when designing policy.

APPENDIX FIGURE D.1: ADVANCED ECONOMIES: MEASURES OF VOLATILITY



Sources: IMF WEO (October 2015) and internal IFAC calculations.

Note: All advanced economies as defined in the World Economic Outlook Database, October 2015 are included for comparison.