9 The Accruals Process

In the Introduction to Part 4, we separated accruals into three components: discretionary accruals, non-discretionary accruals, and reversals arising from transactions that took place in previous periods. The unobservability of the composition of accruals poses a challenge to the earnings management research. Elgers, Pfeiffer, and Porter (2003, p. 406), state, “A fundamental issue in assessing earnings management is the unobservability of the managed and un-managed components of reported earnings.”

Apart from mistakenly ignoring reversals, a reason for this difficulty is that non-discretionary accruals vary with performance. A change in total accruals is consistent with both a change in non-discretionary accruals that is induced by varying performance and the accumulation of discretionary accruals produced by managing earnings. Hence, researchers need to understand what to expect of normal accruals in order to identify managed accruals and strengthen the power of their empirical tests of earnings management (see, e.g., Guay, Kothari, and Watts, 1996; Jiambalvo, 1996; Dechow, Sabino, and Sloan, 1998; McCulloch, 1998a; Black and McCulloch, 2003). As a discussant of Dechow and Dichev (2002; discussed in Chap. 11), McNichols (2002, p. 67), states, “[T]his paper suggests several future research directions. The first direction is to enrich the modeling by specifying the process generating cash flows, ….”

We turn our attention, then, to non-discretionary accruals. In the following section, we explain how earnings management can affect observable accruals by introducing discretion in the firm’s report.

9.1 Non-discretionary Accruals

9.1.1 The Non-discretionary Accruals Generation Process

It is customary to start with an assumption about the behavior of sales over time for two good reasons. First, as in budgeting processes, sales determine a firm’s production and inventories, which, in turn, determine the
cost of sales, other operating costs, and investment decisions. Second, sales have the highest persistence of any component of the income statement, where persistence measures the effect of increasing a certain variable by $1 on the future value of the same variable. Dechow and Schrand (2004, table 2.1, p. 13), summarize 56,940 firm-year observations between 1987 and 2002 and find that sales have the largest persistence, 0.85; operating income (before and after depreciation) comes next, 0.76, then pretax earnings, 0.72, and finally earnings before special items, 0.71 (all variables are deflated by assets). It therefore seems that the sales variable is an efficient statistic for describing the characteristics of a firm.

A characterization of the sales process follows:

\[ S_t = (1+\lambda)[\mu + \phi(S_{t-1}-\mu)] + \epsilon_t, \]  

(9.1)

where

- \( S_t \) = sales in period \( t \);
- \( \lambda \) = growth;
- \( \mu \) = mean sales;
- \( \phi \) = a persistence parameter that measures the effect of the previous period's drift on this period's sales, \( 0 \leq \phi \leq 1 \);
- \( \epsilon \) = serially independent white noise, \( E(\epsilon)=0, E(\epsilon^2)=\sigma^2>0, \) and \( \text{Cov}(\epsilon_t, \epsilon_{t-1})=0 \).

The sales generation process encompasses the most often used stochastic processes in the accounting literature: If \( \phi =0 \), the process is mean-reverting. If \( \phi=1 \), the process is a random walk, and if \( 0 < \phi < 1 \), the process is a random walk with a drift.

Mean reversion characterizes mature large firms and firms with extreme performance (Fama and French, 2000). It is a property of performance measures such as the rate of return on assets (Barber and Lyon, 1996; Sloan, 1996) in long windows. Several authors note that the reversion to the mean tends to require more than one fiscal accounting period, and the reversion is faster when a firm’s performance is extreme (Finger, 1994; Sloan, 1996; Dechow, Sabino, and Sloan, 1998; Fama and French, 2000; Nissim and Penman, 2001 Feng 2004 Richardson, Sloan, Soliman, and Tuna, 2005).

Other authors have adopted the assumption that \( \phi=1 \) (and \( \lambda =0 \)), that is, that the process is a random walk (Finger, 1994; Dechow, Kothari, and

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1 Mathematically, for a given variable, \( Z \), its persistence is \( \frac{\partial Z_{t+1}}{\partial Z_t} \). Empirically, \( Z_{t+1} \) is regressed on \( Z_t \), \( Z_{t+1}=a_0 + a_1 Z_t + \text{noise} \), and \( a_1 \) is the measure of persistence.