



**Overcoming “Spreadsheet Inertia”:
Steering away from Excel-Based Risk Management Practices
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In 1687, Isaac Newton published a three-volume treatise which revolutionized humanity’s understanding of the physical world. *Philosophiæ Naturalis Principia Mathematica* explained natural phenomena so thoroughly and effectively that, three centuries later, high school teachers and college professors still impart its tenets to their students.

Book One of *Principia* contains Newton’s three laws of motion, which describe the responses of physical bodies to forces acting upon them. Sir Isaac expressed the first law (also known as the “law of inertia”) as follows: “Every body persists in its state of being at rest or of moving uniformly straight forward, except insofar as it is compelled to change its state by force impressed.” Whether at rest or in motion, physical objects are heavily inclined to preserve their current status; change occurs only when an outside force acts upon them.

While Newton’s studies were devoted to exploring phenomena in the natural world, the inertia principle certainly applies to human behavior as well. That is, individuals and organizations tend to resist changing their course until powerful external factors compel them to do so. In the case of financial institutions, the global credit crisis of 2008-2009 and consequent regulatory reforms present a powerful impetus to change organizational behaviors and processes.

As the economy was expanding at a torrid pace during 2003-2007, asset growth may have been the primary focus of most commercial banks. Given the considerable loan impairments and business failures subsequently experienced (not to mention elevated unemployment levels), risk management is the topic du jour, and will likely remain so for the foreseeable future. Outside forces – heightened credit risks and regulatory scrutiny – have caused bankers to reconsider their approaches to underwriting and risk management. However, one conspicuous form of technological inertia has remained largely unaddressed.

Microsoft Excel is a user-friendly spreadsheet application that is well-suited for an individual or small number of people to process a modest amount of data. Before they enter the workforce, most bank personnel are longtime users of the product, gaining initial exposure to it during high school and college courses. Its familiarity and ubiquity (nearly all PCs and laptops contain the application) make Excel a popular choice for managing data. Spreadsheets can be readily customized by loan officers and other commercial bank users without additional assistance from IT personnel.

Over the past two decades, bankers have become heavily reliant upon Excel for underwriting decisions as well as risk-management reporting. Despite its popularity, the “spreadsheet

approach” entails a considerable number of drawbacks and limitations in both endeavors. Below, the program’s deficiencies as they pertain to loan underwriting and risk management are considered.

General Limitations:

- Excel is a spreadsheet application, not a database. Information stored on Excel spreadsheets is not centrally warehoused, rendering it difficult to access via ad hoc queries. Further, as many spreadsheets contain a fair amount of manually-entered information, data integrity is a perennial concern.

Underwriting Limitations:

- While report customization may be advantageous to individual users, processing data in an idiosyncratic manner often becomes a liability for an organization. If borrowers’ financial data is not centrally stored and readily accessible to multiple users, chief loan officers and risk officers may have great difficulty in verifying that underwriting standards are being consistently applied.
- Loans made to borrowers with multiple business interests and loans supported by a guarantor require a “global” cash flow analysis. As Sageworks’ Vimal Patel has noted, proper [global cash-flow analysis](#) “involves integrating multiple partnership and corporate tax returns, business financial statements, K-1 forms, and individual tax filings.” Excel is ill-equipped to readily integrate all the pertinent information from these disparate sources.

Risk-Management Limitations:

- Excel is not designed to process large volumes of data. A comprehensive assessment of loan-portfolio risk factors requires strenuous computations which cannot be adequately handled by spreadsheets.
- Although data from other applications can often be *imported* into Excel, the program is not conducive to easily *exporting* data to other applications. Any impediments to data sharing are a major constraint to thoroughly evaluating portfolio risks.

Unlike the inanimate subjects of Newton’s experiments (think falling apples), banks’ courses are not wholly dependent on external stimuli. Management decisions—especially those pertaining to Information Technology practices—have tremendous effects on profitability and balance sheet health.

As bank examiners and officers become increasingly conscious of the limitations of an Excel-based approach to underwriting and risk management, the demand for alternative solutions will continue to rise. Undoubtedly, other software applications will soon enable bankers to overcome “spreadsheet inertia” and prudently change their direction.

About James Adams, CFA: James Adams is a Senior Analyst at [Sageworks](#), a leading provider of credit risk management, loan loss reserve, and stress testing software to financial institutions. Adams is also the author of *Waffle Street: The Confession and Rehabilitation of a Financier*, a humorous examination of money, banking, and economics by a hedge fund (and foodservice) professional. Adams began his career with Protective Life Insurance Co. and Jefferson-Pilot Financial, serving as a corporate bond analyst at both companies. Subsequently, he was a vice president at a \$30 billion money management firm. Adams received his MBA from the University of North Carolina’s Kenan-Flagler Business School and a BS in Analytical Finance and Accounting from Wake Forest University.