

## TULLETT PREBON STRATEGY INSIGHTS: 005

### DANGEROUS EXPONENTIALS

#### **Austerity won't work: sovereign debt growth has also become exponential**

London, New York 9 June 2010: **The global economy is in the grip of dangerous financial and non-financial exponentials that are likely to end in a collision between an economic system reliant on growth and finite resource constraints, says Dr Tim Morgan, Head of Global Strategy at leading inter-dealer broker Tullett Prebon.**

The resulting shock – when it happens – is likely to trigger changes of a scale unseen for generations, he says.

A lack of understanding of the 'forest of exponentials' including population growth, energy consumption, cumulative inflation and money supply growth makes the timing and nature of the problem even more unpredictable. All of these exponentials are on a 'hockey-stick curve', showing sharp upturns in recent decades.

And, he argues, the ensuing clash may be compounded by grave threats to the intrinsic values of the world's principal currencies, including the dollar, euro and sterling, undermined by escalating debt, dangerously-rapid expansion in the money supply, and continuing deteriorations in purchasing power.

In the fifth edition of Tullett Prebon Strategy Insights – Dangerous Exponentials: A Radical Take on the Future, Dr Morgan makes fundamental links between population, resources and the growing frequency of our economic crises.

And he calls for urgent efforts to better understand and measure energy returns on energy invested in the world's economic activities, perhaps the most essential and unrecognised measure of the sustainability of human activity.

Dr Morgan's fundamental starting point is that in contrast to that of hunter-gatherers, modern society is built upon the ability of humankind to produce an energy surplus via farming, and then add (largely fossil) energy to enable a vast range of activities not driven by the imperative of human survival. That makes our society and economy at base an energy construct.

Since supplies of fossil energy are by definition finite, resource constraint 'seems, therefore, inevitable'. If the exponential growth of human population and prosperity hits resource constraints, will that 'put all of the linked societal and economic exponentials into reverse?' he asks.

In addition, Dr Morgan identifies fundamentally changed trends in the financial arena. Inflation, once a product of war, has become an accepted fact of life. US and UK Quantitative Easing during the financial crisis, arguably acceptable to compensate for a slowdown in money's velocity, will be inflationary if not reversed once credit growth resumes, he says. Meantime, he argues, austerity won't work: sovereign debt growth has also become exponential.

Setting aside arguments about 'peak oil', he focuses on the mounting cost of extracting fossil fuels now that the most accessible have been 'cherry-picked'. That is why, he argues, the world needs to be able to measure the ratio of energy obtained against the amount invested in extracting it – a vital tool to establish how resource constraints are tightening on our economy. "Slippage along the...curve – and *not* the simple issue of 'running out of oil', as some fear – is the clear and present threat to an economy based on dangerously energy-dependent exponentials," he concludes.

In future reports, Dr Morgan will look at issues surrounding the reliability of reported data, and in more detail at the likely emergence of 'resource constraint', as growth outpaces available energy.

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**About Tullett Prebon**

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