Funding the Future

Article URL

Published: January 12, 2026, 7:07 pm

I have already mentioned that some of yesterday was spent by Jacqueline (my wife and a retired GP, for those unfamiliar, and a partner in Tax Research LLP, which publishes this blog) and me developing ideas around quantum economics, money, and even accounting.

I want to stress that neither of us claims to be experts in this, although we have read enough to ask what we think are sensible questions around the ideas in quantum physics to imagine how they might be applied elsewhere.

The result of our discussion will be published here in at least ten blogs, with the following probable themes (although not all have been edited as yet):

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Why Quantum Thinking Matters for Economics

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Money as Particle and Flow

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Entanglement and Double-Entry Bookkeeping

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Quantum Uncertainty and Economic Forecasts

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Speculation, Potential, and Energy

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Infinite Promises, Finite Energy (MMT and constraint)

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The Photon Question — Labour as the Quantum of Value

*
Land as the Field — Henry George’s Contribution

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Towards a Quantum Political Economy

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A Call for a New Economics

This is the first of those blogs:

Why Quantum Thinking Matters for Economics

“Anyone who is not shocked by quantum theory has not understood it.” – Niels Bohr

Economics has borrowed from physics for centuries. In the eighteenth and nineteenth centuries, Newton’s mechanics provided the dominant metaphor. Bodies moved under predictable forces; systems tended towards equilibrium; the world was a machine that could be measured, predicted, and controlled. Economists, eager to dress their subject in scientific clothes, copied these ideas.

Supply and demand became forces. Prices were imagined to balance markets. Equilibrium became the central metaphor: like planets finding their orbits, markets supposedly found theirs.

But physics itself abandoned this mechanistic worldview more than a hundred years ago. Quantum theory showed that, at the most fundamental level, reality is not mechanical. It is uncertain, relational, and probabilistic, at best, not least because the act of observation always changes the system observed. And, perhaps most importantly for the discussion that follows, what looks like a particle is also a wave.

Economics has, to date, not enjoyed that revolution. It is still almost entirely Newtonian in its thinking. It is, in other words, still committed to equilibrium. In particular, its dominant macroeconomic models – for example, the dynamic stochastic general equilibrium (DSGE) models beloved of most in that field – are clockwork devices, relying on assumptions of rational agents, predictable shocks, and eventual stability whilst excluding key variables - like money - to make these decidedly limited models possible.

The result is an economics out of step with reality. We live in a world of uncertainty, not certainty; of instability, not stability; of entanglement, not independence. And yet our economics pretends otherwise.

First: the Newtonian inheritance

Newtonian mechanics is seductive. It promises an Enlightenment view of rational order, predictability, and control. Drop an object and you can calculate how fast it will fall. Tilt a balance and you can know when it will

settle. These metaphors shaped economics from the start.

Adam Smith wrote of the “invisible hand” (albeit briefly) as if economic life were governed by natural law. Nineteenth-century economists imagined wages, prices, and interest rates settling at natural levels. Twentieth-century neoclassical economists developed mathematical models that assumed markets were frictionless and self-correcting, a perspective that is still held by many neoliberal economists, despite its obvious limitations.

That inheritance persists. Central bankers and other orthodox economists still talk of “output gaps” and “natural rates.” The Office for Budget Responsibility still models fiscal policy as though the future can be forecast with precision. Economists still teach students that supply and demand curves intersect at equilibrium, and that they are smooth and persistent in direction throughout their ranges, when ample evidence suggests that all of this is wrong and the world does not behave that way.

Second: the quantum revolution

Quantum theory overturned classical physics. Three lessons matter most for economics.

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Duality. As quantum physics showed, light is both a particle and a wave. Electrons behave like both too. Their nature depends on how we observe them.

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Uncertainty. What was also discovered was that we cannot know both the position and momentum of particles at once. The world is not determinate, but probabilistic.

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Entanglement. What was appreciated was that articles can share a state so that measuring one instantly defines the other. Systems are relational and not independent.

These lessons shocked physicists. They defied common sense. But they worked: quantum theory explains the micro-world with astonishing precision.

Third: why economics missed the turn

Economics had its chance to learn. Keynes, in the 1930s, hinted at uncertainty and expectations. He knew that the future was fundamentally

unknowable, that probability was not enough, that psychology mattered. However, after the Second World War, the drive to formalise economics into a "hard science" overrode these insights.

Neoclassical economics reasserted equilibrium, rationality, and determinacy. Keynes was tamed by the neo-Keynesians into IS-LM curves and neat models. Uncertainty was reduced to risk. Probability distributions replaced genuine ignorance. The world has, since then, paid an enormous price for this, not least in the 2008 global financial crisis.

By the 1980s, DSGE models dominated macroeconomic thinking. They assumed rational, forward-looking agents, shocks treated as random noise, and economies tending back to equilibrium. The quantum revolution had passed economics by. We lived instead in a world where economists tried to shape the world in the way they thought it should be, rather than trying to understand the way it was. Dogma and not understanding ruled.

Fourth: the consequences

The consequences of this failure were seen everywhere.

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Forecasting failure. Economic forecasts repeatedly miss reality. Recessions are rarely predicted. Growth estimates swing wildly. Yet the models persist.

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Policy paralysis. Fiscal rules are set as though the future can be known. Governments promise balanced budgets in five years, despite the impossibility of knowing what will happen in five months.

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Misunderstood crises. The 2008 crash was not a "shock" from outside but a collapse from within the system. Neoclassical models had no place for it. The lessons have still not been learned.

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Denial of uncertainty. Economists talk as though risk can be priced, as though volatility can be smoothed, as though policy can be precise. Reality is otherwise. Uncertainty is real, and needs to be embraced by economists, most of whom are utterly unwilling to do so.

The Newtonian inheritance is blinding us to the true nature of the economy.

Fifth: what a quantum economics would see

A quantum-informed economics would start with different metaphors.

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Money as a duality. Money is both a particle (a bank entry, a coin) and a wave (a flow through the economy). What you see depends on your perspective. Neither is right nor wrong. Both exist simultaneously.

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Transactions are entangled. Every debit has a credit. Every asset has a liability. Money is not a thing but a relationship.

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Budgets as probability clouds. The future cannot be forecast with precision. Fiscal rules that pretend otherwise are fantasy.

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Measurement as intervention. Just as observing a particle changes it, measuring economic variables – GDP, inflation, unemployment – changes behaviour. Targets alter outcomes.

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Uncertainty is fundamental. We cannot reduce it to risk. We must design policies that are robust to the unknown.

Sixth: the political stakes

This is not abstract. It matters to politics.

When governments claim they cannot spend now because of deficits in five years, they are using Newtonian metaphors. They are assuming certainty where none exists. They are paralysing themselves by clinging to false models.

When central banks claim independence on the basis of controlling inflation with precision, they are assuming a mechanical world. In reality, monetary and fiscal policy are entangled, and uncertainty rules.

When economists deny the relational nature of money, they permit myths: that government debt is like household debt, that deficits are dangerous, that surpluses are virtuous. None of these claims holds in a quantum world.

Seventh: why this matters now

The world is unstable. Climate crisis, inequality, geopolitical conflict, and financial speculation all create turbulence. These are not temporary shocks but features of the system.

An economics that clings to equilibrium cannot cope. It promises stability where none exists. It misguides policy, misinforms debate, and misleads the public.

A quantum-informed economics, by contrast, would accept instability as normal. It would design systems resilient to shocks. It would abandon fantasies of balanced budgets in favour of robust fiscal activism. It would regulate speculation not as a marginal nuisance but as a central threat.

Eighth: the way forward

These ideas mark the start of a journey into the application of quantum thinking to money, accounting, and economics. In the series of posts that will follow in due course, I will develop them in more detail, looking at:

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How money behaves like both a particle and a flow.

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How double-entry bookkeeping is a form of entanglement.

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How speculation traps energy in destructive oscillations.

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How labour is the quantum of value – the economic equivalent of the photon.

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How land (as broadly defined) completes the picture by providing the field in which all value is created.

From those ideas, I will then outline a political economy that leverages these insights to fund the future we need.

Conclusion

Economics cannot continue with Newtonian metaphors. The world is not a machine tending to balance. It is a quantum field of uncertainty, probability, and entanglement.

If physics could accept this a century ago, economics can no longer refuse. It is time for an economics of uncertainty, of relationships, and of reality.

Only then can we fund the future.

Previous posts in this series

* **Discussing quantum economics, accounting, money and more**

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