Funding the Future

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This post continues the story of quantum economics, which began here. There is a summary of posts to date at the end of this post.

Can you please note when reading this post and others in the series that I am not suggesting that quantum physics and economics are akin to each other. Instead, I am exploring how quantum thinking might help build new economic narratives, which is quite a different goal.

Quantum Uncertainty and Economic Forecasts

“In this world nothing can be said to be certain, except death and taxes.” – Benjamin Franklin

He might have added: “and the failure of economic forecasts.”

Economics loves forecasts. Governments base their budgets on them. Central banks set interest rates in response to them. Businesses plan investments around them. Journalists report them breathlessly.

And yet, if there is one thing more certain than the forecast itself, it is that it will be wrong. Growth turns out weaker than predicted, or stronger. Inflation runs hotter or colder. Recessions always arrive unannounced and seemingly by surprise.

Why? Because economists still think in Newtonian terms. They imagine the economy as a machine tending towards equilibrium, disturbed only by temporary shocks. And they model the future as if it can be known with precision, given enough data.

Quantum thinking shows why this is nonsense. The world is not determinate. It is uncertain, relational, and subject to uncertainties rather than probabilities. To treat the future as knowable is not just optimistic. It is fundamentally wrong.

First: the Newtonian fantasy of forecasts

At present, the dominant macroeconomic models are Dynamic Stochastic General Equilibrium (DSGE) models. The name is impressive, but the assumptions are simplistic:

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The world is populated by rational economic agents (otherwise known as people, who always act consistently and as if possessed of the best possible knowledge of all possible economic data).

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Markets invariably tend towards equilibrium, where supply always equals demand and best possible economic outcomes are achieved.

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Random shocks are the only source of change because it would be irrational to assume otherwise, given the first assumption.

As a result, these models pretend to predict the path of the economy by projecting forward from today's supposed state of economic equilibrium. These models reduce uncertainty to risk, assign supposedly known probability distributions, and claim scientific rigour. But as anyone who has lived through the past fifty years knows, the economy is not a pendulum disturbed by random nudges. It is much more like a storm system, generating its own turbulence, and it is impossible to reduce its behaviour to neat equations.

In that case, forecasts based on equilibrium models are not just flawed. They are fraudulent.

Second: the quantum principle of uncertainty

In contrast to this world of economic fantasy, in quantum mechanics, uncertainty is fundamental.

Heisenberg's principle says we cannot know both the position and momentum of a particle at once. The more precisely we measure one, the less precisely we know the other. This is not a failure of measurement. It is a property of reality. The particle within quantum mechanics does not have both a definite position and momentum simultaneously. As a result, reality is at best probabilistic and definitely not deterministic. The consequence is that the future is, in quantum mechanics, uncertain.

Applied to economics, the lesson is stark: the future there can also not be known in precise terms. The economy is not a machine running forward. It is a cloud of possibilities, collapsing into outcomes only as time passes.

Third: the forecast as a wave function

In that case, we need to think of economic forecasts as a wavefunction. They describe possible states of the economy, with probabilities attached.

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The Office for Budget Responsibility predicts GDP growth of 1.5%.

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What this really means is a cloud of possibilities: perhaps 0.5%, possibly 2.5%, and perhaps worse.

*
The mean is 1.5%, but the distribution is wide.

* *And the outcome could be very different.*
Worse still, people like the Office for Budget Responsibility and the Bank of England make a critical assumption in their forecasts, and that is that, as necessarily follows from the assumptions they make, the economy will always return to its mean projection, extrapolated from past economic activity. In other words, it reverts to the mean on all occasions, and as a result, there is, in effect, no uncertainty in their modelling at all.

The problem, then, is that economists present the mean as the reality. They talk as though their forecasts are a specific outcome, and not one of many possibilities. As a result, they in effect collapse the wavefunction prematurely, misleading politicians and the public.

Fourth: fiscal rules as a denial of uncertainty

The problem gets worse when we bring fiscal rules into the mix.

Governments like to promise that budgets will be balanced "over the fiscal cycle" or "within five years", or whatever else they alone choose. These promises do, however, depend on forecasts. Only if growth is as expected, if inflation is as expected, and if tax receipts are as expected, will the books then balance.

But these are huge ifs. No one knows what growth will be. No one knows what shocks will occur. To tie today's policy and actions to forecasts of what might happen five years ahead is to deny uncertainty. Instead, what fiscal rules do is treat models of the future as if they deliver specific outcomes that can be treated as fact in the present moment, and that makes no sense.

The result is paralysis. Governments cut spending now for fear of breaching a fiscal rule

in the future that is based on a forecast that is almost certainly wrong. Public services suffer as a consequence because economists cannot admit uncertainty about the future.

Fifth: the illusion of precision

To consider this issue, think about inflation forecasts.

Central banks set interest rates based on forecasts of inflation two years ahead. But inflation depends on energy prices, wages, exchange rates, global events, and unknown shocks, most of them unknown, and in some cases unknowable in advance. The Bank of England's own record shows forecasts are wrong more often than they are right. Yet, they still claim the authority to manage the economy by pretending they know what inflation will be. This claim is based on an illusion of precision which cannot be justified. Quantum thinking would insist on humility: the acknowledgement that we cannot know.

Sixth: measurement as intervention

In quantum physics, measurement changes the system. The act of observing alters the outcome.

Economics is the same. Forecasts are not neutral. They change behaviour. For example:

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If the Office for Budget Responsibility predicts weak growth, businesses may cut investment, making weak growth more likely.

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If the Bank of England forecasts high inflation, it may raise rates, slowing demand and altering inflation.

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If government departments are told that spending will be cut in three years, they start cutting now.

In that case, forecasts are not passive descriptions. They are interventions that alter the future they claim to predict. It appears that all too often this is not appreciated.

Seventh: uncertainty versus risk

Keynes knew this distinction well. Risk is calculable. You can roll dice and know the odds. Uncertainty is not. You cannot know the odds of war breaking out, or of a pandemic arriving, or of a financial bubble collapsing.

Economists have collapsed uncertainty into risk. They use probability distributions to describe what cannot be described. They pretend that uncertainty can be tamed by statistics. It cannot.

This is why Black Swans occur. This is why recessions come as surprises. This is why models fail.

Eighth: policy for an uncertain world

So what would policy look like if we took uncertainty seriously? The following might be appropriate considerations:

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The aim should be robustness, but not precision. Instead of aiming for precise fiscal targets, policy should be designed to work under a range of scenarios. It is better to be roughly right than precisely wrong.

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Automatic stabilisers should be emphasised. This would mean strengthening benefits, emphasising progressive taxes, and public investment that expands when the economy weakens and contracts when it strengthens. These adjust automatically, without relying on forecasts.

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Flexibility is key. Budgets should be allowed to change as reality unfolds. This means that rigid fiscal rules should be scrapped and that plans must adapt.

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Resilience is key. Investment should be made in systems that can withstand shocks: renewable energy, public health, and social safety nets. If the future is unknowable, it is essential to build key strengths in areas where need is known rather than gamble on forecasts.

Ninth: the politics of uncertainty

*Admitting uncertainty is politically difficult. Politicians prefer certainty. They like to promise that growth will be **X**%*, that the deficit will fall by ***Y***, that inflation will be ***Z***. But

these promises are always false. As a result, they always set governments up to fail. They create cynicism when forecasts prove wrong. They lead to damaging policies designed to hit targets that were meaningless from the start. A politics of honesty would instead admit uncertainty. It would say: the future is unknowable, but we will design policies that protect you whatever happens. That would be braver, and truer, and would restore political credibility.

Conclusion

Economic forecasting is Newtonian fantasy. It imagines certainty where there is uncertainty, equilibrium where there is turbulence, and precision where there is probability.

Quantum thinking shows the truth. The economy is a cloud of uncertainty, not a machine. Forecasts are interventions, not predictions. Uncertainty is fundamental, not reducible.

If economics embraced this, policy would change. Fiscal rules would be scrapped. Forecasts would be treated with humility. Policy would focus on resilience, robustness, and adaptability.

And then, perhaps, economics would serve society better. Because only by respecting uncertainty can we fund the future.

Previous posts in this series

* ***Discussing quantum economics, accounting, money and more***
* ***Quantum economics, part 1: Why Quantum Thinking Matters for Economics***
* ***Quantum economics, part 2: Money as Particle and Flow***
* ***Quantum economics, part 3: Entanglement and Double-Entry Bookkeeping***

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