
How to design a 21st century economy

Introducing 'Doughnut Economics'

Kate Raworth

Economics needs a radical new model that is relevant for our times, says economist Kate Raworth. Frustrated by the dominant influence of outdated twentieth century theories, she proposes a very different framework. It's called 'Doughnut Economics'.

Growing up in the 1970s, Kate Raworth remembers the impact on her teenage self when she heard about disasters such as famine in Ethiopia, the hole in the ozone layer, and crude oil spewing into the ocean from the Exxon Valdez tanker: "By the end of the 1980s," she says, "I just knew one thing; I wanted to change the world."

Raworth saw economics as key to finding solutions to global problems. She went to Oxford University to read PPE (Politics, Philosophy and Economics), but felt disillusioned because the theories at the forefront of teaching pushed the things she cared about - ecological integrity and social justice - to the margins of learning.

Four years and a degree later, Raworth moved on, eager to immerse herself "in real economic issues." She worked for the Overseas Development Institute on Zanzibar, living among "barefoot entrepreneurs who lived on their wits", then with the United Nations Development Programme where she co-authored the Human Development Report. That led to Oxfam for a decade of campaigning, "to show that climate change is an issue of social justice; for women's rights in global supply chains; to make trade fair."

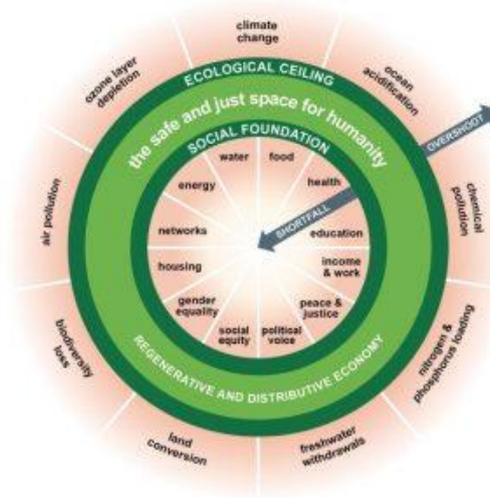
Reflecting on these career experiences, Raworth saw a common thread: "I realised that what I'd been working on was trying to make things that were invisible, visible," she said.

She returned to Oxford, to distill the ideas and experiences that would lead her to write 'Doughnut Economics; Seven Ways to Think Like a 21st Century Economist', published in 2017. "I looked for all the things I felt I had not been taught, such as gender economics, environmental economics and institutional economics. I wondered what happens when you put all these together in a theoretical way," she says.

The power of pictures

Through this time, Raworth says she was guided by the spirit of Buckminster Fuller, the American inventor and visionary, who observed: "You never change things by fighting the existing model: to change something, build a new model that makes the old one obsolete."

She also discovered the power of image to convey an idea. Raworth sums up her new economic model by saying, "We need to meet the needs of all, within the limits of the planet." To illustrate how it works, she draws two concentric rings: a doughnut.



Source: <https://www.kateraworth.com/doughnut/>

The inner ring represents the 12 social priorities that everyone needs to live a good life. These essentials include sufficient water, food and energy, health, political voice and social equity. Indeed, the priorities are exactly those set out in the 12 Sustainable Development Goals (SDG) and therefore, says Raworth, they represent “the most contemporary statement of what the world’s governments have signed up to.” This inner ring, then, is the ‘social foundation’ in Raworth’s economic model.

On the outer ring are nine planetary boundaries which together form an ‘ecological ceiling’. Established by leading earth scientists, these boundaries include climate change, freshwater withdrawals, ocean acidification and biodiversity loss. They represent the critical processes that are essential to regulating earth’s stability.

When we put too much pressure on these boundaries, we begin to kick the whole system out of kilter, says Raworth, and that is what is happening. The challenge is how to reduce the shortfalls of our social foundation without overshooting the planetary boundaries. Looking at the doughnut this way, Raworth suggests that it becomes a compass for the 21st century, and that we need to pay attention to which way the needle is pointing.

“On every one of those social foundations, we are falling far short,” she says, pointing out that 11% of people don’t have enough food to eat every day, 9% don’t have enough water, and one third don’t have access to what we would call a toilet.

At the same time we are already damaging the ecological ceiling. Where scientists have been able to quantify these planetary boundaries, we have already overshoot at least four of them: for climate change, biodiversity loss, nitrogen and phosphorus loading, and land conversion.

There is indeed a worrying amount of red on the doughnut. “This is our selfie,” says Raworth, “and this is how our children’s children will remember us. Our challenge is to turn this around.”

Lasting impressions

Many things need to change, but Raworth’s passion is economics and that is why she is challenging the enduring influence of powerful but outdated models which still dominate teaching.

Her main concern is the basic principles of ‘Economics 101’ taught at the outset of a typical basic degree course. This is dominated by a simplistic ‘supply and demand’ model, yet this is what most students will remember and carry with them into their careers in governments, finance and business: “What’s taught at the beginning is the economics that runs the world,” says Raworth. “I believe that it is completely out of date.”

The teaching of economics today, she says, is rooted in a 20th century mindset. How come? The “mother textbook” on economics was written by American economist, Paul Samuelson. He published the first edition

of 'Economics' aftermath of WWII, in 1948. Since then, there have been 19 editions, the last one as recently as 2009.

Samuelson knew the power that lay in this task, summed up in his words: "I don't care who writes the nation's laws, or crafts its advanced treaties, so long as I can write its economics textbooks. The first lick is the privileged one, impinging on the beginner's *tabula rasa* at its most impressionable state."

The diagrams in 'Economics' were hugely influential, none more so than the simple image illustrating circular flow of income, like water around a radiator.

"The trouble with this diagram," says Raworth, "is that it has barely changed in 70 years." In essence it is still the model used for measuring National Income Accounts. "It is useful," she acknowledges, "but, oh the blank spaces!"

How we see ourselves matters

Raworth is horrified that Samuelson's flow diagram makes no mention of the materials and resources of the living world, no mention of unpaid caring work and no mention of the commons (where people share, trade or exchange things without money changing hands): "It is silent in three of the most important things that relate to our wellbeing."

Wellbeing has not always been left out of economic theory. Adam Smith – the 18th century philosopher and economist who is seen as the father of modern economic theory – made the point that while our interest in markets is based on self-interest, we also have an interest in caring about the world.

But the idea got lost as theories of political economy developed. Raworth points a finger at one of the 19th century's leading thinkers, John Stuart Mill, accusing him of plucking out the bit about caring and putting self-interest at the heart of the economic model.

The liberalism championed by Stuart Mill led to the advancement of theories based on the assumption that humans would behave in a narrowly self-interested way, epitomised by so-called 'Rational Economic Man.' Raworth describes this model human as "standing alone, money in his hand, ego in his heart, calculator in his mind and nature at his feet. He loves luxury, hates work and knows the price of everything."

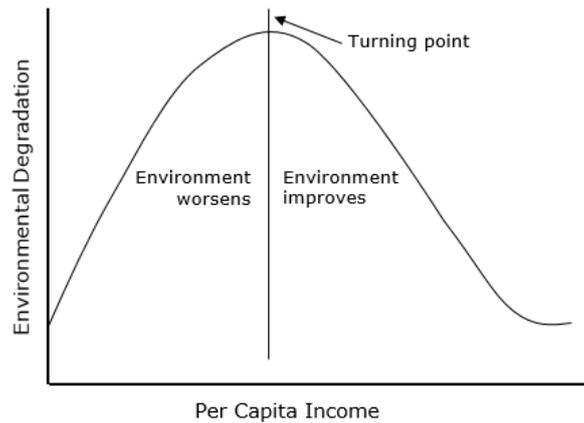
"This is absurdly narrow," she says. But the real trouble is that when people are told that rational economic man looks like *them*, they start to look more like *him*. When researching her book, Raworth was fascinated by this. The more students learn about rational economic man, she says, the more they say they value self-interest and competition above collaboration and altruism.

Economics is not physics

Isaac Newton has a lot to answer for. His laws of physics - and the curves that described them - were much admired by late 19th century Economists who wanted economics to be 'scientific'. One of them was William Stanley Jevons, whose diagram to describe market forces was based on an analogy with gravity: just as gravity pulls a pendulum to rest, so prices pull markets into equilibrium. The trouble is, says Raworth, "gravity is not a good metaphor for markets."

She believes that this search for economics to work like physics led to two laws that have massively influenced our lives: the relationship between income and inequality; and the relationship between incomes and pollution.

In the teaching of Economics 101, both these relationships are described by a bell-shaped Kuznets curve. Poor Simon Kuznets: Economists seized on his work when he suggested there might be a pattern between inequality and rising income per capita, based on small amount of data from the US, the UK and Germany.



Simon Kuznets never drew this curve, says Raworth. He pointed out that his theory was based on only 5% empirical data, and he saw the blind spots in his speculation, but others loved the simplicity of his idea; they drew the curve and named it after him. “Once it is drawn it slips into our minds and takes on a life of its own, and whispers a mantra,” says Raworth.

Belief in this image underpins trickle-down economics, and supports the idea that growth (increasing income per capita) will solve everything, but Raworth warns: “They are false economic laws of motion.”

When French economist Thomas Picketty, writing in 2014, acknowledged that Kuznets’s assumptions were right, he also acknowledged that they were based on measurements from a very particular point in History: from pre-war to post war, when war had destroyed much capital of the wealthy, and government investment.

This is a significant qualification, says Raworth, because “it was war and government investment and redistribution that bent that curve down, not inherent forces of the market.”

The same shaped curve - also named after Kuznets - is used to show that as incomes rise, the pollution caused by development peaks and then falls. Again, says Raworth, this model was based on limited data for water pollutants; it does not describe the relationship we see between growth and pollution in general.

Heading for collapse

Another tremendously influential historical model is Walt Whitman Rostow’s Five Stages of Economic Growth, published in 1960. The model postulates that economic growth occurs in five basic stages, of varying length: traditional society; preconditions to take-off; take-off; drive to maturity; and age of high mass consumption.

“You can hear the implicit aeroplane,” says Raworth. “But, this aeroplane can never be allowed to land.” Besides, there’s an additional question that warrants our attention: what to do when the increase in income loses its charm?

On the back of these key ‘old’ models comes neo-liberalism. With powerful advocates, like Milton Friedman, and championed in opposition to totalitarianism, the idea took hold quickly and evolved. “Minimising the role of the state quickly morphed into market fundamentalism,” says Raworth.

Neo-liberalism was a block-buster, featuring a cast of stars whose roles were trumpeted: the market, finance and trade were the heroes; the state was the villain of the piece. But wait, says Raworth. Let’s look at who’s *not* starring in the neo-liberal story. No sign of households, or commons. And what’s happening backstage? Massive bailouts, tax havens and extraordinary inequality. “I believe this story, built on holes and caveats and silences in the theory has been so powerful that it has played a big role in driving us to the brink of collapse.”

Time for a new script

It is time for a new economic story for the 21st century. John Maynard Keynes believed economic models should be relevant to the contemporary world, and so does Kate Raworth. After all, today is very different from the last century. “We need new pictures, and we need to equip today’s Economics students with the mindset they desperately need to steer us wisely and well this century,” she says.

The first step in teaching should be asking students to question the purpose of the economy. What about the first diagram you teach? Definitely not ‘supply and demand’. That would be to imply that the economy *is* the market and that it is in equilibrium, “and that’s two untruths in one sentence,” she says.

Raworth would start with a diagram which shows the economy is embedded in the earth’s systems and in society. In this model, not only are the market and the state visible and central, but so too are households and commons; finance is flowing in service to society. The diagram clearly shows matter and material are drawn in and waste and pollution are spewed out, so we can ask right at the outset: how big can this through-flow be before it begins to disrupt the living systems on which we depend?

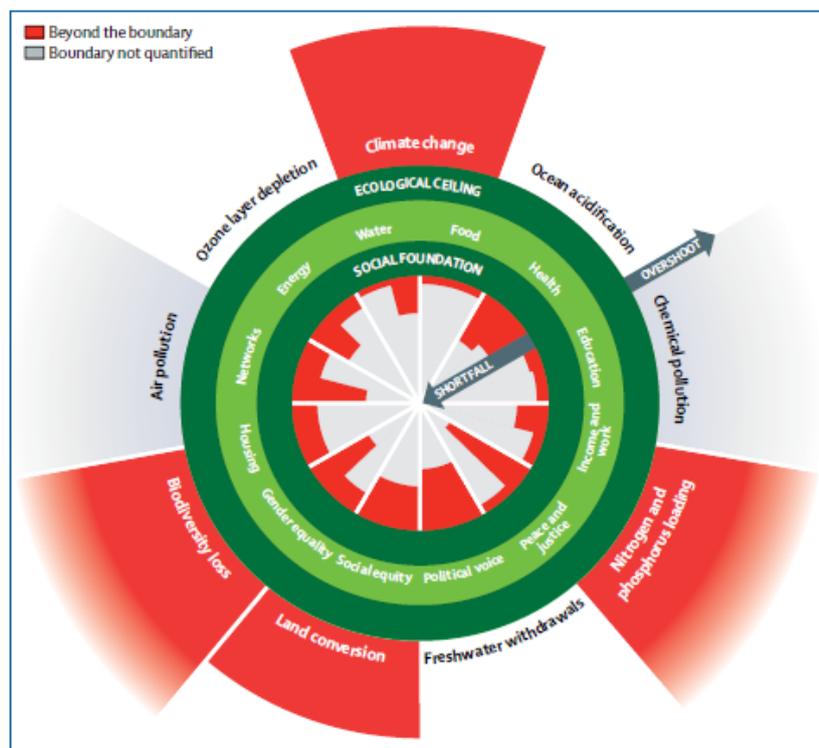


Figure: Shortfalls and overshoot in the Doughnut

Dark green circles show the social foundation and ecological ceiling, encompassing a safe and just space for humanity. Red wedges show shortfalls in the social foundation or overshoot of the ecological ceiling. The extent of pressure on planetary boundaries that are not currently being overshoot is not shown here (see appendix for all graphics).

Source: <https://www.kateraworth.com/doughnut/>

So who are we in this new model? Certainly not rational economic man: we are far more interesting and complex; we have no fixed preferences. We react differently when we are told we are consumers or told we are citizens. “Who we tell ourselves we are shapes what we will become,” says Raworth.

How does Economics work in this new model? Again, Raworth calls “Time” for the simplistic curves of supply and demand. The economy is a complex adaptive and evolving system, reflecting the constant interplay between reinforcing and balancing feedback loops.

Introducing redistributive and regenerative design

As such, it is not something we can control, but we can intervene in it and we can design it, says Raworth. In doing so, we should include two key principles: economic systems should be distributive and regenerative. What does this mean?

In the 20th century's re-distributive system, wealth is concentrated in the hands of a few who dominate ownership of resources and then re-distributed. In contrast, **distributive design** shares access to resources more equitably from the outset. We see the possibilities in housing, energy, enterprise and ideas: solar panels on every roof in a community means distributive ownership of the ability to create energy, rather than being dependent on the mass monopolies of coal and oil; co-operatives are thriving and multiplying; creative commons licensing challenges the old norms of patenting and copyright.

The second principle, **regenerative design**, focuses on capturing value at every stage of decomposition and re-cycling as opposed to the unsustainable and wasteful use of natural resources. Raworth envisages an economy designed to run on sunlight; where the waste from one process is food for another; where individuals have access to the components of products themselves.

New products are emerging which could lead the way in an economy based on regenerative design. Take the Fairphone, which the owner can repair and upgrade themselves with help online, as opposed to iPhone which is "glued shut" and inaccessible to all but the manufacturer. Open Source Vehicles OSV are flat-packed cars assembled by the customer, and adaptable to various end uses. Swedish sportswear company Houdini is working towards zero impact, making products that are organic and compostable. It is even possible to compost old Houdini ski gear and grow mushrooms on it.

Raworth admits that Houdini clothing is expensive, just like it was expensive to put a solar panel on your roof in the 1990s, but she sees these ideas as part of a new trend: "I think this is the beginning of 21st century distributive manufacturing."

"What an exciting change to be part of," she says. If economies *are* to become redistributive and regenerative by design, then we will need economists to rethink what kind of markets, regulations, commons, collaborations and intellectual property rights would enable this.

What about growth?

But what about growth? Rostow's aeroplane model left us addicted to the idea that economies need to grow whether or not they enable us to thrive. True, different countries are on different growth trajectories, but the real challenge, says Raworth, is that the world's richest countries are locked into unending growth: financially, politically and socially.

In the natural world, there are no models of endless growth. Rather, nature's growth curves rise and then level out. "We need to replace the old metaphor of the aeroplane with a new one," says Raworth, "because I believe we need economies that enable us to thrive, whether or not they enable us to grow."

The symbol for this new approach? A kiteboard. It makes sense, says Raworth, because the surfer has a board and a sail, plus a handle to steer. Depending on circumstances - the metaphorical wind and rain - a small movement of the handle determines whether the economy needs to be a little more regenerative or a little more redistributive.

In other words, says Raworth: "Economics needs to become responsive." And for students who feel inspired, she adds: "This is your 21st century task."

Ends.