

Explaining The Roboeconomy

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Introduction

This is a short (10 page) explanation of the Roboeconomy and the thought process that led me to coining the term. It is short because I like you to read it in its entirety, not put it on a coffee table. My wish is that after reading you will be able to make a number of new distinctions in your reality, the world should look a little different and you hopefully will be able to recognize and value things in a way that helps us achieve the vision described. For that to work I will need to restore the meaning of certain words, because a major way in which we are being influenced by our social and commercial environment is by general language poverty and destruction or changing/adjusting meaning of words.

I began thinking and writing about the Roboeconomy almost 10 years ago, when I realized some of the ideas I will lay out in the chapters that follow from trying to figure out what to do about climate change. Recently Elon Musk of Tesla has followed the same path as he is working tirelessly to accelerate the advent of renewable energy, which is a fundamental part of the Roboeconomy. My background is in AI research, Neuroscience, and I studied the various energy technologies and necessary innovations. This led me to discover the bias, suppression and sabotage by the fossil economic system which is now slowly being recognized.

To fight my frustration and frankly depression I decided to view it from the opposite side of the transition. After all, a renewables powered economy once established will last for as long as humans will exist, way longer than the 'fossil century'. This is the best way to view it. How to pull people into the future where renewables are the only source of energy and robotic technology and AI are ubiquitous. It's a joyous activity, not a drab battle against insurmountable forces. Focus energy where you win ground for the Roboeconomy and you will be building the future..

What is wealth

Wealth is used in a very broad sense today. The main reason is the takeover of economism with the rise of fossil energy as the primary energy source in our 'economy'. Banks have redefined both wealth as also meaning money. For the purpose of this explanation of the Roboeconomy we need to return it to its original meaning. Wealth is something that has become the object of desire by a human being. The key is that wealth has to mean the real final thing the human desires and consumes or enjoys, not any intermediary token, currency or means of exchange by which the human can attain what is desired. Wealth can not be a promise, it can not be money.

You can't make a happy life on a bare land with a pile of dollar bills and nothing else. You can make a happy life if you attain the things you need or desire. So to have a roof above your head is wealth, to have a clean toilet is wealth, to have a sandwich is wealth, to have a loving partner is wealth, having a bank account is not wealth, having a bar of gold is also not wealth, unless you just love gold. Having a justice system that works is great wealth. Having roads that don't break your car is wealth. If you or another human (or animal) can enjoy it is probably wealth.

The importance of this restoration lies in the fact that considering money wealth is actually extremely dangerous, exactly because money is a promise and promises can be broken. When do you find out they are broken? Usually too late. Those investing with Bernie Madoff found out too late. Those who think their fossil pensions will be worth something in 20 years will get disappointed. Money is only a means of exchange, not a thing we have any real use for in our enjoyment of life. If we want a future in which we enjoy life, we should focus first on what guarantees that, and only then allow a place for some exchange of effort and time via an 'empty contract' system which money is.

One important thing to note is that wealth is also often associated with 'the best possible version of'. This is not necessary or meant in the way we use the word here. It is just what a human desires. For a prisoner in solitary a daily piece of coconuts is wealth. The way the economy maximizes the power of banks is by making us reject some forms of wealth (forms that does not make us need banks) by framing it as socially inferior. The creation of negative bias so that we believe we need money to attain wealth is their business model, and indirectly that of the economy they created.

The meaning of the word capital has shifted in the same way, capital now also means money. Capital in roboeconomic terms never means money. What capital is will be explained below. Simply said, when you talk about money, say money.

A formula for wealth

With the meaning of wealth defined we can also define a formula for its creation. It is this formula :

$$\text{Wealth} = \text{Skills} \times \text{Energy} \times \text{Materials}$$

The way to read this is to say that to create wealth we need three factors, Skills, Energy and Materials. If we have these three factors we can create wealth for a human or animal, if we lack any of the three, we are out of luck, we have to find it. You could argue that some abstract forms of wealth, like a loving environment or justice, do not really require any of the above, but then you ignore the people who need the skills, energy and materials to exist to supply the abstract thing. The formula can thus work recursively.

It was interesting to discover that justice for example is not (openly) considered wealth by ChatGPT when I tried to make it help me define it (as an interesting way to present my thoughts, but it didn't work). It consistently included money as wealth, but also kept saying that social 'goods' were to be considered part of it. Thus it at the same time demonstrated the presence of a narrative that ignores social 'goods' as wealth, while at the same time recognizing it itself as an independent analyst of its vast library of human produced texts throughout history.

Capital in roboeconomic terms is always wealth or one of the three factors. Never money.

The factor skills

The formula for wealth has the factor 'Skills'. This captures anything that can control a process towards a specific outcome. Skills can be actual skills of a human or animal, for example in China birds are used to catch fish. Skills can also be captured in a mechanism or logic device, a computer, even the shape of a tool. The key constant is that whatever it is allows one to achieve the result by somehow controlling where the energy and the materials go and where they don't go.

Some skills were never human, like that of keeping time by a watch or that of keeping a chisel aligned to chafe off metal. Some skills have first been introduced into the world by creating a mechanism. The creation of such mechanism required skills of humans, but subsequently achieved superhuman skills itself. A process of design often starts with the imagination of a human it evolved by manipulating reality, then that imagination presents a solution to the person, this solution is created and embodies a new skill humans never had. Today we use machine learning and simulation on a massive scale to augment human imagination, so we may see skilled mechanisms created we can't and never have even imagined.

Recent developments in AI, the LLMs, ChatGPT, the growing use of vector databases which closely how the human brain maps similar percepts mean a massive jump in non-human skills available for the creation of wealth. As an AI researcher I foresaw this, but when I worked on AI and neuroscience computers were not capable enough to do what is done today. Fortunately it makes the Roboeconomy more obvious and hopefully a bit easier to outline. AI can pose a threat because it can imagine ideas that may not be 'aligned' with human desires and dreams. It is therefore wise to require any product or service (even when produced or designed by AI) to be what a human can understand and actually want.

The factor materials

Materials seem to be a simple thing and it seems best to make it simple : Whatever you need to create the wealth is materials. This can be other wealth, so half products or final products. A court of law requires chairs and paper and computers etc. Which are all examples of wealth in their own right.

Biomass can be material, sadly living animals can be material in the creation of wealth. I'm not ignoring that in nature almost every creature is eventually killed by and to feed some other creature. It is that we have created ways to treat animals and natural resources that are horrendous, blunt and savage beyond belief. Wealth is to have abundant natural resources, and we see erosion of them on a large scale by the fossil economy.

Today not all materials are accessible to us right now, even though in a Roboeconomy they would be. This is because in a Roboeconomy renewable energy would be used to access them. In the fossil based economy that was created in the 20th century some materials could not be harvested or mined 'economically'. This had to do with the required supply of fossil fuels to where it was needed, so say remote mines in the Amazon. Society developed along the supply lines of fossil fuels, simply because it was easier.

Mining for example is restricted and the price has been high, because the investment of fossil energy and the need to supply that energy is like a rope between the source of fossil fuels and the mine or any other economic activity in the fossil energy based economy. That rope is kept as short as possible because it represents a cost in itself. Renewables can be independent, with no rope or cost associated. A mine running on pure local solar energy can deliver its ore at near zero cost, operating

in almost any place on the planet. If the ore is moved with solar electric rail, and the rail system was built with solar energy, the cost would also be very low. In contrast the cost of iron for example is mainly that of the fossil fuels needed to move it.

The cost of gaining materials from recycling will also be negligible in the Roboeconomy compared to the fossil economy. In the fossil economy recycling plastic requires fossil energy, but it also reduces cashflow in banks and the profitability of plastic factories. With a dropping world population the need for new plastic is also dropping, so primary producers would be out of work if we recycled it using renewable energy at near zero cost. Recycling can also be spread out, and does not have to be concentrated (like some want a central battery recycling plant for Europe). Materials can thus make shorter more local cycles of use.

The factor energy

The factor energy is an interesting one. The main question that shapes the wealth creation process and indirectly society is who owns the energy. In the age of manual labour payment could happen in the form of rice, calories, to workers which then were able to work the field. They created wealth of harvested field by expending energy. If the farmer himself was harvesting the energy from the land would be directly used to work the land and harvest from it. The same would go for horses. Non-metabolic energy (wood mainly) did not do much work. It heated homes and furnaces.

With the invention of the steam engine and the increased use of coal this changed. Coal however had first owners, the owner of the mine, the country that leased the land, and this created a much more streamlined industrial economy where money became an energy token. This grew from small islands around factories until it created a vast network of industry around 1900.

When oil was discovered and dominated by the US and UK and other countries (Holland) manual and horse and even solar energy was quickly replaced by fossil energy, even when it was not necessary, because it generated a lot of cashflow for banks and gave countries enormous power (compare UK with steam/diesel ships vs countries without any such devices). This of course was a continuation of colonialization which had benefitted from early inventions, way to complex to dive into.

The key take away was that in the coal and oil era the energy was often owned first by a company, to then be distributed. Mainly by banks that would create money so people could buy the fuel. Today we are seeing real attacks on the so called 'Petrodollar' system which dominated the last 50 years and which allowed the US to print money. This money was used by the world to access oil from Saudi Arabia and other sources, because the US stipulated it could only be sold in dollars. This is changing.

The energy in the Roboeconomy is 100% renewable. This excludes any power of current fossil energy companies and banks. That is why the separation of money and wealth is important, because if we aren't careful, banks will pretend to own everything by putting a price on it which they can easily pay by creating money.

Renewable energy can be owned by a person, city, state, country, company, and those entities can then allocate it to create wealth. An early example was Volkswagen that put a wind turbine next to their German factory. The electricity, which was relatively expensive, still reduced the cost of production. This hints at what happens in the Roboeconomy. Production costs go to zero.

The agent

Its nice to have a formula for wealth, but who reads the formula? I am not going to create a homunculus problem where perception is explained by a little perceiving gremlin hiding in our brain. The formula can be 'implemented' or 'embodied' by humans, by machines, robots, factories, even structures. A coin sorting machine takes coins (materials), structure (embodying skills) and energy (potential energy needed to throw in the coins) and creates wealth in the form of sorted coins (if it is designed right).

We now have artificial intelligence that can answer questions and summarize books and check things on human verbal or written command. This is a huge step and will at least be viewed as triggering a new industrial revolution. Roadbots (autonomous cars) androids, autonomous drones can do a lot of things if they can see and hear and follow recipes like checking a fence or filling a pothole to going around with medicine or teaching a kid exactly what it finds hard to understand. It is likely the next generation will be way more intelligent than the present one.

What about money

As said, money is a promise, a token, a means of exchange. It certainly has a role, one of them as described in normal economic theory, that of bridging time between the effort made and true wealth received (by farm hands). It can be used to unite people begin a big project. True money matches the unmet promises in dealings between people, but this is a really complex topic, and it does not help us in understanding the Roboeconomy. It is important to realize you can not save a means of exchange. Money is like a movie ticket, if you don't use it the movie no longer shows. In the fossil economy the supply of fossil energy was so reliable that an illusion was created of solidity of the value of savings. This illusion would instantly be shattered when a true oil/gas crisis happened. Even without a true crisis we have seen inflation du moment fossil energy became compromised (Ukrainian war, Russia cut off, Saudi Arabia output reduction). Now try to imagine what your 'saved' pensions are worth in 20 years. There is no basis to trust it will be worth anything.

The Roboeconomic conundrum

This brings us to the second main thought I had as I came to my roboeconomic vision, and it suggests itself readily, Elon Musk has repeatedly expressed a similar question, I call it the "Roboeconomic Conundrum"

Imagine we ceated a world in which machines make and do everything we need, including themselves, including machines to maintain those machines, and everything runs on renewable energy sources build and maintained by machines running on renewable energy, then:

- 1. Are all jobs lost, does nobody earn income and are we all poor and destitute**
- 2. Is everyting free, or we may buy it with an energy credit we recieve for free**

The roboeconomy says the answer is answer nr 2. Everything will be free, or cost some credit which we all recieve for free.

The present economy says "hell no! You will all be out of a job, so you all get nothing, because we **own** the factories, we **own** the energy, we **own** the materials, etc.", this mentality makes sense because fossil energy –is- owned by someone else first before we can access it (with a few rare exceptions maybe), the money we use is owned by the banks, they bankers derive their power from their role to create money, and they actually work very hard to teach us that if you don't work you have nothing.

The world today shows us the conflict between the Roboeconomy and the Fossil credit economy (or carboncredit economy). It is evident by the constant reminder that renewables are "expensive", the delay and distraction tactics (Hydrogen, bad grid maintenance, stranded wind etc.)

The above will trigger people to scream 'communism' and there's a lot more to say about it, but just let the choice be a template when you hear that AI destroys jobs, that automation, factories destroy jobs and wonder if the same would happen if the producer ran its factory on renewable energy sources. Would it stay in debt, would it still constantly have to pay the bank, would it not become a money sink earning more and more, until it could basically produce for free by reinvesting in more energy sources? Could it not pay whoever it needed with either energy or products? I will elaborate on this more precisely when I rewrite this booklet.

The tax office and UBI

When working from the Roboeconomic perspective one sees the inverse of the fossil credit economy. For example Holland has Tata Steel and ancient company of the kind that was created all over Europe, extremely dirty coal based steel refining. The coal has to come from somewhere, say Germany, which is convenient because Germany needs a lot of steel for its products. When you imagine a Roboeconomic minister in Holland this looks like a dependency, which also includes the source of the steel ore, to which Euro's have to be payed, and to the diesel producers, which also demand Euro's which then forces Germany to earn them and borrow them from banks (who run this system with great satisfaction).

How much simple would it be if Holland had a massive solar energy source, say in the Markermeer, and the electricity produced was used by Tata to refine its steel, cutting the need for coal logistics, cost and pollution. Now two things could happen. The steel would start generating massive profit for Tata (and Holland) because Germany still had to buy it but lacked its coal revenues (we say "pants pocked vest pocket" or more or less internal transactions don't count).. Or the steel would become much cheaper including all the products made with it.

The fossil credit economy we live in would say "Maximize profit, we have to price to market!"

The roboeconomy says "Great, cheaper steel for the market!"

Now when it comes to taxation, the Dutch government would not need to tax Tata Steel. This is when it would own the solar energy source. Why do we pay taxes at all? To make things happen we all need (romantic view) to pay off banks loans (IMF ECB, different groups of people that put other people in debt). But energy makes things happen. And if Holland owned the energy sources it could simply use part of it to 'pay' what ver is payed with taxes, except those groups that want the money they created bank, so the banks. Only for those banks would Holland have to sell something, either energy or a product made with it (fertilizer?) to a foreign country or anyone holding Euro's so it can service its debt.

It becomes clear that banks and the Roboeconomy are not friends, because all banks can be replaced by the Tax office. The only reason to extract the roboeconomic credit (I named it the "Joule", but who knows) would be to shape citizen behavior or fine people. With a surplus of renewable energy sources all owned and mobile batteries (energy trucks) the government would really have a fungible currency in an energy credit. We forget that energy prices hide significant grid losses, as do oil/gas/diesel and gasoline prices.

Roboeconomic spots

You may now be wondering how do we get to this Roboeconomy I speak off. The answer is, just like we arrived in the fossil economy we live in today. The world was rural, horse drawn carriages everywhere, and then a piece of rail was layed in one place, and a steam engine factory was build in another, and slowly horses where replaced by more cars and engines proliferated. In the same way the Roboeconomy can grow from islands and spots in our different territories. A solar panel on a roof reduces cashflow and supports wealth creation in the home (cooking, washing, enjoying music etc). No money has to flow for that to happen. Home batteries will plummet in cost and increase the value of home energy systems. Everywhere we see local renewable energy systems pop up. The fossil economy and banks fight this, because they know a school with an electric school bus and solar to charge it during the school hours will reduce cashflow for the participants in the fossil based version of having school transportation. Maybe cutting use of SUV, increasing the health of the children that are not exposed to diesel fumes every morning and afternoon.

You could name Roboeconomic spots 'extraeconomic', as they will become invisible to the fossil economy and banks. Banks for this reason insist on really owning all information and all money traffic, which at the same time allows them to influence our personal lives and throw up barriers against doing anything out side their view.

The word extraeconomic I reserved for remote roboeconomic projects that really have no relationship with the wider economy at all. So say a solar project in the heart of Australia that just freezes water in a big pile in winter to cool the continent a bit and create airflows over the land. Or a ocean based enclave powered by wind and wave and solar energy that works to increase the Albedo of our oceans (urgently necessary).

If you can 100% cut off from the fossil economy and financial system you prevent sabotage and destruction of your idea. You also have to cut off from the patent system as it exists (so only protection of income of the patent holder, but no right to deny use of the patented idea)

Extraeconomic projects can be large scale, and happen outside the attention of the general public. In fact this is the best way to do them.

Fighting the fossil banking system

It is easy to see that the Roboeconomy has to gain traction in an environment that protects itself, the banks don't want to waste fossil energy on fighting climate change or replacing them with the tax office. You can see they love wasting renewable energy, as they enthusiastically support hydrogen which when made with renewables wastes 70% of the the output of solar panels or wind turbines (!). It is their way to sabotage the transition. Banks are now saying they will not try to

achieve climate goals. The COP meetings are fully owned by Shell and hosted in oil countries, so the concept of a global climate agreement is dead as a doornail. But renewables and batteries are growing in the fossil economy, and may start to grow from fully renewables powered production chains, so Roboeconomically soon. Tesla is one company that is trying its best to not need fossil credit.

It is important to recognize this fight. We are fighting against the fossil credit banking system. It wants to maximize cashflow, we want to maximize wealth. These two ideas are in conflict because maximizing fossil credit cashflow destroys wealth on a global scale and the pollution will keep doing so for hundreds of years.

**This is the choice we have,
to work towards profit for banks,
or wealth for ourselves**

The way we fight the fossil credit banking system is by building renewable energy sources, storage, factories to produce them, and to retract from the banking system as much as possible. There has been anger towards super wealthy people, but we need to distinguish between super wealthy people that do things banks like and those that do things that banks don't like (like Elon Musk). We need people with money at their discretion to buy and enable the growth of the Roboeconomy. Governments can actually help a lot. It is impossible to estimate who is a bank or fossil lackey until you truly study who wants what. AI can help in that respect.

The Robo(ECO)nomy

The original idea of the word Roboeconomy was that it contained Eco, for Ecology, because the vision was that robots running on renewables would help restore the ecology. This will happen. If it is not to happen humanity will succumb to the ravages of climate disruption. It is what extraeconomic projects should be focussed on. There is reason to be much more optimistic as AI is now so much more practical. Tesla's optimus will allow an army of robots to exist even in 70 Celsius heat in India and increase surface albedo, to reflect more light away from Earth so it cools and plants and humans can survive.

As a dutch person in a super fossil economic country these ideas have always been considered idiotic, idealistic etc. But that was by a generation that could not see the damage done or the technology which is available. Also it could not imagine having a non fossil or bank dependent industry that could create what is needed for it to become reality. I think you can today, thanks to Elon Musk who did more to bring my vision to reality than anyone else in the world.

It would only be fair to dedicate this booklet to him. Frits Rincker 21 may 2023

Epilogue

Most of this content was written and gradually published on the website www.greencheck.nl since 2009. Some of it is not accessible right now because of possible copyright claims but will be reopened.

I hope you start to use the restored definition of wealth and capital and try to view the actions and suggestions of politicians through the prism of serving a fossil banking system that maximizes cashflow. The title of this text could also be "Profit vs Prosperity"

Many technologies have been burried by banks that can help us. If you know about them you will say that desalination is not hard, that solar can be 1/6th the cost, that you can grow in winter and in the desert, that you can make it freeze in the middle of summer in the desert. The Roboeconomy is an era of enlightenment, because the maximization of fossil credit cashflow by banks required us to be dumber and ignore more pleasant and elegant solutions to our problems. It basically restricted wealth creation and cause massive wealth destruction.

I hope you can adopt the view from the other side and help others join you.

Yeey I kept it to 10 pages!