

Exame interview with Professor [Mariana Mazzucato](#)

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The State has become a coward, says Mariana Mazzucato

By Joao Pedro Caleiro

Sao Paulo - The internet has created entire sectors in the economy that did not exist before. The iPhone is now the flagship of the most valuable company in the world. Shale gas and renewable energy are changing the way in which the world moves.

What do they have in common? All emerged from State funding along the whole [innovation] chain.

This is the provocative thesis of Mariana Mazzucato, daughter of Italian parents, raised in New Jersey, and considered one of the "three most important thinkers about innovation" in the world by the magazine New Republic.

Mazzucato, 46, now holds the RM Phillips chair in the University of Sussex in Brighton, UK. Her TED Talk has been watched more than 600 thousand times. Her book, 'The Entrepreneurial State: Debunking Public vs. Private Sector Myths', is available in Brazil by Companhia das Letras.

A real verbal machine gun, she spoke by phone with EXAME.com before coming to Brazil to attend the 6th Brazilian Congress of Industry Innovation, organized by CNI. See the main parts:

EXAME.com - Your thesis is that the State not only can play, but also has had a major role in innovation. What are the examples?

Mariana Mazzucato - When we talk about State intervention, we pretend that it is 'fixing' markets instead of 'creating' them. The notion of a role of the State at every stage [of the innovation chain] - from basic research to applied research and the financing of companies - is what I call a big role. The State does not do things on its own, but triggers this stage of high-risk, uncertainty and capital intensity.

Examples: the technique of fracking and shale gas was 100% funded by the government and the private sector only entered later. This is also true for solar, nuclear and wind power, or high-tech sectors such as biotechnology, nanotechnology and the internet, all characterized by massive investments of the State in the entire [innovation] chain.

EXAME.com - How has the narrative about innovation starting by a few [individual] entrepreneurs thinking out of the box become so rooted?

Mazzucato - The rational part is that there is much money to be earned by pretending that you are the biggest risk taker. When venture capitalists created their association in the 1970s and began lobbying, they managed to cut half of the taxes on capital gains. They want to pose as the biggest risk takers not only because they seem heroes, but also because it increases their profits.

Pharmaceutical companies can already charge such high prices in the name of recovering high but uncertain expenses. However, in fact, they are not in the highest risk area, like the National Institute

of Health, which spends \$ 32 billion a year in transforming things, rather than in minor variations of existing drugs (where companies usually focus).

The irrational part is that even when the State does amazing things it does not know how to talk about it. Thus, it ends up captured. [It] loses legitimacy with the public, who soon blames the State when something goes wrong. Keynes said that those political and pragmatic persons who think they are doing their job are usually the slaves of some defunct economist.

EXAME.com – So, [is it that] even when the State really does something, it has to pretend that it did not just to be accepted by the public?

Mazzucato - On the one hand, yes, but [it is] not the public, but economists [who do not accept State intervention]. Economic theory justified only a limited role of the State, so [governments] do not have the vocabulary to talk about themselves in a different way. The irony is that the public only hears the State talking about itself in a cowardly manner, then they rush to blame it on the government when there are mistakes.

What you say is mostly true if you refer not to the 'public', but to 'Congress'. [By] keeping a discreet, decentralized profile, avoiding a top down approach, the different types of [public] organizations can stay out of the radar and not become the target when a conservative government is in place. What is striking in the US is that even under Reagan there were no cuts on such funding. It is now the first time that the Conservatives are threatening to do so.

EXAME.com - You advise governments around the world in relation to public policy. Have you met with Brazilians? What advice did you give?

Mazzucato – I am meeting with Dilma and in the last five years, I have had much contact with people from BNDES, such as Luciano Coutinho and João Ferraz. I tried to focus on two things: to be an entrepreneurial State, it is important to think in terms of portfolio – to maintain a broad vision. In the field of green technology, for instance, not to focus on just one type of energy.

Another thing that I talk about is to be mission-driven: instead of funding one narrow area, the interesting thing is to think of problems for all sectors to react. As when the US went to the moon, which joined 17 different sectors catalyzed toward various technologies, many of which culminated in the iPhone.

This is very different from what we traditionally used to call 'industrial policy'. To rely just on tax credits does not work and usually results only in cash transfer, and not investment. What you should do is to push the frontiers of the market, not just work within them.

EXAME.com – Is the role of government, thus, to challenge the private sector to go further?

Mazzucato - Yes, but also the public sector, which is comfortable working within the boundaries,. Consumers can be targeted; companies must be pushed. You can have incentives and low interest rates, but [firms] will only invest if they see technological and market opportunities, and this requires direct massive public investments.

The State must also be willing to keep a stake in the companies. There is no reason to assume that taxes only fund the bad part [or the failures in innovation]. For each Internet, we have 20 Concordes;

for each Tesla we have 20 Solyndras [solar panel manufacturer that received funding from the government but ended up bankrupt].

If the taxpayers are bankrolling all this uncertainty, part of which will necessarily fail, we should think of [this public-private relationship] in various ways. It could be by setting prices, or making [public] loans related to income earned - if you take a loan and [the intended innovation] does not work, you do not pay, but if you win a lot of money, then you [should] pay higher interests.

EXAME.com - But how do you create the right incentives to avoid that these agencies and the public sector are simply captured by private companies or used for short term political goals?

Mazzucato - My first point is that the problem of capture is independent of these issues [of who takes the risks, and who gets the returns], and it happens everywhere, even when governments are small, or when they do not do what I am saying. In the UK, since 2010 the coalition always talks about keeping a small government, but it is super captured!

Looking at the successful investments, we can draw some lessons. The first [one] is that the public agencies involved should not have politically appointed leaders, but they must be independent of the political process. If following every election you change the agency, you create instability and that is a recipe for disaster.

[Second,] to attract high-level people, who are more interested in evidence than in favors, it is good to be mission-oriented. If they are concerned about fighting global warming or sending a man to Mars, it is easier to attract these experts. That is what allowed the US Department of Energy to have been led by a physicist Nobel laureate, Steven Chu.

If people see you as co-creator of the system, it becomes easier to reach serious agreements [with the private sector]. The government was going to break the monopoly of AT & T, but instead demanded that the company reinvested its profits in major innovations. [This agreement] created the Bell Lab, which has become one of the largest private research and development labs in history. That was a very interesting [experience], but it no longer happens.

Today, governments are cowards; [people] say that they are the problem and that they must cut the deficit. Then Facebook and Google become less confident in making that kind of agreement, and what you see record level hoarding, as well as companies focused on buying their own shares back to increase the price. The problem is not to make agreements; it is that we are making agreements of the wrong kind.

EXAME.com - There is an ongoing debate about the danger that technology eliminates more jobs than it creates, and that innovation might not necessarily be good for growth. What do you think?

Mazzucato - Nothing is inevitable in technology that makes it replace labour. There has always been this concern: David Ricardo and Karl Marx raised that question in the nineteenth century. In all the great periods of history, what you see is that in the short run, there is an exchange effect, but when you also have reinvestment of profits, it creates more jobs and skills, because human capital is endogenous to the system.

Part of the problem is the massive financialization of the industry, which led to a lack of investment in human capital in the long term. Senior managers in their 50s are losing their jobs; experience is seen as disposable. The working structure has changed into a flexible and unregulated model heralded as the solution for everything.

The result is that we lag behind in the necessary skills to adapt to new environments. The [previous] waves of massive mechanization replaced people, yes, but also created new opportunities. Today we do not have a public sector being brave and we do not have a private sector reinvesting its profits: of course, you end up with stagnant innovation and unemployment.

EXAME.com - You talk about the interaction between finance and innovation, but what about the relationship between culture and innovation: is it real?

Mazzucato - I do not think so, and I do not know of research showing that. It is nice to pretend that innovation has to do with a country's DNA: "ah, Americans love risk, but we are Europeans of the Renaissance". What? Half of the US is completely lethargic. Moreover, the successful places like Silicon Valley were, specifically, where partnerships between public and private took place. There are countries that had no innovation and became one of the most innovative ones in a short period, as Finland.

It is easy to say that in a developing country, the State must act to catch up and then it can withdraw. However, even the most developed parts of the world still need a massive investment from government! The most advanced form of capitalism requires this role [of the State].

This is another criticism I have to modern Keynesians: even Stiglitz and Krugman, who I highly respect, do not have a theory of the State during the boom. The internet wave happened in the boom. Even in the boom, you need a green strategy in order to have a green revolution.

EXAME.com - But what are today's major missions in which the State can engage?

Mazzucato - Global warming. Not only solar and wind power, but also to transform how various sectors work, and put them all into the green direction, which is what Germany is trying to do. I did some work with Carlota Perez arguing that suburbanization was a government policy that directed mass production. The green revolution may be a direction for information technology.

There is much conversation about the brain as well. However, things only become interesting when you have a purpose. Information technology can be used to make people buy better, or to transform the health care system. These choices need to be made, and were historically made by governments. Within these choices, the private sector can act a little crazy and explore.

What is lacking today are not ideas - everyone speaks of artificial intelligence, but no one speaks about the mission behind it, or about what problem it will solve. We do not think it is sexy or allow that the government has a dream, a vision or a mission. [People] say that governments should bow their heads, serve the business and think only in marketing and valorization - and that is depressing.