"Of all the many ways of organizing banking, the worst is the one we have today."
(Mervyn King, 2010)

Today I shall not talk about the short-term challenges facing banks, such as the evolution of interest rates or taxes, the economic situation, the legacy of unproductive assets, or the changes in regulatory requirements. I will try to find out whether, within the technology-generated changes, there is one that is “disruptive”, in other words one that can produce a radical change in the banking activity of such importance that, as is happening with other industries, it forces private banks to transform themselves into companies very different from those that exist today.

Neither will I deal today with the effects that “Fintech” can have on banking, because, although they are also “disruptive”, they do not question the current banking system, which allows private banks to create money. This privilege of being able to create money is the source of the current system’s fragility and, as long as it remains unchanged, it will still be necessary to apply exceptional regulatory and budgetary remedies to avoid the disastrous consequences of banking crises.

Today I will highlight a technological advance to which, until now, the media has not paid much attention but which could lead to a

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1 Preliminary intervention in the Seminar held at the Areces Foundation on February 6, 2018.
2 Governor of the Banco de España from 2006 to 2012.
4 Such as travel agencies, taxis, telecommunication monopolies, etc.
radical change in the banking system since it would avoid the effects of banking crises and at the same time allow deregulation and liberalization of credit activity, currently strongly intervened by the State. I am referring to the spectacular advance in the capacity of computing and digital storage, which makes it possible for digital money -97% of which is now issued by private banks in the form of deposits- to be issued by the Central Bank.

This technological advance will bring about a change similar to the one that occurred in the mid-nineteenth century when paper-money stopped being issued by private banks and all banknotes were issued exclusively by the Central Banks. I will dedicate this talk to explaining the effects of such an apparently innocuous measure, like allowing all economic agents to deposit their money in the Central Bank, which would be the only one authorized to create money. The adoption of this measure would have disruptive effects, it would mean a radical change, not only because it would stop the banking crises that have very dramatic social and economic consequences, but also because the credit activity could be fully submitted to competition, without protection or privileges granted by the State.

The measure, in principle, is very simple, since it only involves the lifting of a ban. It is a reform of the kind proposed by the enlightened economists: “laissez-faire” (allow doing), which was previously forbidden. Today, only private banks can hold deposits in the Central Bank. The reform would mean allowing families and companies to do what private banks already do: to deposit their money with the Central Bank, where the money is totally safe. The measure is very simple but its effects would be far-reaching because the money kept in the Central Bank is actually money, they are pounds or dollars, while the money issued and maintained by the private banks is not money, but rather “pseudo-money”, a “promise to return money”, and this is what makes it unsafe, the fact that periodically, individual or generalized, banking crises occur.

Today private banks can usually keep their promise to return the money to depositors, but they cannot always fulfil this obligation, and to prevent this from happening, so that, even if they fail to satisfy what they promised, depositors believe that their money is
safe and that the payment system does not blow up, it is essential that the State protect banks with a number of absolutely exceptional privileges. These privileges - which no other financial institution enjoys today - are the securing of deposits, the provision of liquidity by the State when they fail to obtain it in the market, the injections of public capital, the exemptions from competition legislation and many others.

However, the digital money deposited in Central Banks does not need any protection from the State since their deposits are not “promises” to return money, rather they are simply money. Therefore, at no time would citizens run the risk of not being able to withdraw or transfer money from their deposits. The banking crises could no longer occur, with which citizens would stop suffering and paying the cost of these crises.

The cost of banking crises is immense and avoiding that cost is what currently justifies the State allocating a huge budgetary and regulatory effort to protect private banks. Public opinion only realizes a very small part of the total cost of banking crises. So in Spain most people are outraged that the State has had to inject 40 billion euros to bail out the banks, with no chance of recovering these sums. However, even though that is a huge figure, it does not give an idea of the overall cost\(^5\) that Spaniards have paid (and will have to continue paying) for the latest banking crisis.

If the digital money were issued and maintained by the Central Bank, there would be no banking crises but, undoubtedly, as is currently the case, other types of financial crises would continue to occur, such as, for example, stock market crises, investment fund crises.

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\(^5\) The biggest costs of banking crises are not the taxpayers’ resources that have been used to bail out the banks, but rather the macroeconomic damages. The costs in terms of loss of GDP, increase in unemployment, destruction of companies, etc., are immense. These costs are the consequence of the pricking of the credit and debt bubble produced by a monetary system that can only create money if at the same time it creates debt. The macroeconomic collapse has had monstrous budgetary effects (reduction of income and increase in public spending) that have led to an increase in public debt of €600 billion throughout the crisis. Among those 600 billion are the 40 billion used to bail out the banks, enough to outrage anyone, but that only gives a small idea of the total cost of the crisis caused by the exaggerated expansion of bank credit.
crises, those of hedge funds and many others. But these non-banking financial crises have a fundamental feature that makes them less burdensome for citizens and that is that the costs\textsuperscript{6} of these are assumed by those who lent or invested in the stock market, investment funds or hedge funds. Contrariwise, the cost of banking crises is borne by all citizens.

Another very positive consequence of having Secure Money\textsuperscript{7} is that the entities that take over from current private banks could be left unprotected and lose their privileges, and they would be subject to market rules, like the other financial institutions that are not banks and like any non-financial enterprise. All the regulations created to protect banks, that are ultimately explicit or implicit public subsidies to those entities, could be removed, because they would no longer be necessary for citizens to trust their deposits.

To begin with, deposit insurance would no longer be necessary. The State would not have to guarantee this low-cost financing to private companies. The role of Central Banks in providing huge amounts of money to private banks when they do not have liquidity would also disappear as it would be unnecessary. And of course the need to inject public capital into private financial institutions when they have solvency problems would disappear. While there was no alternative to deposits in private banks, all these privileges have been justified. But as soon as there is a feasible alternative, such as deposits in the Central Banks, public opinion will not tolerate maintaining those privileges and public protection to private entities because they are extremely expensive\textsuperscript{8} in budgetary and macroeconomic terms and would no longer have any justification.

Yet, in addition to suppressing the package of protective regulation, given that the enterprises taking over banks would be disciplined by

\textsuperscript{6} Direct costs. These non-banking crises may have some indirect effect as a result of the effects of changes in the wealth of some agents but they are obviously minimal compared to those of banking crises. Consider the stock market crisis of 1987, the crisis of the fixed-income investment funds of 1994 or the “dot com” crisis at the beginning of this century.

\textsuperscript{7} I use this expression of Secure Money, as it would be cumbersome to continuously refer to the “Central Bank Digital Currency” (CBDC in English)

\textsuperscript{8} We have discussed the cost of the current system when crises occur. But there is another cost that is paid when there is no crisis: that of the implicit subsidies of the protections and privileges of the State.
the market like other financial institutions, it would be possible and desirable to also eliminate most of the rules of the so-called prudential regulation, such as the Capital Directive in Europe or the Dodd Frank Act in the United States, which are the fruit of Basel III. These regulations are currently stifling the possibilities of innovation in the businesses of financing families and companies and, together with the supervisory bodies that are responsible for enforcing them, could be drastically reduced and in many cases could even disappear.

The third positive consequence of having public digital money is that it reduces the functions of the Central Bank to those of a simple Issuing Entity, which represents an advance in the “de-governmentalization” or “de-politicisation” of money. For many years, money has been unsafe not only because it is in the hands of private banks but also because of the intrusion of political power. The history of money can be written by explaining how the rulers have interfered in the issuance of money creating distrust and diminishing its security.

The current system is based on private banks that can only survive because they are supported by very powerful Central Banks with powers to intervene in the financial markets. If private banks did not have Central Banks behind them that were willing to prevent them from getting into difficulties, no-one would deposit their money with them. But once private money was no longer unsafe, it would not be necessary to endow the Issuing Entity with the immense powers that Central Banks have today. In this crisis, for example, the Central Banks have invested massively in the markets buying securities issued by governments and private companies. With Safe Money they could not have done this because their job would have been exclusively to issue money.

Although much progress has been made in recent decades in securing greater autonomy for the Central Banks, today they can still support governments, as we have seen during the crisis. The move to Secure Money will keep the issuing entities separate from the

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9 However, Antitrust and Competition policy and Supervision of Markets, Infrastructures and Consumer Protection should be strengthened.
politicians because they will no longer be able to finance governments discretionally.¹⁰ This money is doubly safe because it separates the issue of money from the private objectives of private entities but also of politicians and governments¹¹.

These are some of the most beneficial consequences of the disruptive change that would mean ending the issuance of fragile money by private banks. Yet some proponents of issuing public digital money add other effects they consider positive, such as the possibility of correcting the inequality generated by globalization, its positive effects on climate change, the ability to adopt negative interest rates and thus facilitate the monetary policy, the possibility of more easily pursuing money laundering, the disappearance of cash, the financing of public investment without increasing public debt, etc.

I have not mentioned any of these possible “benefits” because some of them seem debatable and even harmful and because, even those that seem to me correct, I consider unnecessary to justify the issuance of digital money by the Central Banks. I think it is a mistake to present this structural reform as a panacea that solves all problems. I think it is enough to consider the advantages that no more banking crises can occur and that credit activity, which is now super protected and hyper regulated, can be fully developed in market conditions with the gains in efficiency and innovation that this produces.

¹⁰ Now, Central Banks have the power to decide to whom they give the money they create: to private banks, to holders of public or private debt, and they can even purchase shares in private companies. In the new system, the attribution of the amount of money created, that is, the decision to whom the money created is transferred, must be fixed through stable rules with very broad consensus such as laws requiring a highly qualified majority. These laws will establish whether the money is transferred directly to citizens, the State, or both. As regards the “seigniorage” granted to the State, as is normal in a democratic system, its specific purpose (public investment, tax reduction, subsidies, reduction of public debt, etc.) must be decided by Parliament just like any other public revenue, and not by the issuing entity. This is done now with the seigniorage that is obtained with the issuance of paper money. Moreover, on no longer having power to decide who gets the money issued, it would be fully justified that the issuing entities, even if they were public, were as independent from governments as judges are today.

¹¹ The new system is neutral with respect to the objectives that different politicians intend to achieve, but prevents them from obtaining them by manipulating or influencing the issuance of money.
The idea of having safe public money as a solution to banking crises
is not a new idea that has been discovered in these years of crisis. It
is an old idea\textsuperscript{12} but, as we did not in the past have technologies that
made it possible, it could not be put into practice with all its effects.

Today I will only mention two moments in history when the idea of
public and safe money was raised from a practical point of view. The
first moment occurred in England in 1844 with the so-called Peel Act
through which paper-money was nationalized, the money in the form
of banknotes then issued by private banks. From that moment on, a
calendar was established that led to all the paper-money, that is,
banknotes, ceasing to be issued by the private banks and being
issued by the Central Bank. Then the use of private paper-money
was very important and was a form of financing of private banks.
The prohibition was successful and has been maintained until now
in all countries. No country has backed down and has again allowed
the issuance of banknotes by private banks that had been the cause
of continued banking crises.

However, this success was limited because private banks
concentrated on creating money through the issuance of deposits
recorded in their accounts. There were no longer any crises based
on private banknotes, but the expansion of money-annotation, that
is, private bank deposits, led to the re-emergence of crises -
hundreds of banking crises-, the two most serious being that of
1907\textsuperscript{13} and the one of the 1930s. It was in this crisis that the idea of
safe money came up again, when a group of Chicago economists
proposed to Roosevelt a “Programme for Monetary Reform” that
demanded that the money deposited in private banks, to be safe, be
deposited in the Central Banks and thus avoid banking crises.

The problem was that, in those years, the money-annotation, that is,
the bank deposits, was money that today we would call “analogue”
that required millions of accounting entries made by thousands of

\textsuperscript{12} J. Huerta de Soto, in his book \textit{Dinero, Crédito Bancario y Ciclos Económicos (Money, Bank
Credit and Economic Cycles)}, provides the extensive list of economists who throughout history
have concerned themselves with the problems created by deposit banks and their possible
reform

\textsuperscript{13} This crisis led to the creation of the Federal Reserve, fundamentally to protect banks that had
liquidity problems.
bank employees in lots of different localities, making it impossible to
do centrally. Therefore, the practical solution proposed to launch a
safe Money, the only possible one with those rudimentary analogical
recording technologies, was a very complex solution. They
proposed dividing the banks in two, in such a way that one part took
care to collect the money deposited in them and then place it
entirely\(^{14}\) with the Central Bank, while the other part of the bank was
engaged in normal activities of assets, expressly having to request
funds from depositors to give credit to borrowers.

Although at times Roosevelt was considering this reform, that crisis,
like all of them, served to further increase the protection package of
private banks with the deposit insurance and to also increase the
restrictive package with, among others, the Glass-Steagal Act. This
episode confirms the experience of deregulation of other sectors:
that liberalization is successful only when a technology is available
that makes it possible. Therefore, the reappearance of the idea of
safe money\(^{15}\) in recent years is not only explained as a reaction to
the crisis but also because new technologies make it technically feasible.

The reflection on the issuance of public digital money started in very
minority circles but has begun to spread. Will these ideas be
incorporated into the programmes of political parties, as happened
with the deregulation of other sectors such as air transport,
telecommunications, the liberal professions or the labour market? I
don’t think so. My impression is that in this century new technologies

\(^{14}\) hence the name of Full Reserve Banking (FRB) that received this reform proposal.

\(^{15}\) Who, in these years, has gone back to talking about this idea of Secure Money? Over these
years a variety of stakeholders and scholars have emerged. So there is a Nobel Prize winner in
Economics like Prescott, an IMF economist like Kumhof, or Martin Wolf, the chief economist of
the Financial Times. John Cochrane, Ben Dyson, Andrew Jackson have published very
interesting texts. Some organizations like Positive Money in the United Kingdom or Monetative
in Switzerland are trying to introduce these ideas into the political debate. A few Central Banks
have also begun to take an interest in digital money issued by Central Banks. The Bank of
England has a research programme dedicated to this matter, and the Swedish central bank is
studying it in order to issue electronic money to replace cash. In Switzerland, a referendum on
Sovereign Money will be held this year.
are transforming sectors in a different way. Now, the deregulation of some sectors is occurring spontaneously and not as happened in the last century with government approval of supply policies. Think, for example, of what is happening with car transport in cities. It is not changing because politicians have decided to deregulate the monopoly of taxis but because the possibilities offered by new technologies to provide better services and more adapted to users are forcing politicians to accept transitions to new transportation systems by car that are different from the traditional taxi.

That's why I think that the evolution towards Secure Money will not be done “from the top down” but rather “from the bottom up”. The debate on Secure Money will be encouraged as a consequence of the “cracks” that will appear in the current banking system. It is impossible to anticipate all the cracks that will appear in a system that generates periodic crises and prevents innovation and competition in credit activity, but we can guess at some.

For example, those cracks that will produce the separation between the deposit and the payments activities. This “unbundling”, in the jargon of competition policies, will make it visible that the deposit activity does not provide any appreciable value-added. What is valuable are the payment services. Therefore, it will be better understood that the substitution of unsafe deposits for safe deposits would not harm the payment services, which would continue to be provided by private companies. On the contrary, these services will improve thanks to competition and will avoid the current concentration that makes the system very fragile. And this cracking has already begun. The new European Payment Services Directive (PSD2), by extending the payment business to new competitors, will be one of the factors that will put the current banking system in jeopardy.

Another of the cracks that we can now sense is the intensification of the “diabolic circle” in which the Supervisors and the Central Banks are trapped in their relationship with private banking. These regulators are constantly worried about the evolution of the banks’ income statements. This concern is fully justified, because they are aware of the enormous costs of banking crises and these are more
likely when the profitability of banks is reduced. A vicious circle develops in this way: competition reduces the profitability of banks and this leads the Central Banks and Supervisors to increase their protection and reduce competition (increased concentration, obstacles to new competitors, improvement of their income statement through monetary policy, etc.). These actions are logical because they avoid banking crises in the short term but are “diabolic”, because they prevent alternatives to current banks from arising. They have perverse effects since they increase leverage and stop innovations, which, in the long term, make the banking system more fragile and increase the risks of crisis.

A further “crack” in the system could arise from the difficulties of the current monetary policy because, being based on the issuance of money by private banks, it is necessary to increase debt every time you want to increase the amount of money. This problem of the current monetary policy has been evident in the two phases of the recent crisis, both the one that led to a brutal expansion of credit and the one in the recovery of the economy. These difficulties have provoked criticism of the Central Banks for the ineffectiveness of their interventions and for their negative distributive effects.

These “cracks” that are already appearing will be transferred to the debates of the media and social networks and will negatively affect the reputation of private banks and Central Banks and Supervisors, a reputation already badly damaged by the recent crisis, and questions will start to be asked about a system that is sustained only thanks to the State’s support of private companies. As things stand, public opinion does not yet demand safe Money or to end the State’s protection of private banks but, when the current system start cracking, the demand to adopt a safer and less expensive system than the current one will be considered as something absolutely unavoidable.

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But what will be talked about when the debate opens? What kind of analysis and studies are going to be published? Apart from the criticisms and defences of the current system, we should have studies on the “details” of its possible reform. Like all structural reforms, this reform has one part that is very easy to explain, which is to remove all the protective and intrusive regulations and let the market operate, and that is what I have commented on today. But also, like other liberalizations, implementation requires detailing the different options to put it into practice.

Today I have limited myself to explaining how the transfer of money creation from private banks to Central Banks would save us the macro, budgetary and inefficiency costs of the current system, but there are many “details” that should be studied. To get an idea of the study work that lies ahead, suffice it to say that the Bank of England’s research programme devotes 4 pages to the CBDC\textsuperscript{16} and plans to analyse no fewer than 65 issues.

I will give you just some examples of issues that need to be analysed. For example, you must decide to whom the money issued should be given. To the governments? To the citizens? The rules to be imposed on the issuing entity and the discretion it will have should also be determined, as well as the ways to ensure its independence from the government.

We must anticipate the impact that the new system will have on the main macroeconomic variables. For example, one must study what will happen to credit when the subsidies to the indebtedness of the current system disappear. It is also necessary to examine how monetary policy will change as its instruments vary. The interest rates will be fixed exclusively by the market, through the agreements between those who decide to lend and those who want to borrow. In principle, this liberalization will have very positive effects on the current system, strongly distorted by the State’s intervention. But,

\textsuperscript{16} Central Bank Digital Currency is one of the names of the radical reforms of the current system. In addition to the “Secure Money”, which is what I have used, there are many others such as Sovereign Money, Full Reserve Banking, Limited Purpose Banking, etc., which have many differences between them.
although the market always surprises us favourably, it is reasonable to study what we currently believe would be its operation.

The new system radically separates money not only from deposit institutions but from the entire financial system and therefore the problems of “shadow banking” that we have now will disappear. But it would be reasonable to study in what way what we now call “money” markets, because their border with money is currently very blurred, would be transformed into very short-term “financial” markets.

There is a question of “detail” about which little has yet been written and which is the most important: the transition to the new system. Transition is key in all processes of deregulation and liberalization. As in other sectors, moving from a hyper-protected and hyper-regulated banking system to a totally deregulated and liberalized system, without designing an adequate transition, would result in very significant costs, not only for the shareholders and staff of the banks, but also for users and for the entire economy. This problem is the same one that arises in all sectors to which a structural reform is applied that obliges them to act in accordance with market rules. And, in general, in almost all sectors that are liberalized, this problem is solved by applying a slow calendar to reduce protective shielding, which allows a gradual opening to competition.

But, unfortunately, this formula of gradual transition to competition does not work in the case of the banking sector. The specific difficulty of deregulation of the banking sector is that, if the private banks were gradually submitted to market rules, competition would of course increase, but the insecurity and fragility of the deposits would not be reduced and could even be aggravated. There are already some transition proposals that attempt to avoid this problem, but all the possible alternatives of transition should be studied very carefully because, at the speed that everything is going now, we must be prepared, because it cannot be ruled out that we have to respond suddenly to a social demand that becomes “viral” and that urgently requires the suppression of privileges to private banks.
I will now comment on the effects of this structural reform on the distribution of public and private tasks, between the State and the Market. This reform has a very important public component that one could even call it the nationalization of money or the “de-privatization” of money. It is true that the creation of money would cease to be a private activity and would become fully public. But at the same time the reform supposes an enormous boost to the use of market mechanisms in the financial system. Perhaps the most attractive aspect of this reform is that it clearly differentiates public from private tasks. On the one hand, it allows the State to give “security” to Money and on the other hand it allows the Market to adopt risk decisions. The State stops telling economic agents the decisions they must adopt when taking risks and private companies stop offering money as an asset whose security they are unable to guarantee. The State will only deal with the regulations of markets, consumer protection, defence of competition, etc., making sure that the market operates properly and does not defraud citizens, but will refrain from telling anyone what risks they can take, with what capital, with what liquidity requirements, how you should pay your employees, etc.

The first effect of reducing State intervention in the banking system is that a whole battery of harmful incentives and subsidies would disappear. For example, the incentives for indebtedness that the current system has would be eliminated since in the new system it would not be necessary to create debt when issuing money. It would also eliminate the subsidy that means that the State guarantees private banks a significant percentage of financing at practically zero cost. The magnitude of public subsidies in the current system has been estimated by calculating the volume of resources that, in the Secure Money system, would be transferred to all citizens\textsuperscript{17}.

Another of the fundamental elements of the market economy is the consent of the parties to the contracts. In the current deposit contract (misnamed because it is not a deposit, not even an irregular one) depositors money is used to lend it to others without asking for their consent. It is no minor matter. Consent is an essential element

\textsuperscript{17} A recent study for the £ calculates an amount of more than 20 billion £ per year.
for the market to work because, only if the citizens themselves are left to decide on the appropriateness of what they decide can they exercise what is called “market discipline”. In the current banking system, by using the funds without the owners’ consent there is no alternative but to resort to the State so that it is the State that watches over and prevents the actions of banks that could go against the interests of the depositors.

Another fundamental element for the operation of the market economy is that the assumption of risks always involves both profit and loss. In the current system we know that the profits are privatized but the losses are paid by others. In a fully liberalized financial system, profits and losses are allocated to those who made the decision to take risks.

Another way of seeing why the market does not work in the current banking system is the absence of what Anglo-Saxons call “skin in the game”. In the current system the opposite happens, there are some entities - the banks - that play, above all, with the money of others. The capital ratios on total assets are below 5-10% in most private banks. This means that more than 90/95% of the money that banks lend is not from their shareholders.

I am ending. The press and networks are still obsessed with Bitcoin and cryptocurrencies. These experiments are very attractive and can be used to gain or lose a lot of money but they will not alter our monetary and financial system. However, the decision to issue digital money by central banks, which seems boring and uninteresting, is an authentic Pandora’s box that can unleash disruptive waves that, as has happened in other sectors, force the banking system to transform or disappear.

Or not. Or it will take more time. This is not a minor matter. It is not about increasing or modifying some regulations so that the current system could work better. It’s about changing that system, and system changes usually take a long time. Revolutions may occur, but they are rare. The proposals put forward in the early eighteenth

18 In the USA, banks are required to have a capital-to-assets ratio not lower than 5%. In Europe, even less is required: 3%.
century to build political systems with separation of powers did not make any short-term dents in absolutism. It was much later, with varied transitions, when practical applications occurred. But time is not lost when studying the possibility of having safe money and liberalizing the financial system, because even if it takes time to transform the current system, the simple fact of realizing that it could work differently compensates intellectually.

The current system is no longer seen in the same way as before.
Final note.

I hope no one confuses the Secure Money proposal with those of other critics of the current system such as, for example, the populist proposals that public money should not be used to bail out banks or, at the other extreme, the initial proposal of the Trump Administration to reduce the requirements of prudential regulation to private banks. I think these positions are wrong and I think the decisions that central bankers and supervisors have made over these years are basically correct.

Today I have explained how the protection of the banks, the huge subsidies they enjoy, the bail-out with public money, the regulations to avoid taking a lot of risk, the special resolution systems, the exemptions of Competition Law, etc. involve huge costs that would not exist in a system of Secure Money deposited in the Issuing Entities. But it should be clear that as long as the current money system based on the deposits of private banks remains in force, the decisions that Supervisors and Central Banks have adopted in recent years are absolutely justified. We cannot criticize them for having approved the bulky regulations of Basel III and the FSB, nor for having injected huge amounts of money into private banks nor for using public money to bail out the banks that were going to fail because, if they had not done so, we would have suffered a more serious recession than that of the 1930s. It is true that all these actions would not have been necessary if we had a Secure Money system, but this is not an argument to criticize actions that are absolutely justified and consistent with the current system as long as it does not change.