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## VERTICAL SEPARATION, DISPUTES RESOLUTION AND COMPETITION IN RAILWAY INDUSTRY

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### ABSTRACT

There might be various aims for the vertical separation in railways such as the one instituted by the European Commission. One aim might be to improve efficiency, another one might be to introduce competition, as a mean, precisely to improve efficiency. Vertical separation creates, by itself, some disputes between the Infrastructure manager and the so called railways undertakings. So a dispute resolution system is necessary. First, this dispute resolution system is costly and thus might offset the efficiency benefits associated to the introduction of vertical separation. Second, this dispute resolution system can create a kind of collusive agreement where there is a quasi vertical re integration which does not favor competition. The paper is organized as follows : First the various kinds of disputes are analyzed. They are presented according to the following categories : - access to the track - slots allocation ; - timetable establishment ; - adjustments to the initial timetable ; - train circulation - delays - maintenance and renewal works - safety - estate - real estate sharing; - network minor changes - new lines Secondly, the methods by which those difficulties are dealt with are presented for two countries : UK and France. The British dispute resolution system relies heavily on co-operation and contracts within the railway industry whereas the French system is more hierarchy oriented, thus generating less conflicts but which are, maybe, more difficult to solve. But we can wonder whether the present British system, together with the Network Rail

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status doesn't lead to a more integrated railway industry through long term co-operation. Conversely, the difficulties that the French railway industry is presently experiencing might lead to define a dispute resolution system more able to favor some forms of competition.

**Keywords:** railways, competition, vertical separation, dispute resolution

## **INTRODUCTION**

Vertical separation (between infrastructure and operation) is in a sense an "artefact" in the railway industry where integration seems the most reasonable solution according to both an economic and technical point of view. Various reasons might have justified the implementation of vertical separation in Sweden in 1988 (Nilsson, 2002), Britain in 1995 (Nash, 1997) and finally in the European Union (the dates differs according to each country). But what we can take reasonably for granted is that vertical separation creates problems, even if it can improve the efficiency of the railways. One possibility to increase the efficiency of the railways is to introduce competitive pressure on historic monopolies whose best profit is a quiet life (according to Hicks, 1937). But the problems created by vertical separation can lead to various dispute resolution systems. And those dispute resolution systems can hinder true competition under the form of competitive tendering and under the form of open access as well. We will test this hypothesis with the example of the British dispute resolution system. Conversely, the multiple occurrences of problems between infrastructure managers and railway operators can contribute to assert the property rights of the different companies involved. The progressive building of a framework able to manage the conflicts between infrastructure manager and railway operators can be one of the prerequisite for the introduction of competition. The French situation will provide an example of this gradual approach to competition (see Henry and Quinet, 1999).

Britain and France provide example of this interesting observation: where the introduction of competition was supposed to be radical, the dispute resolution system leads to attenuate the strength of the competition; conversely, where the introduction of competition is not welcome, the necessary dispute resolution system leads to pave the way for introduction of competition. This can be seen as an illustration of the tendency to converge for the European railways, after a first step of reform movement where the different countries were heading toward very different situations.

The paper is organised as follows:

First we will present the causes and the nature of the different conflicts which can occur between an infrastructure manager and a railway operator. Then in a second part we will examine how Britain and France manage those conflicts, which have different characteristics in each country. We will conclude by presenting some consequences of those analyses on the possibilities to increase the competitive pressure on the railway operators.

## **THE CONFLICTS BETWEEN INFRASTRUCTURE MANAGERS AND RAILWAYS OPERATORS**

In this part, we have chosen to present the various conflicts, following the chronological process of train circulation. First, we discuss the conflicts that appear before train circulation (due to timetable establishment and programmed maintenance works). Then we present the conflicts that may arise during the train circulation (due to delays or operational disruptions). Last, we examine the case of future network changes.

### **Before train circulation: access, and timetable establishment**

#### *Access and pricing*

The monopoly of the infrastructure manager induces a strong market power. The IM could abuse that power by pricing too costly the use of the infrastructure, or by reducing the quantity, as well as the quality of the supply. So some conflicts between the infrastructure manager and the infrastructure users (the railway undertakings, hereafter RU) can arise from the pricing rules and levels, or from the service supplied.

Concerning the increase of infrastructure fees, the position of the RU depends on the risk they bear. On the one hand, the increases of infrastructure fees are compensated to British TOCs and French regional services by public authorities, so RU are not directly affected by those increases. On the other hand, the repeated increases of French infrastructure fees for freight and high speed services lead to conflicts between the IM, RFF and the historic RU, SNCF.

The access to the infrastructure has to be guaranteed to the RU, in terms of slot quantity and slot quality. Because the railway undertakings develop medium term business, they have to know the characteristics of the infrastructure services provided by the IM. The RU need to know the capacity of the infrastructure, as well as its overall characteristics: electrification, time interval between two trains, maximum length of the trains... Any reduction of those characteristics induce less charges for the IM, but is prejudicial for the RU. So it can lead to conflicts between them.

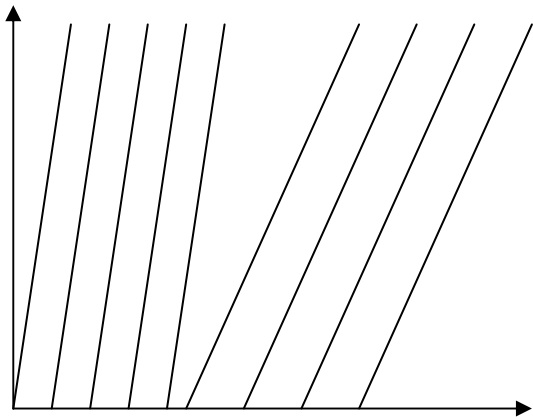
However, it should be noted that an adequate pricing can prevent the IM from behaving so opportunely. For example, a pricing that would take into account the capacity and the authorized speed of the infrastructure gives the IM incentives to maintain the quality of the infrastructure.

#### *Slots allocation and timetable establishment*

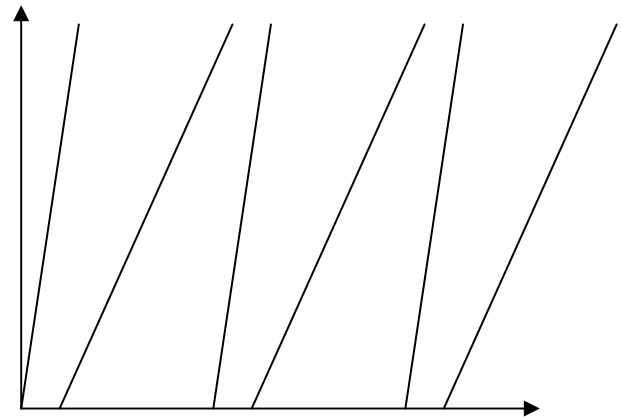
Conflicts about slots allocation are frequent in vertically separated railways. This is due to the divergence of interest between the infrastructure manager and the railway undertakings. There

is no reason that the private interest of the infrastructure manager leads to a socially optimal slot allocation. Moreover, some requests of the various railway undertakings might be in conflict.

There is a trade-off to implement, between the IM's optimal allocation and the RU's one. Both can be caricatured by the following figures:



IM's supposedly preferred slots allocation



RU's supposedly preferred slots allocation

The infrastructure manager would like to maximise the infrastructure capacity, by grouping many express trains together, and many slow trains together. But this is not what the railways undertakings want. Each of them would like to mix express and slow trains, in order to homogenise the frequency of their services.

The British Network Code itemises 13 decision criteria, when establishing a timetable:

1. Maximising the social welfare;
2. Enabling a RU to comply with any contract to which it is party;
3. Maintaining and improving the levels of service reliability;
4. Maintaining, renewing and carrying out other necessary work on the network;
5. Maintaining and improving connections between railway passenger services;
6. Avoiding material deterioration of the service patterns of operators of trains;
7. Ensuring that the overall pattern of rail services is adequately spread in time;

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8. Taking into account the need of flexibility of the freight undertakings;
9. Enabling operators of trains to utilise their railway assets efficiently;
10. Facilitating new commercial opportunities;
11. Avoiding frequent timetable changes;
12. Avoiding changes to provisional international paths;
13. Taking into account the commercial interest of the IM and the RU.

### *Programmed maintenance works*

Once again, there is no reason for the optimal track reservation for maintenance to be the same for the infrastructure manager and for the railway undertakings. The IM would like to minimize the cost of maintenance works, and so, to intervene on the track for a long time, but very few times. On the contrary, the RU would like not to interrupt their services, and so prefer many short interventions on the track. The conflict arise from the externalities borne by the RU, when the IM's decision leads to trains suppression.

### *Congestion*

Regarding congestion, the conflict is due to the lack of investment incentives of the infrastructure manager, when a part of the network is congested, that is, when the satisfaction of all the slot bids cannot be assured. In that case, railway undertakings complain that the infrastructure capacity is insufficient, and, sometimes, that the lack of flexibility of the timetable leads to many delays. But the market relation between IM and RU does not favour decongestion investments. This is due to the very poor (if any) rate of return of such investments. Moreover, when the pricing rule includes a congestion charge, a decongestion investment leads to reduce IM's income, what decreases even more its investment incentives.

### **During train circulation: delays, disruptions...**

#### *Delays*

There are many conflicts related to delays in a separated railway system. Delays can be due to the infrastructure manager, when it is caused by a disruption of the infrastructure (switches,

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signalling...). It can also be due to a railway undertaking, when the staff arrives late, or when the train has been kept too long in its depot. Concerning the effects, delays affect more RU (through a low quality of service), than the IM (maintenance is delayed by the last delayed train). So, externalities arise from carelessness of the parties ; those are borne by the RU, whose customers do not suffer repeated delays. So, each party of the railway system has to be encouraged, not to cause delays.

### *Operational disruptions*

The principle of operational disruption conflicts is the same as the last one, but with more serious causes and effects. Operational disruptions are due to major events, such as accidents, blackout or serious damages. Accidents can be due to the infrastructure manager (neglected maintenance), as well as to a railway undertaking (rolling stock defect, human mistake). The costly externalities are borne by the RU (whose trains are suppressed or delayed), as well as the IM (whose asset is seriously damaged).

Of course, these externalities are the first source of conflict between the parties. But the management of the disruption is also a source of conflict, given that the IM has to restore the operation of trains on the network. The IM has to give some trains priority over some others and, once again, its decisions might be in conflict with the RU's interest.

### **In the future: network changes**

Network changes are usually decided by the infrastructure manager, in order to improve some characteristics of the network (e.g. speed). But such improving changes can also reduce some other characteristics (e.g. operating expenses for some traffics). So, they usually generate two kinds of externalities:

1. those due to the civil engineering works, during which trains circulation on the track is interrupted;
2. those related to the network change itself.

### *Minor changes*

Minor changes affect railway undertakings through several ways. For example, in France, a speed increase due to new switches has reduced the length of freight trains using the siding.

### *Major changes*

Major changes, such as a new line, might oppose the infrastructure manager and the railway undertakings. For example, the SNCF wishes the high speed lines are regularly connected

with the classical network, so that the operation of trains is more easily restored after operational disruptions. On the contrary, RFF wishes to minimize the cost of the project, and so, not to repeat such connections. So, a rationale trade-off has to be found.

This first part has shown that the disintegration of railways leads to many sources of conflict. Public authorities have to develop dispute resolution systems, so that those conflicts do not lead to less efficient railways than integrated ones.

## **THE DISPUTE RESOLUTION SYSTEMS IN BRITAIN AND FRANCE**

The firms have to be regulated, so that those potential conflicts do not lead to effective disputes. Rules have to be set, in order to diminish the possibilities of opportunism for both parties, and to reach an optimal use of the rail network. In this part of the paper, we compare the two different ways chosen in Great-Britain and France.

### **The British disputes prevention and resolution system: the Regulator, the Industry and the Contracts**

#### *The industrial preventive rules*

The British disputes resolution system is decentralized to the railway industry. The relationships between the infrastructure manager (Network Rail) and the railway undertakings are defined in contracts and regulated by an independent regulator (Office of Rail Regulator). The Government intervenes to fix the total amount of infrastructure fees, which it subsidizes indirectly.

This system is characterized by the prevention of the conflicts, through many rules decided inside the industry:

1. The Network Code (ORR 2004) describes (in 237 pages) the track access conditions, such as the performance monitoring, the timetable change, the vehicle or network changes, the operational disruptions, or the access dispute resolution rules. This document is a compromise between the parties ; it can be modified after an industry-wide agreement.
2. The Rules of the plan describe the conditions of slots drawing, for each section of the network. It defines the time interval between two trains on the tracks, in the stations...
3. The Rules of the route define the network maintenance strategy: when, where, how are the sections of the network maintained ?

The signature of a so called “track access agreement” between Network Rail and a railway undertaking completes these documents (which are then approved) by setting:

1. The price, the quantity and the main characteristics (route time) of the slots, that Network Rail commits itself to propose to the RU.
2. The so called “performance regime” (schedule 8), which defines the quality incentive scheme: number of minutes of delays allowed to each party, penalties, compensation for service disruption...

### *The compensation principle*

The main principle of the British regulation consists in compensating each party for the externalities induced by another. The advantages of this principle are the followings:

1. It is an incentive scheme: each party would optimize its decisions from a social point of view, rather than from an individual one. So, it leads to a reduction of the externalities described in the first part of the paper.
2. It reduces the risk, borne by the parties: each of them has to be prepared to pay if it causes damages to another one, but it should not fear to support the whole effects of delays or operational disruptions, caused by someone else. This is an efficient way for attracting investors, and promoting competition.

This principle plays in the regulation of the maintenance works, delays, operational disruption and network changes.

Concerning the maintenance of the track, works that disrupt train services and penalize a RU are compensated by Network Rail. This compensation includes the whole loss of revenue. For example, in the case of the suppression of a Eurostar returning to London on Sunday, the compensation takes into account the loss of revenue for the singles on Friday and Saturday. So the penalty can be twice higher than the revenue of the suppressed train. These compensations are all the more expensive since the train suppression is anticipated.

The compensation principle intervenes also concerning the works induced by network changes. But in that case, the increase of operational charges, induced to any party by the change, has to be compensated too.

Last, this principle is applied to compensate the delays and operational disruptions caused by a party to some others. In the case of short delays, the penalties are defined by the corresponding loss of futures revenue for each party. This takes into account the number of passengers, their motives of travelling, the possibility of a round trip during the week end... If the delays are more important, the increase of operational charges is compensated too. In the



case of operational disruption, a railway undertaking whose rolling stock is out of order, pays for its assistance.

The main disadvantage of this principle consists of the transactional costs, it induces. The mechanism is actually complex, especially when one has to decide who caused the delay or the damage. So, many people in the industry are paid to defend the interests of each party, while the fundamental causes of the events are not solved.

In such cases where the rules cannot prevent the conflict, a dispute resolution system has been created.

#### *The dispute resolution system*

When preventive rules and co-operation do not lead to solve the conflict, the ORR proposes the parties to ask for mediation to the Railway Industry Mediation and Arbitration Service. If the parties prefer to take their dispute to court, the court of first instance is the Access Dispute Resolution Committee of the railway industry. The parties can appeal the first verdict to the ORR.

#### **The French disputes resolution system: the Government and the Law**

Due to very late introduction of competition, the French regulation has not been developed as the British regulation.

#### *A hierarchical system*

The French regulation is not decentralized, contrary to the British one ; it is mainly defined by the law, and by the Network Statement, written by the infrastructure manager, RFF. The law defines each year the network access and use pricing, decided by the Government. It defines the types of trains that have priority in slots allocation, in case of congestion, and it defines how RFF has to manage network changes.

But although the French law has precisely transposed the European directives, it is necessarily insufficient to define efficiently the whole rail regulation. So the law refers for many points to the Network Statement of RFF (RFF 2004).

This document is far more important in France than in Great Britain: it describes the track access conditions, the characteristics of the infrastructure, the slot allocation procedure... We know from the first part that the details of those points should not be neglected, given that they may lead to opportunism. This is one of the main failures of the French regulation: by leaving the infrastructure manager a lot of room for defining such procedures, it might not lead to a socio-optimal slots allocation. Although that Network Statement has to be submitted to the railways undertaking and approved by the Department for Transport, RFF is free to turn it to its (relative) advantage.

### *A lack of incentives*

Another French regulation failure is the lack of incentives, not to induce externalities, such as delays. The French regulation does not propose the parties to be compensated for their loss of revenue, if they are penalized by another party. RFF and the Government prefer the parties to bear more risk, rather than setting a complex and costly performance regime, as the British one.

On the one hand, a party that causes many delays on the network is not penalized and has no incentive to progress. On the other hand, RFF is free to disrupt train services if it wants to work on the track for maintenance; the RU have to support the corresponding risk. Concerning the network changes, RFF does not compensate the increase of operating costs (if any) to the RU.

However, the so-called “contracts for use”, between RFF and the RU, define compensations in some cases of operational disruption: when RFF is responsible, the RU are reimbursed for the penalties they bear, due to train suppressions. When a railway undertaking causes such a damage, it has to compensate RFF for the loss of revenue due to suppressed or modified slots. This benevolent regulation does not necessarily lead to lack of maintenance, although this could become true, given that RFF has no incentive to maintain the network. This is due to the fact that the historic operator, SNCF, is also the delegate infrastructure manager of RFF. That is, the SNCF has to maintain the network on RFF’s behalf. Given that SNCF is the main operator of the network, it is its own interest to benefit of a maintained infrastructure.

### *The dispute resolution system*

However, the introduction of private competitors may lead to conflicts that Government intervention alone cannot resolve. This is the very reason why a specific committee has been recently created, to help the minister to resolve conflicts due to timetable changes or access conditions. This committee is composed of three people, chosen by minister of transport. Each of them is issued from one important administrative bodies: the Council of State, the Audit Office and the General Council of Bridges and Roads.

## **CONCLUSION: WHAT ARE THE CONSEQUENCES OF THE VARIOUS RESOLUTION SYSTEMS ?**

Any analysis of the railway reform process currently under way in Europe is difficult and must be considered as a tentative interpretation of an observation of evolutions limited in scope and clearly dependent on the time when the observations were made. Nevertheless it is useful to attempt to submit to examination some general analysis under the light of some new tendencies. The main hypothesis that we will submit to examination is the supposed convergence of the various railways competitive environments, through the analysis of the two cases studied in this paper : UK and France. This is particularly interesting because the

UK railways market structure was considered among the most competitive and the French situation was considered among the least competitive.

### **The British case : toward more co-operation and more state intervention**

As we have seen, the British dispute resolution process relies heavily on co-operative discussions and settlements within the railway industry. This leads the various railway operators and Network Rail to meet frequently and to develop a cooperative and pragmatic approach. It is likely that long term relationships will be created. The reasons for that are twofold.

First, by frequent interactions between people who are bound to reach an agreement, this process might lead to personal relationships reinforced by a common view over the many problems they have to solve.

Second, railway industry is characterized by the presence of very specific assets and many joint devices which lead to joint costs. Economic theory (see Williamson, 1999) clearly predicts that this situation leads to integration or hybrid forms, at least. In a sense, we can consider that a network of people meeting frequently to solve common problems is, by itself an hybrid form. We can object that only part of the companies are involved in this process. But other aspects of the current evolution of the British railway industry tend to give credit to this hypothesis consisting in the evolution toward an hybrid form.

This creates a form of barrier to entry, in the sense that it is more difficult to enter a market where the participants are already engaged in an intricate set of long term relationships. This increases also the risks of collusion by multiplying the possibilities to discuss thus enabling the existence of relationships unlikely to favor fierce competition.

Let us consider now what can be qualified as an hybrid form: Network Rail. One of the many tricky questions concerning Network Rail is who is taking the main decisions. As regards our subject restricted to the domain where Network Rail is concerned – the interaction between railway operators and infrastructure manager – it seems, that the TOCs' delegates can play a significant role. To understand the problems is obviously necessary, prior to define a negotiating policy. There is no evidence that the members of the board of Network Rail not originated from a railway operator can have this prior knowledge or acquire it easily. Even if there might be some exceptions, the general rule seems to be that, for those matters, the real power belongs to the TOCs' delegates. To a certain extent, we are facing a quasi re-integration. The main difference with a full re-integration is that, alone, a TOC has no power. But, together, the TOCs appear to have considerable power.

Long term relationships, co-operation, quasi re-integration, all that contribute to limit the role of market forces contrary to what was apparently planned in the first years of the railway reform. Other considerations might be added. The TOCs have the possibility to invest by themselves to increase capacity where they judge it useful. Those assets will be finally bought

by the new entrant, if any, after the bidding process for the franchises renewal. It follows that a new entrant has to endorse the investment strategy of the incumbent, when bidding during a franchise renewal. One might object that this is true in any sector where some assets have to be transferred from one owner to another. However, some infrastructure investments might reflect some strategic policy. Thus the new entrant has to find a strategy compatible with the assets he will buy. This, again, will create some difficulties to enter the market.

A last observation supports the convergence hypothesis: the government appears to be willing to play a bigger role. It seems even that the government is the final client of the railway industry. The Department for Transport wants to finance efficient rail services for a given price. That means that the government is playing a very important role in the capacity investment final choices.

### **France : a conflict that will make competition more probable**

It is useful to recall briefly the main features of the French railways reform, less known than the British one, before analyzing how the dispute resolution process can favor the introduction of some form of competition.

The situation currently prevailing in the French railway industry is the combined result of three major imperatives :

- the necessity to transfer into French law the European directives;
- the will to transfer part of the debt of the historic operator (SNCF) to an entity, different from the central government (to comply with the Maastricht criteria);
- the necessity to have at least a weak agreement with the Trade Unions.

This led to the creation of RFF, a public entity, owner of the infrastructure and bearing a large part of the debt of the former integrated company. To have the agreement with the Trade Unions, the maintenance works were left to the train operator, leaving the SNCF de facto unchanged, with the restriction that it has to operate on tracks which belong to another entity. Again, partly to reach an agreement with the Trade Unions, the initial amount of infrastructure charges, paid by SNCF to RFF was inferior to the amount paid by RFF to SNCF for maintenance. Thus RFF was structurally bound to make losses. Those losses of RFF were balanced by government subsidies. This whole financing scheme had the objective of subsidizing SNCF, however these indirect subsidies have been reduced since last year. But direct subsidies to RFF are necessary, given that RFF cannot invest in such a way that its operating loss increases.

This has created a strong antagonism with a seemingly powerful company, SNCF and a weak entity, RFF, benefiting under some circumstances from the support of the central government. Thus, there is a high risk that political interests prevail against the economic rationality.

Against this background, it is unclear whether a competitive pressure can be imposed on SNCF. Any competitor has to find its role in this asymmetric bilateral monopoly.

We will pretend that this situation leads the weak player, RFF, which has a total control of new infrastructure investment, to impose so much damages to the powerful player, SNCF, that the operator is inclined to assert rather bluntly its rights. Defining the property rights is the first step to create a market. If we apply this basic principle to railway industry, we can easily see the importance of comprehensively defining what a company is buying when it is buying a slot. By asserting its rights, as an operator, SNCF is progressively lobbying to build a framework that will be useful to other operators. For the first step, competition can come through the entry of open access freight operators. They will benefit very much from the clear definition of their rights, that SNCF is currently trying to impose.

Other features of the French disputes resolution process can be considered as favorable to future competition.

As very few people out of SNCF and RFF are skilled enough to intervene in a conflict, the arbitration body is or the ministry or the judiciary. So there is no risk of collusion, re-integration or anything associated with the industry committee as we have seen for the British dispute resolution system. The political agenda of the ministry can be challenged by a recourse to the judiciary. Any study of an important problem has to be given to foreign consultants or academics. Independence might be stronger, even if this has clearly a cost.

As any new capacity investment has to be paid by infrastructure charges (unless subsidies from public authorities), there is an incentive for the main operator to let other trains run on the network, to share the burden of the increment in access charges. Thus the structure of access charges, depending mainly of the Government, is crucial to enable competition under the form of open access for freight operators.

With this final arbitration committee independent of railways industry, there is less room for collusion or long term relationships between operators and between operators and infrastructure managers.

Finally, we can conclude that there is surely no good dispute resolution system, per se, for the railway industry in general. A system grounded on co-operation within the industry, as in Britain, is probably more efficient but will attenuate the strength of the competition. A system grounded on the rule of laws and relying on the arbitration of an independent committee is surely less flexible. But in the French context (with strong antagonism between RFF and SNCF), it is probably a good way to prepare for the progressive introduction of limited competition.

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