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Laurie Baker

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Transport in Shanghai

Roland Niblett

Director, Colin Buchanan & Partners

Presentation to the Transport Economists' Group
University College, London
20th March 2002

Roland described Buchanans' work in Shanghai, which resulted from a commission to review Shanghai's transport plan, considering all modes of transport. Systra and MVA were also working to the same brief, working separately from Buchanans. Roland had paid two separate visits to the city in 2000 and 2001.

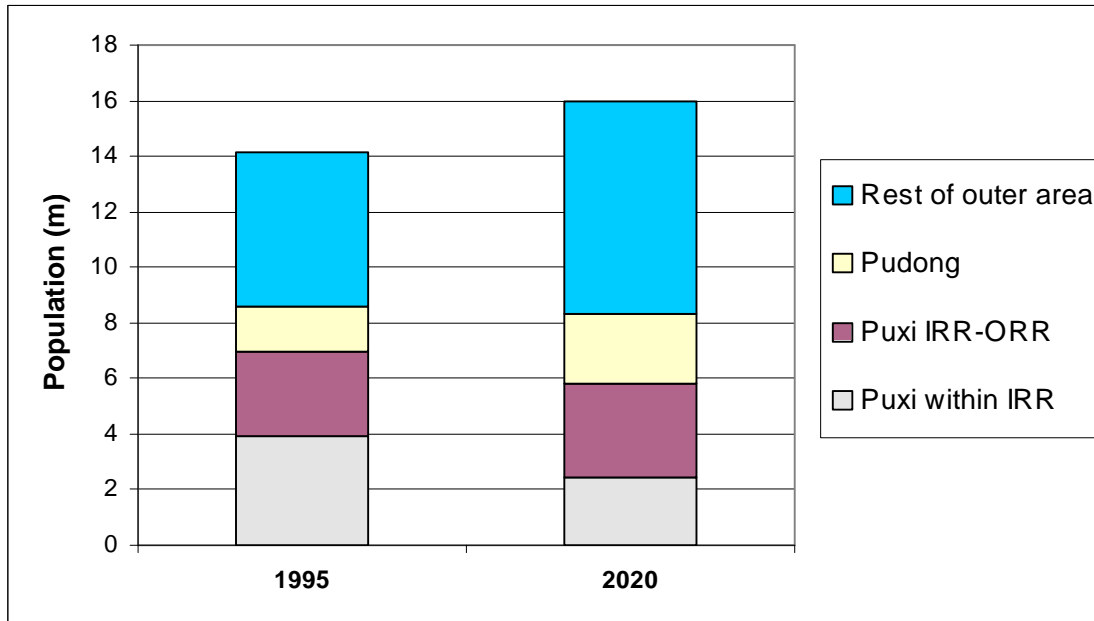
The municipality of Shanghai is situated at the mouth of the Changjiang (Yangtze) River and has an area of 6,340 square kilometres that also covers the large island of Chongming in the mouth of the river. The Huangpu River separates Shanghai into Pudong (east Shanghai) and Puxi (west Shanghai). An inner ring road (IRR) encircles Puxi, with an outer ring road (ORR) linking the farther suburbs.

The population in the Shanghai region was just over 14 million in 1995, with about 7m in Puxi and 1.6m in Pudong. A further 5.5m lived in the outer area. On top of the 14m, there is a floating population of two million people who are not officially registered. The density in the inner area is twice as high as in Inner London.

Population changes are influenced by inward migration from other parts of China and the country's one-child policy, which is not strictly enforced. By 2020 it is estimated that the central city population of Puxi will decline from 4m to 2.5m while inner Puxi and Pudong will increase by 1.2m. The outer area will increase by 4m bringing the total population in the Shanghai region to 16m.

It was against this backdrop of estimated population increase (see figure 1) that Buchanans were reviewing the city's masterplan.

Figure 1: Population change 1995 - 2020



Elements of the Shanghai Masterplan

These are:

- To reduce population density
- Build Pudong, which is comparable to London's Docklands area
- Build four suburban centres in Puxi
- Build six coastal new towns, including an airport and seaport and
- Build six inland new towns.

Roland demonstrated a number of transport aspects in Shanghai with a series of photographs -

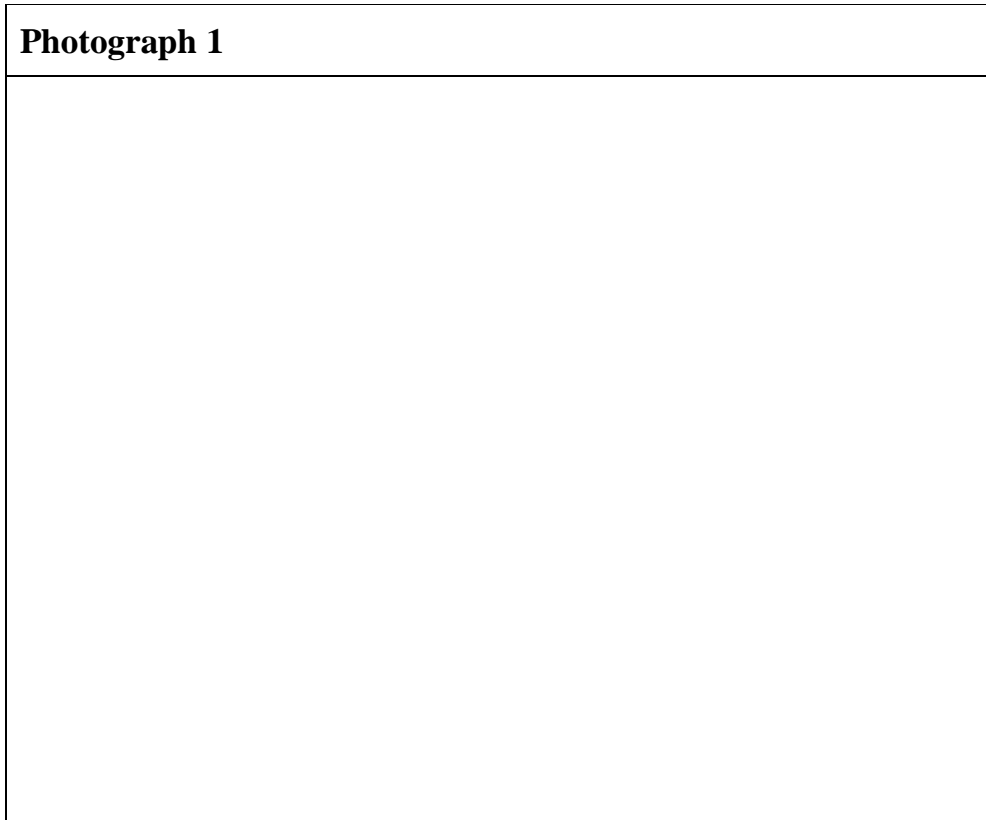
Cycles (biggest means of travel) with some riders using mobile phones demonstrating changes in lifestyle (photograph 1).

Buses (with air conditioned ones charging twice the fare) and trolley buses (mostly not air conditioned) - regulated by city authorities similar to London - articulated buses and trolley buses being introduced (photograph 2).

Beginnings of a metro system with three lines existing and 15 planned over a 10 year building programme (photograph 3). Services not full or very frequent (7-8 min headways).

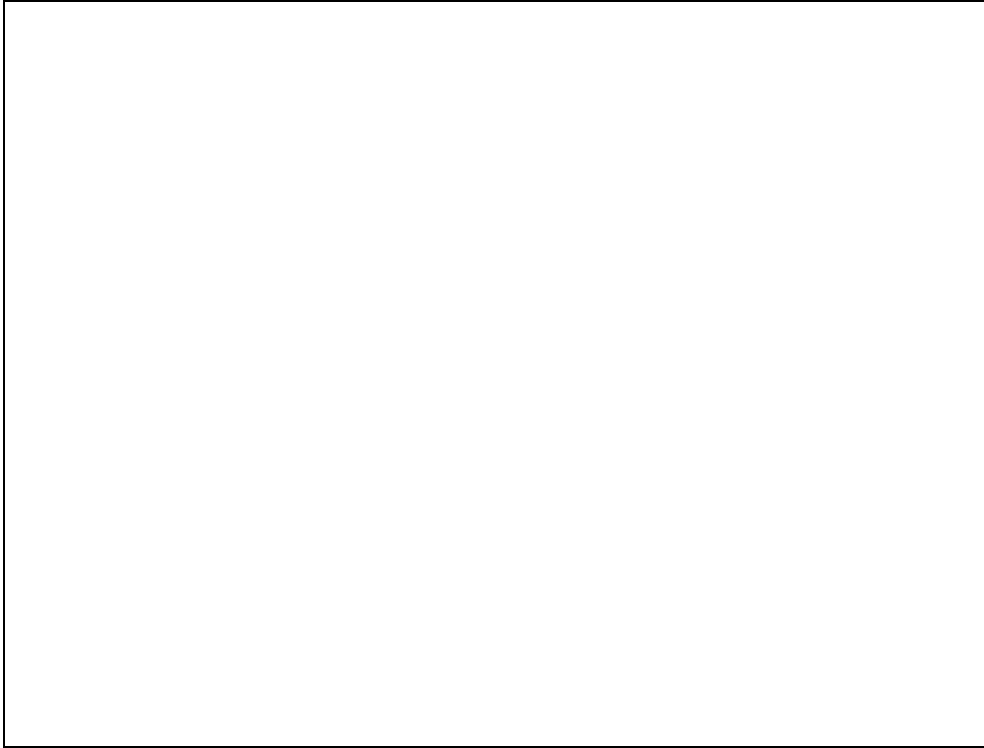
And, a flashy airport on the coast that will be connected to the city centre by a Maglev railway¹.

Photograph 1



¹ See *Guardian Education*, page 72 on Tuesday January 14 2003 for a description of the 30km line between Pudong airport and Shanghai City Centre, and the inaugural journey at the beginning of this year.

Photograph 2



Photograph 3



Issues for the 2020 Strategy

An expanding and developing city (see above)

Car ownership and traffic growth - at present car ownership is very low but the Chinese want a manufacturing capability and people to own cars. This is an impractical policy.

Road safety is an issue as there is a lot of conflict between cars/vans, cyclists and pedestrians with a high fatality rate. The Shanghai transport strategy wishes eventually to abolish cycles, but this would be disastrous if cyclists decided to use cars instead.

Key elements of the Shanghai Transport Strategy are:

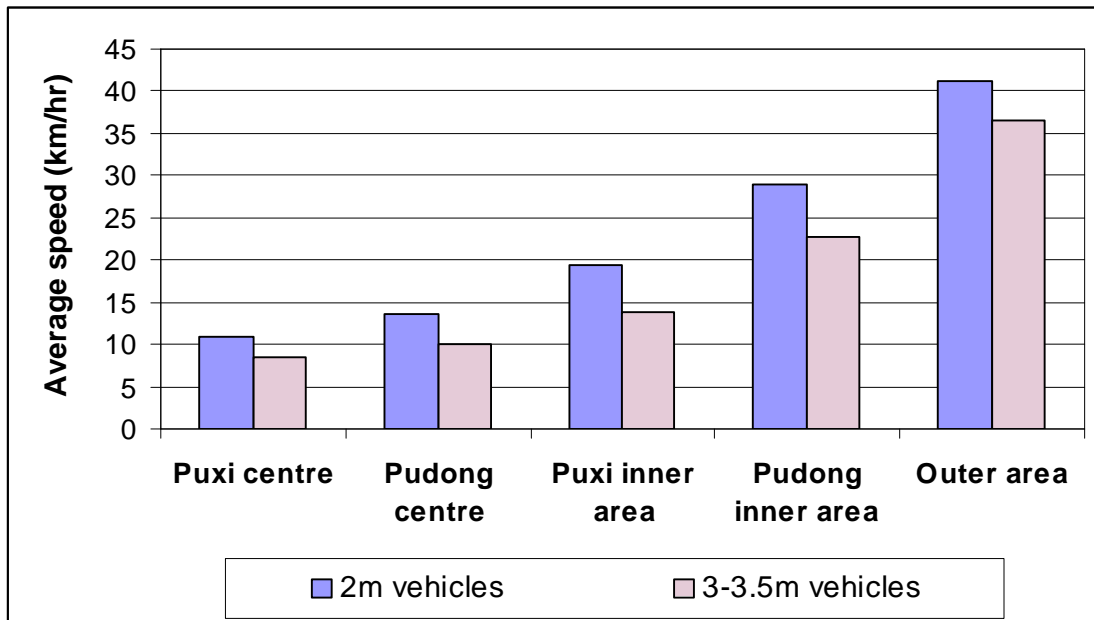
- Rail and bus are the core modes for longer trips
- Walk and cycle are main modes for shorter trips and access
- Car use to be restricted to be within network and environmental limits

Buchanans advised on highway management with new junction design, queue relation and addressed cycle stop-lines. However, there were already multilevel motorways where the traffic fumes cannot escape.

Figure 2 shows forecast traffic speeds falling with increasing vehicle numbers in all areas of Shanghai. The target average speed of 25 km/hr is only achieved in Pudong inner area and the outer area with 2m vehicles. With an increase up to 3-3.5m vehicles, only the outer area remains above the target speed.

The approach to traffic demand management is to retain and strengthen the control of vehicle ownership to 1.3m cars (a maximum of 50,000 plates per year). Parking controls and the development and implementation of electronic road pricing will reinforce this. Once electronic road pricing has been proven then ownership targets would be re-assessed.

Figure 2: Forecast road speeds at different levels of car ownership



Expanding the rail network is a key element of the masterplan so that it becomes "the backbone of the transport system". The plan is to achieve 800 km by 2030 for suburbs to city centre journeys, city centre distribution, inner area collector/distributors and for freight movement.

The rail programme aims to build 184 km by 2005. In the medium to long term, Buchanans advised that the programme should be modified to secure better value by building branch lines, making better use of central tunnels and designing cross-platform interchange. Additionally, the programme includes 20 new bus/rail interchanges (nine by 2005) and a Maglev to Pudong airport. Feasibility studies are looking into the programme post-2020.

In addition to new road and rail infrastructure, buses and taxis are seen as a crucial part of the strategy. However, the plan envisages abandoning trolley buses even though they are cheaper to run and less polluting but Buchanans suggested review of this policy is being done.

Conclusions

The conclusions from the Buchanan work is that unlimited car use is not a tenable answer to transport development in Shanghai, that bicycles should be encouraged, there are too many new towns (there should be fewer and larger ones) and that the Metro should be developed in stages.

Discussion

Peter Gordon (*AEAT Rail*) opened the discussion by asking whether there will be centralisation of employment with a population of 16m in 2020. Roland reported that the Shanghai authorities would prefer to see jobs increased in outlying towns rather than the central city.

John Cartledge (*LTUC*) had also encountered a powerful aversion to bicycles. Roland remarked that they are seen as out-of-date and not the image for a modern city. They have not yet accepted the environmental problems of car ownership and use.

Roland went on to say that most roads have cycle lanes with the main conflict being at intersections. The answer would be space segregation and more time at signals for cycles and pedestrians to cross.

Dick Dunmore suspects that they started to build infrastructure before looking at how things work. Roland commented that, initially, they had sought advice from the U.S. (motorways) and France (metros) and that transport strategy had evolved with that advice.

Dick Dunmore followed up by querying whether the intellectual step had been made to sustainable development. Roland replied that the population density of the centre is too high, therefore there was a desire to move development out.

Peter Collins asked if they had considered high densities around public transport nodes. The answer was that they already had high densities since most nodes are in those areas.

Don Box enquired about how capital investment is financed. Is there a contribution through the fare-box? There is no suggestion of bringing in private capital to build new infrastructure but it is operated privately. It is very difficult to get information about subsidy but fares are very cheap. Roland imagined that there is subsidy from central authority.

Dick Dunmore commented that he had looked at getting private investment but it is very difficult for metro lines because it is impossible to get a suitable rate of return. The Hong Kong Metro only produces a rate of return because of cross-subsidy with property development.

John Cartledge posited whether the Mayor of London or of Shanghai would be preferred to answer transport issues. Roland - both cities seem pretty intractable with personal mobility being high on the agenda. In both countries there seems to be a huge bureaucracy involved with all public sector decision-

making, but the Chinese government is prepared to invest a lot of money in its transport system.

Nigel Harris (*The Railway Consultancy*) stated that one of the things that affects mode choice is the width of the streets. The average width of Shanghai street is wider than in London but the number of houses fronting the streets and, therefore, potential number of cars is much greater.

Dick Dunmore asked if the ultimate objective is to overtake Hong Kong. Answer is yes in GDP but not in terms of population.

Report by Laurie Baker

The Modern Trolleybus - the Economist's Tram? **Role, Economics and Regulation**

Robert A Cochrane

Independent Consultant & Visiting Professor, Imperial College London

Presentation to the Transport Economists' Group
University College, London
29th May 2002

Background and history

The speaker defined a trolleybus as 'a rubber-tyred public transport vehicle which is powered by electricity drawn from an overhead wire'. The trolleybus was devised by Siemens in 1888 and first used by passengers at the Paris 'Exposition Universelle' in 1900. Between 1920 and 1950 trolley bus use expanded rapidly as a replacement for trams at lower capital cost but with greater flexibility. From 1950 to 1970 they in turn were replaced by cheaper and more reliable diesel buses, which were also better suited to lower density outer suburbs which could not justify the first cost, or replacement, of tram wires. Since the 1970s, initially as a result of the oil crisis and later for environmental reasons, their use has grown again, particularly in the former USSR; Russia now has more systems than any other country. Use is now broadly stable, with 36 system openings and 30 closures in the last decade and a current total of 347 systems. Planning and installation remains easier than light rail, particularly in downtown areas, as there is no need to dig up streets for track.

Technical characteristics

Trolleybus technology borrows heavily from buses and includes single deck, articulated and, more rarely, double deck variants. Trolleybuses require about 1.5 metres headroom above the bus for full speed operation and reasonable clearance from overhead signs and trees, although wires can readily be cut down and replaced for activities such as fire fighting. Single decked trolley buses require about 5 metres headroom; double deckers require about 6 metres, restricts their speed under low bridges and their use in tunnels.

Power supply is typically 11kv AC rectified down to 750V DC at the live overhead wire; the second wire is an earth return. Power is increasingly provided by variable frequency GTO/IGBT supplies driving low maintenance synchronous AC motors, allowing compact hub motors and, in future,

regenerative braking. Power requirements rise with the density of the service and with air conditioning, which can require 25-50% more power, and where necessary parallel feeder cables are installed underground.

Service density can reach 120 vehicles per hour with on-line stops, rising to 230 with hybrid or off-line stops, which, however, require progressively more complex and intrusive wiring. Capacities can therefore reach 5-10,000 passengers per hour.

Reliability can exceed that of diesel bus, with 92-95% availability and one dewiring, corrected in 2-3 minutes, in every 10,000 vehicle-kilometres.

The principal advantage of trolleybus over diesel bus is environmental, with no local emission and noise levels 8-12dB lower. They bring these benefits at lower cost than light rail and train and avoid the technical and safety issues of fuel cells, CNG and LNG. They are therefore best used to replace diesel buses in urban ‘canyon’ streets where trucks and cars are also banned. If necessary they can be dual mode, switching to diesel power when outside the ‘wired’ area, or at least carry batteries for travelling round road works or sensitive areas (e.g. round Tien an Men Square).

Study findings

The speaker summarised a study in Hong Kong, led by Atkins China, which compared 12 metre double-decker trolleybuses, carrying 127 seated passengers and 89 standees, with Euro III diesel bus. The range of comparative costs on three different networks are shown in Table 1.

Table 1: Comparative trolley and diesel bus costs (Diesel = 100%)		
	Diesel	Trolley
Labour cost of operations	52%	54%
Non-labour maintenance	7%	5%
Energy (cost highly variable with location)	11%	14%
Overhead & insurance	14%	17%
Infrastructure maintenance	1%	5-7%
Vehicle depreciation	11%	17-23%
Infrastructure depreciation and maintenance	4%	10-13%
	100%	122-133%

On costs, fixed infrastructure would cost around £0.45-1.1 million per (2-way) route kilometre, and energy would cost around 2 kWh/km, plus 0.5-1 kWh/km for air conditioning. Vehicles would cost around £220,000, 50-100% more than buses, due to a combination of:

- small order runs, typically less than 100 compared with 500-1000 for standard diesel buses
- over-specification: the key to trolleybus economics is to keep design light and avoid specialised designs
- poor procurement management

Maintenance costs for solid state electrical systems would be lower than for diesel buses, which require regular servicing to keep emissions low.

On institutional arrangements, the operator should not normally operate the AC energy supply, since the equipment is very similar to the electricity distribution network. A possible exception is perhaps where the bus operator also has light rail experience. The operator should, however, maintain the DC wires, thereby internalising disputes over the causes of dewiring and problems of scheduling infrastructure maintenance.

On regulation, trolleybus systems will in general be loss making. Best practice appears to be to regulate the asset-intensive high voltage equipment on a rate of return basis and pass through a charge to the labour-intensive operator, with fares regulated on RPI-X and reviews at 4-5 years. There is no reason, however, why the operator should not negotiate bulk energy purchase direct. Subsidies can be injected into the operation of the supply system or into the bus operation itself, depending on circumstances.

Conclusions

The speaker concluded that trolleybuses could provide most of the capacity and environmental benefits of light rail with less disruption and intrusion and at lower capital costs. In other words, they were ‘the Economist’s tram’.

Discussion

Chris Castles (*PricewaterhouseCoopers*) asked whether the study was a financial or economic analysis. RC replied that the analysis was financial but enabled the client to identify the incremental financial costs (and hence the additional fares or subsidies) needed to obtain the potential environmental benefits.

Peter Gordon (*AEAT Rail*) asked whether the decision would be to use trolleybus. RC thought that it would, but probably as a demonstration project (say South Kowloon) rather than where they were really needed (canyon streets such as Queens Road Central).

Peter White (*University of Westminster*) pointed out that trolleybus had been considered as an intermediate mode in London, and that the additional air conditioning load on London's diesel buses was only around 4%. RC indicated that air conditioning load would be higher in Hong Kong than London, where the cost of reverse cycle air conditioning would be partially offset by savings in resistive winter heating costs. The annual cost of air conditioning would not be as high as the peak cost. The difficulty, however, was that infrastructure had to be designed for peak, rather than average, load. This had (for example) prevented the introduction of air conditioning on Hong Kong trams.

Gregory Marchant asked whether any trolley systems had been converted to trams. RC said not, presumably because the incremental benefits would not justify the capital costs. Many of the early trolley bus systems had replaced trams.

Robin Whittaker (*University College London*) mentioned that trolleybuses could outperform buses on the steep hills where buses are also at their most polluting. RC agreed.

Hugh Ashton (*PricewaterhouseCoopers*) asked about hybrid vehicles. These have higher cost and lower reliability, but in Seattle single-deck vehicles use trolley mode in a 2-mile long city centre tunnel and revert to diesel power in the suburbs.

John Slaughter (*London Borough of Wandsworth*) asked how trolley and tram could be mixed. RC replied that this had been done in the UK and was still done, for example in San Francisco. The power supply systems are isolated from each other. The tram usually uses a trolley pick-up rather than a pantograph to obtain MV power from a separate power line and returns the current through the tracks.

Report by Dick Dunmore

Slot Allocation & Airport Charging: Respective Roles in Capacity Allocation and Provision

Robin Pratt

Associate, Steer Davies Gleave

Presentation to the Transport Economists' Group
University College, London
26th June 2002

Robin began by saying that there needs to be a debate about the role that prices (airport charges) should play in dealing with allocation of slots at airports. While prices remain below market-clearing levels, there is a need, therefore, to look at the problems of allocation so as to get the best use out of scarce resources.

Overview

The eight areas covered by the talk were:

- Capacity at airports: why is there an allocation problem?
- Airport charging: history and trends
- Slot allocation: background and experience to date
- New options for slot allocation
- Some preconditions for trading
- Possible mechanisms
- Charging versus slots
- Potential impacts

Capacity at Airports: Why is there an allocation problem?

The problem of allocation was outlined as:

- Mismatched lead times (supply-long; demand-short), which implies that successive short-term reallocations of fixed capacity are required
- Lumpy capacity with multiple components, which cause tensions between planners and customers
- Heterogeneous demand with no single “unit” of capacity and a wide range of values

- International constraints to market pricing, which implies access is instead rationed by queuing
- Local natural monopolies, implying that where privatisation has occurred, economic regulation has followed.

History and Trends of Airport Charging

The industry's traditional adherence to simple average cost pricing at airports, with willingness to pay (WTP) proxies based on Maximum Take Off Weight (MTOW) is weakening, with charges now more reflective of users' attributable costs

In parallel, historically administered quality levels have been subject to pressure from liberalised airlines for market-based Service Level Agreements.

Aeronautical charges traditionally have been residual items from a Single till (net of commercial revenues) – providing muted investment incentives for new capacity. Charging policies are now moving towards dual till bases, which will be the “new default” at capacity-constrained airports, pushing up average levels of aeronautical charges.

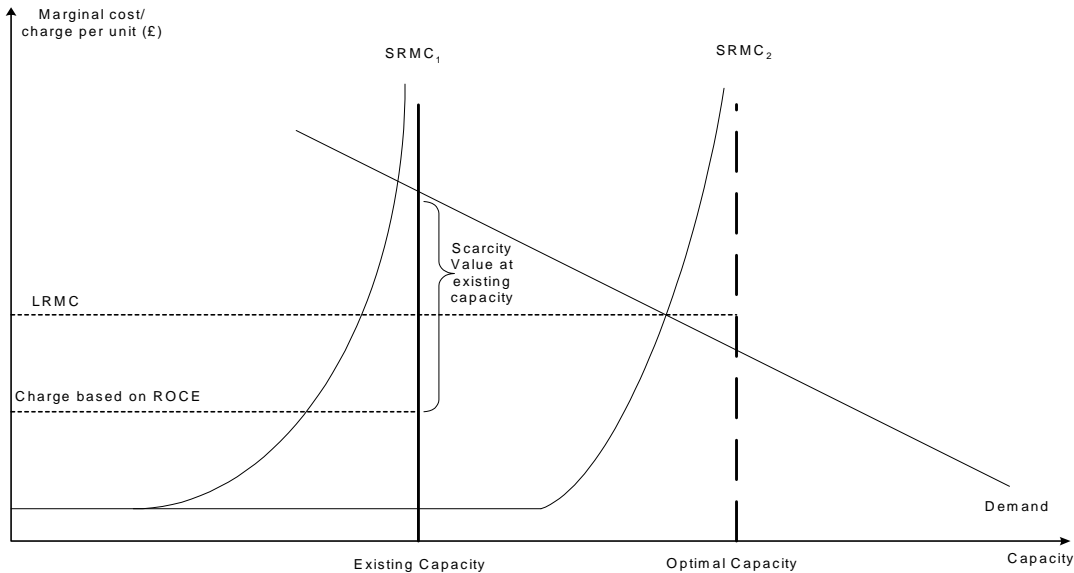
There has been fierce airline opposition to a variety of charge structure initiatives including peak charging, value based charging, and pre-funding / long-range marginal cost (LRMC) based pricing, which tends to generate high returns on capital employed (ROCE). However, liberalisation is now forcing more deals to be negotiated, with a differentiation in facilities, project-financed capacity expansion and acceptance by airlines of airports as businesses needing to make returns on their new investments.

Despite these other trends, scheduling (allocation of the product) and charging continue to be largely de-coupled, with different parties responsible for the oversight of capacity allocation and charging respectively.

Background and Experience of Slot Allocation

Figure 1 illustrates the need for slot allocation with the charges set below clearing levels: there is no incentive to expand capacity towards the long-term equilibrium (for a given level of demand), leading to a lot of unsatisfied demand and a need to allocate capacity through other means.

Figure 1: The need for Slot Allocation with sub-optimal capacity

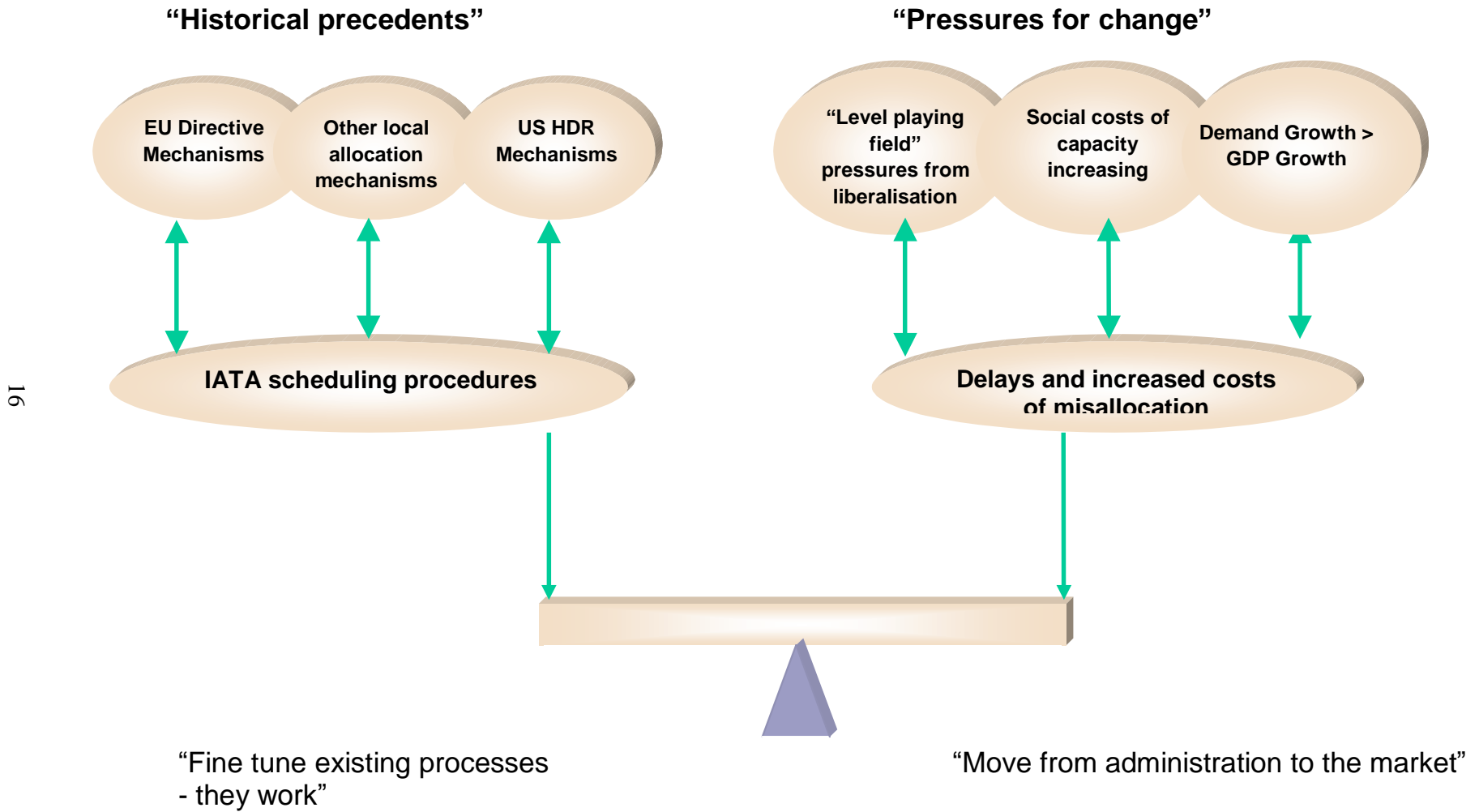


Slot Allocation: Key features to existing European legal framework

- National Governments determine capacity “problem”
- Historical preference (“grandfather rights”)
- Administered pools for surplus slots: 50% to “new entrants”
- Independent Co-ordinators apply IATA scheduling rules and monitor slot use
- Processes linked to airlines’ pre-existing international scheduling conferences
- Airlines, not airport, deliver the slot allocation process
- Limited links between airport slots and those defined and allocated by the ATM industry due to air traffic control (ATC) constraints

Attitudes to the greater use of market mechanisms in future are given in figure 2 overleaf.

Figure 2: Attitudes to market mechanisms



How likely is change?

- Some clarifying proposed modifications to Regulation published in 2001 – tougher use-it-or-lose it, etc.
- EU processes bedding down (linked to IATA processes) – need for more coherent capacity review/designation
- Monetised bilateral trading already happening in a “grey market” in Europe
 - § UK legal precedent
 - § Commission unhappy


^Is there really a strong case for radical change?

- Commission thinks there is: new studies launched but
- Many airlines are unconvinced

Defining tradable instruments

- “Rights to operate at airports” with permits issued by State (or delegated authority)
- “Historical precedence” rights (non-tradable?) would need to formalise existing “grandfather rights”
- “Tradable rights” could be created for new capacity
- Permits can accurately reflect policy objectives and the nature and duration of binding capacity constraints
 - § Environmental limits, specific “pinch” facilities, etc
 - § Duration can match duration of constraint
 - § market/business development objectives reflected (subject to States international obligations on non-discrimination, etc)
 - § etc
- Such slot permits would need to operate within **existing** constraints:
 - § Terms of airlines’ operating licences
 - § Terms of traffic rights agreed between States

The basic options and the issues involved were presented in Table 1.

Table 1: Slot Allocation: Basic Options		
<u>Option</u>		<u>Issues</u>
Status Quo	: Administrative allocations	<ul style="list-style-type: none"> • Not pro-liberalisation • Not highest value use
Primary reallocation	: Lotteries (US experience) : Auctions (UK proposals)	<ul style="list-style-type: none"> • Not highest value use • Disruptive to airlines • Interdependencies and facilities slots • Perverse incentives • Anti-competitive behaviour
Secondary reallocation	: Multilateral trading : Bilateral Trading	<ul style="list-style-type: none"> • Complex • Not transparent: risk of abuse
 The potential effects of value transfers have limited progress to date		

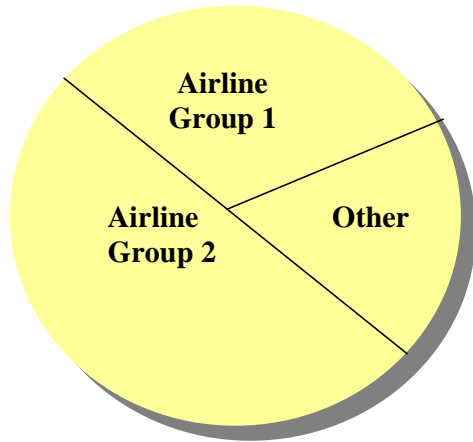
The potential future role of historical precedence under a trading framework is presented in Table 2.

Table 2: Potential future Role of Historical Precedence	
<p style="text-align: center;">Now</p> <ul style="list-style-type: none"> • Loose “Rights” not defined rights • Rely on Consensus/industry arbitration • Flexibility designed for efficient operational scheduling, not clarity for trades 	<p style="text-align: center;">Desirable for Monetised Trading</p> <ul style="list-style-type: none"> • Unambiguous rights • Enforcement in courts (if only as “ultimate deterrent”) • Historic precedence still included in scheduling priorities, but on defined basis
<p>EU Commission envisages two-stage reform process:</p> <ul style="list-style-type: none"> • Clarify rights/obligations • Allow trading 	

The issues around economic regulation of airlines are illustrated in figure 3

Figure 3: Economic Regulation

The issue



Who regulates: need to avoid regulatory “turf wars” by clear jurisdiction in advance

How to regulate: market complexity and other imperfections could imply conduct regulation rather than prescription?

What teeth are used: need workable system for enforcement on global industry

Trading potentially increases existing opportunities to abuse market power

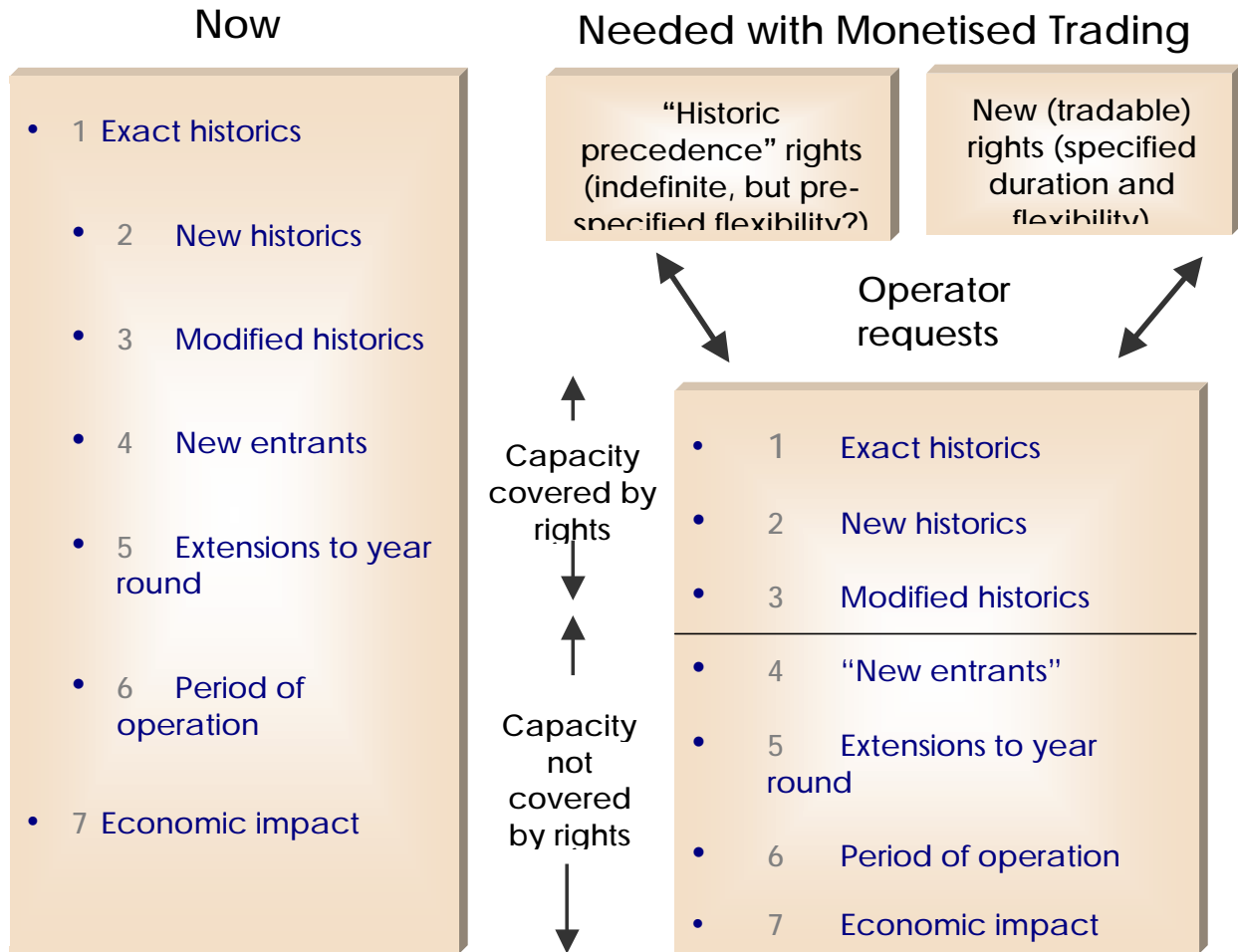
Definition of tradable rights (“permits”)

- Location and time specific?
- Restricted duration?
- Other restrictions (e.g. maximum/minimum seats; emission/noise etc.) to meet State’s objectives
- Level of flex for re-timings
- “Use it or lose it” requirements

But **not** carrier-specific: trading can occur.

The default issuer of permits is the State, who could auction them itself. Royalties could go to the state or to a designated local authority, which would have the possibility to hypothecate the revenue to fund supporting surface transport infrastructure, environmental protection, compensation, etc. Alternatively, the airport could perform the auctioning function, allowing it to be directly remunerated for providing new airport capacity. In this process, carriers would bid for new permits for new capacity. The impact on existing scheduling priorities would be as shown in figure 4.

Figure 4: Impact on existing operational scheduling priorities



..... should indefinite “Historic precedence” rights be

Figure 5: How scheduling and monetised slot allocation could work together

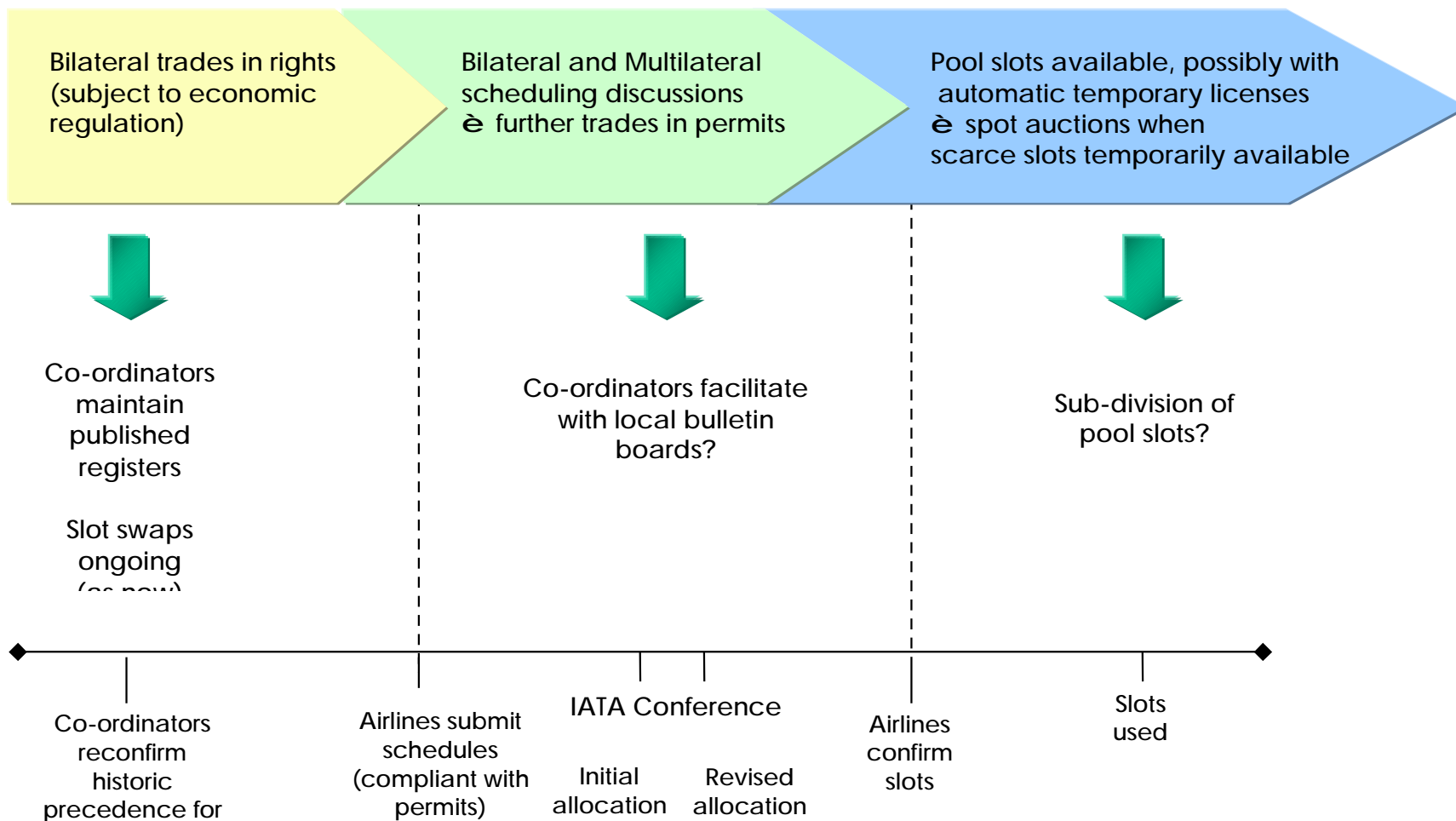
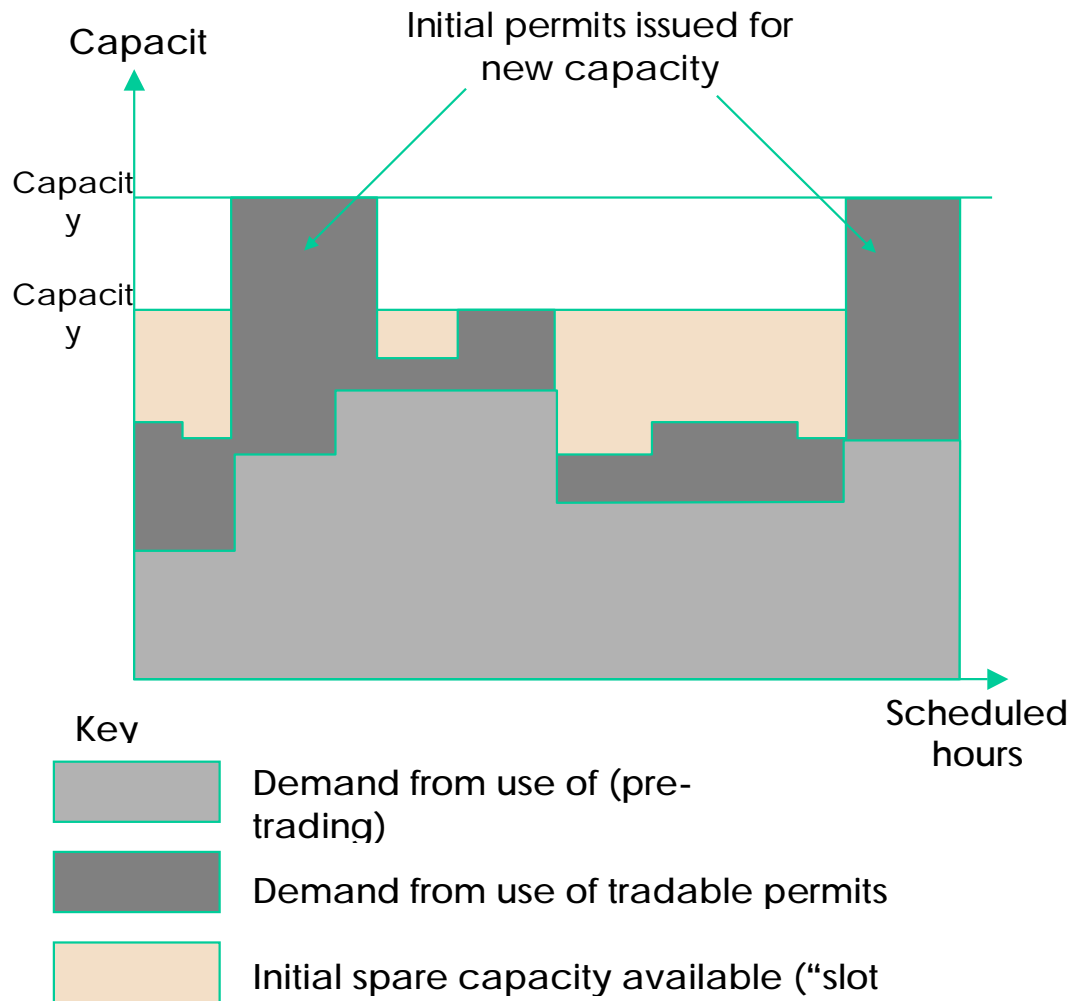


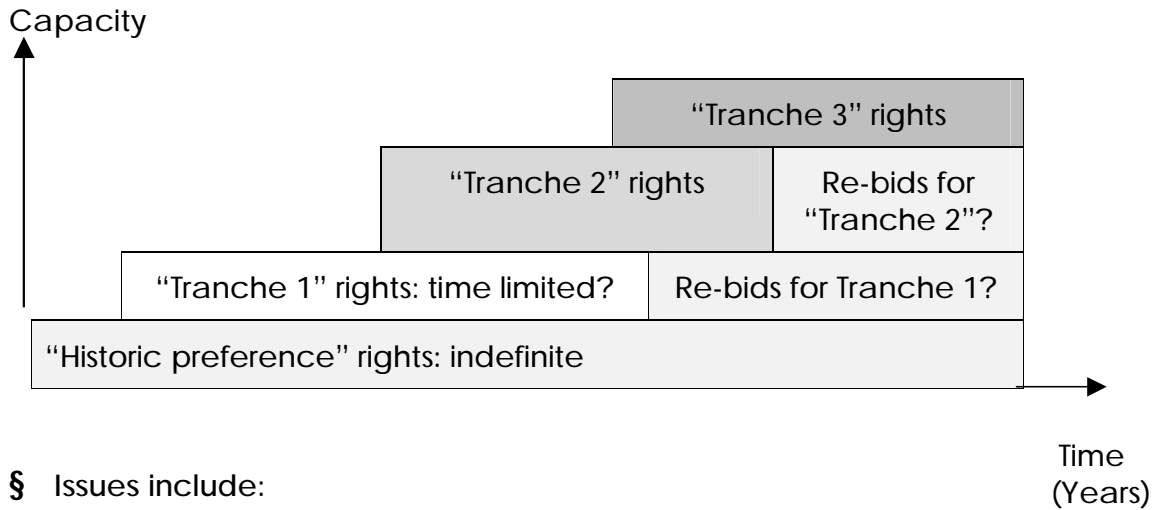
Figure 6: When might permits get issued for capacity expansion?



22

- “Historic preference” rights defined before trading starts
 - Permits issued when new rights sought and available from:
 - surrender/sale of “historic preference” rights
 - creation of new capacity
 - Slot pool defined from co-ordinators’ initial allocations, using schedule requests and priorities conferred by “historic preference” and “permit rights”
- ^ allows subsequent access to pool in each scheduling season from

Figure 7: Tradable slots and long term capacity for development



§ Issues include:

- Need to avoid “locking up” use of capacity if airport role changes (e.g. development of hub and spoke capability)?
- Need to avoid “cliff edges”: steady stream of new slots better?
- Who gets the proceeds from any rebids?
- Do incumbents get any options to renew?

Table 3: Possible impacts of slot trading

Regulation	Market	Capacity
<ul style="list-style-type: none"> • Economic regulation of slots at individual State level ^ better prospects for open skies and anti-trust immunities? • Revised EU Regulation at EU level 	<ul style="list-style-type: none"> • Hubbing economics crystallised? • Marginal segments under closer scrutiny? ^ Balance shifts further towards large alliances? 	<ul style="list-style-type: none"> • Market value to incremental capacity ⇐ more efficient expansion? • “gate to gate” airport/ ATC harmonisation under the spotlight ^ economic pricing of airspace?

... the impacts could be profound, and the implementation a major task. But the potential benefits of trading are increasing all the time.

Discussion

Peter White (*University of Westminster*) opined that since airlines had re-allocated slots at Heathrow themselves could this be considered as part of their historic rights? They were allowed to do this.

Andrew Evans (*University College*) asked since the aim is to operate the schedule, is it possible to lose your slot? The basic allocation process is historic. If airline is sloppy or intentionally off-time, and this is sustained, it could be considered a deliberate attempt to flout the scheduling rules and then there will be a sanction involving loss of slots.

Michael Kemp (*Charles River Associates*) enquired about the network-based industry and inter-airport competition. Administration of airports in Europe and the US is generally local, and any capacity and other solutions have traditionally been developed by separate people (airports, local authorities, etc) from those allocating slots (airlines). For a network, the provision and allocation of capacity should ideally be joined-up into a single process; the issue is whether and where airports have sufficient network economies to require coordination of capacity expansion decisions.

Chris Nash (*University of Leeds*) said that with 50% of additional slots being new entrants implied that it is difficult to work well. The EU wishes to change the current definition by increasing the number of slots that an airline can operate at an airport and still be regarded as a new entrant, thereby qualifying for preferential access. The practical effect of such a change on effective market competition may however be limited, as airports that are full up will only have slots available in the pool at "awkward times".

Robert Cochrane asked whether anyone has looked at experimenting with pre-sale of slots? And is the next problem how to charge for airspace? There has been some thought given to pre-sales and contingent options for slots, but not aware of it being implemented on a systematic basis; most slot sales have been triggered by specific events (such as incumbents' bankruptcy). In respect of ATM, while there are strong reasons to extend the principles of cost-based charging and market-based allocation, there has been fierce political resistance to the concepts. One of the reasons for strikes by European air traffic controllers has been their fear that current moves towards a Single European Sky mask a long-term agenda by the EU to auction air space.

Report by Laurie Baker

New Publications

RICS (Royal Institution of Chartered Surveyors) Planning and Development Faculty published in November 2002 ***Making transport work: business and the local plan process*** (ISBN 1-84219-108-X) by David Banister (Bartlett School, University College). The study highlights how co-operation between local government and businesses can work to make local transport plans much more effective. The study can be viewed at www.rics.org/pd

RICS Policy Unit and ODPM (Office of Deputy Prime Minister) jointly published Stage 1 of a study ***Land Value and Public Transport*** in October 2002. ATIS REAL Weatheralls (ARW), University College London (UCL) and Symonds Group were commissioned to complete a study identifying the relationship between land use, land value and public transport.

Stage 1 of the study comprises a comprehensive literature review of existing published research material on the subject of land value and public transport. The literature review also provided a theoretical analysis of the relationship between land value, property values and public transport, and identified the methodologies used to assess and quantify the relationships. In addition it sought to classify where gaps in knowledge exist and the effectiveness/efficacy of policy instruments. This report can be viewed at the RICS website above.

Notice has been received of the following publications by Edward Elgar Publishing Ltd:

Railways (ISBN 1-84-064553-9) edited by Chris Nash and Mark Wardman (University of Leeds), Kenneth Button (George Mason University, US) and Peter Nijkamp (Free University of Amsterdam) contains 28 articles from 1938 to 1998. Articles are included on costs and productivity, pricing, regulation and privatisation, econometric rail demand models, disaggregate choice modelling and investment in railways. Cost £120.

Transport Infrastructure (ISBN 1-84064-554-7) edited by Roger Stough (George Mason University), Roger Vickerman (University of Kent), Kenneth Button and Peter Nijkamp describes the wider impact of transport infrastructure, which presents a major challenge to economists. Contains 37 articles dating between 1929 and 1999 at a cost of £180.

TEG NEWS

Notice of Annual General Meeting 2003

The Annual General Meeting will be held on Wednesday March 26th 2003 at 5pm in Room 218 (or as directed on the evening), which is in the Chadwick Building, University College London, Gower Street, WC1E 6BT

A map of UCL can be found at:
<http://www.ucl.ac.uk/transport-studies/findus.htm>

Membership Drive

We are attempting to increase our membership and an application form has been included with this issue of the *Journal*, which your committee hopes all members will be able to persuade another person to join the transport Economists' Group. For a mere £20 members get delivered a copy of the journal three times a year, which contains reports of all the talks. Bona fide students can obtain membership for half price (£10).

Meetings are held every month from October to June at University College, London off Gower Street. The meetings consist of short papers presented by speakers, drawn from both within the Group's membership and elsewhere, followed by lively discussion. Recent topical debates have included:

- *The Proposed Congestion Charging Scheme in London - a translation of theory into practice* by Michèle Dix, Assistant Director of Congestion Charging at Transport for London
- *PPP for the Underground - tackling the right problem with the wrong solution* by Tony Travers of the London School of Economics, where Paul Godier, LUL's Managing Director added to the lively debate

Forthcoming meetings can be found in the inside cover of this issue of the *Journal*

Administrative Assistant

Our long-serving administrative assistant, Joanna Hase, will be leaving for New Zealand in the summer of 2003. We therefore require a new person to take over this role and if any member knows a person who may be interested in this

position please draw their attention to the post (advert is a separate inclusion with this issue of the Journal).

The person will require his or her own personal computer and email facilities. Use of MS Word will be expected. The work will be flexible and is expected to be no more than four days per month. The areas of work include:

- Maintenance of members' address file (140-150 members)
- Typing of some reports for inclusion in the Group's journal *The Transport Economist* (published three times a year) and dispatching the journal to members
- Sending other communications to members by post and email

Remuneration will be agreed with the Group to cover time and expenses. Further information can be obtained from Don Box (address, etc. below).
