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Why pedal power and why now? Exploring the Possible Economic and Health Benefits of Large Scale Promotion and Adoption of Cycling as One of the Primary Means of Transport in Malta

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ABSTRACT: This paper will examine the possible economic and health benefits of large scale promotion and adoption of cycling as one of the primary means of transport in Malta. The paper will also propose a model of cost neutral transition as well as examine the particular areas of health expenditure that could be reduced.

Keywords: transport cost reduction, economic risk reduction, competitiveness improvement, health care cost reduction.

1 INTRODUCTION

"We have to get to majority renewable energy this century, the only question is whether it's going to be painful or respectful to get there"

Bill Gross, speaking at the Stanford Entrepreneurship week 2011 [11]

Mr Gross's statement could be read as an ominous look at a future characterized by shortages and conflict but it's anything but that. What is being said is that significant change is needed and that some realism and far-sighted planning will make all the difference in an orderly transition to a more sustainable and prosperous future.

In the context of Malta and energy consumption this opens up some very exciting possibilities to kill several very unpleasant birds with one stone. This group of angry birds includes, exceptionally poor public transport efficiency, extremely wasteful use of fossil fuels, poor use of space, quality of life concerns, balance of trade issues and a litany of health care problems. The root cause or pathogen in a large portion of the above is the misuse of individually operated private motorised vehicles.

The above may seem daunting and it would be untrue to say that there exists a magic solution, but there are some very simple steps that can be taken. The most effective is to simply start cycling. This paper will attempt to explore the possible economic and health benefits of large scale promotion and adoption of cycling as one of the primary means of transport in Malta. The structure of the analysis will be as follows;

[1] Transport system economics; to include maintaining/improving competitiveness, reducing economic risk, a model of cost-neutral transition and establishing sustainable levels of system effectiveness

And

[2] In regard to health, a review of the health benefits of cycling throughout the lifespan, exploring the cross-over effects on health spending, possible complications in regard to climate, as well as to a review of literature concerning the effects of physical exercise/exertion on the old, disabled and those with acute and chronic conditions.

2 ECONOMICS

Transport economics: The core purpose of a transport system is to allow individuals to travel to where they want to go, quickly, cost effectively and safely. Malta's current system fails almost all individuals in terms of both speed and cost efficiency. In regard to the very few cyclists currently on Maltese roads it also profoundly fails them in terms of safety. This being the case a rethink of the system is necessary.

Maintaining/improving competitiveness; transport is a cost to every individual, consequently, increases in the cost of running and maintaining fossil fuel powered transport feeds directly into increased wage demands, which over time will erode and eventually destroy competitiveness. Large levels of cycling can significantly offset such cost increases.

Despite increased fossil fuel prices reducing living standards generally the effect would be less severe if car ownership and use is removed from the equation. This is also of paramount importance in the Maltese context as, being a peripheral location, it is imperative that any relative competitive advantage is maintained

Avoiding Infrastructure over spending; reducing the use of private motorised transport may help avoid excessive spending on road building and maintenance. This spending if not kept in check could by means of opportunity cost, lead to stagnation in other investment starved sectors.

Efficient use of labour. In the context of an ageing, with the inherent shift in the dependency ratio. The efficient use of the remaining productive labour force becomes extremely important. This is particularly important in maintaining and growing industry, the key bulwark in attempting to avoid running an ever increasing deficit. The current situation in the Maltese motor trade where a very large amount of labour is engaged in a strictly service sector provides an excellent opportunity for re deployment to productive revenue earning industry. The opportunity cost inherent in not doing so is truly enormous and of a scale that could destroy an economy.

Such a shift would also be aided by the significant degree of commonality in the skills required for industry; an analogy would be to examine the similarities in between repairing a cars air conditioning system and repairing a refrigeration unit in a pharmaceutical plant. Save for differences in scale the tasks are essentially identical , this is true for almost all technical areas of industry and is also true, to a lesser extent in terms of sales , marketing and management positions.

It would be assumable that such a shift of labour would be best achieved through a combination of taxation and regulation. In regard to the technical side of the trade, a possible measure to reduce its size would be vigorous enforcement of extremely stringent safety and health standards for automotive workshops combined with mandatory inspections of any work undertaken by a vehicle owner. In regard to sales and marketing an extremely steep transfer of vehicle ownership fee combined with a mandatory inspection would in all probability prove sufficient to drastically reduce the size of the non technical side of the motor trade.

Sustainable system effectiveness and long term system usefulness; in the context of Malta, being on the periphery both economically and physically this takes on a very great importance. An example

would be something as simple as obtaining spare parts from distribution and manufacturing centres a significant distance away. Such activity is likely to become a much greater challenge in a post cheap transport "big world". As such motorised personal transport and highly technical support systems [e.g. the infrastructure associated with alternative propulsion systems such as, hydrogen and electric propulsion] are at best going to become a lot more expensive to run and maintain. At worst they may suffer prolonged periods of being partially unserviceable. Cycling and its associated pathways are very simple to maintain even in the most difficult of economic conditions. As the fixed infrastructure is under very little stress and if necessary worn out components can be reconditioned or manufactured locally with the simplest of tools and at minimal cost. The physical infrastructure is also very long lasting and not dependent on the availability of very specific finite natural resources,

Protecting and promoting tourism; it is impossible to look into a crystal ball and predict tourism patterns, length of stay, requirements for a destination et cetera. However it is possible to prudently plan for the possibility that future patterns of tourism in Malta may involve lower numbers of tourists staying a longer time. As such it is imperative that the quality of life on the island is as attractive as possible, as well as the inherent cost structure being kept low. Congestion and pollution would not be a plus factor in this regard. The opposite would be a definite advantage, it could also be argued that cycling is an excellent way to keep visitors entertained and in an area for longer [1].

A model of cost neutral transition; to include the short term maintenance of current levels of car ownership while vastly reducing the annual mileage per person.

Achieved by means of reducing the possibility of using private cars for inappropriate journeys at peak times by raising the cost of and severely curtailing the availability of parking and introducing limited zone charging.

In regard to parking what would seem necessary in a Maltese context would be to, firstly increase the amount of space available on the roads, which would involve ending on-street parking on many roadways and reducing it in other situations. This is necessary as, if roads are to be safely shared by cyclists and motorists then more space is required to accommodate section demarcations.

By reducing the availability of parking there will hopefully be less incentive for motorists to venture into areas of high congestion. However in order for this to be a success its application requires a degree of nuance, in that it must be combined with a zone charging system.

In regard to on-street parking the details are as follows; there needs to be absolutely no ambiguity in regard to parking or a place to temporarily pull-in, this can be achieved by demarcating short stay loading areas outside commercial premises and then auctioning off the very few remaining on-street parking spaces on a month by month basis for use by a specific vehicle by one individual. It would seem logical not to include an exemption for residents as this would eat up the amount of spaces available to auction as well as potentially creating a secondary market, distorting the auction process. A secondary market introducing all manner of complication and potential for congestion [12]

Provided there is reasonable enforcement, this would hopefully create a situation where car journeys are undertaken for a specific purpose. Retail footfall being maintained by making the area more accessible to cyclists, pedestrians and by a vastly improved public transport system. Less congestion equals a faster more reliable bus service as well as more convenient access, potentially improving absolute footfall.

From a financial perspective such a scheme has the potential to be quite lucrative and should help towards filling the gap left by reduced fuel duty revenue as demand for parking, is in all likelihood going to remain high resulting in strong prices and demand. Such a system is also highly progressive, as the largest contributions are made by those who can most afford it; individuals insistent on renting a private parking spot.

In regards to off-street parking; it would seem that a minimum hourly charge for using parking facilities in any commercial premises or place of employment for employees and non-employees alike would be an effective incentive to use an alternative means of travel. The revenue collected being used to further fill the hole left by reduced fuel duty receipts, a portion of the revenue collected also being made available for the installation of onsite facilities such as showering and locker rooms.

In regard to infrastructure specific to cycling, the initial demarcation lanes and the erection of cycling specific traffic control can be achieved at a nominal cost, with specific infrastructure being constructed as patterns of use become apparent.

Costs associated with timely versus late action. To take no action is a definite choice; in certain circumstances it may prove to be the correct choice. However in regard to improving transport efficiency early action is probably the cheaper option as in reasonably good times, the present being such a time, credit, realistic alternative job options, resources and good will are relatively available at a reasonable cost. This contrasts with times of crisis where action must be taken regardless of cost and side effects.

3 HEALTH

Inactivity is a leading cause of death and the overuse of private cars makes it far too easy to avoid even incidental exercise. While information campaigns and an increasing awareness of the benefits of a healthy lifestyle are useful [2]. There is no substitute for robust action, with direct financial consequences to wean individuals off unhealthy habits [3]. In this regard the overuse of private cars can be tackled in much the same way as smoking; reduce the incidences where it can be done and significantly increase the cost

Possible complications in regard to climate; When comparing Malta to Northern Europe there exists one major obstacle to cycling; the sun. That said the solution is equally simple, shading, simple tree-lined cycle paths. This is medically essential in that any benefits derived from exercise would pale into insignificance compared to the skin damage that would occur [4] if comprehensive precautions to shade cyclists were not undertaken. In regard to extremes of temperature; shading will help and most journeys are taken outside the hours of twelve to three. In any case it is not a new or insurmountable problem.

Quality of life improvements; being in a position to safely and quickly commute to and from work is vastly preferable to spending several hours a week sitting in traffic leaving more time and money for sport and leisure contributing to improved physical and mental health [5] .

Acute services cost reduction; it has been shown that there exist benefits to individuals of all ages in partaking in physical exercise. This is particularly the case in regard to reducing blood pressure [6]. Seeing as strokes and heart attacks are a major cause of both emergency department admissions and acute procedure admission. Significant savings can be made. In regard to after incidence care strokes are extremely costly to rehabilitate [7] the savings that could be made are immense, this is particularly so in the case of an ageing population

[8]. There is also a major on-going benefit in that when cycling becomes a habit it is an activity that can be engaged in throughout life.

General services cost reduction; there is only one word that needs to be said; Diabetes, which is one of the major financial drains on the health system [9]. It has been shown time and again that physical exercise has the effect of reducing the instance of and severity of diabetes [10].

A shift toward cycling, its effect on the disabled and those with acute and chronic conditions; It is quite obvious that not all individuals will be able to physically operate a standard bicycle, however there is no reason that these individuals cannot benefit, both in terms of the opportunity for exercise (Inc. Health care cost savings) and in the speed and convenience from improved cycling infrastructure. For the purposes of planning it is possible to provisionally create two categories;

A; the possibility to use a modified cycle;

Example; limitation; emphysema, adaptation; cycle with electric assist

And

B; an alternative conveyance required;

Example: limitation; quadriplegia adaption; longer range battery pack

4. CONCLUSION

The adoption of cycling as one of the primary means of conveyance provides an inexpensive , inflation and cost reducing solution to a challenge which if not tackled has the potential to do untold economic damage.

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