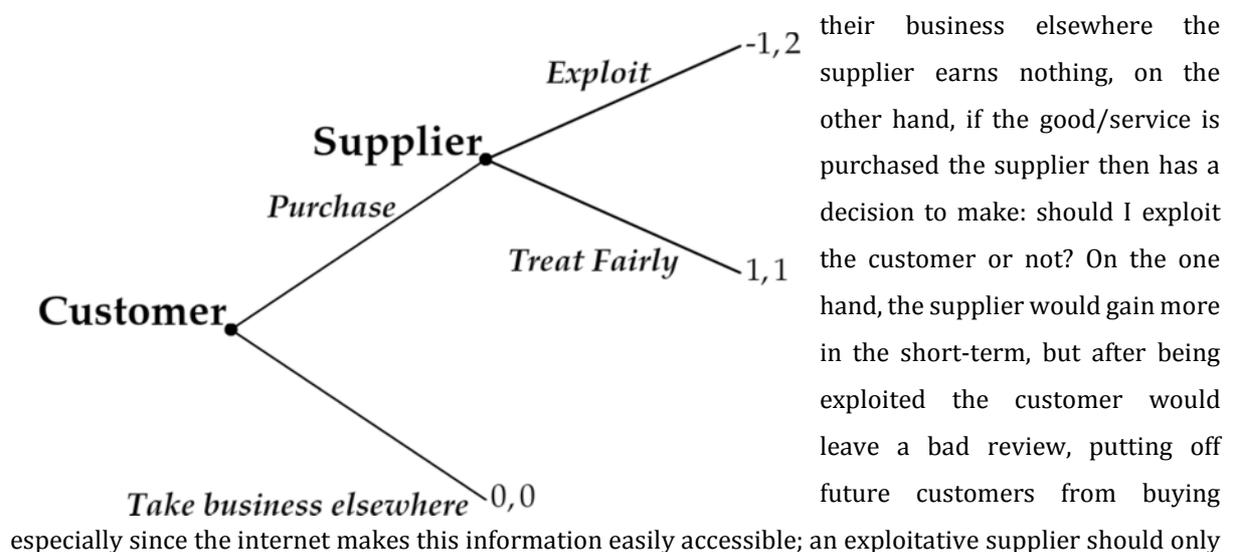


Should internet companies like Uber and Airbnb be regulated?

By Sherwood Lam Shun Hei

Fuelled by trust, reputation and efficiency, internet companies such as Uber and Airbnb are part of a bigger movement dubbed as 'sharing economies'. The sharing economy resolves information gaps by using the internet to match consumer demand to spare capacity, and as such is able to compensate households for their idle resources while benefiting consumers in the form of lower prices, increased variety and convenience. Sharing economies also allow consumers to rent expensive goods for short periods of time instead of buying them. It is no wonder the industry is growing rapidly, with pioneers such as Lyft, Airbnb and Uber raising \$680m, \$1.5bn and \$4.8bn in funds respectively in 2015. (Ronny Kerr, 2015) Consequently, the previously under-the-radar industry was brought into the spotlight, with many calling for its regulation on the basis of unfair competition to traditional industries, most notably the taxi industry, amongst other reasons. Government regulation however, is both costly and not designed for the sharing economy: regulations often cost millions to enforce, millions that could be used for infrastructure instead. Instead of traditional regulation, I believe a combination of self-regulation and compulsory introduction of a shared third-party company such as TrustCloud would be better suited and more cost effective for these internet-based companies. Meanwhile overregulated industries should be partly deregulated to encourage fairer competition.

One of the main criticisms of sharing economies is their apparent lack of quality control: as users provide products instead of a company, they may cheat customers to maximise their profits. However, this is not true, as users have an incentive to treat customers fairly. Most sharing economies employ a user-based rating system, where buyers can freely access a supplier's rating before making a purchase, a user's rating forms what many people call 'reputation capital' and it quickly becomes apparent that suppliers should treat customers fairly to maximise profits in the long term. If a supplier plans to sell repeatedly, we can model the process as a repeated game as drawn below. Consumers start by making the decision of whether to purchase from the supplier or take their business to another supplier, ceteris paribus the customer is much more likely to purchase the good if the supplier has a good rating. If the consumer decides to take

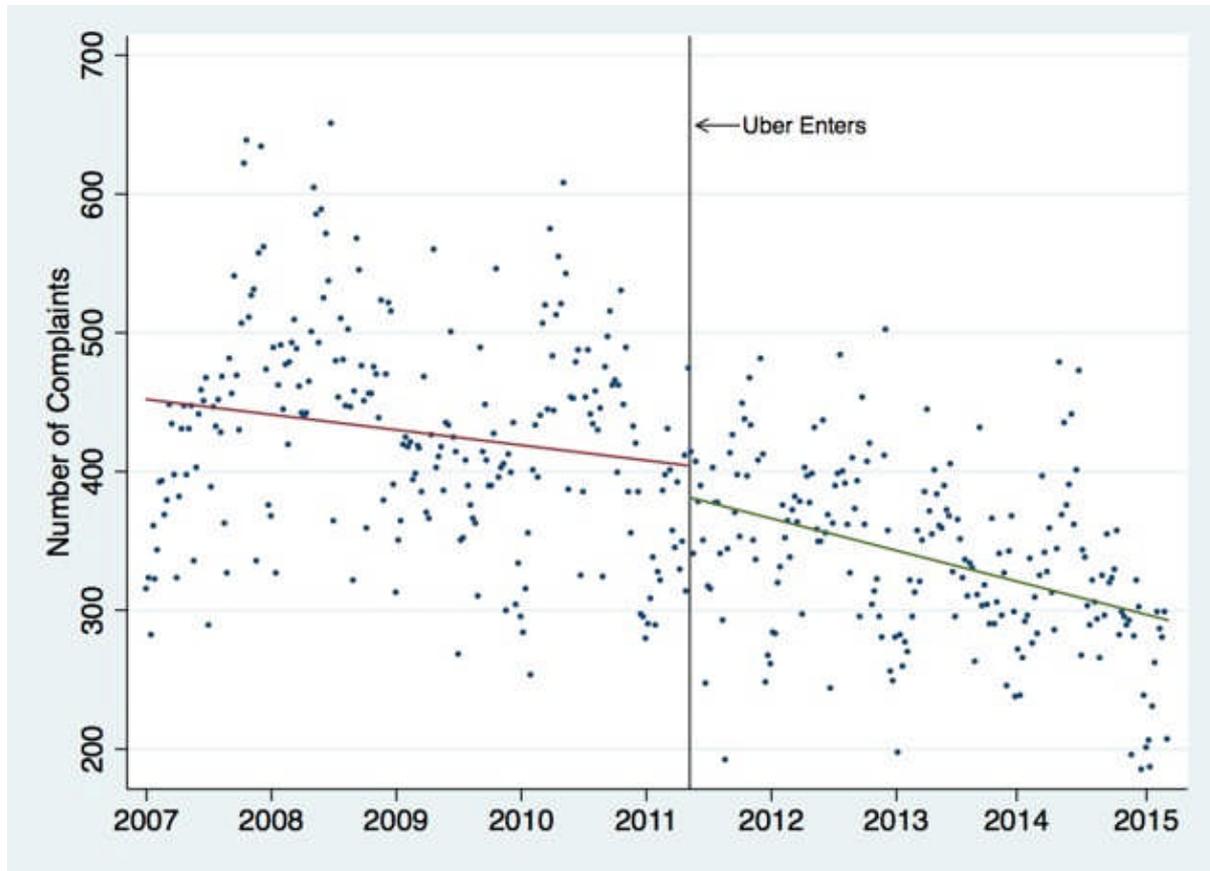


expect to earn profits from the first few customers, after which the supplier will receive no business or be fired by the company itself. On the other hand, if the supplier decided to treat the customer fairly they would earn less in the short term, but positive reviews would ensure future business and hence more profit in the long-term. No quality regulation is needed as producers have an incentive to treat consumers fairly. In real life this translates to 93% of Uber users being satisfied compared to 52% of black cab users (Dan Taekema, 2015) and 'EliteTaskers' (TaskRabbit users with a high rating) earning three times more than their non-elite counterparts (TaskRabbit Support, 2016). However, there are some caveats to this. Firstly if a supplier believes that by exploiting the customer once they can make enough to outweigh the loss of future business on the platform they may do so, this is particularly true for platforms such as Airbnb where a single exploit can make thousands. Secondly some sharing economies such as Airbnb have two-way marketplaces with non-anonymous rating systems where both consumers and producers rate each other non-anonymously. Customers with bad ratings find it hard to find suppliers, moreover customers who frequently give negative reviews are discriminated against. As the product is a sunk cost and consumers would be better off with a good review than a bad one, implicit collusion is encouraged between suppliers and customers. Consequently threats of bad reviews are ineffective as suppliers realize that it would not be in the customer's interest to carry them out. Regardless of the quality of product producers continue to receive positive reviews, allowing producers to abuse their customers without retribution. Airbnb is a perfect example of this: the same properties listed on both TripAdvisor and Airbnb were 14% more likely to receive a 4.5 star rating on Airbnb (Zervas, G., Proserpio, D. and Byers, J., 2015).

Using quality regulation in the form of an inspection before registration would be expensive, whereas an anonymous complaint centre would fail to prevent exploitation until it occurred if suppliers believed the one-off profits were worth expulsion from the platform. In cases where the system is undermined, we should introduce a third-party company which will be more cost-effective, ensure fair treatment of consumers and increase revenue of suppliers and sharing economies alike: I will elaborate on this later. Otherwise, sharing economies can be trusted to self-regulate their quality.

Historically the US taxicab industry was brought under regulation in the 1930's in order to combat soaring taxi driver numbers brought about by the Depression Era which nearly doubled in the span of a few years (Rubenstein, 2014). In a prime example of the tragedy of the commons, rapid entry into the taxi driving market induced by low costs of entry and unemployment resulted in increased response times from congestion, and declining wages caused high turnover which in turn caused a decrease in service quality leading to even lower wages in a vicious cycle. To counter this the US introduced regulation on entry (medallion system), rates and finally service standards, after which there was 'little or no entry into the industry except by the purchase of licences or permits from existing operators' (Teal, R.F. and Berglund, M., 1987). Firms like Uber have been accused of providing unfair competition to their traditional counterparts, for instance, New York City yellow cab drivers have to pay for a medallion which costs \$1.32m (Van Zuylen-Wood, 2015), London black cab drivers have to take a Knowledge of London test (TfL, 2016), and drivers in both cities face fixed rates, none of which Uber drivers have to do (Uber has surge pricing). This regulation asymmetry has led to widespread outrage amongst taxi drivers, with many calling for an outright ban on Uber. Most economists however, would argue that competition for the monopolistic taxi

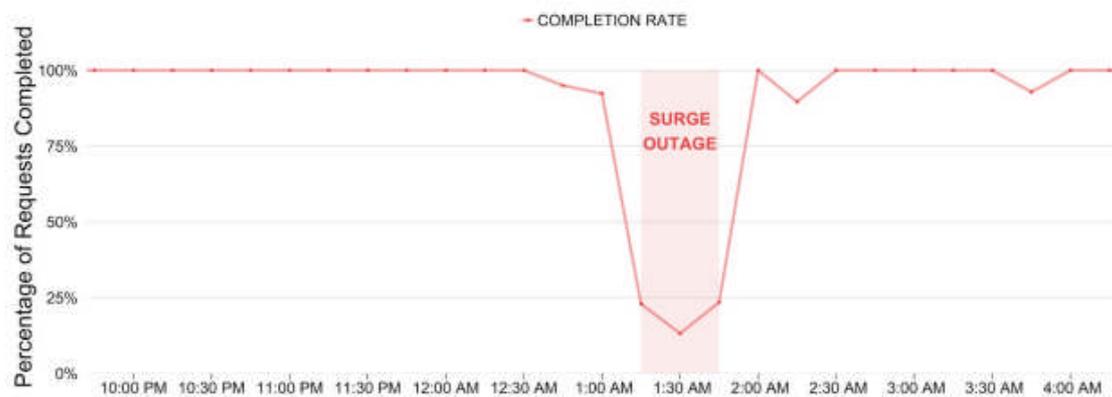
industry is welcome: since Uber's debut there has been a decline in customer complaints per taxi trip (Wallsten, 2015), an increase in the net number of vehicles available for hire (Florida State University, 2014), and a lower cost alternative for consumers. Nowadays unemployment is much lower and there is a much bigger variety of jobs to choose from, society no longer requires the medallion system.



The issue therefore, lies within the onerous regulation ironically created by taxi firms themselves to monopolize the industry. In 1989, New Zealand deregulated their taxicab industry, leading to shorter waiting times, a decline in fares and a greater range of services (Morrison, P.S., 1997). Evidence from US states such as Seattle however, appear to contradict the claim that deregulation leads to an increase in consumer welfare: the mean fare increased by 145% in deregulated cities compared to 133% in regulated cities (Kang, C.H., 1998). The true reason behind this was the different type of deregulation underwent by the respective countries, while New Zealand only removed the quantitative limit on licences and kept fare control, Seattle removed fare control which led to a huge rate variation. Due to the nature of the non-radio dispatch industry customers have an incentive to take the first cab encountered and hence its price, since the waiting time and prices for the next cab are unknown, giving taxi drivers an unprecedented bargaining power to exploit riders with. This presents a question: should we regulate Uber's pricing? Unlike Seattle taxis, Uber's pricing is universal across all Uber drivers and prices are readily available on their website, the information costs associated with checking prices are much lower. Furthermore, regulations on pricing would disable Uber's innovative surge pricing algorithm, an algorithm which applies a multiplier to fares to equilibrate market supply and demand. Although widely complained about by users, customers are forewarned and it ensures market clearing by motivating more drivers to work, whilst allocating rides to

those who are the most willing and able to pay for them, in other words, the perfect price mechanism. Surge pricing maximises both consumer and producer welfare, during an Ariana Grade concert surge pricing ensured a 100% ride completion rate with an average waiting time of 2.6 minutes, without which driver's would have made an estimated 13% less. In contrast, on New Year's Eve (2014-2015) when surge pricing was not in effect completion rates fell to less than 20% (Hall, J., Kendrick, C. and Nosko, C., 2015). While high prices are bad, no service at all is worse, a price ceiling would eliminate the consistency afforded by Uber's surge pricing algorithm, harming drivers and riders alike.

Figure 6: Impact of a Surge Pricing Disruption on Completed Ride Requests on New Year's Eve



Instead of increasing regulation on sharing economies to make them less competitive, the government should increase traditional business's competitiveness by removing unnecessary regulations which has been proven to increase consumer welfare; by undergoing similar deregulations to New Zealand such as waiving the application fee for taxi drivers (currently costs more than £1000 in total) we can ensure fairer competition between the industries.

A quick search of 'Uber driver satisfaction' on google yields a host of negative reviews from previous drivers (Google, 2016), low employee satisfaction rate in the sharing economy isn't exclusive to Uber, with Taskrabbit receiving a 2.2/5 rating on GlassDoor with many employees accusing the company of exploitation (GlassDoor, 2016). However, the term 'employee' is a poor choice of word, as 'contractors' for these firms are not legally considered employees and as such are not eligible for insurance, sick pay, the national minimum wage or protection against unfair dismissal. While the argument 'If you don't like it, work for somebody else' usually applies to independent contractors, sharing economies are different in that they are platform providers. In 1998 Microsoft was sued for making switching between operating platforms difficult, effectively locking consumers into their system and overcharging them (The United States Department of Justice, 1999). Similarly, the complex registration process for sharing economies makes it relatively hard to switch between employers, in addition employees lose their 'reputation capital' after leaving; unlike other independent contractors workers face entry and exit costs and can hence be exploited to a greater extent before they quit. Nevertheless, changing their legal status from independent contractors to employees would harm employer and employee alike, in an Uber spokesperson's own words:

'As employees, drivers would drive set shifts, earn a fixed hourly wage, and lose the ability to drive using other ride-sharing apps as well as the personal flexibility they most value' (Alison Moodie, 2015)

With 42% of female Uber driver's claiming that the primary reason they worked with Uber was to work a flexible schedule and 51% of drivers working less than 15 hours a week compared to 4% of taxi drivers (Hall, J.V. and Krueger, A.B., 2015), it is obvious that flexibility is indeed an important factor and rebranding them as employees is not a good solution. A better solution would be to encourage competition between sharing economy firms in the labour market. Although there are several platforms to choose from, barriers to switching prevent workers from changing platforms, granting firms a degree of monopsony. Unlike traditional monopsonies in the labour market information failure is not an issue: there is an abundance of information available as firms have an incentive to advertise themselves, furthermore information costs are low compared to traditional businesses thanks to the internet.

Instead of government regulation, we should force users to sign up to sharing economies through a third party company such as TrustCloud to facilitate the transfer of reputation capital between platforms which would otherwise be lost. Moreover, the threat of having a permanent negative reputation combined with being banned from multiple platforms would deter most suppliers from exploiting customers, addressing the issue of exploitation in the sharing economy. Letting users sign up through TrustCloud would also remove the need to pay the background check fees and go through the application process more than once. Workers would benefit from lower costs of entry and exit, and as a result sharing economy firms would be forced to offer competitive working conditions without extra regulation. Additionally, letting a third-party handle applications would increase the revenue of sharing economies and its suppliers as well by increasing consumer confidence. Firstly, suppliers would be deterred from exploiting consumers. Secondly, a third-party company would have no incentive to allow dangerous or underqualified individuals to work in the industry, even if they offered lower wages.

The sharing economy is an economic innovation made possible by 21st century technology, it represents an extra source of income for workers, lower prices for consumers and reduced wastage for society as a whole. Rather than trying to extend government regulations to cover something it wasn't designed for, we should pursue a more cost-effective, better adapted approach by trust reputation to replace regulation and allow the sharing economy and its members to regulate themselves with the mandatory help of third-party businesses such as TrustCloud. Meanwhile to ensure fairer competition, we should follow New Zealand's example and partly deregulate overregulated industries such as the taxicab industry.

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Does rising inequality warrant the imposition of higher income and inheritance taxes on the rich?

Introduction

Research has shown that in the last 30 years inequality has been rising (IMF, 2014) and the 2016 World Economic Forum lists inclusive growth and inequality as one of the ten biggest global challenges (Hutt, 2016). With inequality being “*the defining challenge of our time*”¹, the imposition of higher income and inheritance taxes on the rich would at first blush seem axiomatic. This essay will argue that whether higher income taxes or inheritance taxes is warranted depends on a variety of factors, which include the balancing of policy choices between achieving equity (redistribution) and incurring efficiency costs that may impede economic growth and undermine redistribution efforts. In the case of inheritance taxes, there is also a need to consider its efficacy in reducing inequality in wealth. This essay will conclude that inequality in outcomes cannot be reduced solely through income and inheritance tax rates, and that effective redistribution requires a comprehensive fiscal policy that incorporates taxes, as well as transfers and must include measures to address the drivers of inequality in outcomes and in opportunities.

Inequality of Outcomes and the Situation Today

Inequality of outcomes can be measured in terms of income, as well as wealth. In recent decades, both have been rising in advanced and developing economies (IMF, 2014). Inequality of income is commonly determined using the Gini co-efficient which measures the income distribution of a country’s residents. Between 1990 and 2010, the Gini-coefficient for disposable income (market incomes minus direct taxes plus cash transfers) increased in nearly all advanced and emerging European economies, and most economies in Asia, the Pacific, Middle East and North Africa (IMF, 2014). Similarly, inequality in wealth, measured using household net wealth, i.e. financial assets and real estate less debt, has also increased substantially over the last four decades in advanced economies (IMF, 2014).

Some inequality is necessary for the proper functioning of a market economy as it incentivizes people to invest, save and compete. However, studies have shown that excessive inequality is harmful in several ways, including being a threat to social and political stability, as the wealthy may influence government policy to benefit themselves (Stiglitz, 2012). It could potentially lead to financial crises (Bordo et al., 2012), and can negatively affect growth and its sustainability (Ostry et al., 2014). High inequality also reduces equality of opportunity for those with poor economic mobility, who lack the wherewithal to access education, healthcare, and financial, business and career opportunities, in turn perpetuating and exacerbating the inequality divide. High inequality also results in lower income mobility within generations, measured by

¹ Remarks by the President of the United States, Barack Obama on economic mobility, 2013. Available at: <https://www.whitehouse.gov/the-press-office/2013/12/04/remarks-president-economic-mobility>

the elasticity between a parent's and an offspring's earnings. These harms thus make it imperative for governments to find comprehensive and sustainable solutions to the problem of inequality.

Are Higher Income and Inheritance Taxes on the Rich Warranted?

How the rich are taxed is important not just from the perspective of fairness and equity, but also from the revenue that the government can collect. Tax rates are endogenous to views about inequality and justice in a society, and in turn determine the evolution of inequality and wealth (Alesina et al., 2012). That said, would higher income and inheritance taxes on the rich actually reduce inequality?

Income tax

The case for higher income tax on the rich or progressive income tax, where taxes as a percentage of income (the marginal rate) increases as income rises, is based on the work of Jakobsson (Jakobsson, 1976) and Fellman (Fellman, 1976). Their theorem concludes that progressive income taxes, and only progressive income taxes, ensure a reduction in income inequality. If so, taking the proposition to its logical conclusion, the imposition of higher income taxes through higher marginal tax rates on the rich is a solution to inequality. Up until the 1970s, there was a complementary belief on the part of policymakers and the public that pay increases for the wealthy reflected mostly greed or other socially wasteful activities rather than productive work effort. As a result, marginal tax rates were as high as 80% in the US and the UK. These approaches however do not take into account behavioural responses to higher marginal tax rates, for instance, the disincentive to work and tax avoidance and evasion, which in turn can adversely affect economic growth and undermine the redistributive purpose of progressive income taxes. These became the very concerns of the UK and US governments in the 1980s, and consequently their tax systems were reformed to adopt a "broad base-low rate" approach by lowering statutory rates of income taxes, and recovering lost revenue by applying these tax rates to a broader base (Carter, 2012).

In view of the above, the question then is whether there is an optimal top rate for progressive income tax beyond which the redistributive effect of progressive income tax diminishes, or creates efficiency costs for redistribution and undermines economic growth. The answer to this question in turn depends on the elasticity of income tax rates, a parameter which attempts to summarize all behavioral responses to taxation. Behavioral responses to taxation create distortions and therefore a loss of efficiency. The literature (Piketty et al., 2011) suggests that there are three key elasticities and behavioural responses to be considered. The first, is the standard supply side theory (Feldstein, 1995), namely, that lower tax rates stimulate economic activity among top income earners or conversely, higher top tax rates may reduce the amount of time spent in paid employment, since a higher tax rate implies a lower net wage rate and thus a lower opportunity cost of leisure. In addition, people may reduce the intensity of effort devoted

to obtaining income. They may decide to change the composition of their income by ‘shifting’ income into sources which are taxed according to a different schedule and lower tax rate (Creedy, 2009). The second elasticity is whether higher top tax rates increase tax avoidance. The third elasticity is compensation bargaining. In this scenario, top earners are considered to be able to partly set their own pay by bargaining harder and that the incentives for rent-seeking² are much stronger when top tax rates are low. In this scenario, cuts in top tax rates can still increase top income shares but the increases come at the expense of those falling outside the top income bracket. In other words, top rate cuts stimulate rent-seeking at the top but not overall economic growth.

Studies estimate the optimal top rate for progressive income tax ranges between 50 and 60 percent (IMF, 2013). However, there are arguments that it can be much higher. For instance, it has been suggested a rate of up to 80 percent can discourage rent-seeking by top-income earners (Piketty et al., 2011). Support for this is drawn from data showing a strong correlation between the reductions in top tax rates and the increases in top 1 percent pre-tax income shares from 1975–79 to 2004–08 across 18 OECD countries. For example, the United States experienced a 35 percent point reduction in its top income tax rate and a very large ten percentage point increase in its top 1 percent pre-tax income share, whereas by contrast, France or Germany saw little change in their top tax rates and their top 1 percent income shares during the same period.

There is no consensus among economists as to the degree of elasticity of income tax rates. Much will depend on the design of a country’s tax system, the complexity of tax regulations and policy choices. What is clear is that while progressive income taxes can reduce inequality, that ability is negated if tax loopholes that facilitate evasion or avoidance are not closed. The efficacy of progressive income taxes is also affected by the availability of allowances that allow the rich to claim deductions. There is also a need for strong enforcement of tax laws and external co-operation to eliminate the ability to shift income overseas to avoid and evade tax. It is also clear that behavioural responses which drive supply-side elasticity will have the most significant impact on economic growth. Policy makers thus need to understand the drivers of income tax elasticity and their consequences, and in determining whether higher income taxes should be imposed on the rich to reduce inequality, consideration must be given to the trade-off between equity (redistribution) and efficiency costs (whether taxes illicit behaviour that undermines economic growth or the effectiveness of progressive income taxes).

Inheritance taxes

² Rent-seeking behaviour is the use of resources by an individual to obtain economic gain from others without reciprocating any benefits to society through wealth creation.

Statistics show that the distribution of capital is much more unequal than labour, with estimates suggesting that half of the world's wealth is now owned by just 1 percent of the population (Fuentes et al., 2014), and that in the last two decades, advanced economies such as US and UK, saw the top 1 percent's share of wealth increase while those in the bottom 90% saw their share of wealth decrease. Piketty (Piketty, 2013) has argued that those who invest in capital (e.g. plant, equipment) will achieve a rate of return that is greater than the rate of economic growth over the long term, and as a result wealth will become concentrated to a "*potentially terrifying degree*". It has also been argued that inheritances have played a significant role in contributing to rising wealth concentration (Kopczuk, 2005).

Where income inequality is high, this also leads to high inter-generational inequality, with parent's earnings being a more important determinant of a child's earnings. The high income is in turn reflected in capital accumulation, and stronger intergenerational transmission of wealth (Corak, 2013). It follows that high inequality in wealth will also result in high inter-generational inequality. This can limit equality in opportunities to education, healthcare and financial, business and other opportunities that perpetuate and exacerbate the inequality of outcomes.

A fundamental question that has divided economists is whether inheritance taxes actually reduce inequality. Some have argued that as inheritance taxes reduce savings and capital accumulation leading to a lower ratio of capital to labour, the greater scarcity of capital will increase the return to capital and the share of income attributable to that capital, which will result in incomes becoming more, not less, unequal (Stiglitz, 1978); a finding that was confirmed in a recent study (Elinder et al., 2016). Elinder's study also confirmed an earlier thesis that inheritances decrease the inequality of wealth among heirs (Wolff, 2002). This is because while richer heirs inherit larger amounts, those less affluent receive substantially larger inheritances relative to their pre-inheritance wealth than do richer heirs. One could also argue that an inheritance is money that has already been taxed, and inheritance taxes are a double taxation which is unfair. Additionally, bequests are not inimical to societal obligations since it promotes familial ties and provides for the next generation reducing the state's burden.

Advocates of inheritance taxes argue that inheritances are not earned, and wealth is acquired simply as a matter of being lucky enough to be born wealthy. Taxing inheritances thus redistributes wealth from those born 'lucky' to the 'unlucky', thereby reducing the perception of unfairness in society (Alesina, 2012). Some studies have shown that inheritance taxes can be useful in limiting inter-generational inequality and strengthening the equality of opportunity (IMF, 2014). As to the optimal level of inheritance taxes, the same considerations described above for the optimal rate for income taxes, namely, the elasticity of taxes and the trade-offs between equity and efficiency costs, will apply.

With rising wealth concentration, it is imperative that policymakers find ways to reduce the inequality. As the discussion above indicates, the efficacy of inheritance taxes as a

mechanism to reduce inequality is controversial, and the solution may well lie in other types of wealth taxes, such as property taxes, transaction taxes, taxes on capital, or a recurring wealth tax.

Conclusion

Whether higher income and inheritance taxes are warranted in an age where there is rising income and wealth inequality, assumes existing public support for redistribution. As the Robert-Meltzer model shows, democracies extend political power to poorer segments of society, and they are likely to vote for pro-poor policies which are naturally associated with redistribution. Where redistribution is the underlying aim, policymakers will then have to consider whether higher income taxes or inheritance taxes will actually reduce inequality. As the preceding discussion demonstrates, the response depends on a variety of factors, which require a balancing of policy choices between achieving equity (redistribution) and reducing efficiency costs that may impede economic growth or negate the redistributive effects of higher taxes. In the case of inheritance taxes, given the lack of consensus over its ability to reduce wealth inequality, there is also a need to consider whether other forms of wealth taxes may be more effective. Additionally, inequality in outcomes cannot be reduced solely by income and inheritance taxes. Effective redistribution also requires transfers. A study of advanced economies finds that in recent decades a combination of direct income taxes and transfers resulted in inequality decreasing by one-third (IMF, 2014). Of this, transfers accounted for more than two-thirds of the reduction. Transfers (which include those financed by higher taxes) are government expenditures, and policymakers will need to find the optimal level of spending, encapsulated in Dalton's principle of Maximum Social Advantage, where the marginal social benefit of spending equals the marginal social cost of financing this spending. In the context of inequality, this requires the following to be considered: first, the optimal level of redistributive spending will depend on the factors in each country such as preferences and costs, including the efficiency costs of taxation; second, benefits derived from additional spending on redistribution should be compared with the benefits of spending in other areas, such as public infrastructure to support higher growth; and third, redistributive policies must take into account fiscal sustainability, and an assessment of whether the policy can support economic growth and finance higher spending on redistribution over the longer term (IMF, 2014).

Finally, redistribution through higher taxes is not sustainable without concurrent efforts to address the drivers of inequality, such as access to education, healthcare and financial, employment and business opportunities, since the lack of access is reinforced by low incomes and wealth (IMF, 2014).

Consequently, the problem of inequality must be dealt with holistically. Policymakers must consider not only higher income and inheritance taxes, but other tools, such as other direct and indirect taxes and transfers and measures which address the drivers of inequality. They must also take into account other policy considerations such as the need for economic growth, other

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competing expenditures and priorities and fiscal sustainability in order to be able to create a coherent, effective and sustainable fiscal policy which addresses rising inequality.

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Should internet companies like Uber and Airbnb be regulated?

Following the global financial crisis of 2008, when unemployment and real wages slumped to their lowest in a decade, it is no coincidence that many households turned to innovative ways to generate a source of temporary income. This led to the exponential rise in the idea of the sharing economy, otherwise known as the peer to peer market, which differs from a typical rental market (whereby individuals who hold assets rent them out) because the owners use these assets both for personal consumption and to rent them out. Not only is this relatively new market challenging economists' theories and models, it's changing the way we interact with each other. We are sitting in the backseats of stranger's cars (Uber, Lyft); putting them up in the spare room (Airbnb); eating food round their table (Feastly) and letting them rent our possessions from cars (RelayRides) and boats (Boatbound) to power tools (Zilok) [Tanz]. For any household it's easier than ever to embrace the sharing hype as long as you are willing to hand over your closest possessions, for a price, as shown in Figure 1.

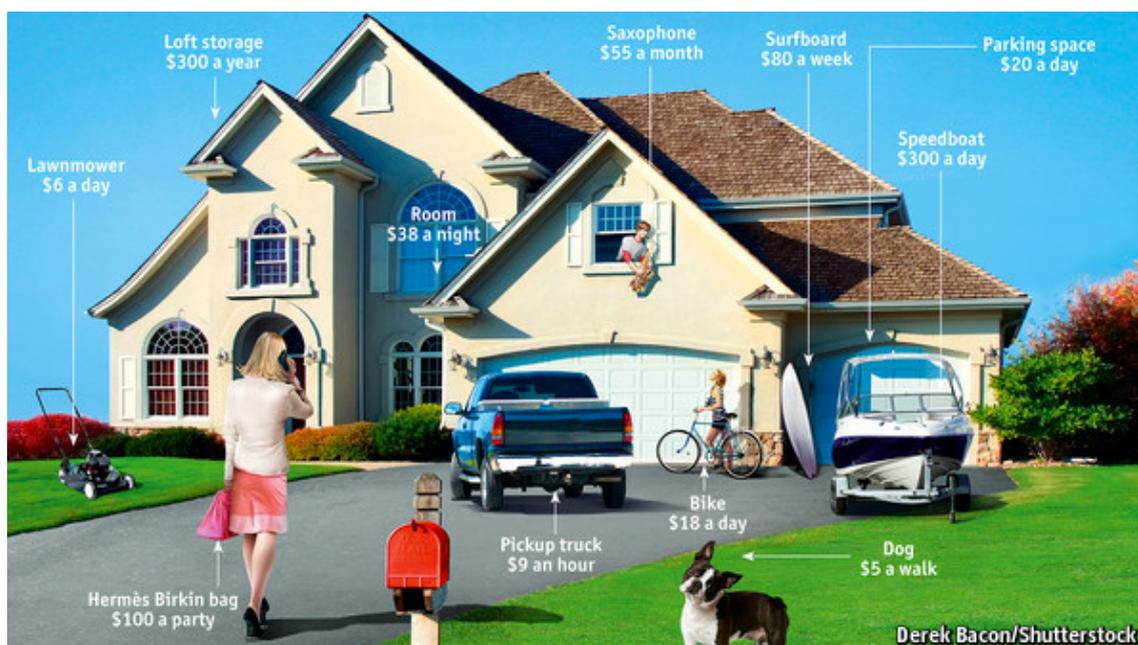


Figure 1: Prices of household goods and services in the US as of 2013, current values may have changed.

Helped along by the advancement of modern technology, these new internet companies have flourished on a new legal framework somewhere between the online and physical world and are blurring the lines and rules that were defined only 10 years ago - for example between giving a friend a lift home from school and being a professional driver. Since Forbes estimated that the money flowing through the sharing economy in 2013 was \$3.5 billion and this would increase by 25% per year [Geron], the issues associated with the peer-to-peer market will only continue to grow and the decision needs to be made to regulate or not. In my opinion these internet companies need a form of regulatory framework in order to limit the negative

externalities. I am going to begin by assessing the benefits and drawbacks of such companies, then later I will go on to discuss the ways in which we could regulate them.

The sharing economy is clearly harming many industries, with Airbnb shaking up the hotel business and Uber causing problems for taxi companies; so why is its regulation so hotly debated? The answer is its overwhelming benefits to the economy which Lisa Dansky refers to as the “triple bottom line” of greener commerce, greater profits, and rich social experiences. The first benefit of these companies is that they facilitate the use of under-utilised resources in our economy; creating new wage earning opportunities mainly for those who are unemployed or want to supplement their income [Baker]. There exists millions of homes across the UK with empty rooms, and by using a company like Airbnb it allows households to profit from these rooms while allowing guests to stay at prices that are often far below those charged by hotels aiding both economic agents. The extra profit helps supplement many households’ income and consumers will have more disposable income by not choosing a hotel; it then follows that they will potentially spend this extra income on consumption, thus boosting aggregate demand and economic growth.

It’s also clear to see that by making use of underused assets it will increase the economy’s long run productive capacity and this in turn could help provide a solution to the peak load capacity problem (demand for goods or services predictably fluctuates during a fixed period of time leading to excess demand then supply in a continuous cycle). Take the London 2012 Olympics as an example, between 2009 and 2012 there was an increase of 12% in new hotel rooms in the capital but after the games, demand dropped quickly, leaving many rooms empty and forcing hotels to cut rates. The Premier Inn beside the Olympic Park charged £199 per night during the Olympics then by 17 August they cut prices by over 80 per cent to just £39 [Calder]. The drop in tourism was expected after the games but it would have been more efficient if individuals were allowed to rent out their spare bedrooms rather than build new hotel rooms for the two weeks, which lead to excess supply during the low-season that followed.

A second benefit of the peer-to-peer market is its low environmental impact which, for a strong and sustainable future economy, is paramount. Renting goods and services rather than owning them means fewer goods like cars are demanded in the economy and there is lower derived demand for resources to produce them. Assuming demand for “collaborative consumption” or shared goods continues [The Rise Of The Sharing Economy], there will be a fall in manufacturing and distributing costs as goods are shared locally rather than bought. Although this could massively damage the manufacturing industry by causing industries to lower their output it will lead to a fall in the pollution they cause whether it be greenhouse gasses or effluent, which can only be beneficial for a world suffering from global warming. Furthermore many of these internet companies discourage waste and the unnecessary buying of new goods, for example Uber reduces the number of cars we need on the roads and in car parks.

The last benefit I will discuss here is that the sharing economy has developed an increase in trust between economic actors and helped to rewire our relationships with each other leading to richer social experiences. The fact that these internet companies have boomed in recent years can only be due to a growing sense of trust which is leading to a cultural revolution as much as an economic one [Tanz]. If households didn't trust one another, they wouldn't ride in a stranger's car or stay in somebody's house and these companies wouldn't have grown to the point that Airbnb has a \$24 billion valuation [Winkler and Macmillan]. The implications of an economy in which individuals have greater trust are huge, we only have to look at Adam Smith's pin factory to realise the role that trust holds in a growing economy. Smith argued that wealth was built on the division of labour which itself relies on trust, for example the worker who sharpens the pin point trusts that the worker before him added the pin head and so on; if one of the workers doesn't complete his task then the pin doesn't get made. Therefore trust created by the sharing economy can only have a net beneficial effect on the economy however there will always be the risk of people abusing this trust. For example in 2012, HiGear a luxury car-sharing service was forced to shut down after a criminal gang stole four cars totalling to \$400,000 [Okulski].

Before we look at appropriate regulations for the sharing economy, the drawbacks that the regulations aim to minimise or stop should be looked at. Firstly many traditional businesses argue that these internet companies are anticompetitive as they can operate at lower cost by avoiding many of the costs associated with obtaining permits and complying with other regulations (such as fire safety) which companies such as Airbnb can avoid although it has recently started paying occupancy tax. On the other hand, from the view of the internet companies this isn't anticompetitive as they are just using available technology to lower their costs. In addition economies of scale have benefitted these internet companies in cutting costs and giving them a significant cost advantage over the traditional business. This is because distributing services digitally has almost a zero marginal cost and there is no capacity constraints. The comparative advantage that these companies gain from operating digitally could lead to monopolies in certain markets especially by pricing out the traditional competition.

This has also meant it has been relatively easy for firms to enter the peer-to-peer market which in effect has flooded the market, with Uber drivers as an example. This could have the effect of driving the price down if the demand doesn't continue to increase at the current rate. With an excess supply of Uber cars many drivers will cut down the amount of hours they work. However a recent paper co-authored by Alan Krueger stresses the new financial opportunities created for tens of thousands of workers and argues that workers' earnings will potentially rise [Hall and Krueger]. The availability of modern technology, like the Uber app which currently sits at 25 in the apple app store chart, illustrates the high demand for taxis at a lower price than the traditional taxi cab, which has increased total demand for workers with the requisite skills to work as for-hire drivers, thus raising income for those part-time drivers. But with the attractiveness

of working as an Uber driver, its flexible working hours and no worrying of unpaid fares, there is one major negative externality being the displacement of traditionally secure jobs not just in the taxi industry but also one competing directly with any of these internet companies.

It's not difficult to see that there is a clear consumer safety issue with the sharing economy and its lack of laws and regulations which would otherwise protect consumers in a typical market. A few high-profile incidents have hit the press in recent years highlighting the danger of putting yourself in vulnerable positions, from the backseat of a strangers car or inviting someone into your house. From the example I mentioned earlier with HiGear to stories of Airbnb hosts who come home to find themselves robbed of money, credit cards and jewellery; some users of the peer-to-peer market find themselves worse off but the vast majority benefit from the low-cost and ease of access to the sharing economy. We must acknowledge that many online platforms such as Uber now offer peer-reviews which would clearly help to deter fraud or crime as you can find out about your driver and their rating before you meet them.

However it's not just consumer safety which has come under fire in recent times but also the wellbeing of these internet companies' employees. In a recent BBC newnight interview between Evan Davis and Jo Bertram (General Manager of Uber in UK, Ireland and the Nordics), she was notably reluctant to give him the percentage of their 30,000 drivers who are earning less than the statutory minimum wage or who have driven more than 60 hours a week; Instead she reeled off many of the benefits that uber gives its users and drivers as mentioned previously. However what I found most worrying as a potential Uber user, was that she couldn't say that they had any way of stopping their employees from driving more than 60 hours a week and there is no way for consumers to know whether their driver has driven 20 or 80 hours that week which is clearly asymmetric information [Riley].

Although the economic benefits of the sharing economy are huge, the protection and safety of consumers and their privacy weighs heavily. Of regulation Adam Smith in "The Wealth of Nations" wrote: "*The proposal of any new law or regulation of commerce...ought always to be listened to with great precaution, and ought never to be adopted till after having been long and carefully examined, not only with the most scrupulous, but with the most suspicious attention.*" Therefore I will not attempt to say conclusively how these internet companies should be regulated but will try to show how certain regulations could be implemented to limit some of the downsides.

The first method of regulation that has been tried and tested is the outright banning of these internet companies which has occurred most notably in Las Vegas and Portland with Airbnb and Uber. This is easily the most unpopular method of regulation as it cuts off all of the potential social and environmental benefits of the peer-to-peer market. Furthermore with the sharing economy growing year on year, it wouldn't be out of the question to admit that its too big to ban. With the comparative economy focusing

on popularity rather than profit through its effective use of social media platforms to expand demand in younger users, the dominance of these firms will make them impossible to regulate if nothing is done soon. This is because as these firms grow and operate in a multitude of districts worldwide, it becomes more difficult to regulate the company as a whole and it's not effective to inform consumers of the various laws in each state.

Secondly, there exists the approach to apply already existing regulatory structures that were made for non-sharing businesses to these internet companies such as minimum safety and quality standards which helps reduce asymmetric information as consumers trust that the Government has checked that it's safe. But this approach is not sustainable as the sharing economy needs a whole new regulatory framework; there are laws for business and laws for people, but the sharing economy has created the need for one more: laws for people as businesses. The existing rules are still likely to put consumers at risk and it will still give companies like Uber a comparative advantage over traditional industries because they can avoid many regulations through the internet.

Lastly, regulatory authorities can take a novel approach to a new economy and work with the internet companies to improve consumer and employee safety, reduce fraud and ensure this economy continues to grow. For example, the California Public Utility Commission worked with several car-sharing companies to develop new regulations for the industry and has implanted 28 rules that a company must comply with to operate [The Public Utilities Commission of California]. On the other hand with the comparative economy growing and changing, it's questionable how effective any regulation will be as there is no definitive understanding as to what the sharing economy is and so any regulation is likely to be reactionary and ever-evolving.

On balance, internet companies such as Uber and Airbnb need some sort of fluid regulation that allows them to continue to develop without any hinderance on their economic benefits. Its always likely that regulators will have to face new technologies, and business practices that need to be addressed, but do not fit comfortably within their existing regulatory models. As Joseph Bower and Clayton Christensen would have called the sharing economy a "disruptive innovation", which implies that as it displaces established industries it will also displace traditional regulations that aren't apt for a digital age. To address the market failures in the new sharing economy such as the negative externalities and lack of competition, regulators should be prepared to work with these internet companies to implement flexible rules that promote innovation and entrepreneurship. It's also important to note that regulation isn't the only solution; other methods could be taxation or subsidisation but constrained by the word limit I am limited to only evaluating regulation.

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