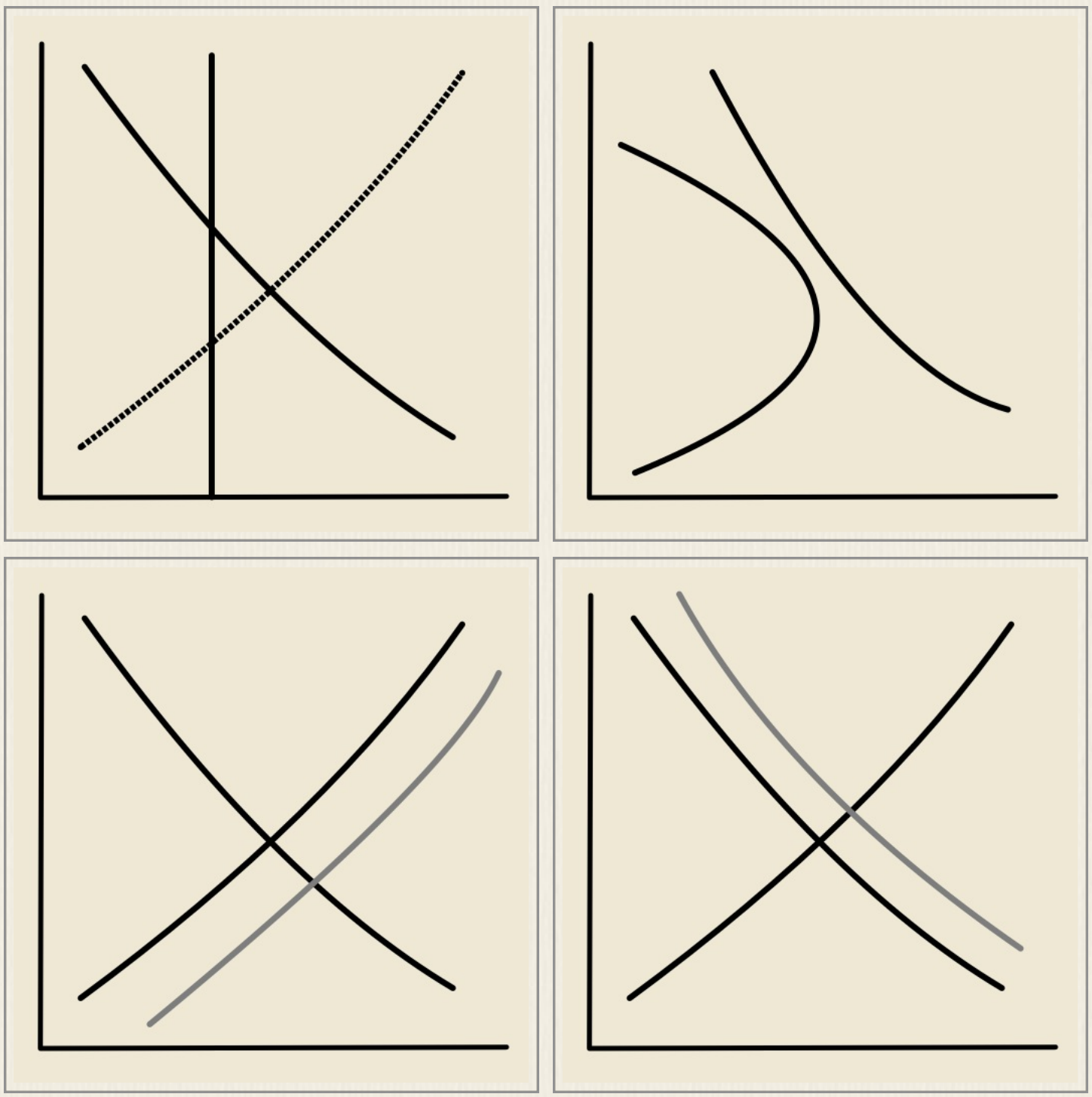
Finishing the Job

Real-World Policy Solutions in Health, Housing, Education and Transport

JOSHUA GANS AND STEPHEN KING



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First published by Melbourne University Press, 2004. (Out of print, 2014)

Preface

This book is somewhat of a departure for us. Our work normally centres on traditional areas of microeconomic reform, such as competition and the regulation of firms. The subject matter in this book is very different. It focuses on the interaction between government policies and consumer behaviour. We deal with these interactions, not because they have captured the attention of policy makers in the past, but precisely because they are the key to a variety of issues that should capture the attention of policy makers in the future.

The following chapters present our views on the next phase of microeconomic reform for Australia. We deal with a range of issues – low income housing policy, health insurance, education funding and road pricing. Each of these areas affects the day-to-day lives of many Australians. Some of these areas have been 'reformed' in the past, but only through an ad hoc and piecemeal approach. None of them have been systematically reformed in a way that mirrors the privatisation and competition reforms that have swept through other sectors of the Australian economy over the past two decades.

Our purpose here is to stimulate debate and to play a small role in shifting the reform agenda away from the firm side of the equation to the distortions of consumer behaviour. In so doing, we do not provide an academic review of critiques, thoughts and ideas. Instead, we state our perspectives on the issues, try to draw common themes together and then suggest avenues for larger, systemic reform that may – theoretically at least – solve the problems we diagnose. We provide neither detailed costing nor a manual for implementation. Our focus is on economic prin-

ciples and what these principals imply in terms of ideas that, at the very least, should stimulate further discussion and investigation.

That said, we haven't just happened upon these four areas. Our work on housing was stimulated by our involvement in the Prime Minister's Home Ownership Taskforce in 2003 (see Gans and King, 2003, 2004a, 2004b, on which much of Chapter 2 is based). Some work with Ian Harper lead to our research on health insurance (Chapter 3) while a collaboration with the Melbourne Institute of Applied Economic and Social Research at the University of Melbourne (in particular, Malcolm Anderson and his work on international comparisons of school funding) was behind Chapter 4 on education funding. Finally, Stephen was a member of the Victorian government's Infrastructure Planning Council in 2001 – 2002; a key part of which dealt with transport reforms.

Finally, along the way parts of this book as had important input from Malcolm Anderson, Brian Caldwell, Bruce Chapman, Peter Dawkins, Jeremy Gans, Ian Harper Christopher Joye, Warwick McKibbon, and John Quiggin. We thank Melbourne University Press for taking the initiative in publishing this book. Last but not least, we thank Richard Hayes for his outstanding research assistance in producing much for the work here.

In the end, the market-place will determine whether any of the ideas we present here have 'any legs.' At the very least, it is our hope that reform in these sectors can be moved seriously on the agenda of the next Federal government.

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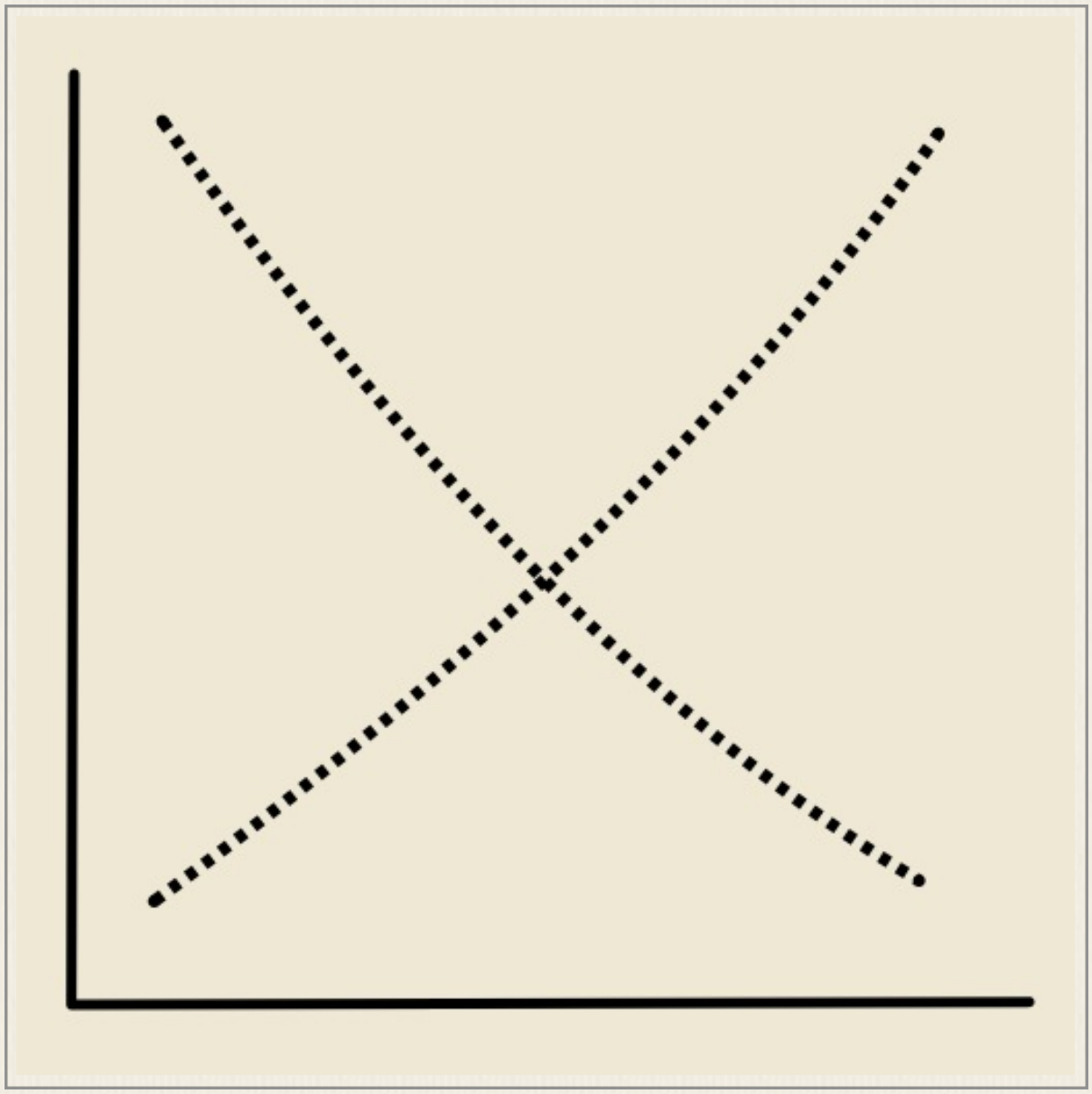
May, 2004

CHAPTER 1

A Job Unfinished



"Microeconomic reform" was the economic catchcry of the late 1980s and early 1990s in Australia. Pushed forward by the Hawke and Keating Labor Governments, a bundle of reforms were enacted that changed the face of Australia. The large-scale privatisations of Qantas, the Commonwealth Bank, GIO and a variety of other firms were relatively minor reforms compared with the opening up to competition of basic infrastructure industries in electricity, gas and transportation. The old state-run enterprises were restructured, corporatised, broken up and are now virtually unrecognisable both in terms of day-to-day operations and their long-term business strategies.

But sometime during the 1990s, the Australian public became reform weary. Faced with resistance from regional governments and community groups, the tide of reform ended where it started – with the utility industries. The reforms put government-owned and privately-owned businesses on a level playing field. They fostered competitive neutrality by unwinding cross-subsidies and in so doing forced governments to face the true costs of their business policies. The reforms helped to eliminate distortions that undermined Australia's business environment and helped to underpin more than a decade of sustained economic growth.

Microeconomic reform focused on the producer-side of the economy and particularly the role of government in production. However, these reforms failed to address the people or consumer-side of the economy and the role of government in influencing our consumption choices. Australian consumers face a wide range of government policies that affect our health and medical choices, our decisions about education, where we live and the type of accommodation we buy, and how we use transport to move through our daily activities. These policies and their potential to distort consumer behaviour have not been subjected to rigorous scrutiny and reform. Microeconomic reform fixed the problems of competition in production but did not address similar problems that exist when people choose their basic services.

This book focuses on the reform of consumer policies. In the chapters that follow, we consider a variety of sectors that have been virtually untouched by microeconomic reform but that are at least as important, if not more important, for everyday life and wellbeing as those industries that have been reformed. In each of the sectors of the economy that we consider, consumers face key choices that are strongly influenced by government policy. Comprehensive reform requires that we understand the economic and social rationales behind these government policies and critically analyse the existing policy solutions. Our aim is to present alternative approaches that can be adopted by the government that improve the choices available to both individuals and households and help Australians make decisions that improve the efficiency of our economy. Reform needs to respect the legitimate reasons for government intervention while considering the best way to assist consumers to make decisions in an economically responsible manner.

Each of the sectors that we analyse is a key part of the Australian economy. Each is also in need of considerable reform. However, in each sector, reform has been slow if not absent.

In many ways the lack of consumer-side reform in Australia is both a consequence of political inertia and a cause of this inertia. Reforming consumer behaviour is often more difficult and complex than the production reforms initiated in the past two decades. Producer-side reforms are often founded on the rhetoric of 'increased competition' or 'cost minimisation.' These types of reforms, however, are not appropriate for the sectors that we scrutinise. Because traditional microeconomic reforms cannot be simplistically applied to consumer-side reforms, these sectors have often been put in the politically 'too hard' basket. Where reforms have occurred, in health, housing and other sectors, they have often been a hodgepodge of compromises rather than well-designed policies that respect both social and economic imperatives.

The difficulty of reforming consumer-side behaviour is that the sectors most affected (and distorted) by government policy are also those that have strong underlying social features. In each of the sectors that we consider, universal access and fair treatment for consumers are key social goals. But these goals are an anathema to cost minimisation. Simple policies aimed simply to minimise costs are unlikely to be socially desirable. As a result, serious economic reform in health, housing and education is often considered impossible – how can we improve economic efficiency without undermining the very social objectives that drive government policy? In contrast, we argue that economic reform and respect for social objectives can often go hand in hand. It just takes a more rigorous economic approach that thinks beyond reform rhetoric. Put simply, we believe that in many situations, there are opportunities to have your (social) cake and eat it too. Social goals can be respected while applying basic economic principles to improve efficiency. And in our opinion, when it is understood that economic reform can respect legitimate social concerns, political resistance to consumer-side reform can also be overcome.

THE NEW FRONTIER IN MICROECONOMIC REFORM

While energy, telecommunications and other infrastructure industries were at the centre of the first wave of microeconomic reform, in this book, we focus on health, education, housing and transportation. Each of these sectors not only impacts on peoples' day-to-day lives but also their long-term wellbeing; outcomes for individual Australians are our concern here.

These sectors have a key feature in common: sometime over the last century, societies around the world decided that their citizens should have *universal access to these services* regardless of ability to pay. Adequate health care, appropriate education, access to reasonable housing, and the ability to move freely around our cities, are considered basic rights that should be available to all citizens. To be sure, universal access to electricity and telecommunications are also common social goals but in these sectors society is willing to charge the user for the services. But when it comes to services such as health and education, a large segment of society consider that it is inappropriate to deny a person these services simply because of an inability to pay. As a result, these services are often 'free' to the direct user. Free universal education for example, is often considered one of the defining features of a developed civilized society. From an economic perspective, it is not surprising that achieving these social goals while providing appropriate incentives for both producers and consumers is somewhat challenging.

To see this challenge, consider health. Making health care freely available means giving individuals a right to see doctors, have surgery or stay in hospitals without seeing a bill. Equivalently, you can give them health insurance with no premium; so that again they do not see a bill. But the people providing these services – the doctors, nurses, hospital staff and hospital owners – still need to be paid for their time and effort. In this situation, where does the money come from?

The answer, of course, is that people pay for health services through their taxes, rather than through a direct payment for service. In this light, free health care is a right that society pays for. The social objective is achieved because governments can tax people to fund the health system in a way that is disproportionate to their potential use of the health system but related to other factors such as their in-

come. Thus, free universal access is really a goal of re-distributing costs from the haves to the have-nots. If it were any other way, the service could not be funded.

Universal education, access to decent housing and access to a safe road system, all have this feature. The service is freely available but funded by general taxes. But, while each of these cases involves a social aim of universal access, the first issue that needs to be addressed is the breadth of this access: universal access to what? Society does not expect universal free access to all levels of housing, to any type of education, to a perfect uncongested transport system or to 'unnecessary' health services. For each of the services we consider, society has to 'draw a line'. While there is a goal of universal access, this access is not unconditional.

Politics may affect the scope of universal access. In some situations, the lack of political will to raise taxes has meant a reduction in the breadth of services freely available. An excellent example of this was the move to a user-pays system for tertiary education in Australia while preserving free access to primary and secondary school. Of course, in this situation, there was plenty of evidence that the service was being funded disproportionately by those most in need; after all, there wasn't universal access to tertiary education at all – only to some who happened to come from the more well-off segments of society.

Invariably the political desire to economise means degrading the quality of the service. Hospitals have waiting lists and a lack of choice of doctor. Public housing deteriorates and needs renewal. Investment in public transport is neglected. So while the goal may be universal access to all, the reality becomes universal access but not necessarily at the quality you expect. Not surprisingly, this creates a continual policy tension. And it is this tension that is the focus of this book.

WAYS OF FUNDING SOCIAL OBJECTIVES

When it comes down to it, there are a few broad way to fund social objectives. The simplest is to estimate the cost of providing universal access to a particular service and to raise taxes accordingly. This has the advantage that tax policy – how best to raise a given amount of revenue – is separated from how that revenue is used to produce services of a certain quality. So if the government wants to re-

duce waiting lists in public hospitals, it estimates the costs of the extra beds, doctors, nurses and others and sets a taxation policy to raise that revenue. This makes the government decision a straightforward trade-off of the economic and political benefits of improved service versus the economic and political costs of higher taxes.

This funding mechanism creates two problems: one economic and one political. The economic problem arises because, in many situations, while the quality of freely available services is determined collectively by the government, the quantity is at the discretion of individuals. Individuals can, in part, determine how much health care they consume. Individuals choose their family size, impacting on education and housing. And individuals choose how much they drive, impacting on road congestion and the environment. However, when the price of a service is zero (or at least below cost), this means that individuals will choose to consume too much of it.

The political problem arises because of a desire to reduce the total level of taxation. At one level, this simply means a government must weigh the political costs and benefits of improved quality. At another level, governments design systems to make a tax not look like a tax.

It is perhaps for this reason that the simple funding policy, with the tax-service trade-off, is not pursued in many sectors. Instead, while the government funds freely available services, individuals are encouraged to opt out of these services in favour of privately provided services that are more expensive but offer better quality. Households take out private health insurance and send their children to private schools. This does not reduce their tax payments but it does save the government money because it no longer has to provide health or education services directly to these families. In this way, the government reduces the taxation cost of funding the freely available service. From a society-wide perspective, however, any supposed savings are simply an accounting chimera. The individuals and families who opt out are not paying any less once their contributions to the government budget and their own direct payments for the services are added together. There may be a fall in the cost to the government, but there is not a fall in the total cost to society.

Does this 'opt out' method of funding universal access improve individual decision-making? Recall that the simple funding system meant that individuals might consume too much of the freely available service. This basic incentive does not change with an opt out system. Individuals who do not opt out still face a zero price and consume too much. But, more importantly, because individuals who opt out are not rewarded for doing this by an offsetting tax deduction, too few individuals choose to opt out. So governments must try and find ways of encouraging them to opt out in order to reduce reliance on taxation funding and 'make the system work.'

How might governments encourage opting out? One way is to subsidise the privately provided service. Private health insurance gets a rebate and private schools obtain some government funding. However, these measures move an opt out system closer to a simple funding mechanism as the government has to raise taxes to cover the rebate or to contribute to the private school costs. Another way to encourage opt out is by providing a stick rather than a carrot. In health insurance, wealthier individuals face a surcharge on their Medicare payments if they do not have private health insurance. They take out private health insurance and on the books it looks like they are not paying a tax. However, the virtual compulsion of that additional insurance expenditure makes it economically a tax, even if politically it isn't one.

In the end, governments have to resort to a means that private businesses are very familiar with: they have to crimp their own low-end product. When trying to charge different prices to different customers, businesses launch different products with different qualities. A good example of this is the different classes of travel on airlines. But to ensure that wealthier individuals pay the high prices for business class seats the airlines have to ensure that those individuals do not want to switch in order to save money by traveling in economy. The only way to do this properly is to make sure that quality differential between the two classes is high. This can be done by raising the quality of business class (something that is costly for the airlines) or it can be done by lowering the quality of economy class (something that actually saves them money). Not surprisingly, it often makes sense to do the latter. So if you have ever wondered why they do not give you an extra inch of leg room

in economy, think of the difficulty an airline would have in charging high prices for business class if this was done.

To encourage opt out, the government faces the same problem and employs the same solution as business. They need to keep the quality differential between the freely available service and the privately provided one high enough so that sufficient people opt out; allowing them to keep taxes down.

But this very need to balance private decision-making in order to fund universal access has an additional cost in terms of public decision-making. When choosing the quality of the freely available service, the government would ideally balance the additional costs of increased service quality with the social benefits provided by this improved quality. However, when the government is concerned about keeping individuals out of the public system, there is an additional cost in the equation. If the government improves quality of the universally available service, not only must it bear the costs of providing the service to existing users, it must also bear the cost of providing the service to new users who 'opt back' into the public system as its quality rises. As we will see, for example in health, this additional cost prevents the government from doing relatively cheap things like allowing patients the choice of doctor in public hospitals. To do so would not have much direct cost to the government and it would have great benefits to public patients. But those very benefits may cause a collapse in the private system. So, in the end, quality isn't improved and everyone is worse off.

LOOKING FORWARD

In what follows we move from sector to sector and lay out the issues for each. There are common themes but individual sectors have their own underlying economic issues and policy histories. Thus, while there are similarities in our reform recommendations across sectors, these reforms must also respect the differences and idiosyncrasies of each sector.

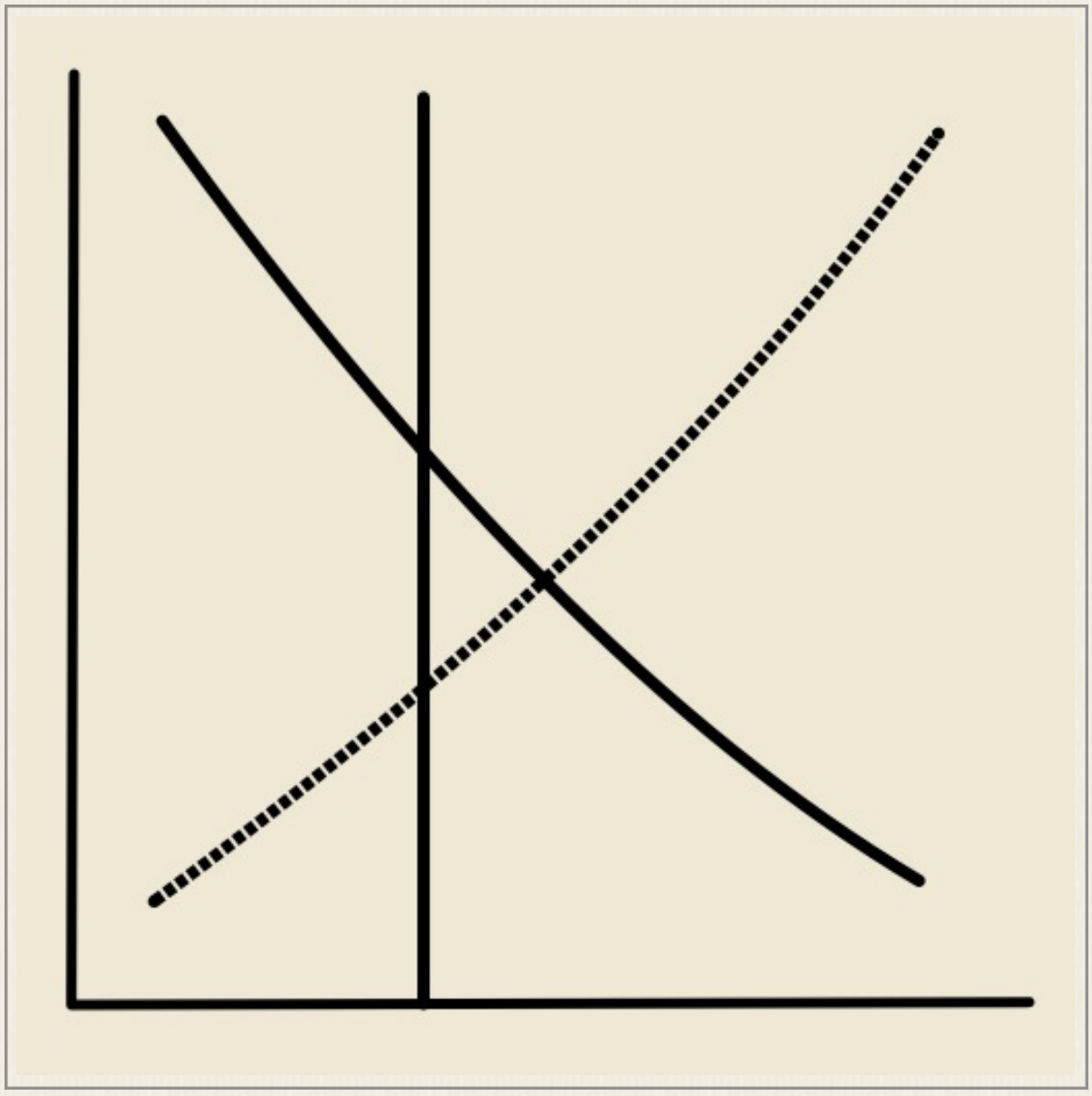
Overall, we are optimistic. Our belief is that by properly understanding the problem for each sector – the desire to fund social objectives in the least distortion-

ary manner – economic solutions can be crafted that are politically feasible and offer significant benefits to all Australians.

So for each sector we outline our preferred solution that will reform that sector and allow Australia to finish the job of microeconomic reform. In some cases, the solutions we favour have been debated for years. In other cases, the solutions are a new application of well-understood economic principles to the sector in question or arise because of new technological opportunities. In no case do we claim to have fully worked out all of the practical issues but that is not our aim. Rather, we wish to open up minds and put reform on the agenda in the sectors we discuss. This is a limited objective, to be sure, but it is also a necessary first step for the task at hand.

CHAPTER 2

Building Housing Policy



Australians are said to have a national obsession with housing. This is partly borne out by the statistics. Australia has one of the world's highest levels of home ownership. In 1999-2000, there were around 7.2 million households in Australia. Approximately 70 per cent of these households comprised people living in their own home while 26 per cent rented accommodation. In contrast, current home ownership rates are approximately 69 per cent in the United Kingdom and 67 per

cent in the United States, but are only approximately 41 per cent and 51 per cent for Germany and the Netherlands respectively (Productivity Commission, 2003).

Yet housing policy has come to the forefront of political debate recently. Interest rates are a perennial economic issue if only because they drive mortgage rates and households' overall expenditures on dwellings. However, the Federal government's policy of providing grants to first home owners – something that was introduced to soften the blow of the GST on the building industry but has yet to disappear – keeps housing a hot political issue; especially among young swinging voters and the parents that might otherwise need to support them.

Lacking a harsh winter, Australia is spared the housing issue that is more salient elsewhere: homelessness. Not that Australia suffers less from the problem of homelessness than other advanced countries. Rather, a lack of shelter in Australia does not carry the drastic health consequences that occur in colder latitudes, where homeless people regularly die of exposure during cold winter months. Nonetheless, it remains a clear policy goal that universal access to minimum standard shelter is a desired outcome just as it is for health care and education. The problem is that when it comes to housing, the choice of dwelling and the ability to purchase are such a large part of a household's day to day economic activities that the effects and effectiveness of government intervention have been particularly complicated.

We argue that a desire to make a minimum standard of housing affordable for households of any income has become confused with the general affordability of housing and the role it plays in people's lives and wealth accumulation plans. Put simply, because housing is the biggest single component of many households' expenditures (particularly low-income households), making it universally available makes this goal equivalent to general policies for the relief of poverty. However, that same issue – the importance of housing in household budgets – gives it predominance in peoples' financial lives; exposing them to real risks associated with economic and other fluctuations. Those risks are not risks of poverty per se but of the ups and downs that can accompany economic activity. As such, dealing with what we term 'short-run' affordability issues requires a different approach. Indeed, as with most economic policy that is not about simple income redistribution, sensi-

ble policies require careful thought as to the underlying economic problem (or market failure) generating them. As we will see, thinking about underlying causes of public concern over housing allows us to envisage simple, practical policy solutions and also to rule out some existing policies with inadequate rationales, such as the first home owner grant.

THE ECONOMICS OF HOUSING

To begin, it is useful to consider the ways in which housing markets are both like and unlike other markets in the economy. Like all markets, the price, quality and quantity of housing services are driven by the basic forces of demand and supply. Housing in a particular location tends to be more expensive when there is a high demand by individuals and households to live in that area, whether due to work commitments, life style or some other factors. In contrast, housing services tend to be cheaper in regions where demand is relatively low or where there is a large available housing stock and few constraints on the availability of land.

Any meaningful analysis of housing policy needs to recognise that there are features of housing markets that are unlike other markets. In particular – spatial immobility, durability and imperfect malleability, and heterogeneity – will influence housing policy and it is worth considering these in more detail.

LOCATION, LOCATION, LOCATION

People move, houses don't. For this reason, location matters. House construction is largely an irreversible investment which is tied to a specific location. Further, the location of a particular home matters both for the market value of that home and for the economic and social prospects of the people occupying that home. Home location influences social groupings and networks, social status, job availability, access to private goods and services, the quality of public infrastructure and the environment. While an individual or household has some control over the location in which they live, they have relatively little control over changes to the social and economic environment of that location.[1]

The irreversible nature of housing investment, the fixed geographic nature of housing and the potential for idiosyncratic changes to specific locations, mean that

in housing markets, there will be a large distinction between the "short run" and the "long run." Changes in people's locational preferences can create mismatches between demand and supply that lead to short-term dislocation and may only correct over a number of years. For example, if the main income earner in a household is required to relocate for employment reasons then this may lead to onerous commuting or even household separation in the short-term. In the longer term, other family members may be required to relocate with an accompanying change in housing. These short-term dislocations can be exacerbated if the source of dislocation is correlated between households in a particular location. For example, regional economic changes can affect an entire city and impact on the demand and supply of housing in that city. This can lead to substantial once off gains or losses to home owners which can intensify the short-term dislocation in the housing market.[2]

The spatial immobility of housing means that when considering any housing policy a clear distinction must be made between immediate effects (that can nonetheless last for a significant period of time) and long run effects when mismatches in housing preferences are eventually resolved.

DURABILITY AND IMPERFECT MALLEABILITY

At any point in time, the vast majority of housing stock involves dwellings that have been in existence for a considerable number of years. Even the Prime Minister lives in a second-hand house! Thus, housing assets are extremely durable and represent an important investment decision by anyone who is constructing them.

The durability of the housing stock means that houses have important investment characteristics. This is most obvious for rental accommodation. The owners invest in a long-lived, largely sunk capital asset. They then lease this asset to others who gain the flow of housing services from the asset. In return, the tenants pay rent to the landlords. The investment return to the landlords includes rental payments plus any capital appreciation in the value of the land associated with the dwelling, less depreciation (if any) of the housing stock.

These same joint investment-consumption characteristics are relevant for owner-occupied dwellings. However, for these dwellings, the investors and the consumers of housing services are the same individuals.

The long-lived nature of housing assets does not mean that these assets do not alter over time. Existing housing can be modified. These modifications range from standard maintenance such as painting, to significant renovations such as remodelling rooms or replacing wet areas, to complete redevelopment. But such modifications can be costly and can take significant time to implement. Thus, while the existing housing supply can change in response to market signals, these changes may take a significant period of time.

Because housing involves long-lived assets, and has limited malleability, particularly in the short-term, it has the characteristics of both consumption and investment. Hence, the supply of houses and welfare derived from housing will be closely related to the operation and efficiency of capital markets. Further, these same characteristics mean that the housing stock is likely to have a relatively low degree of turnover at any point in time. In other words, only a small fraction of households are active at any point in time as buyers and sellers of houses. The buying and selling of housing stock has more in common with the buying and selling of businesses than with the markets for standard consumer goods. As such, the households who participate in home ownership often make commitments and tie themselves to obligations that far exceed those associated with more familiar market based transactions.

HETEROGENEITY

Housing units differ considerably in many attributes. For example, even in a single urban area, housing size can range from small one or two bedroom apartments with floor space of 100 m^2 through to stand-alone five bedroom houses on 1000 m^2 of land. Housing differs in terms of neighbourhood environment and public service access. For example, residents of Rowville in outer Eastern Melbourne have highly limited access to public transport, especially when compared to inner urban residents. The houses themselves have different features, styles, building quality, and vintage. When people search for houses, they do not consider all

houses but look for houses with certain characteristics. While houses with similar characteristics may be viewed as relatively substitutable, there is often limited substitution between houses with very different characteristics. "Housing is not, then, a single commodity but a complex of variously related commodities; the urban housing market is not one perfect market but a set of interrelated submarkets."[3]

For this reason, it is useful to consider housing as a set of submarkets that are characterised by 'quality.' This does not necessarily mean that the quality of housing in one market is unambiguously superior to another (although that is true in some cases). Instead, 'quality' is defined broadly to mean that housing within a particular submarket is relatively substitutable from the consumers' perspective but has less substitutability with housing outside that submarket. Nonetheless, for obvious reasons, it is sometimes useful to consider a hierarchy of submarkets ordered from the lowest to highest quality.

Housing submarkets will generally be linked. A policy that alters consumer behaviour in one submarket will tend to affect other submarkets as marginal customers move into or out of particular submarkets in response to the policy. This means that the analysis of any policy should consider its immediate impact on certain targeted submarkets and its 'ripple' effects on other submarkets. Some policies might impact on most submarkets but their differential impacts should be noted as well as how any 'ripple' effects resolve themselves.

IMPLICATIONS FOR POLICY

Because the market for housing is intrinsically different from the markets for apples, fish or washing machines, government policy towards housing must carefully take note of the relevant market idiosyncrasies. Our discussion above has highlighted some of the most important characteristics of the housing market. In particular, housing has both an investment and consumption characteristic, home ownership is intimately tied to capital markets, and housing decisions can lead to 'frictions' in a household's ability to adjust to other economic factors that impinge on welfare. Further, there is not a single 'housing market' but a series of interlinked submarkets, and these linkages can be important for understanding the impact of housing policy.

In summary, housing policy must consider the important differences between short run and long run effects on housing, and the disparate and linked effects on low, middle and high quality housing.

WHY IS AFFORDABILITY A CONCERN?

Affordable housing is usually defined with reference to the (post tax) income that is sufficient to meet household basic needs (food, clothing, medical care, etc.). Under this definition, if a household is spending more than 25 per cent (for rent) to 30 per cent (for mortgage repayments) of its income on housing, then that household is experiencing an affordability problem.[4]

This approach to housing affordability, however, does not allow us to easily distinguish between a housing problem and a low-income problem. Moreover, it does not take into account the period of time over which there is an affordability problem. Relevant policies to deal with housing affordability will generally depend on whether it is a long-term structural problem or a temporary situation.

LONG-TERM VERSUS SHORT-TERM AFFORDABILITY

When you think about it carefully, there are really two classes of housing affordability problems: long-term and short-term. The distinction between them is conceptually quite simple and is applied at the level of a household. If a particular household – for various reasons (ultimately low-income) – can never amass the financial capital to afford (by rent or purchase) even the minimum standard of housing, then it faces a long-term affordability problem. On the other hand, if a household finds itself having difficulty to continue to afford its current level of housing (i.e., is unable to pay rent or mortgage repayments and has to move), it faces a short-term affordability problem. To be sure, that short-term problem may itself become a long-term problem but it is also the case that immediate pressures to move from your current dwelling do not automatically mean you can never afford a minimal level of housing.

The problem we face in determining housing policy is that both of these problems are lumped into a single issue: affordability. Yet both are distinct from a public policy perspective. Long-term affordability is, in a sense, the easy one to under-

stand. The problem is ultimately a lack of income or income generating power on the part of a household. The solution is income relief or financial assistance with achieving housing access. While the solution is clear, implementation and how to fund it is not. In any case, housing policy essentially becomes equivalent to anti-poverty measures.

The short-term affordability problem concerns households who over time have an *average* income that would be sufficient to purchase appropriate housing in the private market, but who face short-term *fluctuations* in income that precipitate housing stress or crises. That is, a household may face the short-term loss of employment, illness of a primary income provider or a rise in interest rates or rents precipitated by macroeconomic conditions. Such households may find themselves unable to afford their current accommodation in the short-term and face hardship from being forced to move; losing personal capital incorporated into their homes. These short-term fluctuations harm both the households and the parties providing them with housing. As a result, households with a higher risk of short-term income fluctuations may find it difficult to gain appropriate housing in the private market.

DEALING WITH LONG-RUN AFFORDABILITY PROBLEMS

Most government housing policy is directed at long-run affordability problems. An exception is the first home buyer's grant (something we will return to later). We briefly review government policies here but our main theme is that long-run affordability is essentially equivalent to problems of low income. Indeed, our criticism of some recent proposals to deal with low-income housing is that they do not simply recognise that fact and instead attempt to disguise housing as something requiring more special attention than poverty per se.

To the extent that housing affordability, particularly for low-income households, has fallen in a range of Australian cities, there is scope for government assistance to low-income households. Roughly speaking, these government policies can be classified as building or buying.

BUILDING

Building policies focus on alleviating affordability by expanding directly the supply of housing. Supply-side policies around the world typically comprise a variety of public housing projects and developments. In Australia, the bulk of public funds for housing development come through the Commonwealth-State Housing Agreement. This agreement involves capital grants to State Housing Authorities who in turn provide public housing and direct aid to community housing organisations for social housing. These payments also fund crisis accommodation, and loans and grants to private investors to offset initial costs.

In the past, United States housing policies have had a similar thrust. In recent years, however, there has been a move away from supply-side to demand-side policies. In Britain, there is a long tradition of state provided public housing; usually managed by local councils. This policy has undergone a revolution in the last two decades with strong moves towards owner-occupier solutions and private sector ownership. This has been achieved primarily by substitution of government funds for demand-side policies. In the Netherlands, a significant level of housing stock remains in public hands with management provided by housing associations in a largely decentralised manner.

Inadequate private provision and allocation of housing does not necessitate public provision and allocation of housing. Further, public provision and allocation of housing necessarily ignores significant aspects of individual tastes and preferences. In other words, public housing, while attempting to solve a failure of the private market, also neglects the benefits of housing allocation associated with the private market. It replaces individual and household choice with some form of bureaucratic decision making.

BUYING

While supply-side policies focus on government provision of housing, demand-side policies assist households in buying suitable housing through the private market. Thus, demand-side policies involve less micro-management than supply-side policies and provide greater discretion to the recipient households.

A common policy, both in Australia and overseas, is to provide low-income households with rent subsidies. This type of policy has many forms, including subsidies paid directly to low-income private tenants and direct payments to landlords to 'compensate' for the provision of housing to low-income households. The calculation of the relevant subsidies, eligibility criteria, specificity of the payments and mode of payment differ widely between jurisdictions.

In the United States, part of the Section 8 voucher program provides subsidies for low-income households who choose to live in a certain minimum standard of accommodation. The subsidy covers the difference between 30 per cent of the household's income and a defined 'fair market rent.' The scheme is administered through a local public housing authority which determines the 'fair rent' for the unit. The relevant household, once they rise to the top of a waiting list, can search for any dwelling that satisfies the programs requirements.[5] The public housing authority then pays the subsidy directly to the landlord on behalf of the tenants. The tenants pay the difference between the subsidy and the actual rent of the dwelling. Eligibility for the program is geographically based, with relevant households having less than 50 per cent of the median income for the relevant area.

In Australia, a similar type of rental assistance is available, for example to individuals who receive a government pension or to households with dependent children who satisfy relevant criteria under the family tax benefit scheme. Payments are made to households who rent a dwelling from a private landlord and the payment is made to the household in addition to the other benefit payments being received by the household.[6] Rent assistance is calculated at three quarters of the rent being paid by the household above a minimum threshold, up to a maximum payment. For example, for a family with a single adult and one or two dependent children, the maximum payment in 2003 was $109.48 per fortnight. Rent assistance only applied if your rental bill was at least $109.06 per fortnight and the maximum rent (to receive the maximum payment) was $255.03 per fortnight. The payments do not vary across cities or regions. For this reason, it targets low nominal income rather than households who have insufficient funds to afford rent payments in their area.

Rental assistance schemes need careful design. Because they tend to be based on current rather than lifetime income, they can easily lead to poverty traps for low-income households. These programs may be viewed by governments as a drain on funds, and as the US experience shows, they may involve funding that only covers some and not all low-income households. Depending on the form of payment and the dwelling criteria, these schemes may distort dwelling choice. For example, the Australian scheme which has an *ad valorem* subsidy effectively reduces the marginal price of housing to low-income households once rent is above the minimum threshold and until it reaches the maximum. Such a subsidy will tend to push rental demand towards the maximum thresholds. This can involve households choosing 'too high' a level of housing relative to other inputs of equal or greater importance to family welfare (e.g. clothing, food, education, child care, etc.). It can also lead to 'bunching' in the rental market, where much rental accommodation is offered near the maximum cut off with a reduction in more moderate housing.

Governments may assist low-income households to purchase housing rather than rent housing through some form of 'ownership subsidy'. The first home owner scheme in Australia represents on ownership subsidy scheme. It only applies to first home owners and has very broad eligibility criteria. In this sense, it does not focus on low-income households, although such households also enjoy the benefits of the scheme.

The US section 8 program includes vouchers for first home owners. Like the rental vouchers program, it is administered through public housing authorities and has minimum quality requirements for the dwelling. The scheme has minimum and maximum income criteria and also an employment criterion. It is generally only available to first home owners. This said, there is no separate funding for this home ownership scheme. Public housing authorities who participate in the scheme must draw funding from other voucher arrangements and authorities do not have to participate in the scheme.

Governments may also use the tax system to implement demand-side housing policies. In the US, the Low-Income Housing Tax Credit programme provides tax relief for investors in long-term low-income housing. There is certainly scope,

therefore, for governments to use tax relief to encourage investment in housing for particular types of households. However, the scope for tax relief to low-income households themselves is limited by the fact that those households usually do not incur significant levels of tax relative to housing costs.

A number of alternative demand-side policies have recently been mooted in Australia. Gavin Wood[7] formulated a proposal that is similar to the US low-income housing tax credit. He proposed two reforms to the tax system:

- *Income tax credit*. Investors with dwellings that have rents below a certain threshold (Wood considers $100 per week), would receive tax credits.
- *Capital gains tax reform*. There would be relief from capital gains tax on the first $10 000 of capital gain for these dwellings.

As formulated by Wood, this policy would be an entitlement to any investor at the lower end of rental accommodation. The policy, at its heart, is a government subsidy, albeit that it is organised in a non-transparent way through reductions in taxation payments. The policy also raises issues of accountability relating to length of low-income tenancy, the legitimacy of tenants and the nature of the dwelling. The policy may lead to the inappropriate downgrading and degradation of some housing stock, in order to meet the program requirements.[8] Such a scheme would need to be carefully designed to prevent gaming by investors.

Caplin and Joye[9] discuss the possibility of using shared equity schemes to increase housing affordability. Under this system, a lender, such as a bank, would retain an equity interest in a dwelling, reducing the amount of capital required to be borrowed by a household seeking to buy the property. A household would then be able to 'balance' its debt and equity exposure to the housing market, much as commercial businesses manage their mix of debt and equity financing.

While a shared equity scheme may assist to improve overall housing affordability, it is not geared towards low-income households. As we discuss below, many of these households face significant problems when attempting to access traditional financial or rental markets, so a share equity scheme by itself may do little to benefit low-income households.

DEALING WITH SHORT-RUN AFFORDABILITY PROBLEMS

The government policies discussed above tend to focus on longer term solutions to housing affordability for low-income households. In other words, the policies are geared towards households who not only have current low income but are likely to continue to have low income for the foreseeable future.

However, as already discussed, housing affordability is often a problem for low-income households due to temporary distress. A low-income family might find housing affordable most of the time, but can remain vulnerable to income shocks that make housing unaffordable for short periods of time. For example, consider a low-income family whose main income earners often experience short spells of unemployment. This may reflect the nature of the jobs held by family members. While over the households 'life cycle' it might have adequate income for housing, at particularly stages of that life cycle, housing may be temporarily unaffordable. For example, housing stress may occur when children are young, particularly if this coincides with a period of unemployment for an income earner.

Similarly, low-income households may be adversely but temporarily hit by short-term income shocks, for example due to illness or accident. These shocks may make housing unaffordable in the short-term. Government policies aimed at long-term housing relief, particularly those policies that involve moving to particular dwellings, will often be inappropriate in these circumstances. Indeed, to the degree that a household must 'lose' its current housing before it can receive government assistance or faces high effective marginal tax rates once government assistance is accessed, government policies may inadvertently change short-term housing distress into a long-term affordability problem.

In theory, financial markets should be able to deal with problems of short-term loss of income. However, it is well understood that financial markets suffer from potential problems of asymmetric information that may lead to market failures such as the rationing of credit.[10] These market failures will fall most heavily on low-income households.

Credit rationing arises due to problems in the effective operation of financial markets. Potential lenders may have difficulty distinguishing between individuals who would be able to make repayments and those who cannot. As a result, potential lenders may be reluctant to provide funds to customers who appear more risky; for example individuals with a lack of credit history or who are proposing more risky investments.

Yet, this problem of asymmetric information is different to the problem of risk. After all, risk accompanies all lending and, in the absence of information asymmetries, more risky borrowers would simply face higher interest rates than less risky borrowers. Rather, the problem is that the potential lender cannot adequately distinguish between high and low risk borrowers and so may be reluctant to lend any funds. Further, this problem cannot be solved by simply raising the interest rate on borrowed funds. Raising interest rates may simply act to dissuade the low risk borrowers leaving only the high risk borrowers. After all, the high risk borrowers, who know that there is a higher chance they might default on the loan, will be less influenced by interest rates. In this way, a simple interest rate charged equally to all potential borrowers, adversely selects for borrowers with a higher risk profile. To attempt to solve this problem a lender might try to ration credit; attempting to infer borrower risk through indirect means.

In the financial markets that provide loans for purchasing housing, a number of standard tools have developed to deal with adverse selection. Lenders often ration credit on the basis of income history and income potential. Borrowers who have a steady history of income earnings or who are trained and employed in 'stable' professions are more likely to receive funds than potential borrowers with variable income histories or who are employed in less stable industries. This clearly has an undesirable effect on low-income households, particularly those with a checkered history of employment. Such households will tend to be excluded from access to housing finance.

Lenders may also deal with adverse selection by shifting risk back onto the borrower. This is most easily achieved by requiring a large deposit on a house before funds are provided. This reduces the risk that the financier will be stuck with a house that is valued at less than outstanding debt if default occurs. But again, low-

income households will be most adversely affected by this solution, as they are least able to save for a significant housing deposit while at the same time paying for rental housing.

Lenders can also shift risk onto a third party, requiring potential borrowers to have a third party guarantee the loan. Again, low-income households are adversely affected by this solution as they are less likely to have 'richer' family members or friends who can act as guarantors.

Overall, we would expect that asymmetric information in housing finance markets will impact most heavily on low-income households, limiting their access to housing finance.

Similar selection problems arise in rental markets. Investors are keen to rent properties to households or individuals who will be able to pay the relevant rent and who will minimise depreciation of the dwelling. But landlords cannot tell the exact risk associated with particular tenants and will try to infer this risk from other factors. Again, an obvious method used by landlords to distinguish between tenants is their employment history and their current job and income. This discriminates against low-income households who are viewed as having a higher risk by landlords.

Other common methods that have historically been used by landlords to vet tenants include the marital status of potential tenants, whether the household includes children and the number of adults in the household. While explicit use of these types of characteristics would violate current anti-discrimination laws in Australia, landlords will still be tempted to try and infer tenant risk from information they can gain about the tenant. This makes the rental prospects for low-income households less certain than those for higher income households.

The use of economic discrimination in both financial and rental markets biases those markets against low-income earners. This discrimination need not reflect any bias on the part of lenders or landlords. Rather it is simply a rational attempt by lenders and landlords to at least partially overcome information asymmetries in these markets. However, the end result may be to ration many low-income house-

holds out of the private markets for housing. Put simply, the market imperfections can make housing unobtainable for low-income households.

The problems of selection relate not only to low income per se but also to income risk. If a potential borrower has inadequate income to cover repayments, then that borrower will not be lent the funds to buy a house. However, even if a potential borrower is likely to have adequate funds *on average* to cover a home loan, if that household's income is variable then the probability of default is higher and they may also be able to access housing funds.

Income risk is something that faces all households. It can arise through a number of sources. For example, unemployment is usually associated with a significant but temporary drop in income for individuals and households. Injury or significant illness can also lead to a sudden reduction in income.

An unforeseen drop in income can lead to a large but temporary reduction in housing affordability for the relevant household. For example, if the household is renting, then it may be impossible for the household to make its regular rental payments when it suffers a sudden reduction in income. In such circumstances, the household faces eviction. Similarly, recurring mortgage payments may not be met due to a sudden income shock, leading to potential foreclosure.

Income risk, like any other form of risk, can be reduced by insurance. For example, income protection insurance is available to households. Similarly, both landlords and lenders may be willing to renegotiate agreements to overcome short-term income shocks. After all, finding new tenants or foreclosing on a mortgage and selling a property are both expensive activities. Both landlords and lenders have incentives to take actions to avoid incurring these expenses. Finally, households may self-insure against income risk, for example by keeping ahead of mortgage payments or by keeping a readily accessible pool of savings.

These solutions to reduce the cost of income risk, however, are less likely to be available to low-income households. For a household with a history of unemployment, income protection insurance is likely to be either unavailable or prohibitively expensive. The moral hazard problem facing the insurer makes such insurance unviable. Self-insurance through discretionary saving is difficult, if not impos-

sible, for low-income earners. And renegotiation to avoid foreclosure or eviction is less likely to occur for higher risk, marginal households.

Consequently, low-income households are likely to face significant residual income risk that creates short-term housing crises for these households. Government housing policies are not geared towards dealing with income risk and short-term crisis. For example, Federal government rental assistance in Australia only becomes relevant once a household becomes eligible for other forms of benefits. In the US, Section 8 voucher programs often involve waiting lists, meaning that they are unable to meet the needs of low-income households facing short-term distress. As a result, existing policies only tackle part of the problem of low-income housing.

THE HOUSING LIFELINE

If existing government policies geared at low-income households housing needs are inappropriate to deal with income risk, what should be done? The key to formulating appropriate policy is to consider the source of the problem. In the case of short-run affordability, it is the inability of households to tap into credit markets when faced with income difficulties.

Having specified this, a solution readily presents itself: the government could provide a line of credit that enabled households to smooth over the bumps of fluctuating income. Moreover, how to implement this solution also becomes apparent as the Australian government plays this role already: as a lender of funds to students to complete higher education (through the Higher Education Contribution Scheme or HECS). In so doing, it provides a 'no questions asked' loan to individuals and uses the tax system to recover the debt once incomes rise. Australia is a pioneer in income-contingent loans (or ICLs) and for that reason it is useful to consider how this might be implemented in a housing context.

In this regard, we propose that the government might set up a housing lifeline. The lifeline would use income contingent loans by the government to help households overcome short-term income fluctuations. The scheme's aim would be to increase access to financial and rental markets for low-income households, by limit-

ing the undesirable consequences of adverse selection on landlords and lenders. It would also aim to help protect low-income households from the adverse housing consequences of a short-term income shock.

The housing lifeline involves governments addressing the income risk associated with low-income households directly. The government would provide a form of income insurance to low-income households, to ensure that short-term income fluctuations do not create long-term housing problems. For example, the government might allow a household that has suffered a short-term drop in income, due to say unemployment or temporary lay off, to draw down a payment (say up to an eventual maximum of $5,000 - $10,000) towards rental or mortgage costs. The funds would form an ICL for the household. In other words, a low-income household that chooses to draw down on the housing lifeline is not receiving gift from the government but faces a liability for future payment. However, this future payment is related to future income, further insuring the household and avoiding long-term poverty traps.

To see how a housing lifeline would work in practice, suppose that a household suddenly finds itself facing a crisis where it is likely to be unable to meet short-term commitments for housing payments. A housing lifeline means that the household would be able to draw down a payment from the federal government to tide it over the short-term crisis. This payment would be a loan to the household, but the loan qualification would be automatic. In other words, the household would face few if any hurdles – perhaps no more than a simple liquid asset test – in the short-term when accessing the lifeline funds. However, the household would incur a future tax liability associated with the loan. In other words, the lifeline is an income contingent loan. The liability may or may not have a reduced interest rate associated with it, depending on government policy. For example, to limit long-term government exposure to lifeline debt, the lifeline interest rate might be set equal to the long-term government bond rate. This is likely to be substantially below equivalent interest rates available to low-income households.

Payments to a household would be capped. The housing lifeline is designed to provide short-term relief, not to provide a permanent source of support for those households who will not have the means to adequately fund housing in the me-

dium to long-term. Thus, while the lifeline might displace other programs such as rental assistance in the short-term, it does not replace other long-term welfare programs but supplements these programs by providing more appropriate short-term assistance to low-income households facing temporary crisis. The payments may be capped on both a weekly and a total basis. For example, it might be possible to 'borrow' up to $200 per week under the cap up to a total of $10,000. Thus, the scheme would provide up to 50 weeks (or more if less than $200 was drawn upon) support for a relevant household.

Even low-income households who face a crisis due to unemployment usually find new work within six months. Thus, any household who remained in crisis after twelve months should probably be moved to a more permanent program.

The payments under a housing lifeline would be tied to housing. Thus, funds would be paid directly to a (registered) landlord or lender specified by the relevant household. This would require a contractual agreement that ensures that the funds do reduce the household's liability to landlords and lenders directly. At present, Medicare payments operate in this manner.

Drawing down the lifeline would be a choice made by the relevant household. But because this access to an instant 'line of credit' removes a substantial amount of the risk that would otherwise face lenders and landlords who provide housing solutions to low-income households, the lifeline directly addresses the problems embedded in the rental and mortgage markets. Thus, while the lifeline is designed to provide short-term housing insurance for low-income households and as such is drawn down after a crisis occurs, this insurance will increase the ability of low-income households to access housing markets. It removes some of the problems of adverse selection that otherwise face lenders and landlords.

The risk, of course, does not disappear, but it is both reduced and it is passed onto the government. The risk is reduced because the government takes on a portfolio of 'loans' to low-income households. Unlike an investor with only one or two properties, the government can pool the risk of income loss for low-income households, reducing the idiosyncratic variability of that risk.

Passing the risk onto the government also has important economic advantages. In particular, unlike a private lender or landlord, the government has the substantial advantage of ensuring appropriate repayment of any lifeline loan through the taxation system. In this sense, an ICL provided by the government involves a lower repayment risk than an equivalent private loan.

Further, the government potentially saves some welfare expenditure through the housing lifeline. Most obviously, to the degree that a household is able to draw down the lifeline so that the household is less reliant on other government assistance, the lifeline reduces demand for short-term government assistance. More importantly, by reducing the adverse consequences of a short-term income shock, the lifeline should help low-income households from sinking into long-term poverty.

In theory the housing lifeline could be substantially self-funding. So long as the interest rate charged by the government is above the long-term bond rate on government funds and accumulated debt is eventually repaid, the government will be operating on the same funding principles as any lender.

In practice, of course, full repayment from every household will not be possible. Some households will move from temporary to long-term crisis and will be unlikely to ever gain a lifetime income that would allow repayment. In such a situation, the household can be transferred onto appropriate long-term benefits after the lifeline expires or when the long-term nature of the crisis becomes evident.

At the same time, it must be recognised that the housing lifeline will help low-income households who face short-term crisis from becoming dependent on long-term welfare. In this sense, the lifeline could be highly cost effective for the government even if it does not cover its own cost because it avoids the government paying other benefits over a longer period of time.

To see this consider a low-income household suddenly faced with an income crisis. The household may face eviction or foreclosure. This may force them to move to alternative housing in the short-term and may force them to move onto government benefits. In the medium-term, the crisis will harm the household's credit standing so that it may be harder for the household to gain appropriate housing in

the future. Thus, the temporary income crisis may lead to a long-term housing crisis for the household. The timely and temporary intervention allowed by the lifeline can avoid these long-term problems (with the associated long-term government payment of benefits).

The government might also choose to subsidise the lifeline interest rate. While this raises the cost of the lifeline it also creates greater protection for low-income households by limiting their lifeline debt exposure.

Implementing a housing lifeline obviously requires policy makers to address a number of important practical issues. For example, it is important to determine both the weekly draw down available under the lifeline and the maximum debt level available under the lifeline. For example, a weekly loan of around the level of current rent assistance, say $200 to $250 per week, might be appropriate under the lifeline. Unlike rent assistance, the lifeline would be automatic so that households would not be required pass eligibility waiting periods as is required currently under rent assistance. Alternatively, it might be felt that a slightly higher weekly draw down should be possible under the lifeline. After all, the lifeline is a loan, not an entitlement.

The maximum length of the lifeline might be twelve months. The lifeline is designed to deal with short-term stress and it is reasonable that a household that still faces an income crisis after one year requires longer term assistance.

As with all government programs, the rules of the lifeline need to be carefully designed to avoid people 'rorting' the system. This involves issues such as potential adjustments for the number of people in the household (in particular, the number of dependents) and for different household configurations. These issues, however, must also be dealt with under the existing social security and taxation system. Lessons from these schemes can be used to implement the housing lifeline.

In summary, the housing lifeline provides a powerful tool to protect low-income households against income shocks and potential housing loss. In so doing, the lifeline opens up financial and rental markets to low-income households. Unlike alternative welfare systems it avoids creating a poverty trap by treating payments as a loan rather than an entitlement that is 'lost' as income rises. Thus, a housing life-

line can retain incentives for households to take appropriate actions and risks to improve their standard of living.

POLICY RATIONALES AND FIRST HOME BUYERS

To finish our discussion of housing policy, it is useful to return to the focus of much recent government concern, the so called plight of first home buyers.

Fears that decreasing housing affordability has made it harder for first home owners to buy a house have dominated the politics of housing for the past few years. In 2000, the First Home Owner Grant was introduced to smooth over the impact of the introduction of the GST on the building industry. It was modified in 2001 and continues today offering straight up grants of $7000 to individuals buying property for the first time. These days it amounts to almost $4 billion in government expenditures (far in excess of the private health rebate considered in Chapter 2).

More recently, the Federal Government instructed the Productivity Commission to investigate "all components of the cost and price of housing, including new and existing housing for those wishing to purchase their first home."[11]

The First Home Owner Grant has been the subject of considerable criticism. It has been claimed that the scheme has fueled housing demand and led to an artificial inflation in housing prices. In other words, the scheme has been (at least partly) self-defeating. Even if the scheme has succeeded in making home ownership more accessible for eligible first home buyers, it has pushed other buyers out of the housing market by pushing up housing prices. It is far from clear that these other buyers – such as families trying to re-establish themselves following divorce and forced property sale – face less of an affordability problem or are less deserving of assistance than first home buyers.

It has been claimed that the scheme is open to rorting. The First Home Owner Grant has not involved any means test. As a result, even wealthy first home purchasers can access the grant, leading to claims that the government is assisting well-heeled young professionals to buy million dollar first homes.

At a more basic level, however, we need to question the rationale behind the First Home Owner Grant. What is the problem that the scheme is meant to solve?

Do first home owners face a significant problem of housing affordability that is not faced by others in the community? While arguments could be made that first home owners have special problems, these arguments are generally weak. House prices in Australia's major cities have risen rapidly in the past few years, but this reduction in housing affordability is faced by all house buyers. It might be argued that affordability is less of a concern for those people selling a house and upgrading to a higher quality house. However, it is far from clear that the affordability gap between different classes of housing is less than the affordability problem for entry-level housing.

It might be argued that first home buyers have difficulty establishing their ability to deal with debt while existing home owners already have a credit rating and history with a financial institution. However, even if some first home owners have problems with a lack of credit history, it is far from clear that such problems apply to many first home buyers. Bank credit in recent years has been available at historically low interest rates and the deregulation of the financial system means that mortgage credit is far more accessible for new home buyers today than it was twenty years ago. While some first home buyers will have problems gaining credit, the source of this problem will relate to their income. As we have already noted, poorer households and households with volatile income, face a harder time gaining access to credit, regardless of whether or not they are first home owners.

It could be argued that first home owners today face burdens not faced by previous generations. For example, individuals in Australia are forced to save a proportion of income under government superannuation policy; something that the previous generations did not have to worry about. Thus, it could be argued that forced superannuation diverts the savings of first home buyers to retirement funds rather than allowing them to buy a house. Of course, if this were truly a problem, and remembering that housing is a major asset for most Australians, the solution is obvious: allow first home buyers to tap into superannuation funds or use them as collateral for deposits on property. The 'superannuation burden' does not justify a First Home Owner Grant scheme.

It is far from clear that first home buyers, as a group, face any particular idiosyncratic affordability problem for housing. Some first home buyers will find home ownership unaffordable. But this is likely to reflect either their low level of household income or the volatility of this income. The solution is to help individuals who are either too poor to afford adequate housing or who have volatile income so that difficulties in gaining credit drive them from appropriate housing markets.

Even if potential first home buyers face particular affordability issues for home ownership, it is far from clear that this creates any significant social concern. While house prices have recently risen in Australia's major cities, rent has been stagnant or falling, particularly in inner city areas. In other words, rental properties have become more affordable, particularly to young couples and young families. Most potential first home buyers can access affordable adequate housing through the rental market. In fact, it could be argued that things have rarely been better for young renters. Housing is not the problem. Rather, the problem appears to be that these young households cannot buy a particular form of asset – a family home *to own*. Of course, in many countries, including most of continental Europe, this is the norm and is not viewed as a problem. There are many other ways for people to invest their money – housing is only one, highly concentrated, way to save. It is far from clear that housing policy should be governed by a desire to distort how people save.

In brief, the First Home Owner Grant scheme appears to be a policy in search of a rationale.

The Productivity Commission's 2003 draft report on first home ownership struggled to find a rationale for the First Home Owner Grant. They recommended modifying the scheme to target low-income households. But this simply modifies the scheme so that rather than assisting first home owners as a group, it assists poor first home buyers. Rather than trying to fix a broken scheme, a better approach would be to determine those people in society who do face a problem of gaining adequate housing and fashioning appropriate policies to deal with this problem.

The obvious groups in need of assistance are the long-term poor, who need general income assistance rather than specific housing assistance, and those families who face volatile income and as a result have difficulties gaining access to appropriate rental properties or to the financial markets to borrow and buy a home. The answer for these households is the housing lifeline. An appropriate response to the First Home Owner Grant scheme is simple – get rid of it. Eliminating this ill-designed policy will reduce government expenditure, some of which can be shifted to a targeted policy such as the housing lifeline.

CONCLUSION

In this chapter, we have explored the problem of housing affordability and appropriate solutions. Housing affordability has two basic sources – long-term poverty and short-term distress. The issue of alleviating long-term poverty is broader than simply housing. While most housing policy is traditionally aimed at the long-term poor, it is far from clear that this focus makes much economic sense. Having the government build housing for the poor is an inflexible and costly solution. The private market can provide adequate housing. The problem is that the poor cannot afford this housing. Having the government build its own housing is simply confused public policy.

The problem of short-term housing distress is generally ignored by traditional housing policy. This creates a problem. When families face short-term housing problems, say due to unemployment, they are placed on schemes designed to provide long-term assistance. These schemes risk turning a short-term issue into a long-term problem. For example, long-term rental assistance for the poor often has strong income-based means testing. As a result, a family moved onto rental assistance due to short-term unemployment may find that they face high effective marginal tax rates creating a disincentive to find new employment at modest wages. The household facing short-term housing distress is pushed into the pool of long-term poor by the poverty trap associated with long-term assistance.

In this chapter, we have outlined an alternative approach to deal with the problem of short-term housing distress. The housing lifeline provides an automatic

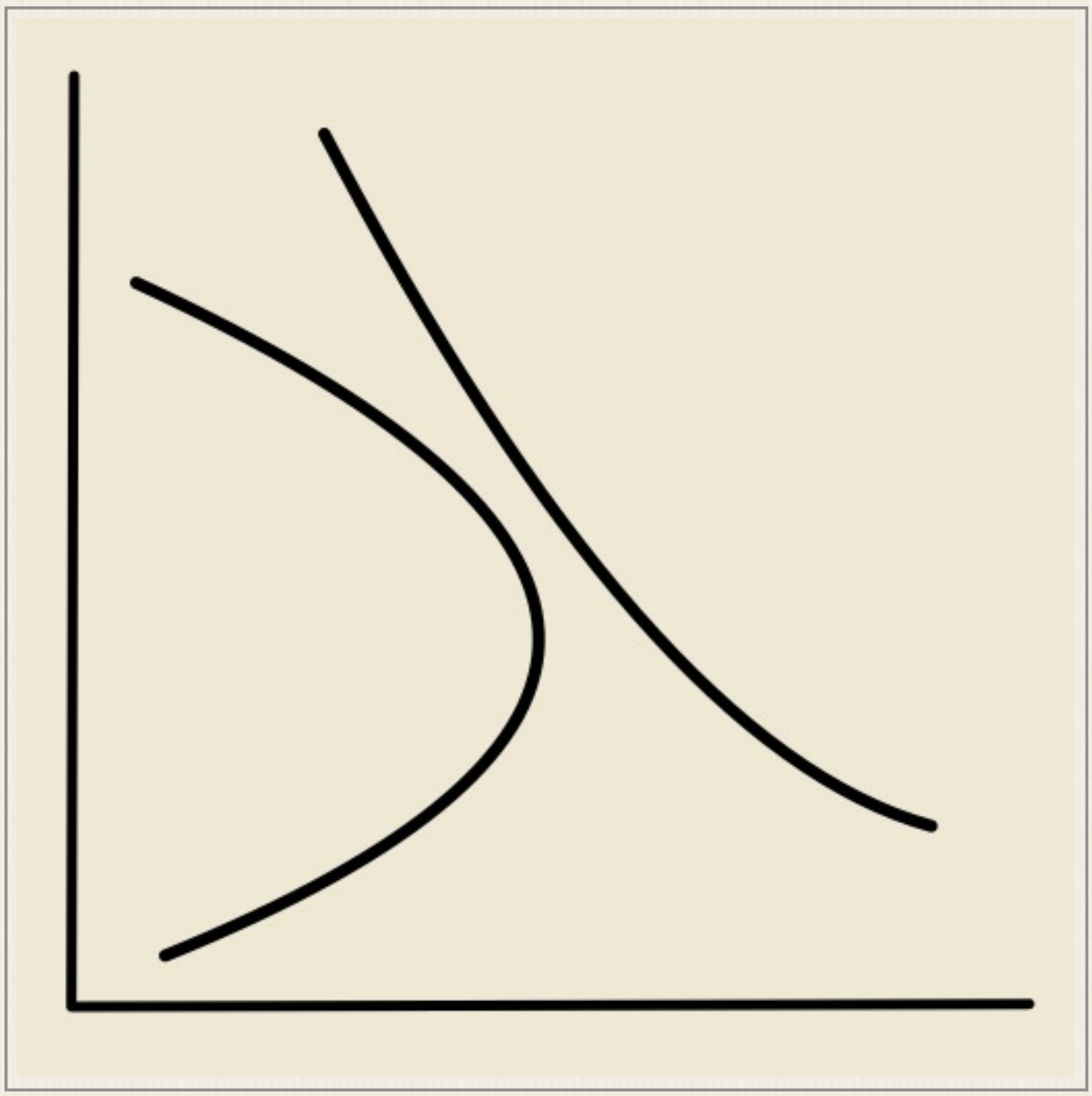
'line of credit' to households facing short-term distress. Because it is based on an income contingent loan, the housing lifeline minimises 'poverty trap' effects. Further, it leaves the family in control. The family itself decides on the relevant level of rent or mortgage assistance subject to appropriate upper limits.

The housing lifeline works by insuring families from short-term income risk. This benefits the relevant families as it removes a significant source of uncertainty. It also protects lenders and landlords, making them more willing to provide appropriate housing to these families. Thus, the lifeline opens access to the housing market to those families who are disenfranchised because of their risk.

By being based on an income contingent loan, the housing lifeline places minimal additional burden on government financing. In practice, it will not be self-financing and will cost the government money. A good source of these funds is the existing First Home Owner Grant scheme. By scrapping the First Home Owner Grant scheme – a policy with little economic rationale – the funds could be used to underwrite the housing lifeline. The end result will be better housing assistance for those who really need it.

CHAPTER 3

Curing Health Insurance



Universal access to reasonable health care is one of the cornerstone features of modern economies. The desirability of universal access is not a result of market processes but reflects a clear social recognition that no individual should be denied health care due to lack of ability to pay. Consequently, throughout the world, societies (including Australia) have adopted universal access as a guiding principle behind health policy.

With it, however, comes a real economic problem: how to fund universal access. If a minimum acceptable health standard is to be available to all, the resources must be in place to deliver that service. The simple answer is that government should be responsible for funding appropriate universal health care. However, this ultimately means that the funds must come from individuals and households via the tax system. Moreover, if some individuals do not have the ability to pay for health care directly, it is highly likely that they do not contribute an equal share through the tax system. As a result, any provision of universal access goes hand in hand with some differential in the tax burden.

Universal health care is not unusual in this respect. Individuals have different income levels and as a result make different tax contributions to the public purse. So to the extent that any public service is available to all people and funded through the tax system, individuals will contribute different amounts to the cost of the service. National defence is the quintessential example of a public service with equality in benefits and differential tax contributions.

Health care is different in several important ways. First, the same level of national defence is provided to all whereas for health care individuals can opt to 'increase' their level of service by utilising private options. Second, funding for national defence is directly associated with the provision of the service. The government not only receives the tax revenue used for defence, it 'owns' the defence forces. In contrast, health care as a service is funded through the provision of health insurance (i.e., Medicare). Where health care is publicly provided this distinction is semantic but for non-hospital services, such as individual patient consultations, provision is private even under a public insurance scheme. For these reasons, the funding and level of health care provision has become quite complex with important debates regarding the level of public funding and provision as well as the interrelated role of the public and private systems.

Put simply, the main economic choice in health policy is determining the minimum standard of universal health provision rather than working out various means of extracting greater contributions from those with higher incomes without

calling them a 'tax.' The apparent complexities surrounding health care services arise precisely because of the use of health care (and in particular health insurance) as a redistributive instrument – i.e., a way of shifting money from the rich to the poor – rather than a means of efficiently providing health to the population. Indeed, once this is realised, the scope for redesign of Australia's health system becomes readily apparent with the main constraints being more political than economic.

AUSTRALIA'S CURRENT HEALTH SYSTEM

To provide a common reference point for the following discussion, we begin by providing some background to the Australian health system and the underlying drivers of decisions to take out private health insurance and access the private health system.

PUBLIC AND PRIVATE HOSPITALS IN AUSTRALIA

It is useful to characterise Australia's health care system as two interrelated streams: practitioner care and hospital care. For practitioner care, provision is overwhelmingly private in that individual doctors and specialists own their own practices and have assets that are not government-owned. As we will see, government funding is an important part of this sector even though it is nominally privately provided.

In contrast, hospital care, particularly acute hospital care, is both publicly and privately provided. The distinction between the two is in terms of who owns the underlying assets (buildings, beds, equipment, inventory etc.): government or non-government entities. There are roughly twice as many hospital beds in public than in private hospitals; a relationship that has been relatively stable in recent years.[1]

Nonetheless, over the past decade there has been a relative increase in the number of patients using private hospitals. While public hospital care has been relatively stable, private hospital care has risen substantially (by over 12 per cent from 2001 to 2002). All this has raised the importance of the private sector: with the proportion of treatments falling from 71.5 per cent in 1993/94 to 62.7 per cent in 2000/01.[2]

At the same time, there has been a change in the mix of procedures performed in public and private hospitals. "In the past, private hospitals tended to provide less complex non-emergency care, such as simple elective surgery. However, they are increasingly providing complex high technology services."[3]

While there has been some convergence in procedures between public and private hospitals, the mix of patients and procedures in public and private hospitals still differs. Private hospital stays are shorter on average than public acute hospitals at 3.0 days versus 3.9 days. This partly reflects that private hospitals have a greater share of patients who stay for less than one day (58.5 per cent versus 46.2 per cent for public hospitals). However, even if we limit attention just to patients who spend at least one night in hospital then the average lengths of stay in private hospitals, 5.7 days, is less than the equivalent average length of stay (6.4 days) for public acute hospitals.

Importantly, the use of hospitals (both public and private) tends to be skewed towards the older members of the population. Australians over 65 years of age made up only approximately 12.3 per cent of the population in 2000/01 but accounted for 33.1 per cent of total hospital separations and 48.0 per cent of patient days.

A significant source of demand for private hospitals relates to patients who require 'elective' surgery. The waiting times for such surgery in the public system differs by procedure but they can be significant. The median waiting time for elective surgery in public hospitals in 2000/01 was 27 days and 90 per cent of patients were admitted for their surgery within 202 days. However, 4.4 per cent of patients waited more than 365 days. The median waiting times differ significantly by procedure. For example the median public hospital waiting time was 11 days for cardiothoracic surgery, 52 days for ophthalmologic surgery, 16 days for coronary artery bypass graft and 114 days for total knee replacement. Using private hospitals often allows patients to bypass these queues and to significantly reduce any waiting time. Of course, there is an associated financial cost with using a private hospital rather than the public system.

PUBLIC AND PRIVATE FUNDING

As noted earlier, there is a distinction between the practitioner costs of medical procedures and hospital costs. For practitioner costs, the public insurance system, Medicare, pays for 85 per cent of the schedule fee if a patient does not make a private health insurance claim. In some situations, practitioners 'bulk bill' and in effect charge a fee commensurate with the Medicare rebate. In others, the patient pays the 15 per cent difference between the Medicare payment and the practitioner's fee.

When a patient makes a claim against a private health insurer, the picture changes. The patient is reimbursed for the practitioner's fee but their insurer is only given a 75 per cent rebate of the schedule fee from the Federal government. Thus, jointly, patients and their private insurer are better off if patients do not make a private insurance claim or visit practitioners that bulk bill.

Turning to hospital costs, public patients in a public hospital are fully funded by the Commonwealth and relevant State governments. To give an idea of the cost to the government of an 'average' public patient, the cost per casemix-adjusted separation in public hospitals was $2834 in 2000/01.[4]

A patient who receives care in a private hospital will have the practitioner costs of the associated treatment 75 per cent funded by Medicare. The remaining costs are either paid by the patient themselves – self-insurance – or by a private health insurer. Nonetheless, the costs of ancillary services are fully funded by either the patient or their private insurer.

Patients in the hospital system are classified as either public patients or private patients. This classification relates to funding rather than to the type of hospital used by the patient. By some estimates, almost 15 per cent of private patients were in public hospitals.[5] Similarly, there are also a small number (approximately 3 per cent) of public patients in private hospitals.

If privately insured patients receive treatment in a public hospital, their insurer pays the basic table or default rate benefits only. However, this payment from the insurer will only be made if the patient reports that they have health cover. If this is not reported, then the financing of treatment is the same as for a public patient.

This raises an issue of whether privately insured patients or their insurers have an incentive to report their status openly?

Regardless, this illustrates a simple but important fact: *where funding for health care comes from is independent of who actually provides the health care*. There is no necessary reason why individuals cannot pay out of their own pocket (or from private health insurers) for care in publicly run hospitals. Similarly, there is no necessary reason why privately provided care cannot be funded from government sources (as it is for practitioner care). Nonetheless, the current system creates incentives for public hospital care to be funded from public sources and private care from private sources, tying provision and funding sources together.

THE PROVISION OF HEALTH INSURANCE

When it comes down to it, the provision of universal access to health care is equivalent to the universal provision of health insurance. Basic health insurance is a means by which individuals and households reduce the risk that they face in terms of having to foot the bill for minimum standard health care. By telling individuals that, if they need it, they will not have to pay for such care, those individuals are effectively insured against basic health care expenditure.

To be sure, health insurance does not really provide insurance against all the costs associated with poor health. Even the best coverage does not give back time, lost income and pain and suffering relief. There are always some health risks. But what basic health insurance does is to relieve individuals and households of the concern that, if critical health care is needed, that they will be unable to afford it. There may be other risks but at the very least a minimum standard of care will be provided. This type of insurance is exactly what is provided by Medicare.

However, beyond a minimum standard, individuals may still wish to insure against health risks. They might wish to be able to have some control over the type of care they receive, where they receive it, how comfortable the surrounds are and how long they have to wait for care. Thus, individuals may want to insure against health expenditures above the minimum level that might be provided by universal

health insurance. In Australia, this additional insurance is only available by taking out private health insurance.

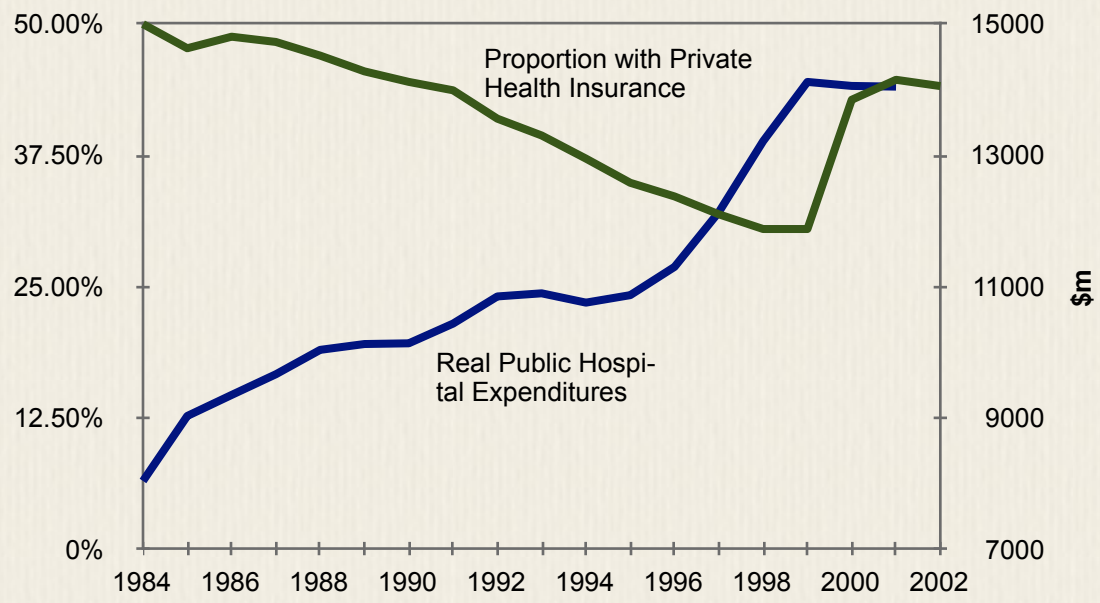
The health insurance system exists side by side with the health care system. In many respects it governs the financial aspects of the system. However, it also performs a critical socially valuable function: it enables individuals with different risks of illness to pool those risks. As we demonstrate below, risk pooling is a key social benefit of health insurance and its proper operation is something that health policy needs to explicitly be concerned with.

It is, however, useful to begin by describing in more detail Australia's existing system before looking at the economics of health insurance.

PUBLIC AND PRIVATE HEALTH INSURANCE

The Australian health insurance system has been the focus of considerable policy attention over the past three decades. Since the mid-1970s, the industry has been through five major reforms involving the introduction of a universal public health insurance scheme (on two occasions) and numerous policies aimed at stimulating private health insurance (PHI), from taxation relief to direct subsidisation of insurance payments. The effect of these policies on the use of private health insurance has been mixed while government health expenditures have shown an upward trend (Figure 1).

Figure 1: Key Trends



Sources: *Private Health Insurance Administration Council, Australian Institute of Health and Welfare*

The Australian public health insurance system has two key features. First, public health insurance is, in general, *mandatory* – all individuals in the economy receive public health insurance. Australian residents are covered by the public insurance system and are eligible to receive the benefits associated with this insurance system.

Second, individuals pay for the public health insurance system through taxation. In Australia, the taxation revenue used to fund the public health insurance system has three broad elements. First, there is the Medicare levy. This levy is generally calculated as 1.5 per cent of an individual's taxable income and is paid as part of the standard income taxation system in Australia. Secondly, there is the Medicare levy surcharge. This is an additional payment of income taxation by high-income individuals and households. This surcharge is waived if the relevant individual or household has private hospital health insurance.

Both the Medicare levy and the Medicare levy surcharge form part of federal government general revenue. The cost of operating the public health insurance system, however, far exceeds the total revenue raised by these two taxes. Thus, the third and by far the largest part of funding for the public health insurance system comes from general taxation revenue (both income taxation and other taxation).

Because the payments for publicly-insured health care come through the *tax system* rather than through explicit premiums, any changes to the public health insurance system have budgetary implications for government. If the Australian government wished to improve the level of coverage and services provided by the public health insurance system then it could do so. However, this would involve raising additional taxation revenue, lowering expenditure on other government provided programs and/or increasing the level of government borrowing to fund these additional insurance services. In such a situation, it is unsurprising that the debate on public health insurance has often been diverted into a debate about funding and fiscal priorities rather than addressing the fundamental issues of the nature and coverage of the Australian health insurance system.

Private health insurance in Australia can be purchased through a variety of profit and not-for-profit private institutions as well as through a government-owned health insurance company, Medibank Private. The premiums charged by these institutions for private health insurance are monitored and vetted by the federal government. Purchasing private health insurance provides an individual with a variety of benefits in addition to the public insurance system, although these benefits depend on the exact nature of the insurance policy purchased by the individual. A privately insured patient can access the services of private hospitals with reduced out-of-pocket expenses compared to an individual without private insurance coverage. This means that a privately insured individual has insurance coverage for a wider choice of service provision relative to the insurance coverage gained purely through the public system. It also means that a privately insured individual can often receive more timely health service provision with reduced additional out-of-pocket expenses, for example by avoiding waiting times associated with the provision of services under the public health insurance system. Private health insurance may also cover a higher level of service than public insurance, for example through choice of physician.

Private health insurance in Australia is subject to some regulation. The most important regulation is the principle of community rating. This is the explicit desire that *all* Australians are covered by insurance for basic health care at a premium that does not depend upon their own real or perceived health risk.[6] Community rating, strictly speaking, is a requirement imposed on insurers that they do not discriminate in their insurance offerings to their customers. As a principle, community rating encompasses a desire that everyone in the community has access to non-discriminatory insurance.

The goal of community rating is typically unsustainable in a purely private health insurance system as it requires cross-subsidisation from low to high risk individuals. In order to be viable, private health insurers must attract low risk (healthy) members to pay for the cross-subsidisation. The lack of risk-based premiums leads to premium levels that are perceived by healthy people to be too high. As a result, some of the more healthy individuals and families drop out of the private insurance system. The cross-subsidisation becomes less effective and premiums rise to

reflect higher claims experience, and only those with high risk status for whom private health insurance is still of benefit will remain insured. Thus, to ensure that there is the possibility of full coverage in achieving community rating, government intervention is necessary.

THE DECISION TO TAKE OUT PRIVATE HEALTH COVER

The institutional arrangements discussed above play an important role in the decision to take out private health insurance. The decisions of individuals and households will be driven by what they pay and what they receive by taking out private health insurance.

The benefits from taking out (basic) private health cover to an individual are:

- Choice of own doctor regardless of whether the treatment is undertaken in a public or private hospital;
- Coverage for the 15 per cent gap between the schedule fee and Medicare rebate for medical practitioners;
- Coverage for accommodation expenses as a private patient in hospital;
- Coverage for expenses associated with theatre fees, intensive care, drugs, dressings, prostheses (surgically implanted), diagnostic tests, pharmaceuticals and doctors' services.

The (net) costs are:

- The private health insurance premiums;
- *Less* the 30 per cent PHI rebate on those premiums;
- *Less* a 1 per cent of taxable income (saving the Medicare Levy Surcharge) for high-income households;
- *Plus* 10 per cent shortfall in Medicare rebate that will be built into premiums by the private health insurers.

When choosing whether or not to take out PHI, an individual must trade-off the benefits they receive from being able to access *additional* health services with a

premium that (while subsidised) must reflect the *full cost* of *both* the supplementary and basic services.

The costs and benefits of basic private health insurance can be contrasted with cover for ancillary services such as dental treatment, ambulance, chiropractic treatment, home nursing, podiatry, physiotherapy, occupational, speech and eye therapy, glasses and contact lenses, prostheses and the like. Medicare does not cover these services and hence, by taking out private health insurance, an individual receives the full benefits of coverage for these services. Moreover, the premiums are still subject to the 30 per cent PHI rebate. Thus, the decision to take out ancillary services has individuals considering the *full benefits* for those supplementary services against (subsidised) premiums based on the *full cost* of those services.

In the Australian health insurance debate, it is often implicitly assumed that a publicly insured individual cannot access services through, for example, private hospitals. This assumption is both false and misleading. It is false because individuals generally can access such services but will not be insured for these services. In other words, the relevant individuals will have to pay additional out-of-pocket expenses. This, of course, is the nature of insurance. Private insurance covers some of the additional costs associated with health services that are not covered by the public insurance scheme. A lack of private insurance does not mean that the relevant services cannot be accessed. Rather it means that there is additional expense for an individual who wishes to access those services.

This implicit tying of private health insurance with private service delivery is misleading because it fails to note the underlying economic product being provided by private health insurance. Private health insurance does not give access to privately provided medical services but rather insures against the cost of services that would be available in the public system and services that may not be available in the public system. In other words, private health insurance is more comprehensive in its coverage than the public insurance scheme but also overlaps with the public insurance scheme. To see this, note that private insurance supplements the public insurance scheme and provides greater protection for individuals in terms of expenses that they might face when suffering an adverse health event. In the absence of this insurance product, individuals would need to bear the entire burden

of any health expenditures that are not covered by the public insurance system. In some cases, individuals would be unable to afford the relevant services and would be forced to suffer the welfare loss associated with poor health where the treatment is not adequately covered by the public health insurance system.

However, while private health insurance provides broader protection against some medical expenses than the public health insurance system, in Australia the two systems 'overlap.' Some services are covered by *both* insurance systems. Where an individual declares that they are privately insured, the private insurance bears any overlapping costs. But the relevant individual does not receive any explicit reduction on the taxation premium paid for public health insurance when they take out private health insurance to compensate for the reduced effective coverage of the public insurance. Rather, the individual with private insurance simply 'pays twice' for the insurance of expenses relating to overlapping services.

It could be argued that the recently introduced Medicare levy surcharge is a form of 'rebate', in the sense that some individuals avoid paying higher taxation if they take out private hospital insurance. However, this levy is not, as far as we are aware, explicitly related to any double coverage associated with overlapping insurance. Rather, the explicit objective involved inducing high-income individuals and households to take up private health insurance. In our analysis here we focus on the underlying insurance system and the thirty per cent rebate.

UNDERSTANDING HEALTH INSURANCE[7]

Consider two people who are identical in all ways except for their risk of an adverse health event. In particular, the individuals have the same level of income, but one is more likely to require hospital treatment than the other. For simplicity let's us refer to the individuals as Norm and Dawn, with Norm having the greater probability of requiring future hospital treatment.

From a welfare perspective, and before any health event is realised, it seems clear that Norm is worse off than Dawn. They are, after all, identical in all relevant aspects *except* for their chances of requiring future hospital treatment. Norm faces more risk than Dawn and if they are averse to facing significant (and poten-

tially life threatening) risk, Norm will be worse off than Dawn because Norm faces greater risk. Of course, after the event, it might be the case that Dawn requires hospital treatment and Norm does not. After all, illness and the requirement for future hospital treatment are uncertain events. It might be the case that Dawn is hospitalised and Norm is not in the future, but this is unlikely. Rather, it is more likely that Norm will require future hospitalisation and care and Dawn will not.

Because individuals like Norm and Dawn do not like to bear significant risk, insurance is offered. An insurance policy transfers some of the risk of the adverse health event away from an individual. If the individual requires hospital treatment at a future date then the insurer will cover the cost of that hospital care and may also cover other related costs that must otherwise be borne by the individual. The insurer cannot, of course, cover all the personal cost of an adverse health event that faces an individual. For example, the insurer cannot 'take away' any pain and suffering that the individual might face. However, the insurer can assist the individual in paying for the relevant hospital treatment.

Insurance may be more or less comprehensive. Health insurance that is more comprehensive covers a wider range of adverse health events, a wider range of treatments and a larger share of any hospitalisation costs. An individual with a less comprehensive insurance cover might choose to use the same medical services as a person with more comprehensive insurance cover, but the costs of any additional services beyond those covered by the less comprehensive insurance cover must be met by the individual themselves.

Insurance that is more comprehensive will be preferred by an individual to insurance that is less comprehensive. Essentially, more comprehensive insurance cover protects an individual against greater risk. But insurance cover is not free. Health insurance involves an individual passing the future financial liability for illness to another party, such as a private insurance company or the government. This other party is taking on a future 'contingent liability' and this has an expected cost associated with it. Insurance is actuarially fair if the expected future cost to the insurer associated with an insurance policy is equal to the premium of the insurance policy. In other words, the actuarially fair premium associated with an in-

surance policy that has a particular level of coverage is given by the minimum expected cost to the insurer of that policy.

Let us return to the two individuals, Norm and Dawn. Because the risk of a future adverse health event is higher to Norm than to Dawn this means that Norm will tend to value health insurance more highly than Dawn and that Norm will be more expensive to insure than Dawn. Norm will have a higher value of health insurance because Norm faces a higher risk of future illness. Because Norm faces higher risk, Norm will tend to be more willing to pay a premium to avoid this future risk. Few of us may be willing to pay an insurer to avoid a $10 risk, but most of us would be willing to pay an insurer to avoid a $10M risk. Further, from the insurer's point of view, Norm is more expensive to insure because Norm is more likely to require future hospital care. The expected future cost associated with insuring Norm is higher than insuring Dawn.

PRIVATE INSURANCE MARKETS

The important feature of private health insurance markets[8] is that even though it costs more to insure Norm against future health risk, private insurers are often unable to charge Norm a higher premium than they charge Dawn. This might be due to a number of reasons. The insurer might not know whether Norm or Dawn *in particular* has the higher risk of future illness. While Norm and Dawn might have a good idea of their own future risks, due to family history, lifestyle or some other relevant factor, an insurer is often unable to observe these risk factors. The insurer might know that on average half the population has a high risk of future illness and half the population has a low risk of future illness. But this information does not allow an insurer to know that Norm in particular has a high risk and Dawn in particular has a low risk. The best the insurer can do is to offer the same insurance contract to both Norm and Dawn. Further, in Australia, under community rating requirements, private insurers are prevented from explicitly charging Norm more than they charge Dawn. Economists refer to the information problems associated with a customer having private information about their risk as adverse selection. The inability of private insurers to 'separate' insured parties by their risk is known as 'pooling'.

Pooling has important consequences for private insurance markets. Suppose that an insurer offers the same insurance policy to both Norm and Dawn. Assuming that the insurer is not making a loss, the premium associated with the insurance contract must be equal to at least the average expected cost of insuring both Norm and Dawn. In other words, the premium will be based on the *average* future risk of illness to Norm and Dawn.

Remembering that Norm has a higher risk of illness than Dawn, such a policy is likely to be very appealing to Norm. From Norm's perspective, the private insurance contract is very cheap. But from Dawn's perspective, the insurance is too expensive. If Dawn is pooled with Norm then Dawn is paying a premium above her actuarially fair premium and Norm is paying below his actuarially fair premium. Dawn is cross-subsidising Norm and, if there is no compulsion for Dawn to buy the insurance then Dawn will be tempted to drop out. In this situation, the private insurer risks being left with only the high risk types. The end result is that private insurance will be expensive and only cater to individuals who have the highest health risk. This is not all bad – after all those individuals with the highest health risk are most in need of health insurance. However, those facing a lower health risk, like Dawn, are liable to be underinsured.

THE ROLE OF PUBLIC HEALTH INSURANCE

The discussion above highlights the limitations of a purely private health insurance market. It provides the economic basis for government intervention in this market. This intervention can occur in a number of ways. From an economic perspective, the best type of intervention would involve the government requiring all people to join universal and comprehensive public insurance scheme. All individuals would be fully and efficiently covered by public health insurance. Note that this first best solution *does not* mean that the government must own the facilities used to provide medical treatment. There is no reason why public hospitals are needed in order for the government to solve the problems associated with private health insurance. Ownership of hospitals and the provision of health insurance are separate public policy issues and should not be confused.

In practice, few (if any) governments provide universal comprehensive public health insurance. The reasons are simple. First, it is extremely expensive. It means that the government would have to 'foot the bill' for all costs of illness, and this would require massive taxation revenue to pay for the public insurance. Second, there are incentive problems with comprehensive public insurance. The government would be unable to effectively prevent over-servicing or individuals using the public insurance to cover unnecessary procedures. Third, it would be politically difficult. A universal tax-funded public insurance scheme means that all individuals are pooled. As we have already seen with private insurance, this means that those individuals who are relatively fit and healthy and have a low risk of future illness are cross-subsidising those individuals who have a higher risk of future hospitalisation. The low-risk individuals may be reluctant to support universal health insurance at the ballot box, knowing that it will cost them more in taxes than they will gain in insurance cover.

For these practical reasons, public health insurance around the world is less than comprehensive. Not all procedures are covered. There may be waiting lists for certain procedures. Add-on services, such as a private room or choice of own doctor, are either unavailable or only available at a private cost to the individual. Practical public health insurance is less than perfect.

AUSTRALIA'S MIXED PUBLIC/PRIVATE HEALTH INSURANCE SYSTEM

In Australia, the tension between imperfect private health insurance and limited public health insurance has led to the development of a dual system. Individuals pay for the public health system through their taxes. Some of this expenditure is 'explicit' in that the Federal Government sets a Medicare charge through the income taxation system. Most of the government funding required for the Australian health system however is just taken from general taxation revenue.

Individuals may, if they choose, also purchase private health insurance. This insurance both duplicates aspects of the public insurance system and provides more comprehensive insurance cover than the public insurance scheme. For example, a privately-insured individual (a private patient) may receive the same services as an individual who does not have private health insurance and is only covered by the

government insurance scheme (a public patient) in a government-owned hospital. But in the case of the public patient, the government pays the full cost of the services. In the case of the private patient, part of the cost is borne by the private insurer and possibly directly by the individual themselves.

Private insurance however is more comprehensive than public insurance. It covers the individual for services that are not covered under public insurance, including in some circumstances receiving treatment without an extensive waiting period.

An individual who takes out private insurance is effectively removing some of the insurance burden from the public insurance system. However, until recently, those individuals would not have received any rebate on their taxes associated with the lower cost they impose on the public insurance system. This effectively means that individuals who take out private insurance are 'paying twice' for their insurance. They are paying for the public insurance scheme through their taxes, but because they have private health insurance these individuals provide a significantly reduced burden to the public health insurance scheme. At the same time individuals who take out private health insurance are paying directly for this insurance. This provides a significant disincentive for individuals to take out private health insurance. They must pay the full cost of this insurance to the private insurer, but because the private health insurance overlaps with the public insurance scheme, these individuals do not get additional benefits equivalent to this additional cost. From the consumers' perspective, private health insurance only provides them with additional cover compared to the public insurance system. But the private health insurance premium must cover the whole of the expected medical costs for that individual.

Suppose that an individual has a 50 per cent chance of requiring future hospital treatment. This treatment will have a personal cost to the individual of $5000, including the cost of discomfort, pain and suffering, loss of income, and so on. There is however a 50 per cent chance that the individual will not require this future hospital treatment.

Suppose that the public insurance scheme effectively covers $2000 of this cost. The public scheme may involve a waiting list for the procedure which means that the public scheme covers less of the cost of pain and suffering and less of the loss of income. The public scheme may also provide less choice to the individual, meaning that they effectively are less fully covered. From the perspective of the public scheme the individual has an expected cost of $1000. This is just the 50 per cent chance that the individual will require the future hospital care times the $2000 cost to the 'public purse' that arises from this future care.

Alternatively, suppose that the individual could take out private health insurance that covers $4500 of the cost of future illness. This may involve benefits such as coverage for a private room, additional rehabilitation care, alternative therapies, and avoidance of a waiting list. Further, suppose that the private health insurance is priced in an actuarially fair way, with a premium of $2250. This is exactly the expected future cost for the private insurer.

If the individual is risk averse and faced the true cost of the insurance through either the public or private system, then the individual would clearly prefer the private insurance. The public insurance would cost them $1000 rather than the $2250 for the private insurance. Both premiums are actuarially fair but the private insurance is more comprehensive, so that a risk averse individual would prefer the more comprehensive cover if she could afford it.

However, the individual does not face the true cost of the public insurance. The individual does not receive a tax refund of $1000 when she takes up private insurance even though the individual has reduced the costs of the public insurance scheme by $1000. Rather, the individual keeps paying the same taxes but receives a reduced public insurance benefit. From the individual's perspective, if they purchase private health insurance then they are paying $2250 to gain an additional $2500 in the event that they require future hospitalisation. From the individual's perspective the private health insurance only provides an extra $2500 benefit relative to the benefit that they would receive (and will pay for regardless) under the public insurance system. Of course, the private insurer pays out the full $4500 in benefits if the individual is ill, but the additional coverage gained by the individual in the event that they are ill is only $2500.

Under the mixed Australian public/private health insurance system, individuals who opt out of public insurance and take up private insurance essentially 'pay twice' for their health insurance. These individuals pay for the public health insurance system through their taxes even though they place a lower burden on this system. They also pay the full price of their private insurance, even though they would have received some of the private insurance benefits anyway under the public health insurance scheme. Clearly 'paying twice' is a significant disincentive for individuals to take out private health insurance, even though when they do take out such insurance they reduce the costs of the public health insurance scheme.

Given the disincentive to take out private health insurance in Australia, who if anyone will take out this insurance? Let us return to our fictional pair of individuals, Norm and Dawn. Remember, they are identical in all ways (including income) expect that Norm has a higher risk of future illness and as such he has a higher risk of requiring future hospital care.

As noted, Norm will tend to value health insurance more than Dawn because he faces greater health risk. Further, Dawn is unlikely to be 'pooled' with Norm in a private health insurance scheme. Such voluntary pooling means that Dawn is effectively paying 'too high' a premium for insurance and is cross-subsidising Norm. Finally, private health insurance, if it is to be taken out by anyone in Australia, must be more comprehensive than the public insurance scheme. No-one would pay additional money for private health insurance if it did not offer them some additional benefits compared to the public health insurance system. Thus, in a mixed public/private health insurance system like we have in Australia there are three possible outcomes for Norm and Dawn:

Neither buys private health insurance and both rely on the public scheme. Both Norm and Dawn have 'inadequate' insurance in the sense that they have to rely on the public health insurance system that is less comprehensive than private insurance. But neither individual believes that the private insurance is 'worth it' even at an actuarially fair price, given that they still have to pay for the public scheme through their taxes.

Both buy private insurance and neither relies on the public health insurance system. If the public health insurance system is very poor, providing highly inadequate coverage, then Dawn may decide to buy private health insurance even though she 'pays twice' and even though she is pooled with Norm. And as Norm values insurance more than Dawn, if Dawn finds the private insurance worthwhile, then Norm will definitely find it more desirable than the public insurance scheme.

Norm buys private health insurance and Dawn relies on the public health insurance system. In this situation, Norm cannot 'take the risk' on public health insurance. Even though he receives no tax rebate, Norm finds that the public insurance system does not provide adequate cover given his relatively high risk of future hospitalisation. In contrast, Dawn has a lower risk and is willing to 'gamble' on the public insurance system. Dawn would like to have more health insurance but given her relatively low risk of future hospitalisation, she is unwilling to pay the additional premium required to buy this insurance privately.

Given that Norm faces a higher health risk and values health insurance more highly than Dawn does, Norm may take out private insurance even though Dawn does not find this insurance worthwhile. But the reverse will not hold. Given that Norm and Dawn *only* differ by their health risk, we will not have a situation where Dawn privately insures and Norm does not privately insure.

The outcome that best describes the current Australian situation is clearly the last one. We have a variety of individuals and families who take out private insurance and, even before the recent Federal Government changes to health insurance, these individuals were spread over the spectrum of the community.

IS AUSTRALIA HEALTH INSURED?

An important implication of our analysis is that those individuals and families who face the highest health risk are those that are most likely to 'opt out' of the public insurance system and to purchase private health insurance.[9] Those individuals who have lower health risk do not buy private health insurance but will rely on the public health insurance system. But relying on public insurance alone is highly

undesirable for those individuals and families with high health risk because public insurance provides inadequate coverage for high-risk individuals.

Under the Australian mixed public/private health insurance system, those in society who are most likely to be ill will be most likely to 'opt out' of public insurance and purchase private insurance. The public health insurance will tend to be used by those in society who are healthiest (i.e., least likely to become ill). The high-risk individuals are made worse off by the public insurance because they are required to cross-subsidise the public insurance of the low-risk individuals through the tax system.

This outcome of the Australian health insurance system is perverse. Those most at risk of adverse future health are required not only to pay for private insurance in order to gain adequate insurance cover, but are also required to cross-subsidise those individuals and families least likely to be ill in the future. But as in the case of Norm and Dawn, those individuals and families who have a higher health risk are worse off in the sense of expected welfare. Having a high health risk is not something that most people would aspire to. However, the Australian system requires that these individuals and families who are least well off in terms of expected health and welfare must transfer funds to those who are better off in terms of expected health and welfare. A system that taxes the sick to give to the well, to our mind, seems to have severe equity problems.

The transfers that are embedded in the current Australian health insurance system are not simply inequitable. They are also inefficient. In our discussion above, we assumed that some individuals had a high health risk and others had a low health risk. In fact, over our lifetimes, most of us will face periods where our health risk is low and periods when our health risk is high. The basic incentives provided by the Australian health insurance system are for us to rely on the public health insurance system when we have a low health risk (e.g. when young) but to take out private health insurance when we have a high health risk (e.g. when older). At any point in time the 'old sick' will be cross-subsidising the 'young well'. But over our lifetime, these transfers essentially increase our risk rather than decrease our risk. The insurance system means that we will be paying out more money when we are least able to afford it – when we have a high health risk and

are forced to rely on private insurance for adequate health risk protection. While, in turn, we receive a cross-subsidy when we are young and healthy, this is when we least require the additional funds. From the perspective of an individual over his or her own lifetime, the Australian health insurance system transfers wealth from those times when we most need it to times when we need it less. This of course is the exact opposite of what insurance is meant to achieve. Insurance is designed to take wealth from us in situations where we are relatively well off (e.g. when we are young and healthy) and provide us with additional resources when we most need them (e.g. when we are old and sick). The Australian health insurance system does the exact reverse. In this sense, the Australian health insurance system is quite literally anti-insurance!

The income transfers associated with the Australian mixed public/private health insurance system are socially undesirable because they raise the risk that individuals face across the community and over their lifetime.

POSSIBLE OBJECTIONS

The conclusions presented above are a harsh indictment of the Australian health insurance system. Our analysis, however, is based on considering individuals (Norm and Dawn) who only differ in their health risk. While this is a special case, our conclusions regarding the existence of welfare-reducing anti-insurance are robust to a significant relaxation of our key assumptions.

First, we implicitly assumed above that private health insurance was provided at actuarially fair prices. This is a reasonable assumption given the highly regulated nature of private health insurance premiums. However, even if these premiums were not regulated, and health insurance companies had sufficient market power to charge 'monopoly prices', our conclusions would remain valid. For example, suppose there was a monopoly private insurer. Raising the price of private insurance to a monopoly level would not eliminate the fact that the high risk individuals who rely on private health insurance must 'pay twice'. In fact, these individuals are simply made worse off by the monopoly insurer. Not only do they pay for public insurance that they do not use, they pay an unfair price for private insur-

ance. A lack of competition in the market for private health insurance simply exacerbates the inefficiencies in the Australian system.

Second, our discussion implicitly assumed that all individuals had identical levels of risk aversion. However, similar results would hold, for example, if individuals differed in risk aversion but not health risk. Rather than the Australian system leading to transfers from high-illness-risk to low-illness-risk individuals it would lead to transfers from highly-risk-averse to less-risk-averse individuals. There would seem to be little merit in such a transfer which again moves income from those who are less well off (due to their high aversion to risk) to those who are better off. The system is still characterised by anti-insurance.

Finally, we have made a potentially controversial assumption that individuals have identical income levels. This assumption rules out any potential redistributive benefit that might arise from public insurance. While we have shown that the Australian health insurance system transfers income from those most likely to require health treatment to those less likely to require health treatment what will happen if income levels differ? If low-income households, who cannot afford private cover, rely on the public system then they receive a transfer from high-income individuals who take out private health insurance. This, however, provides little justification for the current system. Rather, it highlights the inadequate level of insurance support for low-income individuals and the complexity of the existing transfers embedded in the Australian health insurance system. Low-income households forced to rely on a public system that only provides partial insurance still receive inadequate coverage regardless of implicit transfers from high-income households. The solution to this is to assist the public system; not to distort insurance mechanisms.

The inadequate nature of the existing insurance system becomes even more obvious when we consider all the transfers. While the poor may receive an implicit subsidy from those richer individuals who have private health insurance, so too do the most healthy rich. Thus, the system provides the same subsidy to those most well off in society as it provides to the poorest in society. At best, the equity of taxing the sick rich to pay both the well rich and the poor is debatable.

REBATE OR REFUND?

In 1997, the Australian Federal government began introducing rebates for private health insurance. While initially a lump sum based on income level, today this rebate reduces the effective price of private health insurance by 30 per cent for all privately insured individuals.

The 30 per cent private insurance rebate has two effects. First, it partially reverses the transfers imposed on high-risk individuals under the Australian health insurance system. This is desirable in the sense that it partially reverses the anti-insurance associated with the health insurance system. High-risk individuals who take out private health insurance reduce the burden on the public insurance system and the rebate provides a partial recognition of that reduced burden. There is less of a transfer from high-risk individuals to low-risk individuals.

The effect of this can be clearly seen in Figure 2. The upper line represents a pure transfer from those who take out private health insurance to those who don't. On the one hand, it is a reasonably conservative measure as it does not include contributions from those who were self-insured.[10] On the other, it assumes that the privately insured never used the public system without declaring their private status. The transfer from high-risk types (privately insured) to others was between $500 - $650 per person but had risen appreciably since 1995. This rise reflects the declining numbers of people taking out private health cover as well as the consequent rising public hospital expenditures.

Figure 2: Public Contribution by Privately Insured Individuals

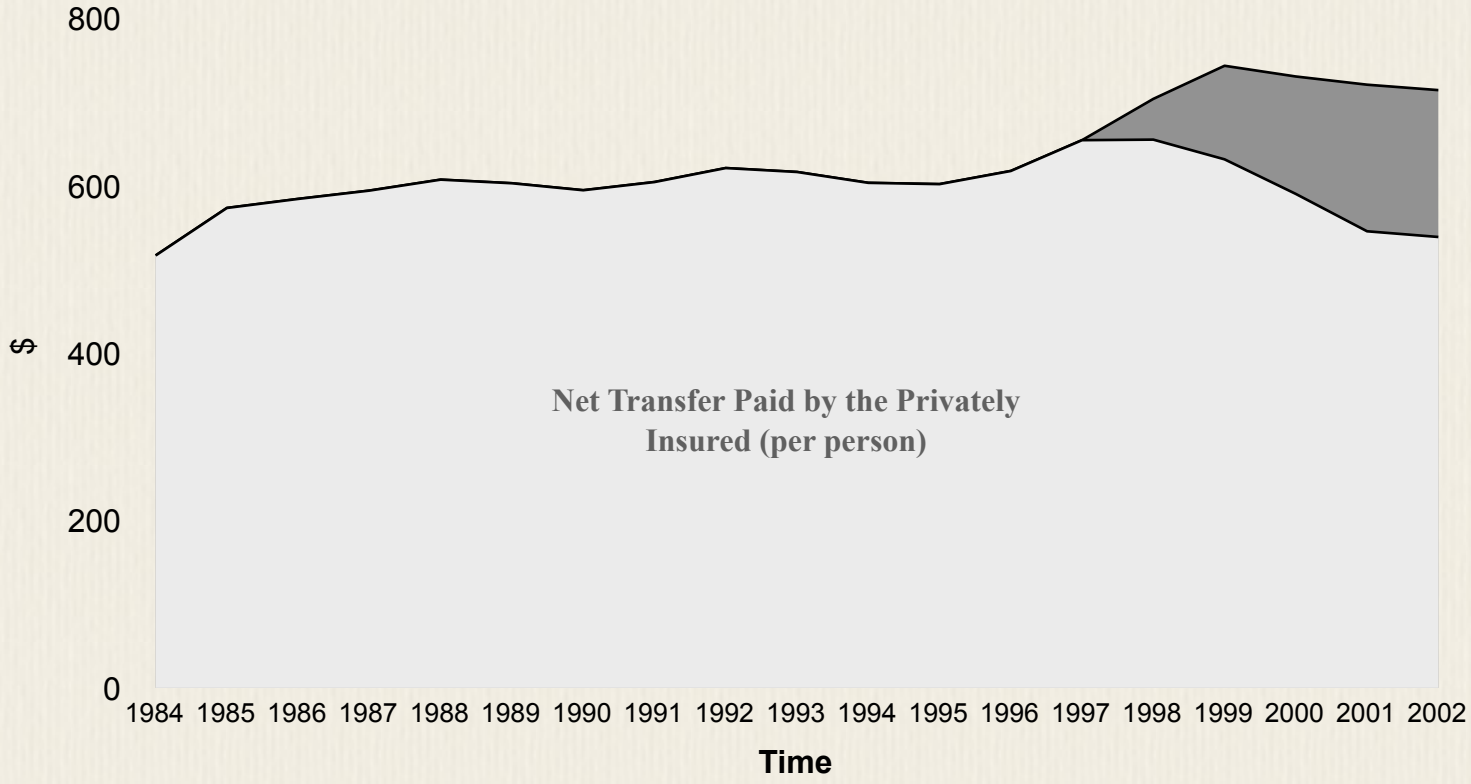


Figure 2 also demonstrates the effect of the rebate. We subtract from the transfer, the extent of the rebates to private health insurance since 1997 (the lightly shaded area). Notice that these have reduced the net transfer (the dark shaded area) considerably. Thus, the transfer potentially paid by high risk individuals has fallen from about $650 per person prior to 1999 to about $550 per person in 2002. We can interpret this as a reduction in social risk as costs for those most likely to face adverse health risk have been lowered.

The second effect of the rebate is that it distorts the marginal price of private insurance. This is undesirable in the sense that it means that additional private insurance cover is 'too' cheap. In practice, we would expect to see individuals who purchase private insurance buying policies that are 'too comprehensive' and that provide benefits that are valued by the purchaser at less than their true economic cost. It should be noted that this over insurance is not due to any incentive problems. Any subsidy which reduces the marginal price of any product tends to encourage excessive consumption of that product. The over-consumption created by a subsidy will lead to a misallocation of resources and a social loss.

The 30% government rebate on private health insurance reduces the transfer from the high-risk individuals to the low-risk individuals. In this respect it is a 'refund' for potential double payment for insurance. At the same time, the rebate cre-

ates a deadweight loss through over insurance that creates a welfare loss for the high-risk individuals.

The overall effect of the private health insurance rebate is ambiguous. It solves one problem with the health insurance system but creates another problem. An alternative approach that would not distort the marginal price of private insurance is to have a lump sum rebate on private health insurance premiums. Such a lump sum subsidy would reverse the double-payment that exists for private insurance while maintaining the marginal price of private health insurance. The lump sum private insurance rebate has all the desirable properties of the percentage rebate but avoids any additional, undesirable price distortion.

WHY CAN'T PUBLIC HEALTH CARE SIMPLY BE IMPROVED?

We have argued that the provision of minimum standard health care is a separate issue from where its funding comes from. However, the current Australian system inexorably ties the two. To see this, suppose that the government wished to improve minimum standards in public hospitals by reducing waiting lists or enhancing quality in other ways such as improved technology. Under the existing system, this improvement would tip the balance for some individuals in their decisions to take out private insurance. After all, a key motivation for so doing is the relative difference in waiting list and other quality dimensions between public and private hospitals.

But here is the issue. Remember that how we help fund the public system is to encourage individuals not to use it by having them take out private health insurance. So by improving the public system, we, at the same time, encourage people to use it. In so doing, we remove a source of funding for the health system as a whole. Thus, the decision to improve the public system is doubly costly. Not only does this take more resources but it also raises the number of individuals relying on that system. Indeed, improve the public system by too much and we risk a sharp collapse in the take-up of private insurance coverage.

There is no simple answer to this. We could prevent the movement to the improved public system by offering higher insurance rebates which amounts to a fall in funding for health care from private hands. Again the public costs mount. Similar considerations apply to subsidies directly to private health insurers. In the end, when the decision to utilise public versus private health care is linked to the overall funding of the system, there is a fundamental constraint on the government's ability to set a minimum health standard. As it stands, our system ties the government's hands by threatening cost blow-outs if public provision is improved.

CURING AUSTRALIAN HEALTH CARE

While the private health insurance rebate partially rectifies the undesirable anti-insurance created by the current Australian health system, it is a 'band aid' that does not address the underlying distortions at the heart of our current health insurance system. In our opinion, the problems highlighted by our analysis stem from three key policy failures:

- The erroneous connection of public and private health insurance with the provision of health care through publicly-owned and privately-owned facilities;
- The use of health insurance system to attempt to provide for income redistribution; and
- The failure to recognise the key role of private health insurance as a supplementary product to public insurance rather than as a replacement to public insurance.

We have already noted that there is no economic reason why public health insurance and the public provision of health services need to be tied together. However, this unnecessary joining of two separate features of health provision often drives the Australian health insurance debate. Private health insurance is seen as a way of moving patients from public hospitals to private hospitals. Public hospitals (and public insurance) are seen as being 'available to all'. Those who choose not to use the public facilities need not do so but they must pay their own way. If this means a reliance on private health insurance, so be it. In other words, the owner-

ship of the hospital facilities drives health insurance policy. Not surprisingly, this leads to very poor insurance policy that is inequitable and socially undesirable.

To avoid this confusion between ownership and insurance, the government needs to alter the way that it treats hospitals and other medical facilities. Hospital ownership should be irrelevant for the government *as an insurer.* In its role as a health insurer, the government should simply be interested in getting the highest quality of care for its customers at the best possible price. If this is able to be provided by public hospitals, fine. But if private hospitals can better provide services that are covered by public insurance, then they should be allowed to provide those services and to receive the same payment from the government insurer as a public hospital.

To untangle the issues of insurance and ownership, the government needs to move to a system where a patient who is covered by public health insurance is able to receive relevant services from any hospital that is registered to provide those services. The public insurer would cover the relevant cost of the services and the payment to the hospital would be fixed. Hospitals, whether public or private, would not be able to levy any additional charge on the publicly insured patient. A relevant hospital would not be able to pick and choose public patients but would have to take 'all comers' subject to capacity constraints.

Similarly, both public and private hospitals would be free to take privately insured patients. If a hospital is registered to take public patients then it may be required to limit its intake of privately insured patients. But the rules facing a hospital should not depend on the ownership of the hospital.

The use of the health insurance system as an income redistribution device is bad economics. It is at best a highly inefficient way to redistribute income. As we have shown above, it is also highly inequitable, making the ill pay the well, and allowing the young rich to receive the same benefit as the poor. While the recent government initiatives have helped to mute the worst inequities in the health insurance system, it is clearly not sensible to use it to redistribute income. If the government wishes to help the poor then they have our full support. But the assistance

should be provided directly, openly and transparently, not through backdoor health insurance transfers.

To remove the inequities that exist in the current health insurance system, the government should move to make the public health insurance system truly universal. This does not mean that public health insurance cover will be comprehensive. As discussed above, this is impractical. However, public insurance paid for by tax revenue should be open to all individuals. An individual who has high risk of future illness and who chooses to 'top up' their public health insurance by buying additional private insurance should not be penalised for trying to better protect themselves from future health risk. The government needs to determine the appropriate level of insurance that will be provided through the public health insurance system. It then needs to fund this insurance through the taxation system and provide the insurance to all individuals.

Under such an approach, private health insurance necessarily becomes a supplement to the public insurance system. Individuals, who desire greater insurance protection, whether because they are elderly and face higher health risk, or for any other reason, should be allowed to buy such insurance. This additional insurance would not overlap with the public insurance. Rather it would cover procedures or services not covered by the public insurance system.

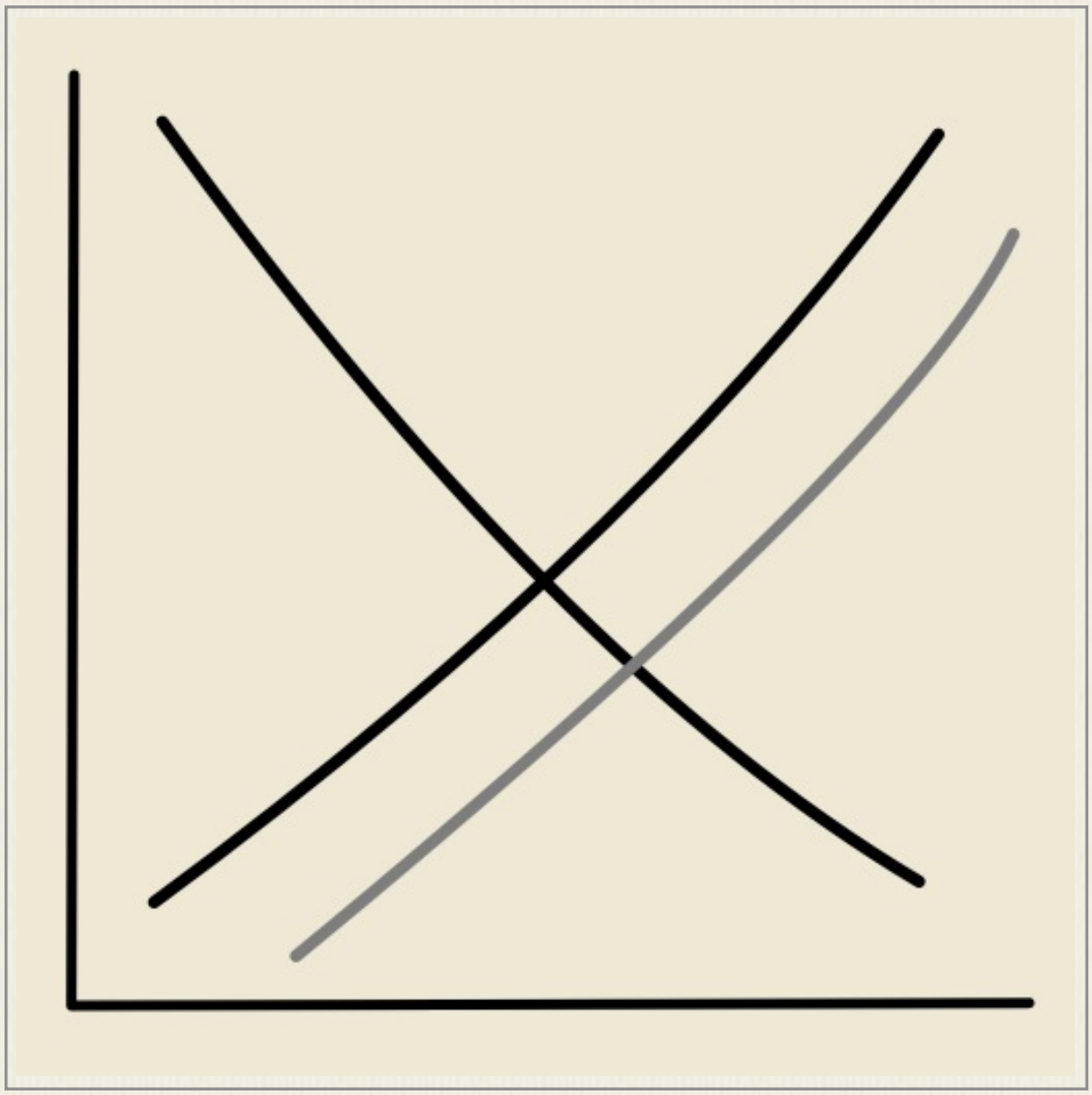
This type of supplemental insurance has been considered elsewhere.[11] It has some desirable economic properties, but needs careful implementation. However, a supplemental role for private insurance is a necessary consequence of a universal public health insurance program.

However, perhaps the biggest policy impact from a move to a 'top up' system is that it will clearly separate government choices as to the level of public health care and how it is funded. Under this type of system, if the government improves the level of quality of basic health care available under Medicare, it improves the quality of that care under both public and private provision. While this might reduce the need for 'top up' insurance, it will not cause more health consumption from public sources; that will be exactly the amount the government wishes to provide. And if the government wants to fund this, it must do so through the usual tax sys-

tem. This means that it will have to call a ‘tax’ a ‘tax.’ But surely this is a small price to pay to make a more stable health system able to cope with improvements in the level of health care.

CHAPTER 4

Rethinking Education



In policy terms, education is an oddity. Almost everyone agrees that more education is a good thing and that access to at least basic education should be freely available to all Australians. But at the same time, Australian governments limit the ability of schools to raise additional funds to improve the level of education that they provide to their students. Government-owned schools are either banned from charging additional fees to students' families or face severe constraints on such additional fees. Attempts by government schools to raise additional money from corporate donations are often met with howls of derision. If parents want to buy their children more education by using a private school then they are effectively penalised as such schools receive less government funding. However, the same parents

can purchase educational services without constraint from a variety of private providers, such as specialist after-school tutoring services, so long as these services are additional to standard schooling.

This tense relationship between education and funding is not unique to Australia. In most developed countries, primary and secondary education is 'free' (and indeed compulsory) until students reach their mid-teens. These same countries all have a high degree of government involvement in education, often through direct government ownership of schools. And in all these countries, trade-offs between access and additional funding exist.[1]

In some countries, such as Finland, most schools are government-owned and funded, and students have little choice over which of these schools they are allowed to attend. At the same time, many government-owned schools in Finland began as private schools and the few remaining private schools are funded on the same per student basis as government schools. These private schools, however, cannot charge additional compulsory fees.

In contrast, other countries such as the Netherlands have more than half of all students educated in private schools. Dutch private schools educate approximately 70% of students and parents have wide choice over where to educate their children. Private and government-owned schools there receive government funding on the same basis and both can charge additional compulsory fees. However, these fees cannot be used to hire additional staff. [2]

Australia and most European countries fall between these extremes. In the UK, for example, parents have flexibility in the choice of school for their children. But private schools have to choose to either receive government funding or to stay out of the government system. If a private school opts for government funding then it forgoes the right to charge additional compulsory fees.

In Australia, about 25 per cent of primary education and 35 per cent of secondary education is provided by private schools with the remainder provided by government-owned schools. [3] Often private schools are perceived as elite and rich, but this perception is generally false. For every Sydney or Melbourne Grammar there are many more low-fee private schools. The Catholic primary and secondary

schools provide the obvious examples although the number of other low-fee private schools in Australia has risen rapidly in recent years. Government-owned and private schools are funded by both the State and Federal governments in Australia, but private schools receive fewer funds per student than government schools. Further, 'rich' private schools receive significantly less government funding than 'poorer' private schools. Government-owned schools are not allowed to charge additional compulsory fees although they may ask families to make a 'voluntary' contribution. Private schools can charge compulsory fees, but the level of these fees is taken into account for their government funding. In general, the higher the fees, the lower the government funding per student.

If education is a good thing, why do governments make it difficult for parents to buy more of it? In this chapter, we explore the rationales for education policy and show how governments can improve the delivery of education by adopting innovative funding arrangements. To fully understand the role of government in education we need to examine the 'educational production process.' Education, like most other goods and services produced in our economy, is excludable. In other words, non-payers can be prevented from accessing relevant education services. However, education, unlike most goods and services, involves joint consumption and production by a group of individuals. This group, which we call the 'school community', provides a service that can differ on a variety of dimensions. But once produced, that same service is essentially consumed by all students in the school community.

Like health care, universal access is a goal of education policy. It is desirable for everyone in society to be able to attend a high quality school regardless of their ability to pay. As a result, it is desirable for governments to both guarantee a minimal level of education to all citizens and to encourage (to some degree) educational consumption beyond this minimum level. But this creates a critical conflict. If everyone must have access to a school regardless of ability to pay, then schools must be limited in their ability to exclude non-paying students. However, if a school cannot restrict entry to only those that pay the relevant fees, how can that school raise the funds required to provide a high level of education?

This conflict creates unique issues for education policy. In this chapter we show how this conflict, at least partially, can be solved by rethinking education funding.

WHY IS THE GOVERNMENT INVOLVED IN EDUCATION?

The vast majority of goods and services produced and sold in Australia involve little direct government intervention. The government establishes the rules of commerce and then 'steps back' and allows the market to determine the relevant mode of production and mix of output. In most circumstances such a hands off approach is good for society. Consumers can express their individual tastes and preferences through the marketplace by buying those goods and services that best meet their needs and this creates strong incentives for producers to meet consumers' needs in the most efficient way possible. The end result is that we can buy a vast range of goods and services many of which were unknown and undreamed of one hundred years ago.

There are a variety of economic reasons why the government does not take such a hands off approach for education. First, it can be argued that primary and secondary education is an 'essential' product. Along with basic nutrition, medical care and housing, most Australians would agree that every child has a 'right' to at least a minimal level of education, regardless of that child's background or ability to pay.

Second, it is argued that governments need to take an active role in education provision because it creates benefits that go beyond the individual student. Having a literate and numerate society provides benefits for all citizens, for example through an improved ability to participate in Australia's democratic institutions. Because of this, individual students will fail to consume enough education if it were left to the private market.

It may also be desirable for governments to intervene in education production because education is a uniquely important form of investment. Education is the main way in which individuals invest in their human capital. There is also good evidence that high education levels in the general population are related to high levels for economic growth for society in general. Again, government support for

education may be desirable because it broadly benefits society beyond the benefits received by individual students.

Finally, government intervention in education might be desirable because it involves delegated choice. Most primary and secondary education is consumed by children. However, often these children do not choose either the level of education that they consume or the amount of household funds that will be allocated to their education. Rather these responsibilities are vested in the parents or carers of the children. So long as the parents and carers have a child's best interest at heart then this separation between the identity of the consumer and the identity of the agent choosing the education services creates little concern. If parents and carers do not act in the best interest of their children when making educational choices however it could be argued that the government needs to intervene to protect the children.

These are all good reasons for some government intervention in the provision of education. However, none of these reasons justifies a high level of government involvement in primary and secondary education. Further, none of these reasons explains why government policy would control access to education services to the degree observed in most developed countries.

Let's consider each of these arguments. It is quite reasonable to say that education, like nutrition, health care and housing, is important to all Australians. At the same time, education is significantly different from nutrition, housing or health care. A lack of formal education is not life-threatening unlike a lack of adequate housing, appropriate nutrition or timely medical treatment. In this sense education does not seem to be an essential product in the same way that housing or medical treatment are 'essential'. While it could be argued that a minimal level of education, for example minimal literacy and numeracy, is essential for an individual to be able to function in a modern society it is not clear that the vast majority of primary and secondary education comprises an 'essential' service.

Further, it is far from clear, even if a minimal education is an 'essential' service, that this requires general free government provision of education. When the government intervenes in housing services it generally provides a relatively low level of service to those most in need. While the government may target particular

groups in society for assistance, such as the poor or first home buyers, the government does not provide all individuals with a set level of housing regardless of their income or wealth. In contrast, all Australian families are able to access government-funded education, regardless of their background, income, wealth or any other family specific factors.

Access to adequate education is clearly an important driver of government education policy and funding. It is also clear that this motivation does not by itself explain the high degree of government involvement in education in developed countries. If 'essentiality' was the only driver for education policy, we would expect to observe targeted government subsidies and possibly limited government direct provision, not wholesale intervention.

What about the social spillovers that flow from education? Can these justify existing government education policies either from the perspective of social cohesion or because of the spillovers to economic growth? No! Justification of extensive intervention in primary and secondary education on the basis of social spillovers is weak. While having an educated populace might help society, this type of spillover suggests that the government should be involved in providing a minimal level of education to all citizens rather than providing the advanced level of education associated with, for example, higher years of secondary schooling.

Similarly, the relationship between education and growth cannot explain existing government intervention. Education has a significant investment component and often provides a high return to an individual. But this means that many people would undertake a significant level of education even in the absence of government intervention. While from a social perspective we might want even more education, due to spillover benefits through social cohesion or economic growth, this suggests the exact opposite of existing education funding policies.

If people consume too little education from a social perspective then government policy should aim to provide incentives to increase the level of education. This suggests that the government should aim to subsidise higher education, not primary education. After all, most people in society would consume primary education anyway, so under-consumption of education is likely to be reflected by stu-

dents dropping out of the education system at secondary or tertiary levels. So under the 'spillovers' rationale, government policy should aim at encouraging education retention, for example through increasing subsidies at higher levels of education. In fact, this is the exact opposite of the current education policy in most developed countries, where involvement is maximised at primary levels and reduces significantly for university education.

At best, the 'spillovers' argument can be used to justify government funding of primary education for the poorest groups in society and possibly to justify a compulsory minimum level of education. But it does not explain why governments fund education for rich and poor families alike. Further, it does not explain why governments restrict the ability of schools and parents to increase educational consumption, for example through levying compulsory fees to fund additional services.

What about the issue of education and delegated choice? How can the government guarantee that parents and carers will allocate enough of a family's limited funds to education rather than to holidays, consumer durables or other forms of consumption?

Of course, the government cannot guarantee any such thing without an outrageous level of intervention in the decisions of individual households. Further, it is far from clear that the government should make such a guarantee. For most families, the government does not question priorities in spending. So long as children are fed and housed to a minimal acceptable standard, the government allows families to determine how they will spend their incomes. Under current policies, some families allocate a significant proportion of their budgets to education, for example by paying private school fees or buying after-school tutoring. Other families with similar incomes provide less education to their children and use the additional funds to provide better food, housing or recreation. These are individual choices and most Australians would agree that beyond a minimal level of care to protect children, governments should keep their fingers out of family decisions.

Issues of delegated care may justify some government intervention in the provision of education – particularly where parents and carers are clearly not acting in

the best interests of their children. However, these interventions would be the exceptions, not the rule. In contrast, widespread government intervention in the provision of education is the rule in all developed countries.

If these economic arguments – essentiality, spillovers and delegated care – were the only arguments for government intervention in education, then we would have very different education policies. Like health care and housing, there would be a role for the government to intervene to protect the poorest in society. There might also be a case for well targeted government education subsidies to encourage more education. There would not, however, be any rationale for widespread intervention in education, government ownership of schools, restrictions on fees and limitations on families purchasing more education. If we are going to explain existing government education policies and work out ways to improve these policies, we have to go beyond the 'standard economic arguments' for government intervention.

EDUCATION AND EQUITY

Equity and fairness are clearly important drivers of education policy. Further, understanding the role of fairness and equity can help to explain some of the odd features of government education policy.

For example, as we noted above, education involves direct investment in human capital. As such, education is positively correlated with life-time earnings. Compared to many other forms of investment, education provides low-risk high returns for those who participate in the education system.

At the same time, education is an unusual investment good. It is a product that is consumed from an early age and the level of investment is not in general chosen by the party who will be the main beneficiary of that choice. Educational spending is determined by parents and carers and competes with a variety of other commitments for the household budget.

Given its importance to future lifetime opportunities and earnings, it might be felt that allowing some children to gain a higher level of education, simply because the parents of those children have a higher income or place a higher value on chil-

dren's education is 'unfair'. A government policy to deal with this potential equity issue could involve requiring all families to provide minimum level of education for their children and restricting the ability of families to buy more than this set level of education. Thus, fairness might explain why governments restrict schools from increasing the level of education through fees. Such fees could prevent some children from attending a particular school – either due to family income or parental choice – limiting the child to lower education levels.

Even so, equity issues do not explain the full gamut of government education policy. If equity considerations alone drove government intervention in education then we would expect that governments would attempt to rule out private educational institutions that deliberately provide an educational product differentiated from the state-provided product. In contrast, almost all developed countries have some private school sectors and many allow differentiation within the government-owned school sector. For example, both Finland and the Netherlands allow government-owned schools significant discretion on how they spend their funds, allowing schools to differentiate themselves within curriculum guidelines. European education systems often stream students into 'academic' and 'vocational;' paths, belying a one-size-fits-all approach to equitable education. Even in Australia, elite government-owned schools, such as Melbourne High School, are not uncommon. Such schools clearly fly directly in the face of the 'equity' of schooling opportunities.

If equity considerations provided the main rationale for public intervention in education then we would expect to see the same type of equity-based interventions being manifested in other spheres of society. For example, the lifetime income of children depends on their parents' income and educational levels. But we do not see significant government policies aimed at 'evening up' lifetime earnings through either high inheritance or gift duties, or through a tax of some form on the children of more educated parents.

Equity arguments clearly are important for educational policy. But we would expect to see such policies manifested through government subsidisation and supply of education targeted at the least well-off households. It seems both reasonable and 'fair' that no child should be prevented from reaching their educational poten-

tial simply through inadequate family income. In contrast, government policies go well beyond simple 'fairness'.

While equity objectives, along with issues of minimum standards and delegated choice, clearly play important roles in educational policy, these factors by themselves do not fully explain the education policies observed in developed countries, including Australia. In our opinion, the 'missing' policy input relates to the educational production process.

EDUCATION AS A 'CLUB GOOD'

To understand government education policy, we need to recognise that the provision of education does not occur through a simple one on one transaction. Rather education is provided through a school community and through classes of students.

To see why this is important, consider the alternative standard transactions that we engage in every day. When you buy a sandwich, a drink, put petrol in the car, or purchase milk at the supermarket, you are involved in a one on one transaction. The product being purchased is 'rival' in the sense that once one individual has consumed a sandwich or a drink then that same sandwich or drink is not available to any other consumer. Similarly the act of consuming a sandwich or drink provides no benefits in terms of reduced hunger or thirst to any other individual.

In contrast, some products are most efficiently provided simultaneously to a group of consumers. Examples of these types of goods and services include sporting clubs and gymnasiums, movie cinemas, and entertainment events such as cricket matches and concerts. The provision of these goods is non-rival up to a capacity constraint. Thus, when extra people attend a cricket match they do not reduce the benefits of that match to other spectators so long as the stadium is not excessively crowded. In fact, extra patrons can provide positive benefits to other spectators by improving the 'atmosphere' at the event. Further for those people who have paid to enter the stadium, the cricket match is similar to what economists call a 'public good'. All of the patrons consume the same cricket match at the same time and just because one patron happens to observe Ricky Ponting hitting a cen-

tury this does not mean that other patrons cannot also 'consume' that same batting performance.

Economists refer to these types of goods -- where provision most efficiently involves a group of consumers, where the relevant product is non-rival for the group of consumers, but where the good is excludable so that production can be limited to a particular group of paying customers -- as club goods.

The provision of primary and secondary education has many features of a club good. Educational services are most efficiently provided to a group of consumers at the same time. Whilst congestion within a classroom can lead to service degradation, at low to moderate sizes of class all students are able to consume essentially the same educational services at the same time. But participation in the classroom is excludable. Those in charge of a school can prevent students from attending class and consuming the educational services provided by that school.

In fact the school community in total can be viewed as engaging in the production of a club good. Individual schools simultaneously produce a variety of different educational services to different classes of students. By being able to share resources and facilities such as music rooms, sporting facilities, and libraries the different classes can gain their educational services more efficiently.

As already noted a variety of goods that are produced in society can be characterised as club goods. Many of these goods do not involve any direct government intervention. Further, the economic theory of club goods, developed over the last century, suggests that for most club goods, private market interaction will provide a reasonably efficient outcome. Even where individuals have heterogeneous preferences over club goods, we would expect to see society dividing into separate 'clubs' each providing idiosyncratic levels of the relevant products and charging club-specific fees, that maximise the average benefit of the club members. Those who have a high willingness-to-pay of a particular club good will join clubs with higher fees, lower congestion levels and higher levels of service. Other individuals, who have a lower willingness-to-pay, either because of their preferences and/or their income, will choose to join clubs with lower fees and lower levels of service. Those individuals with particular idiosyncratic tastes, perhaps due to an outside factor

such as a religious affiliation, will join clubs based on providing appropriate services at appropriate prices to those individuals. In brief, club goods generally do not require significant government intervention beyond the standard rules of commerce, because market solutions appear to operate with reasonable efficiency.[4]

So why is education different? As discussed above, there are a variety of factors that motivate some government intervention in the market for education – the desire to incorporate at least some degree of equity into educational provision; the social benefits from providing education at least to a minimal level to all children; and the delegated choice where parents or carers choose educational consumption on behalf of their children. These factors suggest that the government should play a role in the provision of educational services, for example, through the requirement that all children have access to a minimal level of education and possibly through general or targeted educational subsidies. It is the interaction between the government policies aimed at assisting education and the nature of education provision as a club good that creates specific funding issues.

To see this, suppose that the government wishes to guarantee all students access to a minimal level of education. As education is best provided within a school community this means that the government must guarantee all students access to some school community. But school communities are excludable and in the absence of government restrictions the educational services provided will differ substantially between school communities. Some communities will agree to charge their members significant fees and provide a high level of educational service while other communities will agree to levy lower fees on the relevant participants and may provide a lower level of educational service. If the government is to guarantee all students access to a minimal level of education, however, it must guarantee access to at least one school community. Such access cannot be on the basis of payment of fees unless the government itself pays those fees. After all, access cannot be guaranteed if the relevant students can be excluded from the school community for failure to pay fees.

If access is not to be based on the level of fees charged by the school community for the educational services provided by that community then this creates what economists call a free rider problem. Most of us have encountered this type

of problem in our families or other communities. For example, it is time to clean up after dinner. Everyone thinks that having someone clean up after dinner is a good idea. However, everyone also prefers that someone else do the cleaning. We would all like to 'free ride' on the effort of someone else.

The same type of free rider problem arises if the schools cannot exclude non-payers. Suppose that the optimal provision of education for a particular school community involves increasing the level of educational expenditure. All else being equal this would be reflected by increased fees. But if access to the school is guaranteed by the government and students who do not pay higher fees cannot be excluded then there will be a strong incentive for each individual participant in the school community to refrain from paying higher fees even if all participants in the school community agree that the payment of higher fees by everyone is desirable.

The club good nature of education creates a conflict with the socially desirable aim of government policy to guarantee a minimal level of education for all citizens. Either the government needs to underwrite any fee level that is chosen by the school community -- which would be a sure recipe for inflated fees -- or the government faces a conflict between the desire to guarantee access and allowing school communities to best determine the level of service (and fees) that suits their members.

This conflict drives government intervention in the education system. If education was like other standard products then government policy would be straightforward. Education funding could be similar to the funding for lower income housing or the provision of other 'essential services' to low-income families. For example equity issues could be overcome by providing a minimum standard of education to all children. Problems relating to delegated choice could be overcome by requiring that all parents and carers must provide at least that minimum level of education for their children and must pay for that education. If issues of payment arise, these could be addressed by the government providing direct subsidies to relevant students. Minimal levels of education would be guaranteed for all students and there would however be no limitation on students or their parents purchasing a high level of education.

These solutions would be similar to those used for housing and for medical care. Low-income families are eligible for housing assistance to ensure that those families received adequate housing. Higher-income households that include children are required by the law to provide adequate housing for those children. In the relatively rare cases where adequate housing is not provided, children can be removed by the State for their own protection.

For medical care the government provides a basic level of care for all Australian households. Households are able to 'top up' this level of funding through private medical care and, if they desire, private medical insurance. Individuals may also pay above the Medicare allowance for basic GP services, particularly if they are not a low-income family.

Innovative policies could be applied to housing and medical care. Indeed, we discuss these policies in earlier chapters of this book! But these same policies would be limited when applied to education because education is a club good.

For example consider a simple minimum per student allowance. To be effective such an allowance must enable students from poorer households to access appropriate educational services. The student must be able to walk into an appropriate school and to 'cash in' the allowance in exchange for educational services. If however schools are able to charge fees above the government funded allowance then a student whose family is unable to afford such fees would be limited in their choice of schooling. In fact unless there were some schools that were required not to charge any 'top up' fees it is possible that a student wholly dependent on the government allowance would be unable to access any relevant educational services. Thus, for a per student allowance to have any effect it must be provided in conjunction with either a requirement that:

(a) schools eligible to receive government payments not charge additional fees;

(b) schools eligible to receive government payments must take a certain number of allowance-only students; or

(c) certain specified schools not be allowed to charge additional compulsory fees.

As we discuss below, each of these policy choices has its own problems.

Once the nature of educational services as a club good is recognised, the problems and issues of educational policy become clear. But this does not mean that there are simple answers. The disparity of educational policies applied in developed countries reflects the difficulties of trading off equity, access and the level of intervention for a club good.

OWNERSHIP AND MANAGEMENT OF SCHOOLS

The conflicts inherent in education policy have resulted in a high degree of intervention. But it is far from clear that all of this intervention is either well-designed or desirable. Two areas stand out – the link between funding and ownership for schools and the common curriculum forced on many schools.

The vast majority of schools in Australia are owned and operated by State governments. In general, government-owned schools in each state follow a common curriculum and although there has been a recent move to increase school autonomy in some states, there is still a high degree of uniformity among state-owned-and-operated schools.

There seems to be little economic reason for this uniformity. It is far from clear that government funding for schools should be differentiated on the basis of either ownership or management. Also, so long as individual schools are maintaining minimum educational requirements, there seems little value in maintaining a high degree of uniformity rather than letting those individual schools decide how best to educate their communities.

First, consider the issue of ownership. School communities are involved in the joint provision of a club good. To produce the relevant educational services, schools rely on a variety of infrastructure facilities such as classrooms, libraries, specialist science laboratories, and sporting facilities. But the specific ownership of these facilities would appear to have little if any implication for funding. Regardless of the actual ownership of facilities, the maintenance of these facilities, any ongoing payment for these facilities, and any funds required to operate these facilities can come from three sources -- parental funds, government funds, or alternative

outside funding. Subject to the discussion below regarding differential fees, there seems little reason why a government-owned school should not be allowed to draw on all three sources of funds to both maintain and upgrade its facilities. As we will show below, the blanket ban on government-owned schools levying compulsory fees is overkill and prevents schools providing the best education for their students.

If a school is privately owned then issues of facility funding may be more problematic. For example, there are potential difficulties if the government hands over block funding for a facility which is privately owned and can potentially be resold for profit at a later date. However such problems could be overcome through the use of financial instruments. For example any government funding for facilities could be tied to a loan where the security on the loan involves a specific facility that is built using the government funds. In this sense there seems to be no economic reason why private schools and government-owned schools need to have facility funding treated differently on the basis of ownership.

The same argument can be made for ongoing or per student funding. For example suppose that the government decides to make a particular per student payment if a student attends a government school. If that student and that student's parents believe that an alternative privately-owned school is better able to meet the educational needs of that student then there seems to be little reason why the privately-owned school should not receive the same per student payment.

Other countries such as the UK and the Netherlands have shown that the type of separation between ownership and funding that we have in Australia is not necessary. In these and other countries, privately-owned and government-owned schools are often treated equally when allocated government funds. While the formula used to allocate funding may mean that different schools receive different levels of funding, there is minimal distinction in terms of ownership.

At the same time, overseas experience highlights the real issue that distinguishes schools. For example, in the UK, schools can receive government funding on an equivalent basis to government-owned schools so long as they do not charge compulsory fees above any government grant. Thus the real issue for government funding is not the ownership of a particular school but whether or not that school

charges compulsory fees above government funding. The issue of compulsory fees is critical to education funding and we discuss it in detail below. However, there is no underlying reason why fee policies need to relate to school ownership. At present in Australia, privately-owned schools but not government-owned schools are able to charge additional compulsory fees, but this is a rule imposed by the government, not a rule that is imposed by ownership. In this sense any funding distinction between government-owned and privately-owned schools is due to the government's own policy rather than any innate difference imposed by the different forms of ownership.

In summary, there seems little reason why funding for schools should be distinguished on the basis of ownership. This does not mean that privately-owned and government-owned schools all need to operate in an identical manner. Rather it means that government funding for these schools should be on a symmetric basis, subject to any practical limitations.

Next, consider management. Government-owned schools have traditionally been subject to highly centralised management procedures. While there has been a move to decentralise school management in most states in the past few years, there is no reason why this cannot go further. Recognising that school communities are providing club goods for individual school members, appropriate management will reflect the tastes and preferences of those school members subject to any minimum government requirements. While some schools may choose centralised processes, for example with regards to curriculum, other schools may find it appropriate to choose more decentralised methods.

For example, a school may choose to specialise in musical education. Such a school will be more likely to attract children who show musical talent and the school may place less emphasis on traditional academic pursuits relative to some other schools. So long as the specific school satisfies minimum government requirements for educational standards, such specialisation is likely to be a good thing. It allows the school to focus on a particular niche within the education market and provide services that are most likely to satisfy both parents and children seeking education in this particular niche. Similarly, a school may decide that it wishes to be highly focused in specific academic areas, such as science and mathematics edu-

cation, or the humanities. Again, such specialisation is likely to improve the operation of the education market place so long as the individual schools still satisfy the relevant minimum standards across academic areas and nonacademic educational activities.

Specialisation is sometimes viewed askance. However, it is unclear why this should be the case. Just as we do not expect all individuals to drive the same sort of car, wear the same sort of clothes, or choose the same sort of food to eat, we should not expect all students to be equally well served by the same sort of education. While concerns may be raised regarding the appropriate choice of school by parents and carers as the delegated decision-makers, these concerns can be overcome by minimum standard requirements. Just as we do not require that all parents feed their children the same sort of apples or make their children wear the same sort of clothes, there seems little justification in requiring all parents to provide the same sort of schooling for their children. Further, specialisation does not mean increased costs for schools. Rather, it means that schools have greater choice to differentiate themselves and to provide families with a wider selection of educational services.

FUNDING EDUCATION BY A DIFFERENTIAL UNIVERSAL ALLOWANCE

Allowing increased diversity in government-owned schools is an easy education reform. Reforming funding to bring government-owned and private schools back to an even playing field and to free up government-owned schools from unnecessary constraints, is more complex.

The starting point for rethinking education funding is a universal per student allowance. In other words every child of school age would be associated with an appropriate level of funding. The school attended by a child would receive the allowance associated with that child. The payment of the allowance would not be based on either the ownership or the management of the school, subject to the school satisfying the relevant minimum requirements set down by the government. Schools would need to be registered to receive the allowance and would be monitored to guarantee that minimum requirements were being met. However beyond these minimum requirements diversity among schools could be encouraged, par-

ticularly in urban areas and at the high school level where each child potentially has a number of relevant and accessible schools.

The benefits of such an approach have been shown by overseas experience. By both freeing up schools and providing competition between schools, such an approach can lead to better educational outcomes that are more appropriate and tailored to students' individual needs than can be achieved through a more centralised system.

A universal per student allowance is similar to the type of formulae currently used by state governments to fund government schools, albeit that the proposed allowance is associated with further reform of school management and would not discriminate between the private and public systems. One problem with a simple universal allowance scheme is that it may not provide the best targeting of limited government resources. For example why should a high-income family with significant ability to pay for their children's education receive the same level of allowance as a low-income family? It is costly for the government to raise the taxation revenue required to fund a universal allowance. A better approach to a universal allowance might involve an allowance based on family income. Thus a family whose income is say $20,000 per year would receive a higher allowance than a family whose income was say $100,000 per year. The allowance may also differ depending on the number of children in a family. For example the allowance might be lower for the first child and higher for later children.

An income-based allowance system would need to be carefully designed to avoid creating additional poverty traps for low-income families. The rate of assistance would have to phase out at a relatively slow rate. It might also be based on income over a period of time, for example the previous three years. This would reduce the shock associated with a loss of allowance as income rose.

An alternative approach that helps avoid educational allowances creating a poverty trap for parents is to base the allowance on local area income. This type of scheme is used by the Federal government when funding private schools. Parents who live in relatively poorer areas would receive a higher educational allowance. For example a household living in a relatively poor rural area of Queensland

would receive a significantly higher educational allowance than a family living in a middle-class Brisbane suburb.

Such an area based voucher system raises the prospect that richer families might choose to move to poorer areas in order to gain a higher educational subsidy. However to the extent that such a movement occurred this may have good social outcomes.

A key benefit of a differentiated universal allowance is that it creates clarity. Supporters of existing educational policies might argue that current funding formulae effectively create such an allowance at least for government-owned schools. But the existing approach is not transparent and does not provide students and their families with a clear choice. If a family chooses between two particular schools then their choice affects funding for the relevant schools. But families have little if any awareness of these changes and funding cannot provide an input into the decision of families as to where to educate their children. In contrast, a universal allowance provides families with 'ownership' of their children's education. Further, a universal allowance can be explicitly brought into education choice by families as we discuss below.

COMPULSORY FEES

While a universal or a means-tested allowance is the starting point for education funding reform, it does not deal with the fundamental tension between fees and access. What happens if a relevant school (either private or government-owned) wishes to charge students compulsory fees in addition to the educational allowance? If schools are allowed to charge top up fees in addition to receiving the allowance does this mean that poorer families are relegated to allowance-only schools? Further how does the government ensure that allowance-only schools exist?

Because of the club good nature of the educational production process any system of allowance-based funding for students must be tied in with rules relating to the top up fees that schools can charge.

AN OPT OUT SYSTEM

The simplest way to deal with compulsory fees is to adopt a system similar to the UK. Schools may charge compulsory top up fees if they wish to do so, but by charging such fees those schools remove their eligibility for government funding. Essentially, schools can only charge compulsory fees if they opt out of the government funding system.

Clearly such a scheme is simple to administer. All students are associated with a specific educational allowance but schools would have two choices. A school may choose to simply accept the per student educational allowance and compete with other schools for students and their associated allowances. Such schools would not be allowed to charge any additional compulsory fees and there would be strict guidelines governing any so called voluntary fees. Alternatively a school may choose to charge fees directly to students and their families. Such schools would no longer be eligible for the educational allowance associated with each of their students. In other words the schools would be outside the government funding system and would receive no government funding.

This simple system provides both schools and families with the choice of either remaining eligible for government educational funding or having the right and ability to levy fees albeit only by giving up all relevant government funding. So long as government funding is not so poor that most schools choose to 'opt out', this scheme overcomes the problems of flexibility and access. For schools that remain in the government funded system, all students have equal access regardless of ability to pay. Schools are able to differentiate themselves on the basis of the services that they offer, but they are not allowed to exclude students on the basis of additional compulsory fees. Schools and families who wish to have the extra educational resources associated with additional compulsory fees may gain those resources through such fees but only if they choose to give up government funding.

FLEXIBLE TOP UP SYSTEMS

While simple, the opt out funding system is unlikely to be the best alternative. Implicitly, this system taxes schools that choose to charge compulsory fees. Further, the tax rate applied to these schools is exorbitantly high. The first dollar of com-

pulsory fees levied by a school leads to complete loss of all government funding. While it overcomes issues of equity, the pure opt out scheme provides little real flexibility for schools. As shown by UK experience, most private schools, except for the most rich and elite, would choose to come under the government funding system.

Once it is realised that the opt out system is simply a form of tax on any compulsory fee, other more flexible funding arrangements become obvious. To provide schools with more flexibility, alter the rate of taxation on compulsory fees!

For example suppose that the government funding associated with a student is set at $5000 per student. Under the simple opt out system any school wishing to charge any compulsory fees would lose the entire $5000 for each of its students. Thus if a school decided to impose a compulsory fee of $1000 per student per year then this fee would cost the school $4000 per student. The apparent flexibility of the simple opt out system is illusory and most schools will be forced to just rely on government funding.

Alternatively, suppose that the government adopted a more flexible funding system. The government might rule that a school could set compulsory fees for its students but such fees would lead to a proportionate loss of government funding. The government might set the funding formula so that for every $1 of compulsory fees levied on a student by the school, government funding for that student falls by $0.50. This is like setting a tax rate on compulsory fees of 50 per cent.

In this case, if the basic per student allowance was $5000 per student per year and the school chose to levy an additional $1000 per student fee, then this would lead to a $500 reduction in per student government funding for that school. Thus the additional fee would raise $500 overall, resulting in a total payment of $5500 per student per year to the school.

Allowing schools to charge compulsory top up fees subject to a government 'claw-back' greatly increases school funding flexibility compared with the simple opt out approach to funding. Under the opt out system, schools find themselves in an 'education trap'. School communities that wish to access additional resources to increase the quality of education provided by their school are unable to do so un-

less they give up all of the relevant government funding. Even if parents and school communities would like to increase educational funding at their school by a relatively modest amount, they are effectively unable to do so. In contrast, the flexible top up system allows the schools to raise additional funds, although this is associated with a modest decrease in government funding.

To see how the flexible top up scheme might work in practice, suppose that a school community wishes to hire an additional science teacher for the school. The cost of the additional teacher is the equivalent of approximately $100 per student per year. Under a simple opt out scheme the school would be precluded from levying the relevant fee to gain this additional teacher unless the school gave up all government funding. Even if all the families attending the school agreed that it would be money 'well spent' the school is effectively prevented from levying the fee.

In contrast, suppose that the government adopts a flexible top up scheme with a penalty rate of 50 per cent. In order to gain the extra teacher, the school could levy each student $200 in compulsory fee. This would lead to a $100 per student reduction in government funding so that total funding per student (including the fees paid) rose to $5100. The school would have enough money to hire the teacher. The funds saved by the government could be used to increase payments to schools in more deprived areas.

The top up scheme provides considerable flexibility to both schools and the government. While we have only looked at a simple flat rate claw-back in our example above, there is no reason why the government should be limited to flat rate schemes. The government could use a 'progressive' claw-back arrangement, so that schools that charged low fees would face little reduction in government funding, while those schools that set higher compulsory fees would face a greater proportionate loss of government funding.

COMBINING DIFFERENTIAL GOVERNMENT FUNDING WITH TOP UP FEES

A phased reduction in the government subsidy to schools that choose to charge top up fees allows school communities significantly more freedom to increase edu-

cational resources for their community. However, as with all compulsory fee proposals, it raises the problems of free riding and access.

To see this, consider a school that charges an additional $1000 top up fee. Some members of the school community may be unable to pay the relevant fees for legitimate personal reasons. For equality of access we would want the school to have appropriate mechanisms in place to ensure, for example, that low-income families were not disadvantaged due to their inability to pay the fee. But those mechanisms must also be able to prevent families from free riding. In other words some members of the school community who are able to pay the top up fee and who would be willing to pay this fee if education was a standard private good, may choose not to pay the fee claiming personal circumstances. Mechanisms that allow the school community to differentiate between legitimate cases of hardship and simple cases of free riding may be intrusive and difficult to administer.

The problem of access and free riding can be overcome by combining a top up fee tax with a differential allowance. As noted above the government per student allowance need not be uniform across all students. It can be based on ability to pay and may be differentiated according to family circumstances or the number of children of school age in the family. For example while the base level of allowance might be $5000 per student per year this might rise to $7500 for lower income students or for later children in households of moderate means. In such circumstances schools might be allowed to charge top up fees so long as the total per student contribution does not exceed the maximum per student government allowance.

To see an example of this type of scheme, suppose that the government sets the claw back rate associated with school top up fees at zero per cent subject to total payments by any household not exceeding the maximum per student government allowance. Again assume that the basic per student per year allowance is $5000 per student and the maximum allowance is $7500 per student per year. A school would then be allowed to charge a top up fee that brought the total payments per student per year to no more than $7500. A school community could for example agree to a top up fee of $1000 per year. All students associated with a government allowance of less than $6000 per year would be required to pay a top up fee to

raise their total payment to $6000 per year. Thus, a student who receives a basic allowance would pay the full $1000 per year. A student who received an allowance of $5500 per year would only pay $500 of the top up fee. And any student who received a government allowance of more than $6000 per year would not pay any top up fee at all.

Alternatively, suppose the government imposes a 30 per cent 'tax' on top up fees up to the cap of $7500 per student. In this situation if the school community decided to charge a top up fee of $1000 per year, all payments would be as above from the perspective of individual families but the school would lose the equivalent of 30 per cent of any top up fee raised. Thus a student who is only eligible to receive the basic allowance of $5000 per year would still be required to pay a top up fee of $1000 but the school would lose $300 of that student's basic allowance meaning that the school would receive $5700 for that student. For a student eligible to receive an allowance of $5500 per year, the top up fee would remain $500 but this additional fee would lead to a reduction in the allowance received by the school in relation to that student of $150. Thus the top up fee would leave the school with $5850 from that student. Again any student whose basic allowance is more than $6000 per year would not pay any top up fee and the school would just receive the allowance associated with that student.

Allowing schools to top up fees to the maximum differential allowance level set by the government avoids the need for mechanisms to avoid free riding problems while maintaining equality of access. Essentially by setting the differential student allowance, the government determines a family's ability to pay. The family that only receives the basic allowance is in a position of greater ability to pay any top up fee than a family that receives a higher level allowance. In effect the government is saying that the gap between the maximum per student allowance and the basic per student allowance reflects an ability to contribute by the student's family. Of course, the government does not require the family to contribute in this way.

The basic allowance should be sufficient to guarantee that all schools that rely only on this allowance are able to offer a good quality of education for their students. However if the school community decides that it wishes to provide a higher level of educational services for its students then the top up fee system allows the

school to do this. If a family does not believe that the additional services offered by the school are "worth their money" then the family can leave the school community and choose a more appropriate school for their children. In this sense top up fees with differential allowances retain a family's right to choose appropriate educational services. At the same time if a family does believe that the additional services offered by the school are desirable and they want their children to receive those services but would be unable to pay any significant top up fee, then that family is protected. The government determines through the differential allowance the maximum top up fee that any family is required to pay.

Combining a differential per student allowance with school-based top up fees provides significant flexibility for school communities while both protecting individual lower income families and protecting schools in lower income areas. Note that schools in lower income areas automatically receive higher per student funding than schools in areas where families have greater income and greater ability to pay for educational services. At the same time the scheme provides flexibility for schools to be able to draw on additional resources from the school community up to the determined ability to pay.

LEVYING ADDITIONAL COMPULSORY FEES

The combined differential allowance and flexible top up fees creates funding flexibility for schools while protecting access for poorer families. However, it does limit the maximum amount that a school can raise per student to the maximum level of government funding. What if a school wanted to raise more money by charging fees beyond the maximum government allowance?

One option in this situation is to simply invoke the opt out scheme. Any school that wished to gain more than the maximum amount set by the government for per student funding would be required to forgo all government funding. But as we have already seen, such a scheme has undesirable consequences and removes real choice from school communities.

At the same time, if a school community wishes to raise per student funds beyond the government set maximum, this creates issues of access. How can we protect low-income families while retaining school flexibility?

The 'claw-back' system discussed above provides one alternative. So long as the maximum government allowance is sufficiently high, relatively few school communities would wish to raise extra funds through further compulsory fees. Those that do, however, would face a penalty 'tax' on any additional fees raised. Again, this might be a flat rate or a progressive 'tax'. Those families who placed a very high value on education would still be willing to join such school communities, even though the majority of families would not consider that the extra expenditure was worthwhile.

While such a system raises some equity issues – a small number of schools that chose to charge high fees above the maximum government allowance would be beyond the reach of poorer families – in our opinion it is clearly both more fair and flexible than the existing system. This said, the additional equity issues might be dealt with by placing additional requirements on schools that levied 'above allowance' fees.

An alternative approach that overcomes the issues of access and equity associated with 'above allowance' compulsory fees is to require that any school that charged such fees and that wished to remain eligible for basic government funding must admit a minimum number of students on an 'allowance only' basis.

For example, suppose that the maximum government per student allowance was $7500 with a minimum of $5000. Suppose however that a school community decided that it wished to raise per student income to $10 000 per year. This is $2500 beyond the maximum allowance.

The government could allow the school to retain standard government funding so long as it reserved a minimum number of places for 'allowance only' students. For example, the government might set the level of places at 25 percent. In this situation, the school could charge the additional fees to 75 percent of its students so long as it reserved 25 percent of places in the school for allowance only students. To retain the school's eligibility for full government per student funding, the school must ensure that it maintained this minimum number of places for students who would not have to pay any fees.

Such a scheme of 'fee-free' places would need to be carefully monitored to ensure that the process of choosing those students eligible for those places was transparent and carried out at arms-length. This said, with differential per student allowances, fee-charging schools would have a monetary incentive to admit students from lower income families to their fee-free places. To see this, consider the numerical example above. A low-income student or a student from a low-income area would provide the school with $7500 in annual funding compared to $5000 for a 'basic allowance' student. This difference will be highly significant when considered over all fee-free students. For a 1000 student school with 250 fee-free places, admitting low-income students with a maximum allowance raises an additional $625 000 per year compared to admitting fee-free students from relatively wealthy families or areas.

CONCLUSION

Education funding needs to be rethought in Australia. Our current methods for funding primary and secondary education create unnecessary constraints, particularly on government-owned schools. By learning from overseas experience and applying simple economic principles, we can improve the way our schools operate.

The key to education funding is the recognition that education is not a standard product. Rather, education is a club good. It is produced jointly by a school community and consumed by the members of that community. At the same time, equity concerns mean that equality of access is important for education. Economic concerns highlight the desirability of ensuring that all children have access to at least a minimum level of education. There is a tension between the production of education by a school community and equality of access to education.

Understanding the underlying tensions in education funding highlights how the system can be improved. Currently, there is a strong separation between government-owned and private schools, both in terms of funding and flexibility. There is no economic reason for continuing this separation. Funding should not depend on school ownership and government-owned schools should have flexibil-

ity to specialise. Different school communities will have different needs and schools should not be artificially constrained from meeting those needs.

Weighing up access and flexibility in funding is more problematic. In our opinion, a more flexible scheme will be based on three pillars:

A differential universal allowance that provides families with the ability to choose appropriate schools and 'take their funding with them'. The allowance can be differentiated on the basis of family needs and ability to pay.

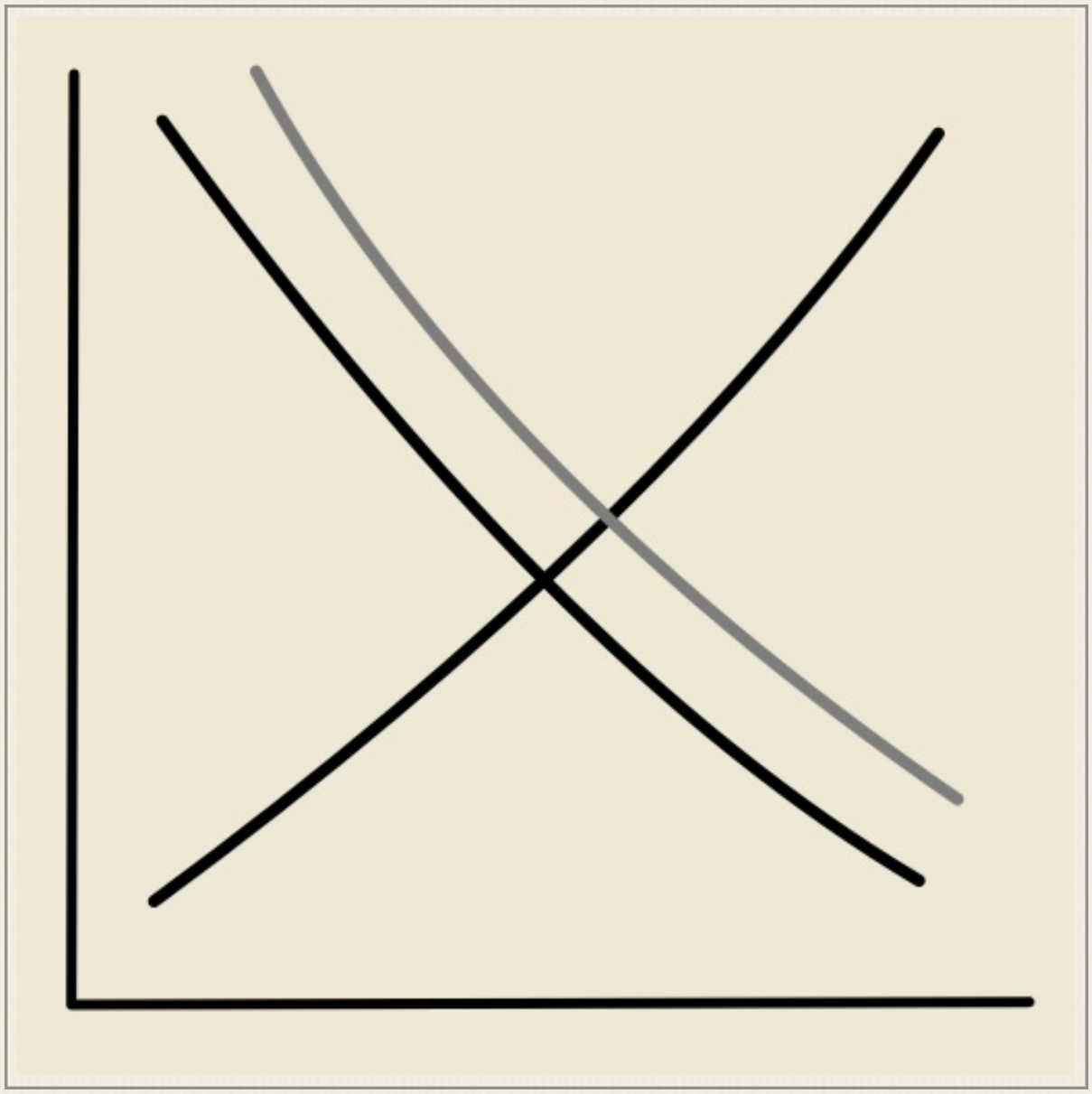
Top up fees that are determined jointly by a school community and are compulsory up to the maximum government allowance. These fees provide funding flexibility for schools while protecting access for students from poorer backgrounds. These fees allow those families who are better positioned to contribute more to a school community to make such contributions.

Additional compulsory fees can be allowed subject to either a 'claw-back' tax and/or minimum numbers of fee-free places. These arrangements encourage increased educational funding while retaining access.

We can do a lot better on education funding in Australia. The ideas presented in this chapter provide the starting point for future reforms.

CHAPTER 5

Driving Road Reform



There is a famous saying that “there’s no such thing as a free lunch”. The best example of this is urban road transport. In most cities around the world, the direct monetary charge associated with using a road is zero. While motorists pay a variety of taxes on cars and petroleum, relatively few roads have a toll or equivalent user-pays charge. Rather, drivers jump in their cars and fight their way through traffic jams and congestion to reach their destinations. While there is no direct monetary payment, drivers directly pay for road use in terms of delay and wasted time, frustration and tension. Using our urban roads is not ‘free’.

In Australia most of our urban drivers are relatively lucky by world standards. While we may fume about delays in the morning and evening peak periods, these delays are relatively benign by international standards. Next time you are delayed in heavy traffic consider the plight of the residents of Bangkok where the average peak-period traffic speed is estimated to be a meager 3.2 kilometres per hour.[1] In 2000, traffic speeds in central London were often below 12 kilometres per hour, leading to quips that modern cars moved slower than the average horse and buggy of a century earlier.

Road congestion is not simply an annoyance – it has real economic costs. The time that you spend sitting in your car on a six lane freeway is time that you could have spent doing something else. Obviously, it is time that could be spent working. At a wage of $15 per hour, that 40 minute delay in the morning peak period is costing you a potential $10. At a wage of $30 per hour the delay is costing you $20.

More commonly, however, time wasted in congestion is lost recreation and family time. Unsurprisingly, most of us would not choose to spend our leisure time sitting in a car on a jammed road. The lost opportunities associated with the time spent in congested traffic – whether it is the alternative of playing sport, relaxing with friends or just sleeping – is a real cost. It is a reduction in our wellbeing and our standard of living. It is the price we pay for using our so called free roads.

The economic costs of road congestion have been estimated for a variety of countries. A 1994 study in the US estimated the annual cost of driving delays at $48 billion or 0.7 per cent of Gross Domestic Product (GDP). A number of studies have been carried out in European countries over the last decade. These provide estimates of road congestion costs at between 0.25 per cent of GDP and 2 per cent of GDP.[2]

While these figures might seem small, they represent a significant real waste for society. Even if we assume that the cost of congestion for Australia is only 0.5 per cent to 0.6 per cent of GDP, this is still a real cost of around $4 billion per year. If we can lower this waste then all Australians can potentially be better off.

In this chapter we consider policies for dealing with urban road congestion. Unlike the rest of this book, the key policies discussed here are not particularly novel. Indeed, the basic solution for road congestion, the introduction of real-time road pricing, has long been supported by economists. The barriers to implementing effective road pricing have been political and technological. However, these barriers are rapidly falling. Advances in tolling technology means that real-time road pricing is now in use in North America. The experience of London mayor Ken Livingstone has shown that the introduction of road pricing can be a political winner rather than a liability. In many ways, the time is right to push forward with real-time road pricing in Australia. This chapter aims to support this push, by explaining the basic economic problem of road congestion and why real-time road pricing can provide a desirable solution.

THE ECONOMICS OF ROADS AND CONGESTION

According to lobbyists for motorist organisations we already pay for our roads. Every time we fill our cars with petrol more than half of the cost of each litre goes in government taxes and charges. We also pay annual registration fees on our cars and pay government charges when we renew our driver's licence. And when we purchase a new car we pay import duty if the car comes from overseas and stamp duty on the purchase price. In fact, motoring organisations often argue that the average driver gets a raw deal from the government – that these drivers pay more to the government in taxes and charges they receive back in the way of road funding.

This argument that we already pay for roads is misleading on at least three dimensions. First, it is wrong. When all the costs associated with the use of motor vehicles are taken into account, such as the costs of wear and tear on our roads and related infrastructure, and the costs of motor vehicle accidents, the taxes and charges paid by motorists do not cover the full costs they impose on society. The Australia-wide deficit is estimated at $19-21 billion.[3]

Second the argument is misleading. Taxes and charges collected by governments from cars and petrol go into general revenue. Like all other monies collected by the government there is no requirement that government use this money

to compensate those who paid the money. In fact, such an approach to government expenditure policy would be ludicrous. Richer Australians in general pay more income-tax than poorer Australians. However we do not expect the government to spend more money on those who are most well-off. Indeed, a key role for the government is to redistribute money to protect those in society who are least well-off. Similarly the government collects a substantial amount of money from gambling and alcohol taxes. If we follow the logic of motoring organisations, the government should only be allowed to spend these tax revenues building pubs and casinos. The idea that taxes on petrol should only be used to fund roads is plain silly.

Even if taxes on petrol and cars were used just to fund roads, these taxes would not be appropriate to deal with the problem of congestion. Congestion is caused when the demand for road space exceeds supply. In most markets when the amount of a product that consumers demand exceeds the amount that is available for sale, congestion will occur in the short-term. Most obviously, queues start to form to buy the product. Before long, however, this congestion leads to a rise in the per unit price of the product. As the price increases some consumers decide that the product is no longer worthwhile and leave the queue, reducing congestion. Similarly the higher price encourages some producers to enter the market and sell more of the relevant product. Again this reduces the congestion. Over time the rise in per unit price of the congested product eliminates the congestion.

In contrast, there is little connection between road congestion and the current taxes and charges levied on motorist by governments. Consider the annual car registration fees. Once this fee has been paid there is no additional charge that depends on when we drive our car or where we drive our car. If a driver decides to travel to work in the morning peak period then the amount of registration that they pay does not change. The registration fee provides neither an incentive nor a disincentive to travel in peak period and cannot alter a driver's decision about when and where to travel. The fee has no effect on congestion.

What about petrol taxes? Surely they affect the degree of congestion? After all, if you are stuck in heavy traffic then will you will use more petrol and pay more taxes.

While there is a weak relationship between petrol taxes and congestion, those who really bear the taxes are individuals in rural areas who drive long distances. In general these individuals travel on relatively uncongested roads and while an increase in petrol taxes may affect their decision to drive, it will have little if any effect on congestion in urban areas.

Congestion is an example of what economists call a negative externality. It is a situation where an action by one individual imposes costs on other members of society but where there is no relevant compensation for those costs. The best way to deal with negative externalities, such as industrial pollution, excessive noise or road congestion, is to directly charge the person creating the externality.

To see this, consider a simple example. Suppose that Sid lives in the suburbs of a major Australian city. Sid works in the central business district (CBD) and his job starts at 8.30 in the morning. Sid lives about 15 minutes walk from a train station and a train would take him into his office. However the trains are often dirty, crowded and unreliable so that Sid prefers to drive his car to work. Sid lives about 20 kilometres out of the city and most of his drive is along a freeway so that outside peak period his journey from home to office would take less than half an hour. Unfortunately for Sid, his morning commute is in the peak period rush. This means that in order to be at the office by 8.30 he needs to leave his house at about 7 a.m. Because of road congestion the trip takes around three times longer than it would otherwise.

The main problem for Sid and his fellow motorists is the set of traffic lights at the end of the freeway. These lights control the intersection of two busy roads and have a two minute cycle. In other words each road in turn has a green light for one minute and then faces a red light for the next minute. Due to the volume of traffic in peak period it can take Sid almost half an hour just to get through this one set of lights.

Why does Sid do it? Clearly from Sid's perspective the benefits of driving to work relative to catching the train outweigh the costs. While driving takes longer, at least he is able to sit in the relative comfort of his own car. But while Sid considers that his own benefits from driving a car outweigh his own costs he does not con-

sider the costs that he imposes on everyone else. In particular Sid does not count the cost of the congestion that he creates.

To understand these congestion costs let's imagine that Sid and his car were suddenly removed from the congestion at the end of the freeway. Say that Sid was about to go through the traffic lights. Now that we have removed Sid, one other car that would otherwise have been caught when the traffic lights changed back to red can go through those lights. By removing Sid we have saved that one driver one minute of time -- the time they would otherwise have had to wait at the traffic lights. Removing Sid has reduced congestion by one minute for one driver.

But that is not the end of the story. Because the line of cars waiting at the traffic lights is now one less than before, the next time those lights go green one extra car can go through. Thus by removing Sid from the traffic we not only save the time of one driver in the first cycle of lights but we also save the time of another driver at the second cycle of lights. Another driver saves one minute of their time. But of course this happens every time the lights turn green for as long as the congestion lasts. If we removed Sid from the traffic when there was one hour of congestion left then in total we have saved 30 minutes of time for other drivers – one minute each for 30 drivers in total over 30 changes of traffic lights.

This simple example shows how Sid imposes costs on everyone else when he decides to drive to work. Even though he is only 'one more car', the cost in terms of time wasted that he imposes on other drivers is significant. In fact it can be shown that if peak period lasts for approximately two hours in the morning then by driving to work Sid can waste up to two hours of time for other drivers! He delays each other driver only by the few seconds, but there are thousands of other drivers. Even if we value time modestly at $10 per hour, by driving to work Sid imposes costs of up to $20 on other drivers.

This $20 is the negative externality due to congestion. When Sid weighs up his personal costs and benefits of driving to work he does not consider the $20 that he imposes on other drivers. He imposes these costs on other people but is not required to compensate them for these costs. From an economic perspective it is desirable that Sid only drives to work if his benefits outweigh all costs, including the

congestion costs he creates. Thus it is only economically efficient the Sid to drive to work if his personal benefits outweigh his personal costs by at least $20.

How can we get Sid to take the congestion costs that he creates into account when deciding whether or not to drive to work? The obvious way is to charge him for the congestion he creates. If Sid creates $20 worth of congestion but he also faces a fee of $20 if he drives to work in the peak period then he will make the economically efficient decision. If the pleasure of driving to work including paying the $20 fee is worthwhile to Sid then he will drive to work in peak period. If not, then he will leave the car at home and catch the train or reorganise his work so that he can travel outside the peak period.

This simple example illustrates the key points about efficient road pricing. Such pricing should be on a road-by-road and a journey-by-journey basis. When Sid travels down the freeway late at night he creates no congestion costs and he should not be charged any congestion price. Indeed if he was charged the congestion price when he is not creating congestion then this would discourage Sid from travelling at socially desirable times. But when the road is congested and Sid adds to this congestion he should be charged a price based on the level of congestion. The more congestion, the more Sid should pay.

Clearly current charges on motorists, such as annual registration and fuel taxes, do not accurately charge for congestion. You pay tax on the petrol which you use when you drive on congested roads in peak period or empty roads in the middle of the night. You pay registration without regard to when or where you drive.

To make sure that motorists face the correct prices for their driving decisions we need a system of real-time road pricing in Australia's major cities. To see how such a system of real-time pricing could work we can look to examples both here in Australia and overseas.

EXPERIENCE IN ROAD PRICING

Road pricing is not a new idea. It was pioneered by Singapore in the 1970s. After experimenting with the use of taxes on cars to reduce congestion problems, in 1975 Singapore introduced a system requiring drivers to pay for a separate 'li-

cense' if they wanted to drive into the central business district during the morning rush hour. The price for a car with fewer than four people was initially set at S$3 – approximately the same as the price for all day parking in the CBD.[4]

In 1998, Singapore moved to a system of electronic road pricing (ERP) for the central area using short-range radio. Receivers are mounted on gantries over the relevant roads. Cars are fitted with a radio device which can hold a debit card and tolls are automatically deducted. By moving to an electronic system, Singapore has been able to increase tolling flexibility so that tolls now vary from S50cents to S$3 depending on time of day and vehicle type. Fees are reviewed every 3 months. The increased flexibility of fees has led to congestion in the central area being reduced by 40 per cent compared with the previous manual tolling system.[5]

The best known recent experiment with road pricing also involves a single central city area. On Feb 17th 2003, London introduced a £5 pound per day congestion charge for motorists driving in an eight square mile area of central London between 7a.m. and 6.30 p.m. In terms of technology, the London scheme is primitive. It works by having 700 video cameras scanning the rear license plate of every vehicle that enters the designated toll zone. These license numbers are then crosschecked against a database of fee-paying motorists at night to confirm payments and to initiate fines against those who have not paid.[6]

While primitive, the London scheme has been extremely successful in its first year of operation. In the first four months of operation, the mayor's Transport for London authority determined that the tolls had led to a 40 per cent reduction in congestion during the charging hours. This exceeded initial expectations of around a 20 to 30 per cent drop in congestion. The number of vehicles entering the central London zone fell by approximately one fifth following the introduction of the charge with an increase of speeds for cars within the zone of about 5 kilometers per hour.[7]

The type of central city toll introduced in Singapore and London has also been used in other cities. For example, in Trondheim, Norway, electronic tolls were introduced for access to the centre of the city and used to pay for a new ring-road.

The tolls vary over three periods during the day – a high toll from 6-10am, a low toll until 5pm and then free until 6am the next day.[8]

These limited zone tolls are a second-best alternative compared to a broader system of real-time road pricing. Because they only operate on a limited part of the urban area, the tolls only deal with congestion in that limited area. However, in Australian cities, congestion is not limited to CBD areas and to the morning and afternoon peak periods. A significant amount of road congestion is caused by cross-town traffic. For example the Parry report states that for Sydney "the available data suggests that the traffic on currently congested arterials is likely to be going to a multitude of destinations, and not just to one or two locations (such as Sydney's CBD)".[9]

A similar situation holds true in Melbourne where what is arguably the busiest urban road, Springvale Road, is located some 20 kilometers from the city centre and provides the main north-south transport link in the outer eastern suburbs.

Further, while the tolls deal with congestion in one area of a city, they tend to result in increased congestion in other parts of the cities. For example, the original Singapore system reduced the level of traffic congestion in the central city area. However because the fee only applied to this area, it raised the level of traffic congestion in neighboring areas, as drivers sought ways to go around the central area.[10]

The same problem of 'road substitution' and 'congestion shifting' has been seen in Australia. Melbourne's CityLink freeway was the first cashless toll road in Australia. The road was built as a build-own-operate project where the private operators use the tolls to pay for the freeway. Motorists use electronic tags and tolls are deducted automatically without any need for drivers to slow down at gantries. The toll charge depends on the distance traveled along the road as well as vehicle type, but does not depend on the time of day or the level of congestion on the freeway. As a result, the freeway tends to be underused particularly off-peak when drivers are reluctant to pay the toll when alternative roads are uncongested. CityLink has also led to substitution between the toll road and other major arterial roads. CityLink incorporated upgraded parts of previously free highways. As a result, when

tolling began on CityLink, some drivers moved to alternative 'free' routes. Congestion increased on roads that acted as a substitute for CityLink as these drivers tried to avoid the tolls. While congestion was relatively low on CityLink, it increased on alternative untolled roads.

Road substitution, however, has been turned into a positive for real-time road pricing projects in the US. A number of highways in the US have separate high occupancy vehicle (HOV) lanes. In Australia, these are often called transit lanes. Traditionally, these lanes were reserved for vehicles with a minimum number of occupants in peak periods. For example, a typical HOV would be reserved for cars with at least two occupants in peak periods. Similar reserved lanes are common on major roads in many countries.

In the late-1990s, San Diego experimented with the first high occupancy toll lane (HOT lane). This involved taking an existing HOV lane and allowing single occupancy vehicles to use this lane subject to paying a toll. The HOT lane uses microwave transponders to assess congestion and to electronically deduct tolls. The congestion information is used to determine the toll fee during the day. The HOT lane fee varies between US50 cents and US$8 depending on the degree of congestion. Drivers are informed of the current fee prior to entering the HOT lane and the fee can be varied every six minutes in fifty cent intervals.

The first HOT lane proved highly successful both in economic and political terms. In economic terms, use of the HOT lane is significant with a considerable number of drivers showing a willingness to pay the toll for an average time saving of around 8 minutes.[11] The HOT lane has also been politically popular. Because the lane explicitly provides drivers with the option of not paying the toll, subject to using more congested roads, issues of fairness and 'paying for something that was free' have not arisen. For most drivers, the HOT lane has increased their options without being forced to pay a toll.

The HOT lane concept has slowly spread in the US and there are currently four HOT lanes in operation. – two in California and two in Texas. These lanes are relatively easy to introduce, although they require that a barrier be erected between the HOT lane and other lanes so that vehicles cannot simple swap back and

forth to avoid tolls. Further, the benefits of HOT lanes are obviously limited to specific roads and they do not provide a total solution to urban road congestion.

Both CBD zone tolls and HOT lanes provide part of the solution to road congestion. However, they are not complete systems of real-time road pricing. To a significant degree, the lack of complete urban road pricing has reflected technology. It is only in the last decade that the technology to read electronic tags at high speed has been fully developed, and any effective tolling system requires this technology. The alternative, where cars must queue to pay a monetary toll, creates more congestion than it cures. Similarly, it is only with the development of global positioning satellite (GPS) technology in recent years that true city wide road pricing has become feasible.

GPS systems have the advantage of requiring little road-side infrastructure. Rather they rely on devices fitted within vehicles. They can track the location of vehicles and charge tolls based on time of day, road used and congestion level. Further, they can be used to provide information to drivers. Obviously, one piece of information that drivers will require are the relevant toll prices for different routes. GPS systems can also be used to transmit route congestion information to drivers to better allow them to plan their journeys.

This said, GPS systems are still being actively developed. In Europe, the use of a GPS system to set road charges for commercial vehicles is being implemented in Germany. At the time of writing this chapter, the system has been delayed due to software problems, for example, relating to the accuracy of vehicle location. Over the next few years, however, GPS based systems for road tolling will become a practical reality.[12]

The use of GPS road tolling systems raises privacy concerns. If the transport authorities can locate individual vehicles and record their location, what is to prevent this information being used to 'track' individuals?

These privacy concerns can create significant political issues for real-time road pricing. For example, a proposed system of city wide road tolling in Hong Kong met strong political resistance and was scrapped ostensibly on the basis of privacy concerns. This suggests that any system of city wide road pricing using GPS tech-

nology needs to be accompanied by strong laws restricting the use of any information collected by the system.

Other practical concerns often relate to the political risk of road pricing. There is a view that road pricing to deal with congestion will be politically unpopular. For example, "[t]he most nervous people are probably politicians. Voters seem to tolerate tolls to finance the construction of roads – the sort of thing levied on some bridges and roads. But charging money specifically to discourage driving is harder to sell".[13]

Recent experience, however, shows that such concerns might be misplaced. HOT lanes in the US have been popular. The city-centre toll in London has generally been well received with 72% of commercial businesses inside the tolled zone having the view that the system is working.[14] It appears that a well-designed system of road pricing is not only acceptable to the general public, but can be a political winner.

CAN'T WE DO SOMETHING SIMPLER?

As the London and San Diego examples show, introducing real-time road pricing need not be hard or even involve complex technology. In the best of all worlds, universal electronic tolling would be used to deal with road pricing and congestion. But overseas evidence shows that real progress can be made with simpler solutions.

Even so, a number of alternative proposals have been suggested, such as parking taxes and pedestrian-only city centres. These alternatives have been tried in a variety of countries but have been shown to work poorly.

A parking levy is often mooted as a simple alternative to a CBD zone toll. After all, it is argued, most people who drive into the city centre have to park, so if there was an additional tax on the parking space this would have the same effect as a congestion charge for driving into the city.

In most situations, however, a parking levy is a poor substitute for a direct road charge. A well-designed congestion levy would depend on the route used to travel

into the city, the time of day and the actual degree of congestion on the roads. Even a crude levy such as that used in London differentiates according to the time of day. If a parking levy is to mimic the effect of a congestion charge, then it needs to have the same type of flexibility. This would not occur with a crude parking tax.

For example, to provide incentives for motorists to travel off-peak, a congestion levy can alter by time of day. If you enter the city centre before, say, 7 a.m., then you pay a lower fee than a motorist who enters the zone between 7 a.m. and 10 a.m. This would need to be mimicked for a parking tax to be successful. There would need to be a differential tax depending on when the driver enters and leaves a car park. While this is feasible, it may be difficult to administer over the hundreds of private car parks in the centre of Melbourne, Sydney or Brisbane.

Further, a time-based parking tax would need to be carefully designed to avoid 'game playing' by motorists. For example, if there is a significantly lower tax for short-term parking, say due to a desire to distinguish between short-term shoppers and commuters, then there will be an incentive for commuters to shift between parking spaces during the day to reduce the tax. Such parking space jumping could increase, not decrease congestion.

Most obviously, a parking space tax only catches those motorists who park in the relevant area. The tax would not catch any through traffic such as large commercial vehicles. As a result, the tax may fail to catch a significant group of drivers who contribute to road congestion.

A parking levy might be a useful adjunct to traffic management policy if the technology to collect a zone-based toll was not available. However, the technology is available and as London has shown a CBD zone toll can be introduced simply by mounting cameras and having a database for cross-checking payments. The more sophisticated electronic toll systems currently in use in Sydney and Melbourne are far superior to a parking levy. In this sense, a parking levy might have been a good idea for the 1960s. Now, its time has passed.

Other suggested alternatives to road pricing include taxes on cars and petrol. As we have already noted, the link between congestion and petrol use is weak. Punishing rural drives on uncongested roads through a petrol tax is not a sensible way

to deal with urban road congestion. Having a differential petrol tax that applied in urban areas, might be a better substitute for road tolls, but this also creates problems. For example, if the tax differed between the city centre and the less congested suburbs then commuters would simply fill their cars close to home, sending city centre petrol stations out of business. If the tax were applied citywide then it would punish those traveling on uncongested roads in the city. Like a parking space levy, an area based petrol tax is an idea that is forty years out of date.

Singapore introduced high taxes on new cars in the late 1960s to try and reduce road congestion. The result was that people simply kept their cars longer. This loophole was closed through the use of punitive registration fees. But again, such measures are poor substitutes for direct road pricing. Taxes on cars and high registration fees are only loosely connected with the congestion that a motorist creates. There is no need to punish all drivers to correct the congestion problem of urban Australia.

A variety of European cities have tried to reduce car congestion by banning cars from parts of the CBD during business hours. While solving car congestion, turning a substantial part of our cities into pedestrian malls is rather excessive.

Dealing with congestion does not mean eliminating congestion altogether but rather creating a 'desirable' level of congestion. When Sid and other drivers join the congestion of the early morning rush hour, they do so for a reason. We all know that our journey will take longer in the morning and evening peak periods, but we prefer not to delay our journey because we also value traveling at that time of the day rather than another time. The problem is not that there is some congestion. Rather, the problem is that there will be excessive congestion because Sid and his fellow drivers do not take account of the delay that they each cause *other* drivers.

Congestion will be at an economically desirable level if all those who drive during the congested period value traveling at that time more than the cost of traveling at that time, including the cost of congestion they impose on other people. To see this, suppose that the government introduces a toll of $12 on Sid and his fellow motorists during the morning rush period. What does this toll do?

Given the $12 charge, some drivers will decide not to travel in the morning rush. For these drivers, the $12 toll provides an incentive to substitute to their next best alternative. This might be traveling at a different time or using a different mode of travel, such as public transport. For these drivers, the extra expense of the toll in the morning means that traveling in the peak period is just not worth while.

Some other drivers might still decide to travel but will economise on the toll cost, for example, by sharing cars. For example, if two motorists share a car rather than travel in their own cars, then they halve the toll cost for each of them. And in so doing, they halve the congestion that they create by only having one car rather than two cars on the road.

Finally, some drivers will just pay the toll. These drivers value driving during the morning peak and value travel by car so highly that they are willing to put up with the residual congestion on the road *and* pay the $12 toll.

If the $12 toll is set at an economically efficient level then it will reduce congestion but not eliminate it. Those drivers who pay the toll will face less congestion, but there will still be some congestion. For example, if Sid decides to drive and pay the toll then his journey will be faster than the pre-toll time of 90 minutes. However, it will not be reduced to the 'congestion free' travel time of 30 minutes. Rather, the travel time might be 50 minutes. Sid is still imposing congestion costs on other drivers just as they are imposing congestion costs on him. But the toll means that Sid 'sees' these costs through the toll that he has to pay and can make a sensible decision about his travel.

Alternatively, Sid might decide to catch the train. The train journey into work takes about 45 minutes door to door, but now has a much lower monetary cost than driving by car. Before, Sid was willing to just put up with the traffic and drive rather than catch the train. Now that he has to actually pay for the congestion that he imposes on everyone one else, however, Sid may prefer to leave his car at home.

How do we know if $12 if the 'correct' level of the toll? This is easy in theory but until recently has been difficult in practice. If there is no toll and congestion is very high then the congestion cost that Sid imposes on other drivers is very high –

as is the congestion cost that those drivers impose on him! In these circumstances, the 'price' of driving in peak period is too low. Every driver imposes costs on other drivers but does not see the costs of their own actions.

As the toll rises, we would expect congestion to fall. Some drivers will shift to traveling off-peak while others will prefer public transport. So as the price of traveling on the road rises, the congestion costs that each driver imposes on other drivers falls. For example, suppose that Sid creates $20 of congestion costs when there is no toll. A toll of $5 will reduce traffic volumes and with this higher toll, the congestion costs created by Sid might be only $17. However, this $5 toll is not the best we can do as Sid still does not face the true cost of driving. He faces a $5 toll but is imposing more than $5 congestion costs on other drivers. Raising the toll further, to say $10, further reduces congestion and reduces the congestion costs Sid creates – to say $14. Essentially a higher toll means less demand for road space in peak period and lower congestion costs created by each driver.

The economically optimal toll occurs when the toll cost faced by Sid just balances the congestion cost that he creates. Thus, $12 is the correct toll if this just reduces road use to a level where the congestion cost that Sid imposes on all other drivers is just equal to $12.

This toll does not eliminate congestion. If we wanted to do that then we could set a ridiculously high toll and stop people driving altogether. This would be extreme and undesirable. Driving is privately beneficial – we travel conveniently when we want to in relative comfort. However, driving creates external costs through congestion, so the optimal road price just reflects these congestion costs and creates the 'right' level of congestion for our roads. There will be less congestion than at present but there will still be some congestion with an optimal road pricing scheme.

The pricing mechanism described above is present in almost all markets in our economy. No law 'sets' the price of apples at your local produce market. Rather, the price adjusts until the amount of apples that people want to buy just balances the amount of apples people want to sell. The same holds for most goods we buy and sell. While some prices adjust quicker than other prices, the role of markets is

to match buyers and sellers, and this is achieved by changes in the price of the relevant product.

For 'road space', there is no natural pricing mechanism. If Sid is driving to work in the morning rush hour then he cannot 'buy' road space and keep other drivers out. The price of road space is set at zero and on our overcrowded roads this price means that the demand and supply of road space is out of balance. Congestion is the result. Road pricing through tolls provides a solution to this – allocating our scarce roads to those drivers who value road space the most.

Until recently, the technology to have real-time road pricing to balance 'demand' and 'supply' of road space, was unavailable. Thus most road pricing systems have been crude and of limited benefit. CBD zone tolls are limited to only part of the city and do not set prices for all congested roads. Indeed they may push congestion into unpriced areas. Similarly HOT lanes only apply to a very limited set of roads. While these solutions are better than allowing unpriced congested chaos to reign on our roads, we can now do better. Real-time electronic road pricing can be applied on a city wide basis. An electronic system of road pricing can measure the level of congestion on our roads and alter the toll for roads to reflect this congestion. As a road becomes more congested, the relevant toll rises. As congestion falls so do the tolls. Drivers are informed of these tolls in advance and can plan their trip accordingly. In GPS based systems drivers can receive information about alternative routes including toll costs, levels of congestion and expected travel times.

Electronic road pricing simply makes the market for road space operate like most other markets in the economy. It does not eliminate congestion. Rather, it leads to the economically desirable level of congestion.

DO WE REALLY NEED ROAD PRICING?

From an economic perspective, real-time road pricing is simple common sense. At the same time, such pricing is often opposed by the same groups who favour the unfettered operation of markets in other parts of the economy. The objections by these pro-market groups tend to fall into two categories. It is argued that road pric-

ing is anti-car and reflects undue favouritism of public transport. Alternatively it is argued that congestion pricing is not needed – that the current congested road system is working just fine.

The idea that road pricing is anti-car and pro-public transport is clear nonsense. For example, most of us would not claim that requiring people to pay for apples was 'pro oranges' or that having people pay for shoes was 'pro bare feet'. Producing apples and shoes involves economic costs and we expect to pay for these products. We might grumble that the price is too high if we are a buyer (or too low if we are a seller) but most people would not argue that apples or shoes should be 'free'. The same holds for road usage. Driving a car on a congested road involves a real cost to other drivers. Requiring that people pay for using an expensive resource such as a congested road is simply economic sense.

Public transport is an important adjunct to a system of road pricing as we discuss in detail below. However, requiring drivers to pay for the road congestion that they create does not artificially favour public transport anymore than requiring people to pay for apples artificially favours oranges.

It is sometimes argued that, despite the evidence we see on our roads everyday, congestion is not a problem so that real-time road pricing is unnecessary. This argument takes two forms. First it is sometimes argued that congestion pricing is not needed because the costs of congestion are relatively small. Road transport creates four separate costs in addition to the private costs of operating a vehicle – injury and death due to accidents, environmental harm, infrastructure costs (depreciation of roads) and congestion. It has been suggested for Europe that these non-vehicle costs are about US$0.12 per kilometre for a petrol powered car, with about half of these costs being the human cost of accidents and almost none of the costs being due to congestion.[15] As a result, it is sometimes argued that congestion is a relatively trivial cost when compared to other costs and that we should not 'waste our time' with road pricing.

This argument is wrong. While other costs associated with driving might be more important *on average* than congestion, this does not mean that congestion is not a serious and real cost at certain times of the day and on certain routes. Thus

while the average costs of congestion, in terms of all kilometres traveled on Australian roads, might not be large, congestion is a real and significant cost in our urban areas. Further, unlike road trauma, we have the technology to deal with urban road congestion.

Even if congestion costs are small relative to other road costs, this does not mean that they should be ignored. A person might earn $30 000 per year but they are still likely to stop to pick up $20 if it is lying on the footpath. The costs of road congestion in Australia are probably around $4 billion per year. Even if road pricing only saves $2 billion per year, that is a lot of extra resources that we can spend on more important things than sitting in our cars.

An alternative argument that road congestion is not a problem rests on a failure to understand the economics of externalities. It is argued that people choose to drive on congested roads so that their benefits from driving on congested roads must outweigh their costs. But these costs include the cost of road congestion, because the drivers are on congested roads. If the benefits to these drivers of using congested roads outweigh the costs to these drivers, including the cost of congestion, where is the problem?[16]

This argument misses the point. Individually each driver who uses a congested road has private benefits that outweigh his or her own private costs, including their own time cost due to congestion. However, these same drivers do not consider the congestion cost that they impose on everybody else. It is this external cost that creates the problem. While this cost might seem trivial – after all what is one more car in peak period traffic – as we showed above, this external congestion cost can be high. An individual driver may only slow up other drivers by a few seconds. But when that few seconds is added over thousands of cars it can become huge.

To see the problem of road congestion in a different way, consider a simplistic example. Suppose that there are two people, Sid and Mel. Both Sid and Mel prefer to drive to work rather than catch the train. If only one of Sid or Mel drives there is no congestion. If both drive, however, there is congestion and both Sid and Mel take longer to drive to work. Even so individually they each prefer to drive on a congested road than to not drive and catch the train.

To make the example more concrete, let us put some numbers on the benefits of driving to Sid and Mel. Suppose that both Sid and Mel are $20 better off if they drive rather than catch the train when the road is uncongested. If both Sid and Mel drive then their individual benefits fall to only $5 due to the congestion. What will happen in this situation?

Notice that in the absence of any congestion charge, both Sid and Mel will drive. To see this, consider Mel's decision. From her individual perspective, she is always better off driving regardless of what Sid is doing. If Sid does not drive then Mel is $20 better off driving than catching the train. She drives to work on an uncongested road. Even if Sid is driving, Mel is better off to drive. She still gains $5 benefit relative to catching the train even though she now has to drive on a congested road. The same holds true for Sid. So we would expect both Mel and Sid to drive, with the result being a congested road.

Is this a problem? Yes! The decision by both Mel and Sid to drive is inefficient. When Sid decides to drive when Mel is driving then he gains a $5 benefit but he creates a $15 cost to Mel. By driving, Sid makes the road congested, so Mel's benefit falls from $20 to $5, a loss of $15. Sid's benefit from traveling on the congested road relative to catching the train is only $5. So by choosing to drive when Mel is going to drive, Sid creates $5 of benefit and $15 of cost, an overall loss of $10. Of course, the same holds for Mel given that Sid is driving.

Mel and Sid face what economists call a co-ordination problem. Both Mel and Sid can be better off if they co-ordinate their actions. And if there were only two drivers such as Sid and Mel then we would expect them to probably work out the problem by themselves. For example, Mel might pay Sid $8 to stay off the road. This would lead to an efficient outcome. Mel would drive while Sid would catch the train. Mel's net benefit from driving would be $12 – the $20 benefit relative to catching the train when the road is uncongested less the $8 that she pays Sid. And Sid's net benefit from not driving would be $3. He gives up $5 in benefit when he catches the train rather than driving on a congested road but is paid $8 by Mel.

Alternatively, Sid might pay Mel not to drive. So long as Sid pays Mel more than $5 and less than $15 to catch the train and not drive, both Mel and Sid will be better off compared to the outcome where they both drive.

Even more likely, if they faced the same situation on a daily basis, Mel and Sid would take it in turns to drive and catch the train. By taking turns each person gets $20 benefit every second day. This averages to $10 per day – better than the $5 per day of benefit that they each receive if they both drive every day.

The real-world problem of road congestion is just a bigger version of the co-ordination problem faced by Mel and Sid. From each individual motorist's perspective, he or she prefers to drive than to not drive. However, when they all choose to drive, they destroy most of the benefits of driving through congestion. Unlike Mel and Sid, thousands of drivers in urban Australia cannot just work out a solution. They need the government to help them and real-time road pricing is the best way for the government to help.

ROAD PRICING AND PUBLIC TRANSPORT

Arguments that road pricing is anti-car or that the benefits are 'small' are clearly false. At the same time, road pricing does raise legitimate issues relating to alternative modes of transport.

Real-time road pricing will only be effective in reducing congestion if drivers have relevant alternatives. One obvious alternative relates to the time of travel. If drivers are able to reorganise their time to avoid traveling in peak periods then they will pay lower road prices. For example, some drivers will be able to reorganise their hours of work in order to start earlier or finish later, avoiding morning and evening peak periods.

Other drivers will reduce their road pricing payments by car sharing, telecommuting or just thinking twice about whether or not driving on a congested road is really necessary. Overall, as people change the way that they drive, road congestion will fall.

In most markets, however, a rise in price stimulates an appropriate response in two ways. When the price of a product rises then this increases incentives for producers to increase their production of that product. Thus, a long-term rise in the price of apples will encourage farmers to grow more apples rather than other products. Farmers who would have planted an alternative crop will increase their acreage devoted to apples and over time, the supply of apples will rise. This increase in supply will tend to moderate the original price increase.

Of course, an increase in supply can take time. In the short-term, a rise in the price of one product will just lead many consumers to buy an alternative product. If the price of apples rises, then many families simply buy an alternative fruit. While some people will still buy apples even at a high price, for many people, oranges, pears, bananas or some other fruit represent adequate substitutes.

Similarly, if the price of one form of entertainment, such as cinema tickets, rises, then consumers will tend to buy substitute forms of entertainment. Instead of going to the cinema, families might go to a restaurant, the park, the football or some other activity. They might even stay home and watch a video of a movie.

In most markets, a rise in the price of one product leads producers to increase their supply of that product and leads consumers to shift to other substitute products. Both of these effects moderate the original price rise.

Both of these standard responses to real-time road pricing would have desirable effects in lowering congestion. If the 'supply' of roads was able to increase due to a rise in road pricing then more roads would be available to drivers in peak periods, lowering congestion on any individual road. At the same time if relevant substitutes to road travel are available, a rise in road pricing due to congestion tolls will lead some drivers to use these alternatives rather than traveling by roads. Again, this will lower congestion.

The supply of roads and the supply of transport alternatives, however, are largely controlled by government. Governments determine what roads will be built, when they will be built, and the size and maintenance of roads. Throughout Australia, governments either directly supply public transport, usually through a government business enterprise such as a railroad company, or strictly control the

supply of public transport. This control often extends to the pricing of public transport and the amount of public transport supplied. For example, even where public transport is provided by a private company, such as a private bus company, the fares charged by that company, the routes that it is allowed to service, and the number of services provided by that company, are all often highly regulated.

This means that a standard market response to real-time road pricing will be muted unless the government takes a co-ordinated approach to transport management. The government needs to use the information that it gains through real-time road pricing, about traffic volumes and congestion levels, as an input for road planning. It also needs to consider the supply of public transport and provide appropriate levels of public transport, in terms of frequency, service and price, so that public transport is a real alternative to the peak period road commute.

Road pricing will provide important information to governments about road use. Even with adequate public transport and relatively high road prices, some roads will remain congested. Many of these roads are likely to be in middle and outer urban areas where cross-town traffic uses one road as a route to a wide variety of destinations. In such a situation, the congestion provides information to the government that the existing road system is inadequate, even with road pricing. The government should use this information to formulate an appropriate response, such as road widening, altering signaling to improve traffic flow, or in some situations, building alternative routes. In this sense, road pricing does not mean that there necessarily will be fewer roads or less road planning. Rather, pricing signals and congestion levels will improve the information available to governments and allow them to plan roads better.

Real-time road pricing also needs to be integrated with public transport reform. Road pricing will lead to increased demand for public transport and the government needs to respond appropriately by increasing public transport services. In particular, government may need to rethink how it funds public transport and who pays for public transport.

Public transport can be provided by a range of modes. Railways or tramways are often used to move large numbers of individuals rapidly around our cities, par-

ticularly in and out of the central business district. Buses are more common in outer urban areas, and often take commuters on cross-town routes or connect with other forms of transport. The economics of these different modes varies greatly. Buses involve relatively low fixed costs but high variable costs in terms of fuel and labour per passenger. In contrast, rail travel involves large fixed costs relative to variable costs. Much of the cost of suburban rail transport is the initial cost of the track and the trains.

Economically efficient pricing for public transport means that the price should reflect the marginal cost of an extra passenger. For rail, where most of the costs are fixed, these marginal costs are small. Of course, rail fares based on marginal cost will not pay for fixed costs of the track. This leaves governments with a dilemma. How do they price public transport to encourage efficient use of this transport while also recovering the costs of that transport?

Road transport has traditionally faced the same problem. The main cost to the government of road usage is the cost of building the road in the first place. Most of the time, the marginal cost of an extra motorist is small compared to this fixed cost and even real-time road pricing will not cover more than a tiny fraction of the cost of building and maintaining our roads. Rather, roads are funded out of general government revenues. There has been no attempt to 'recover' roads by user charges and indeed most of our roads have no user charge whatsoever. Congestion charging partially deals with this problem.

By contrast, the debate on public transport pricing in Australia often encourages 'user-pays' charges set well above marginal costs in order to partially recover fixed track costs. The result has been significant under pricing for road transport and significant over pricing for public transport. Prices for road and public transport need to be rebalanced. Real-time road pricing will help by making drivers face the congestion costs that they impose on other drivers. For public transport, fares need to be set at an efficient level to reflect marginal passenger costs and any external benefits such as reduced pollution. These public transport fares are likely to be significantly below existing fares for many services.

Because it is a substitute for building roads, public transport can save the government money. Increased public transport services and decreased public transport fares save the government from spending even more resources building new roads and widening existing roads to reduce congestion. The government needs to trade-off the costs and benefits of roads and public transport when considering how best to deal with the problems of moving people around our cities.

The supply of public transport impinges on social equity. The poor tend to rely on public transport more than the rich. Moving resources to public transport is 'progressive' in the sense that it most benefits those who are least well-off in society.

If public transport reform and pricing is to be linked to road pricing, how should this be done? As noted above, both road and rail transport involve considerable fixed costs and appropriate pricing of either road or rail will involve prices that reflect the marginal cost of additional use. This will almost certainly fall below the average cost of use. Efficient congestion charges for roads are not about recovering the funds used to build the roads but rather about creating incentives for the best use of our roads. Similarly, rail prices, for example for public transport, should reflect the efficient use of this mode of transport. It should not be aimed at some form of full cost recovery.

If both roads and rail cannot be fully funded from user charges, how do we pay for these services? At present, roads are paid for out of general government revenues. Because consumers face no price signals, this means excessive road congestion. Public transport is funded from a mixture of user charges and general government revenue. Because the relative user price of public transport is high compared to the zero user charge for road, our current public transport fares are almost certainly inefficiently high. Public transport is used too little, especially given the large investment in fixed costs required to establish track-based public transport.

Introducing real-time road pricing partly redresses this imbalance, but any introduction of congestion tolls for roads will need to be tied to a reduction in public transport fares and an increase in public transport services. This rebalancing will allow public transport to provide an effective alternative to driving during peak pe-

riods. In particular, by making sure that public transport is a viable alternative to driving, improved public transport will help congestion charges to work. Like other markets, it will allow consumers to substitute from the congested product with a relatively high price to an alternative product.

A good starting point for public transport fares – particularly services involving train and trams – might be a fare close to zero. Clearly such a fare is below the marginal passenger cost. But when the external benefits of public transport are taken into account, including benefits in terms of reduced pollution and reduced road congestion, the optimal public transport fare is likely to be very low. If collection costs are taken into account, it is quite likely that the best solution will just involve people riding public transport for free or at most a nominal fee.

A zero charge for public transport use will clearly make it a powerful substitute for travel on congested roads particularly in peak periods. It will also provide significant benefits to the poorest people in society who do not have easy access to car transport. However this type of fare reduction cannot be introduced without also upgrading services. If public transport is to be a viable substitute for congested roads then the level of service will need to be improved. Public transport services need to be sufficiently frequent and crowding needs to be tolerable. Commuters will also need improved transport information to help them choose an appropriate mode of transport. As the Victorian Infrastructure Planning Council noted "[p]roviding real-time information about arrival and departure times has a positive impact on people's perceptions about the reliability of the system. If people know how long they have to wait, the wait seems shorter. With accurate information people can make informed choices and use public transport in a way that is more convenient to them. This information is already available to most train commuters. It needs to be extended throughout the network and be available for the tram and bus systems."[17]

A zero charge for public transport may be too low. At present, we simply do not know. The optimal public transport fare will depend on how commuters react to the introduction of congestion tolls. At a minimum, however, public transport fares and services need to be considered in tandem with road congestion charges.

If public transport fares fall while at the same time services for public transport are upgraded, including more frequent services and improved information for passengers, where does the money come from? By tying public transport reform to the introduction of real-time road pricing, there is one obvious source of funds – the congestion tolls. The government would collect increased revenues from the efficient pricing of road services. These funds, at least in part, could be redirected to improving the alternative services available for commuters. This means that congestion tolls get 'twice the bang for the buck'. Not only do congestion tolls create a disincentive for drivers when considering travel in peak periods, these same tolls are used to upgrade the substitute public transport services available to these commuters.

Using congestion toll revenues to fund both improved public transport and, where relevant, improved road services, is also likely to make the introduction of these tolls more politically palatable. Understandably, voters are wary when governments increase charges and the funds simply disappear into general revenue. Voters like to see what they are getting for their money. While the aim of congestion charging for roads is to reduce the costs of congestion and improve the efficiency of our road services, if the toll revenue were used to fund related transport services, the public could see a direct and immediate benefit from their tolls. The end result would be less congestion and higher quality for road, rail and other transport services.

The funds required for public transport could also be tied to location. Outer urban areas of our cities and rural areas often have poor or non-existent public transport services. People living in these areas would rightly feel aggrieved if they faced increased taxes to pay for improved public transport services when they are unable to access these services. In contrast, inner city areas of Sydney, Melbourne and other cities have excellent access to public transport. An equitable way to raise funds for public transport would be to create a public transport 'option' charge for inner city dwellers. Such a charge could be part of inner city rates. A person who owns a house or apartment, for example, in Fitzroy in inner Melbourne has access to a wide variety of tram, train and bus services. Such a person gains a benefit from the availability of these services even if they do not directly use them. Im-

proved public transport increases the value of their property. Including a 'public transport access' charge into the rates for such land owners would be an efficient and equitable way to help raise funds for improved public transport services.

Victoria's Infrastructure Planning Council considered a similar scheme tied to car registration. "One hypothetical option is to make people contribute to the provision of public transport via car registration. … The annual registration fee could include a charge based on the availability of public transport. The public transport charge will differ by region, depending on where the car is garaged for registration purposes. A car that is garaged in a location with significant public transport access would pay a higher registration charge than a car located in a region with poor public transport alternatives. The higher registration would be used to reduce the cost of public transport use, especially in non-peak periods. A special registration fee for local travel for those who rarely travel either by car or public transport could also be available".[18]

Integrating public transport and road charging can be explicit through the use of a common method of charging. This can be done through smart cards.

In Hong Kong, the Octopus Card was introduced in 1988 to allow for electronic payment on subways, ferries and buses. The Octopus Card works as a standard debit card, deducting money as it is used by a consumer. The card is read electronically and does not even have to be removed from a customer's wallet or purse to be passed over a reader. It has proved popular as a substitute for cash and other cards and is now accepted at more than 12,000 locations in Hong Kong as electronic currency. The card now accounts for between 1 and 2 per cent of all monetary transactions in Hong Kong.[19]

Introducing electronic payments for public transport in Australia would increase the efficiency and flexibility of the system. It makes it easy for customers to use public transport and speeds up both boarding and leaving transport, particular at train stations. Such payments would also increase fare flexibility for public transport. Fares can be altered depending on time of day and route to encourage people to make appropriate transport decisions. In the extreme, fares could even be

personalised – rewarding a driver for catching public transport and leaving their car at home in peak period!

Electronic payments are currently used for toll roads in parts of Australia. The e-tags used to pay tolls can also be used to purchase other services such as parking or takeaway food. Such services are already available overseas.[20] Integrating the electronic systems used to pay for congestion tolls and public transport would be relatively straightforward and would create a single means of electronic transportation payment.

An efficient system of congestion tolling for roads needs to be tied in to an efficient public transportation system. This is politically sensible as the revenue from tolls can be used to improve public transport services. It is also necessary for efficient road use, given that the main road substitute, public transportation, is heavily controlled by government. The reforms can easily be tied together, through common methods of payment and integrated planning to deal with congestion. However, as long as governments throughout Australia view road transport and public transport as two separate services, improving the operation and efficiency of our roads will only be a partial success at best.

THE WAY FORWARD

A strategy for dealing with long-term transport problems in urban Australia needs to be built around real-time road pricing. In the absence of such pricing our cities will continue to suffer the blight of excessive road use in congested periods and too little use at other times. The costs of congestion – currently around $4 billion per year – will continue to rise. The technology for real-time road pricing exists. It is simply a matter of political will to introduce this technology to our urban roads in Australia.

Road pricing needs to be viewed as part of broader urban transport reform. For too long, our governments have considered road funding and public transport funding as separable. These services are substitutes and efficient road pricing must be integrated with public transport pricing. Lower public transport fares will help

reduce road congestion and will help provide commuters with a reasonable and cost effective alternative to the peak period crush on our roads.

The use of smart cards together with electronic tolls can help integrate road and public transport. Drivers can use smart cards to pay either tolls or public transport fares. A driver who leaves his or her car at home in the peak period and catches the train instead can be rewarded by a reduced fare through the smart card. These same cards are likely to be adopted for a wide range of other services over time and will evolve into important payments instruments.

A complete GPS real-time road pricing system for our cities will take a number of years to introduce. This said, planning to have such a system in place and operational by 2010 is reasonable. This does not, however, mean that governments can sit idle for the next 5 or 6 years. There are a variety of simple policies that can be adopted by governments as short-term measures to improve urban transport.

The technology already exists to extend electronic tolling to CBD zones and HOT lanes in Australia. For example, a CBD zone could be easily introduced for the centres of our major cities. While this is not a perfect solution to urban congestion, it will help improve traffic flows in the short-term. Many cars in Melbourne already have e-tags and this technology is spreading to other Australian cities. Once e-tags are in place in vehicles, it is relatively easy to introduce toll zones to our CBD areas.

HOT lanes should be investigated by State governments, particularly for major roads that currently have transit lanes in place. While these lanes will require some modifications to limit 'lane jumping', they provide a useful adjunct to traffic policy. As US experience shows, these lanes can be politically popular and help deal with congestion.

Many existing tolls in our cities can be reformed in the short-term. For example, CityLink in Melbourne has no differentiation between peak and off-peak tolls. From the perspective of efficient traffic movement, this failure to adjust tolls for congestion makes no sense. The lack of tolls on neighbouring roads also means that CityLink traffic moves onto other roads to avoid tolls. But the e-tag technol-

ogy used for CityLink could also be used to toll nearby arterial roads, encouraging traffic to use the motorway rather than smaller suburban streets.

Major reforms to public transport could also take place over the next five years. Current road and public transport pricing is out of alignment. There are few direct user charges for road while most Australian cities try to recover an increasing share of public transport costs through 'user pays' charging. Congestion on roads is the natural result of this mispricing. Road charges need to be higher, and this will be achieved through congestion tolls. But public transport charges need to be lower, reflecting the marginal costs of passengers and the external benefits of this transport.

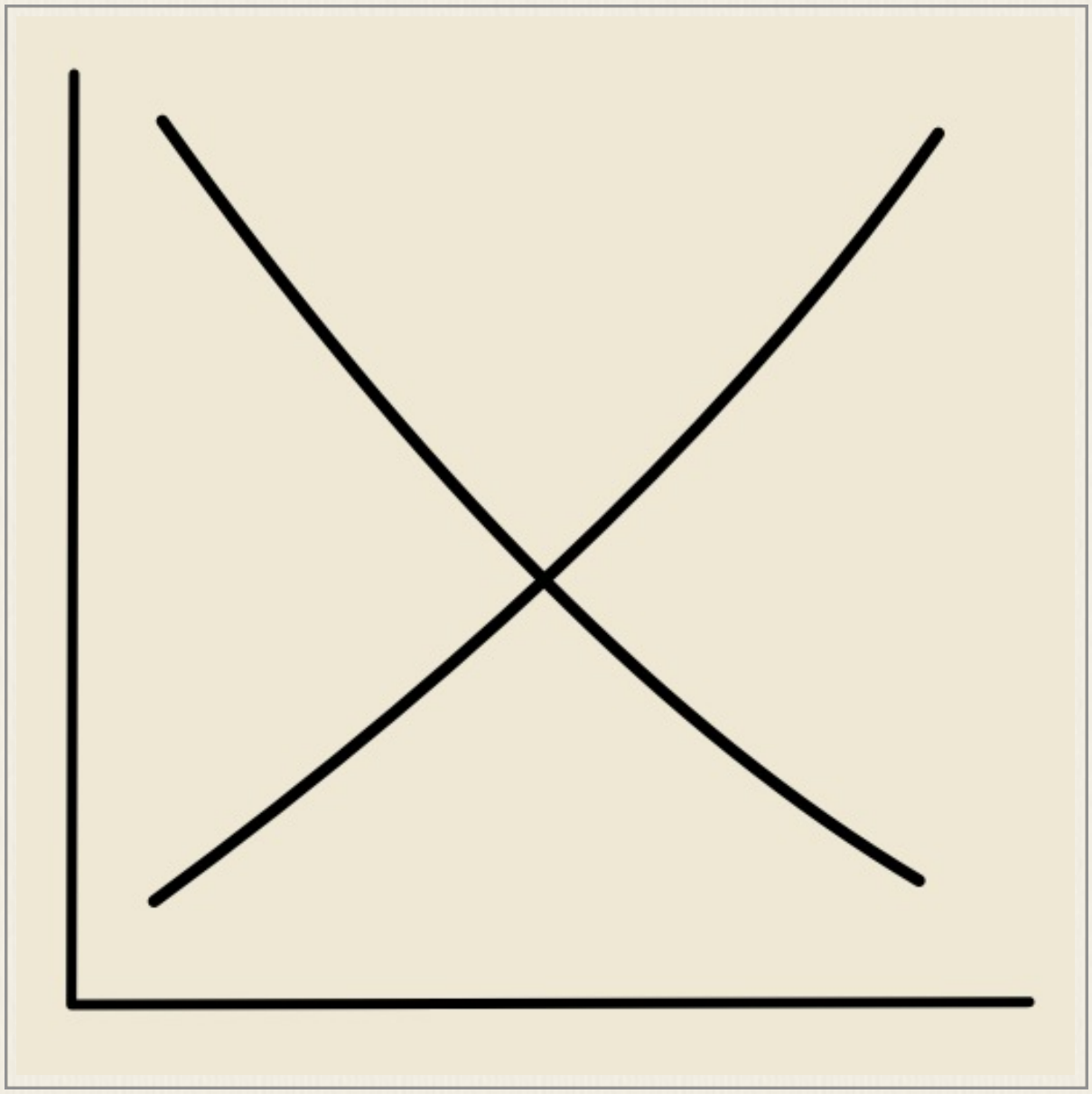
If public transport fares are to be lowered while services are improved then alternative sources of funds for public transport, such as location-based charges and toll revenue, need to be used. It may be desirable to set a zero fare for public transport. Given the benefits of such transport, in terms of lower pollution and less road congestion, and the existing costs of fare collection, a zero fare in peak periods may be economically efficient. Alternatively, ways to reward drivers for using public transport and leaving their cars at home could be introduced, for example using smart card technology.

Public transport services can be upgraded, including the provision of information to passengers. 'Smart' bus routes are being introduced into some of our cities, providing real-time information for passengers. The expansion of these initiatives will make public transport more desirable and a more effective substitute for cars.

While some of these reforms sound fanciful, many are already being trialled or introduced overseas. The concept of road pricing is not new or novel. However, historically the technology to make such pricing practical has not existed. Now, with this technology available, countries around the world are directly addressing the costs of road congestion. Australia, despite being a leader in e-tag technology, is well behind in recognising and addressing the problems of urban transport. The economic answers are known. The technology is available. It will simply take the political will to confront and fix the problem.

CHAPTER 6

The Finished Job



Over the past few decades economies all around the world have gone through unprecedented economic change. Australia has responded to this change by undertaking an impressive program supply-side-based market reform. In energy, telecommunications and other vital sectors, Australia has been a world leader in grasping new ideas to reinvigorate the economy.

As our economy changes, however, different policies are needed to maintain Australia's balance of economic efficiency and social equity. In the previous five chapters of this book we have outlined some of those new policies.

The ideas and innovations presented in this book deal with important sectors of our society. Education, health, housing and urban transport are key elements of our economic and social fabric. At the same time, these sectors have been relatively immune from rigorous economic reform. In part this lack of progress reflects the difficulties of reforming these sectors. Economic reforms aimed at changing consumer behaviour – where we educate our children, how we get to work, where we live, or how we protect ourselves from the risks of illness – can face strong resistance from a conservative populace wary of change that directly impinges on its day-to-day lives. Such reforms can be emotive. The debates about public and private education, or about universal health cover, raise strong views. However these views need not be consistent with either international experience or economic policy and the fact that key areas of our society raise strong emotions should not excuse these sectors from rigorous scrutiny or the adoption of new, better ideas. Indeed, because education, health, urban transport and housing are so important to Australia, these areas are most in need of analysis and reform.

In part the lack of consumer-side reform in education, health, housing and urban transport reflects significant vested interests that exist in each of these sectors. Each of these sectors involves groups that may lose from reform. Even where important reforms are in the general interests of Australia, vested interests may fight tooth and nail against these reforms to protect their own turf. The reforms presented in this book in many ways simply represent commonsense. But vested interests will almost certainly attempt to paint some of our ideas as naive, impractical, simplistic or overly complex. In fact our suggested reforms are none of these. The reforms that we have outlined in this book reflect up-to-date, practical economic understanding guided by international experience. Where Australia is lagging, we should not be afraid to move ahead and adopt world's best practice. Where Australia can learn from the rest of the world, innovate and become a world leader in social and economic policy, it should do so.

Finally, as noted in the introduction the lack of consumer-side reform in Australia partially reflects political inertia. We have subtitled this book: *An economic reform agenda for the next Federal government*. We hope that by carefully presenting key economic ideas for reform in education, health, housing and urban transport, this

book will help to inspire public policymakers and educate the electorate so as to make reform politically practical.

REFORM TO HOUSING

Australia is a world leader in the use of income contingent loans to overcome the problems that students face when funding higher education. Countries such as England have followed Australia's lead and are now using their own versions of our Higher Education Contribution Scheme as key elements in higher education policy.

In our opinion, Australia can continue to be a world leader in this area, showing the way for progressive social and economic reform in housing. The credit market failures that bedevil higher education funding also face households with low and volatile incomes when they seek adequate housing. In Chapter 2, we showed how a housing lifeline could be used to overcome these problems. The housing lifeline provides an automatic 'line of credit' to households facing short-term distress. It is an income contingent loan that protects households in the short-term while minimising the risks of poorer families falling into a poverty trap in the longer term. It creates significant budgetary benefits for government. It is not simply a handout. While not all households that receive the lifeline will be in a position to fully repay the loan, governments can expect a reasonable level of repayment, reducing the pressures on general taxpayer funds.

The housing lifeline empowers families. The family itself decides on the relevant level of rent or mortgage assistance that it requires subject to appropriate upper limits. Because the housing lifeline is not a handout but a short-term line of credit, families can avoid the stigma that may be associated with social security. At the same time the housing lifeline works by insuring families from short-term income risk. By limiting income risk, poorer families become more desirable tenants and both lenders and landlords will be more willing to provide appropriate housing solutions for these families. In this sense, the housing lifeline represents a win-win solution. It helps those families most in need when they need assistance. It protects landlords and lenders making it in their interest to serve poorer families

rather than disenfranchising those families from the housing market. And it limits government liability, particularly when compared to poorly-targeted, expensive handout-based programs such as the First Home Owner Grant scheme.

REFORM TO HEALTH INSURANCE

As we noted in Chapter 3, modern societies are often judged by their policies on health care and the way in which they deal with the ill. Australia has much to be proud of with its health system. However this system has come under increasing pressures over the past decade as governments attempt to balance the mix of public and private funding for medical services while at the same time providing appropriate universal health insurance for the populace. These pressures are likely to continue in the future as our population ages.

The tension that exists in Australia's health care system has three fundamental sources. The first is the inappropriate linking of the provision of health insurance and provision of health care. Health insurance is separate to the provision of health care. Unfortunately in Australia, for historic reasons, public health insurance is tied to the public hospital system while private health insurance is tied to the private hospital system. This linkage is unnecessary and inefficient. Rather in its role as a health insurer, the government should simply be interested in getting the highest quality of care for patients at the best possible price. These services can be provided by either publicly-owned hospitals or privately-known hospitals, which ever can offer the best deal for the patient and the government. As the health insurer, the government should be neutral between private and public providers of health care.

The second underlying problem for Australia's health care system is the inappropriate use of health insurance scheme as a redistributive device. Much of Australia's health debate concentrates on the redistribution of income from the relatively well-off to the poor. If richer individuals and families purchase private health insurance while still paying taxes for the public system, so the argument goes, then poorer families, who rely on public health insurance, benefit. This approach has difficulties. By using health insurance as a redistributive tool, govern-

ments must distort the provision of this insurance. For example, to convince those families who are both well-off and healthy to purchase private insurance the government must create incentives for private insurance. These incentives include both direct monetary rewards to those who privately insure as well as limitations on the coverage of public health insurance. The end result is that those who most need health insurance – the poor who are ill – are forced to rely on a limited public scheme. Further redistribution through health insurance system rather than through taxes and transfers lacks transparency and makes it difficult to identify the true beneficiaries. A better system would separate health insurance from redistribution.

Finally Australia's health insurance system fails to recognise the key role of public insurance in providing universal base-level protection for all people. The role of private insurance should not be to duplicate the public insurance system but to supplement that system.

These three factors have led to many of the existing problems in Australia's health care system. As we discussed in Chapter 3 to result has been a form of anti-insurance. To untangle the issues of insurance and ownership, the government needs to move to a system where a patient who is covered by public health insurance is able to receive relevant services from any hospital that is registered to provide those services. To remove the inequities that exist in the current health insurance system, the government should make public health insurance truly universal. By separating redistribution from the insurance system and making private health insurance supplementary rather than overlapping with public health insurance, Australia can have a truly equitable universal health care system.

REFORM TO EDUCATION FUNDING

In education reform, Australia needs to learn from the rest of the world. Much of the debate about education funding in Australia involves squabbling between those who favour privately-owned schools and those who favour publicly-owned schools. As other developed countries have learned, however, education debate should not be about ownership but about providing appropriate resources where

they are needed. Most children in the Netherlands are educated in privately-owned schools, but the schools are funded in the same way as government-owned schools. In England, privately-owned schools can either opt-in or opt-out of the government system. Australia needs to move to an education funding system that recognises the underlying need to direct scarce resources to where they are most needed.

Government-owned schools should be freed from unnecessary constraints. At the same time it is important to recognise the education is produced by school communities and all children should have access to an appropriate school community. Schools should be allowed to specialise to offer the best possible education for their school community.

The key to reforming school funding is a student-based universal allowance. Students and their families should be able to choose the school that best suits their needs and to "take their funding with them" when they move to such a school. Privately-owned schools should also have the ability to receive this funding so long as they agree to abide by the restrictions associated with this funding. These restrictions relate to the ability to charge additional fees and to access for poorer students.

The universal allowance can differentiate between families on the basis of need and ability to pay. There is no reason why children from poorer families or less-well-off areas should not receive more generous education funding than children from richer families. In this sense, the universal allowance includes a government judgment about direct family ability to pay. Richer families who can directly financially contribute to the school community should be obliged to do so while poorer families should be protected from such a financial burden.

To allow for an appropriate mix of direct family contributions and government payments, school communities will be able to charge top-up fees so long as these do not exceed the maximum government allowance. These fees provide funding flexibility for schools while protecting access to students from poorer backgrounds.

It may be desirable to also allow some schools to charge additional compulsory fees. However, schools that wish to charge such fees but also receive government

funding will be required to meet government guidelines. These may include a form of 'fee tax' where a percentage of additional fee revenues are returned to the government for allocation to poorer schools. Alternatively, schools that wish to charge additional fees beyond the standard top-up fee may be required to establish a minimum number of fee-free places.

Australia is lagging a long way behind 'world best practice' in education funding. The reforms laid out in Chapter 4 of this book will help Australia to catch up.

REFORM TO ROAD FUNDING

It is not unfair to suggest that Australia's approach to urban road pricing has been exactly wrong. Instead of using tolls to manage the flow of traffic in our cities, governments have used tolls as a revenue raising device to fund specific roads. The end result has been excessive congestion, inappropriate driving patterns, and a brake on Australia's economic growth.

With road funding, as with education, Australia can learn from overseas experience. In the USA and Europe sophisticated forms of real-time road pricing are being used to improve life in major cities. In our region, Singapore is an international leader in the use of road pricing to manage congestion problems. Australia needs to embrace the new technology that makes real time road pricing practical.

Road pricing should not be viewed in isolation. Rather road pricing needs to be viewed as part of broader urban transport reform. Driving a car and catching public transport are substitute services. Revenue collected from real time road tolls can be used to cross subsidise public transport. Lower public transport fares will help to reduce road congestion and will provide commuters with a reasonable cost-effective alternative for peak-period transport.

Road pricing and electronic tolls can be combined with smartcards as a general payment instrument. Drivers can use the smartcards to pay either tolls or public transport fares. A driver who leaves his or her car at home and travels by public transport in peak-period can be rewarded, for example through a lower fare.

The introduction of a complete real-time road pricing system for our cities will take a number of years. However both planning for such a system and reform of our current road pricing can begin today. For example where current toll roads exist, the tolling system on these roads can be improved to allow for peak and off-peak tolls and create better incentives for drivers to use these roads at appropriate times.

Australia has no excuse not to adopt improved urban road pricing. The relevant technology is available in his being used overseas. Indeed electronic tags are being used on toll roads currently in Australia and these can be adapted for broader use. Australia simply needs to show the political will to embrace these reforms.

WHAT THESE REFORMS WILL MEAN FOR AUSTRALIA?

The past decade of microeconomic reform has changed the way that Australian businesses operate. The next decade of microeconomic reforms will change the way that all Australians live. The reforms outlined in this book will have direct, long-lasting effects on the Australian society. Not only will these reforms lead to a more economically efficient society they will also lead to a more equitable society. Reforms to housing will improve the market for home lending and will open up the property market to those families who are least well-off. Reforms to health insurance will mean that all Australians are better protected from the uncertainties of illness and the potentially catastrophic effects of injury, major disease and subsequent hospitalisation. Reforms to education funding will help Australia to become a more creative dynamic society. Reforms to urban transport will improve the quality of life for the many Australians who live in our major cities.

Consider the potential for an average Australian family 10 years from now. Traveling to work will be easier, cheaper and more efficient. Public transport will be widely available and fares will be kept down by the cross subsidisation from road tolls. For those who choose to travel by road in peak period, congestion will be reduced allowing them to move to their destination more safely and more rapidly.

For the children, educational opportunities will be broader than ever before. Families will be able to choose appropriate schools for their children to better meet the needs of these children. Funding of schools will be fairer and more efficient. While schools will be open to all, families who can afford to contribute more to the school community will be required to make such contributions. Poorer families will have full access to the same educational services currently reserved for the well-off in society.

If the family hits hard times they will be protected. If the family faces as an unexpected downward shock to its income, it will not be forced to sell their house in the short-term to meet mortgage demands. Rather the family will be able to draw down its housing lifeline in order to tide it over the short-term income shock. Sudden unemployment of a major breadwinner will no longer spell disaster for an average Australian family.

As the family ages it knows it will be protected by appropriate health insurance from the risks of illness. An average Australian family will have access to comprehensive public health insurance. If the family wishes to protect itself beyond this insurance, competitive privately-provided supplementary insurance will be available. The family will be able to choose an appropriate level of health insurance knowing that it is protected by the safety-net of a universal government system.

This view of an average Australian family 10 years from now is both realistic and practically attainable. In this book, we have laid out the basic reforms that need to be pursued to attain this future. Clearly, significant work still needs to be done to move between these ideas for reform and implementable policy. However, overseas experience can help us implement these policies and the real constraint on finishing the job of reform is political rather than economic. As long as the political will exists it is possible to finish the job of microeconomic reform, creating a better society for all Australians.

CHAPTER 7

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