INVESTING IN A HEALTH CLUSTER IN FOOTSCRAY

AN ECONOMIC IMPACT ANALYSIS

CoPS
SINCE 1975

WoMEDA
WEST OF MELBOURNE
ECONOMIC DEVELOPMENT
ALLIANCE

FOREWORD BY THE CHAIR AND DEPUTY CHAIR, WEST OF MELBOURNE ECONOMIC DEVELOPMENT ALLIANCE

BACKGROUND

The West of Melbourne Economic Development Alliance (WoMEDA) has produced an Economic Development Strategy for the West of Melbourne (WoMEDA, 2017). It outlines the case that there is a major jobs deficit in the West of Melbourne, especially given its rapid population growth, and urgent action is needed both to avert rising unemployment in the region and to avert the region becoming a dormitory.

A two part strategy is proposed. First is a catch-up strategy, involving a commitment to bring both health and education outcomes in the West to city averages. Investment in health and education will itself grow jobs in labour intensive industries. It will also result in a healthier and more skilled population, which will help raise labour force participation and increase the employability of the local population. Second is a job cluster strategy, built on developing employment clusters, especially in Footscray, Sunshine and Werribee. The report outlines, at a high level, the most prospective industries for each cluster.

The next stage of WoMEDA's work program is to undertake economic modelling of the strategy. What kind of public and private investment would be needed in the various industries to drive the kind of employment required? How will this effect travel to work times, productivity and wages? This work is being undertaken by the world renowned Centre of Policy Studies (CoPS) at Victoria University, an international leader in undertaking this kind of analysis , with the necessary modelling tools and data bases and expertise at hand.

As the first step in this modelling, Professor Glyn Wittwer of CoPS has undertaken an analysis of one of WoMEDA's proposals for the Footscray employment hub, i.e. to co-locate the proposed new Footscray Hospital with Victoria University at Footscray Park, to create a unique health, sport and active living precinct. Health, Sport and Active Living is a major focus of teaching and research at Victoria University, for example through its College of Health and Biomedicine and its world class Institute of Sport, Exercise and Active Living. This projects ticks both strategic boxes: a health and education catch-up strategy and an employment cluster strategy.

INITIAL MODELLING

Co-location provides the opportunity for an exciting major precinct development built on the synergies between health and education and research and development. It can be expected to further foster an employment and jobs cluster, involving private health, community health and research and development in Health, Sport and Active Living.

We believe that the level of investment that might be necessary to create a hospital of sufficient size to meet the rapidly rising demand for hospital services in the west of Melbourne, which already has a deficit for such services, could be of the order of $1.4 billion. If this occurs it is likely that the University would also need to invest at least $300m in new infrastructure, to take advantage of the opportunity, expand its health courses, and meet the health workforce needs of the hospital. This would involve the University building a new College of Health and Biomedicine facility at its Footscray Park Campus with a bridge adjoining hospital, and to re-locate some of its non-health related activities to its other Footscray Campus. It is also likely that a private hospital would wish to co-locate with the University and the public hospital to create a unique (within Australia) university / hospital campus comprising a university, a public hospital and private hospital and promoting the synergies between them. The modelling assumes that this would also involve of the order of $300m investment.

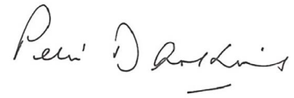
Thus, the total infrastructure investment analysed at this stage is $2 billion, followed by a substantial expansion of health and education services in Footscray. Professor Wittwer's analysis suggests that the long run jobs impact of this initiative would be of the order of 2,000 ongoing full-time equivalent jobs. This modelling is outlined in this paper.

FURTHER MODELLING

These 2,000 ongoing jobs would represent a very significant contribution to the employment growth needed. The WoMEDA Economic Development Strategy Report (WoMEDA 2017) notes that if the West of Melbourne is to match the rest of the Melbourne for employment rates and participation rates then 25,000 additional jobs would need to be created and about 1 per cent added to GDP. While many more jobs than this would be needed to avoid excessive outward migration of workers and excessive travel to work times, as population continues to growth rapidly, the creation of 2,000 net new jobs is a significant contribution to this objective and by creating these jobs within the region would also reduce the average travel to work times of the working population in the West of Melbourne.

Further modelling will be undertaken to explore the total levels of additional investment that will be needed in the different employment hubs, to create enough jobs to fully achieve the jobs strategy, and the range of other possible projects that might make significant contributions towards this, and how this in turn would reduce commuter times and improve the wellbeing of the workforce.

The Hon Steve Bracks AC
Chair, WoMEDA



Professor Peter Dawkins AO
Deputy Chair, WoMEDA

THE ECONOMIC IMPACTS ON THE WEST OF MELBOURNE OF CONSTRUCTING AN ENLARGED HOSPITAL AND EXPANDING UNIVERSITY CAPACITY

Report prepared by Glyn Wittwer,
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EXECUTIVE SUMMARY

Constructing an enlarged hospital to replace Footscray Hospital and enlarging the university facilities in the western suburbs of Melbourne will make an important contribution to improved amenities in the west. The scenario in this study assumes that $1.7 billion is spent on hospital replacement (including the establishment of a private hospital, alongside a public hospital) and expansion and $300 million on university expansion over a 5 year period. After three years of the operational phase, the new facilities are operating full capacity. The study uses a multi-regional, dynamic computable general equilibrium model of the Australian economy, VU-TERM, which represents the regions of the west of Melbourne separately from the rest of the city, state and nation.

In 2032, a decade after the new facilities have become operational, there are 2000 more jobs located in the western suburbs of Melbourne than without these new facilities. Approximately half of the additional jobs arise directly in the west's health and university sectors. Additional jobs in other sectors in the west arise indirectly as a consequence of the additional economic activity of the health and university sectors.

The west of Melbourne's population has grown by more than a quarter of a million over the past decade. Expanded hospital and university facilities are part of the overall array of investments required to ensure that amenities and job opportunities in the west at least partly track population growth.

BACKGROUND

The western suburbs of Melbourne (more specifically, the combined regions of Brimbank, Hobsons Bay, Maribyrnong, Melton, Wyndham and Moonee Valley) present an extreme case of population growth. 253,000 more people reside in the western suburbs than a decade ago, accounting for 6.7% of national population growth in this time. The region's share of national population has grown from 3.0% in 2006 to 3.6% in 2016.

Growth of this magnitude has created major problems in terms of supporting infrastructure and services. The present study concentrates on the impacts of enlarging both health service provision and a university in the western suburbs through $2 billion of investment. These sectors are large employers. University and hospital enlargement may contribute significantly to expansion in employment opportunities and improved amenities in the west.

A broader question concerns the development of job clusters in Footscray, Sunshine and Werribee. Such clusters would arise from a combination of public and private investments across an array of industries. Clusters have the potential to do much more than transfer resources from one part of Melbourne to another. Significant welfare benefits may arise from reducing commute times and improving access of residents to an array of services in the western suburbs. The investments modelled in this study are part of the broader array of investments necessary to improve job opportunities and quality of life in the western suburbs as the population continues to expand.

THE ECONOMIC IMPACTS OF ADDITIONAL INVESTMENTS OF A HOSPITAL AND UNIVERSITY IN FOOTSCRAY

This study examines the regional economic impacts of $2 billion of investment on a hospital and a co-located university in the western suburbs of Melbourne. $1.7 billion of investment is allocated to public and private hospital development and $0.3 billion to university expansion in the study. The construction phase lasting five years brings additional jobs to Melbourne, which are spread across Melbourne. However, the operational phase brings additional jobs to western Melbourne which are transferred mostly from elsewhere in Melbourne relative to a business-as-usual forecast.

In the context of improving the liveability of the western suburbs, there are a number of benefits. The first is that it will improve access to health and university services for residents of the western suburbs. The second is that by increasing the number of jobs located in the western suburbs, these projects will contribute to a reduction in commute distances for residents of the western suburbs. The commuting distance reduction benefit is not estimated in this study. Subsequent studies will infer patterns from census data to examine the potential impact of investments in the west on commuting distances for residents of the west.

Benefits will also arise from synergies between a hospital and university campus located in the same precinct. Training in a broader range of health-related professions will be enabled by these linkages. Ready access to the hospital will enhance the learning experience of student in health-related fields. Close linkages between the university and hospital are likely to enhance the research environment and may contribute to broader technological gains. Again, such potential benefits are not modelled in this study but may be so in future studies.

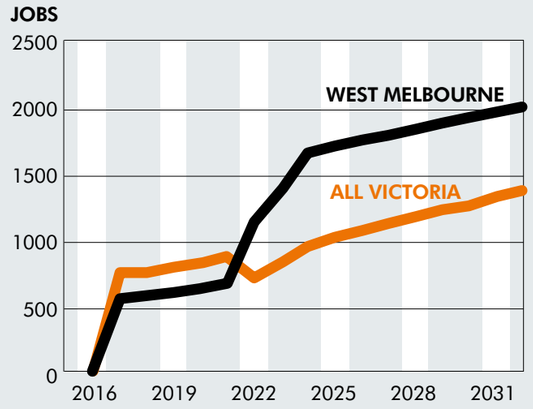
INVESTING $2 BILLION IN THE WESTERN SUBURBS

In this stylised scenario, construction proceeds over five years from 2017 to 2021, costing two billion dollars. Most of the $1.7 billion to be spent on hospital construction is to replace the existing Footscray Hospital. The remainder will be spent on building a new private hospital.

Figure 1 shows that during the 5 years of the construction phase, the total number of employed in Victoria increases by almost 800 relative to forecast. The expanded university and hospital begin operating in 2022. A substantial part of the job increase in the western suburbs arises from a demand switch for health services by western suburb residents away from other parts of Melbourne towards the west, due to improved health service proximity. That is, western suburb residents become less reliant on health services provided other parts of Melbourne as capacity and breadth of health services in the west expands following the opening of the hospital.

Similarly, there is a demand switch by tertiary students towards education in the western suburbs away from the rest of Melbourne. In addition, there is a small increase in demand by foreign students for education in West Melbourne.

FIGURE 1: EMPLOYMENT IMPACT OF $2 BILLION HOSPITAL/UNIVERSITY INVESTMENT IN WEST MELBOURNE Jobs relative to baseline forecast



Our assumption is that the demand switch towards local health and university services in the western suburbs proceeds over three years. Initially, the hospital operates at only a slightly larger capacity than the hospital it replaces. After three years of operations, the hospital is operating near full capacity.

By 2032, a decade after the hospital and expanded university have become fully operational, Melbourne's west has 2,000 more jobs than would be the case if the $2 billion investment had not proceeded in the region (Figure 1). Victoria also experiences job growth overall relative to a business-as-usual forecast: total jobs increase by 1,400 relative to forecast by 2032. This implies that although total jobs in Victoria excluding west Melbourne fall, the jobs created in the west of Melbourne are not entirely at the expense of the rest of Victoria. The hospital and university expansion provide a net jobs benefit to the state.

FIGURE 2: INDUSTRY OUTPUT IN WEST MELBOURNE $m real value-added relative to forecast

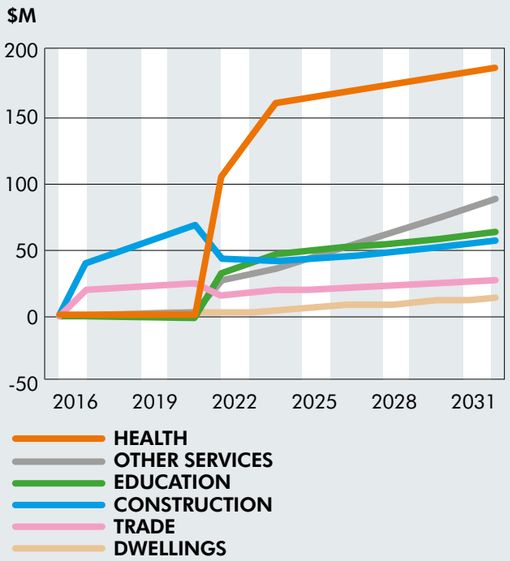


Figure 2 shows the impact of health and university expansion in the west of Melbourne on industry outputs. Since the investment is larger for health services than university services, the dollar increase in value-added output is larger for the former relative to base in the scenario. Construction activity remains above forecast during the operational phase. This reflects in part higher than base levels of investment to maintain the larger scale of local hospital and university services during the operational phase.

Increased activity in the health and education sectors raises investment and output in trade (retail and wholesale), dwellings and other services. The main message from the industry outputs is that with expansion of health and university services, there will be opportunities for expanded private investments in other sectors. Approximately half the additional jobs arise directly in the health and education sectors, while the other half arise indirectly, induced by the additional local economic activity of the expanded hospital and university. Targeted investments in other sectors above and beyond those induced by hospital and university expansion will add to the jobs created in the west and contribute to improved amenities in the west.

FUTURE WORK: EXAMINING OF CENSUS DATA

In future analysis of western suburbs projects, we will examine census data carefully for changing patterns of employment arising from the rapid population growth. Census data on journey-to-work for 2016 were not re-issued by the ABS in time for analysis for the present report.

Analysis of census data will help explore the following:

- How much did the average commute distance increase in Melbourne between 2011 and 2016?
- On the basis of the present occupation mix in western suburb residents, what scope is there to reduce commute distances through enlarging university campuses and hospitals in the western suburbs?
- How would the expansion of hospital facilities reduce the travel times to use hospital facilities? Expanded hospital facilities in the west will reduce the average distance that residents of the west need to travel for hospital services. A preliminary examination of data on public hospitals (see https://www.myhospitals.gov.au/) indicates that the western suburb's share of Melbourne's public hospital capacity is far below its share of Melbourne's population.

APPENDIX: VU-TERM, A DYNAMIC MULTI-REGIONAL CGE MODEL USED TO DEPICT THE REGIONS OF MELBOURNE

The model used for this study was an aggregation of VU-TERM, a dynamic multi-regional model of the Australian economy. The regions in the model were a western composite (Brimbank, Hobsons Bay and Maribyrnong), Melton-Wyndham, Rest of Melbourne (including Moonee Valley) and Rest of Australia. The job and industry output results reported in this study for West Melbourne are an add-up of the LGA regions of Brimbank, Hobsons Bay, Maribyrnong, Melton, Wyndham and Mooney Valley.

WHAT IS A COMPUTABLE GENERAL EQUILIBRIUM (CGE) MODEL?

A CGE model can be an economy-wide model. In the context of the current project, it is an economy-wide model that also includes small-region representation. Another sort of model is an input-output model. The difference is that an input-output (IO) solves either for quantities or for prices, but not both at once. A CGE model solves for both prices and quantities together.

Since a CGE model includes price effects, additional demands in a region may result in rising prices which partly diminish the quantity demanded.

DYNAMIC CGE MODELLING

Dynamic models trace the effects of ascribed direct impacts across time periods. The theoretical basis of dynamics is in linkages between investment and capital across time, and the balance of trade and net foreign liabilities. Investment and balance of trade outcomes are flows that a comparative static model includes. Capital and net foreign liabilities are stocks that require a dynamic model.

WHAT ARE THE IMPLICATIONS OF CGE MODELLING FOR NATIONAL BENEFITS?

A typical multi-regional model result is that an investment project provides national benefits during the construction. It may provide benefits for a region during the operational phase but at the same time have little or even a negative impact on the national economy. Negative impacts at the national level relative to a base case would occur if factors were more productive used elsewhere in the economy.

The present study has some differences. The base case Melbourne residents understand easily is that the city is becoming more congested. This is evident on most roads during peak hour and on some roads for much of the time. It is not surprising, given the rapid population and commuting growth in the west of Melbourne presented in this report, that roads and trains servicing the western suburbs have become extremely crowded in the past few years.

Other benefits as discussed in the report are likely to arise from synergies between the university and teaching hospital in health-related courses and research.

In addition, a growth in public amenities in the west will contribute to an improvement of lifestyles in the west.

Further work concerning the west will examine the impacts of projects that increase jobs in the west on commuters and on users of health services. The potential exists for substantial benefits arising from reduced congestion relative a business-as-usual forecast.

This scenario therefore is not a typical zero-sum game in which in one region gains at the expense of all others. Decongestion may provide benefits across Melbourne, reducing waiting times at existing hospitals, and alleviating worsening traffic problems.

HOW DOES DYNAMIC TERM DIFFER FROM MONASH?

The MONASH model was the first multi-sectoral (100+ sectors) dynamic model of the Australian economy (Dixon and Rimmer, 2002). However, MONASH was primarily a single region model, based on the entire Australian economy. Although it was possible to model regional impacts, that was done in a top-down model.

Dynamic TERM combines much of the theory of dynamic MONASH with bottom-up, regional representation. That is, each region in TERM has its own production functions, household demands, input-output database and inter-regional trade matrices. This enables us to model relatively local issues.

TERM was originally developed by Mark Horridge at the Centre of Policy Studies (see http://www.monash.edu.au/policy/term.htm). Since then, Glyn Wittwer has developed a dynamic version of the model.

The West of Melbourne Economic Development Alliance sits within Victoria University.

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