Australian Communities at Risk: COVID-19 and a New Pandemic Economic Risk Tool

The speed and severity of the economic disruptions resulting from the COVID-19 pandemic is unprecedented in modern times. In the space of a few months, the virus that causes COVID-19 has spread from a relatively remote inland area of China to become a truly global phenomenon. National, state and local governments are struggling to engage not only health and safety responses but also actions to keep financial markets functioning and mitigate the economic shocks being felt by individuals, businesses and government. The Australian federal government has undertaken a number of steps to intervene in financial and capital markets and to provide for people, institutions, and government. State and local governments are taking action to address the immediate and near term needs of residents and businesses in their communities within their areas of authority and capacity. However, because of the scale of the economic impacts of COVID-19, there is an immediate and pressing need for to policymakers and agencies to not only understand what kind of support is needed but where that support is needed most. There is no state, locality or community who will not be affected by the pandemic but because of differences in economic structure, there are some communities who will be more vulnerable.

The team assembled to address this issue are based at three universities and include researchers with extensive experience in understanding the economies of Australian urban areas, regional cities, and localities including the University of South Australia, the University of Newcastle, and George Mason University in the Washington, DC area. Brief bios of the research team can be found at the end of this briefing paper. Our solution to the need for information on relative vulnerability to economic disruptions directly or indirectly associated with COVID-19 is to offer a new Pandemic Economic Risk Tool (PERT).

Key features of the Pandemic Economic Risk Tool:

- Built from publicly available data.
- Reflects industries likely to be the first to experience pandemic-related disruption
    - Hospitality & Leisure (lodging, restaurants, pubs)
    - Transportation (air, water, ground)
    - Employment Services (contract work, temporary worker agencies)
    - Travel Arrangements
    - Oil & Gas Mining
- Addresses local economic structural issues
    - The degree to which the effected industry is export based.
    - Economic diversity (relative dependence of the local economy on a narrow set of industries).
    - Proportion of the resident workforce holding part-time jobs.

In this initial effort, we focused on public facing industries that are either directly affected by travel restrictions, as well as those dominated by temporary or contingent workers. We include Oil and Gas Mining because of that commodities sensitivity to travel demand. Retail is not included in this initial iteration of the PERT because the elements of retail spending by those

affected by travel restrictions is accounted for in other included industry sectors. Export based industries carry relatively higher weights in our calculation of the PERT for two reasons. The first is that the bring in new dollars into the local economy. The second, export industries typically have a larger indirect economic effect on their host economies due to their deeper local supply chains. Finally, we include a calculation of the percentage of total local jobs that are part-time. Part-time jobs are more susceptible to market downturns and workers in part-time jobs usually have fewer financial reserves, which means their household spending is more easily disrupted, which then impacts the overall health of the local economy.

The Pandemic Economic Rick Tool is calculated so that a value of 100 equals the national average score. Higher PERT scores mean that the community is relatively more economically vulnerable to COVID-19 disruptions. A score lower than 100 means the community is relatively less vulnerable – though we note, again, the impacts of this pandemic will be felt in every community.

The table below shows the 10 most vulnerable cities using the PERT and the 10 least vulnerable cities. The full list is attached at the end of this paper.

Most Vulnerable Cities	Most Resilient Cities
Chinchilla	**Kyabram**
Karratha	**Biloela**
Airlie Beach - Cannonvale	**Port Hedland**
Sale	**Naracoorte**
Roma	**Leeton**
Gladstone	**Griffith**
Byron Bay	**Forbes**
Lakes Entrance	**Mount Isa**
Tannum Sands - Boyne Island	**Emerald**
Cairns	**Gatton**

The widespread lockdowns have driven a reduction in consumer spending that is more drastic and widespread than any we have previously seen. Even as we publish this first version of the PERT, we are finding anecdotal evidence that suggests the index needs to be adjusted as the list of impacted industries grows beyond our current list. We expect that PERT 2.0 will need to explicitly account for declining local retail spending, and the spread effects across supply chains as the loss of revenue increases in professional services, non-emergent personal health and related services, and manufacturing as unsold inventories begin to pile up. We will provide this updated tool in the coming days and weeks as data and information become available.

The Research Team:

University of South Australia

Professor Andrew Beer, Executive Dean, Faculty of Business and Law, University of South Australia. Dr. Beer is one of the most widely cited researchers in the nation on issues related to regional development, housing, and other issues.

Jacob Irving, Project Officer—Research

University of Newcastle

Professor Will Rifkin: Director, Hunter Foundation Research Center, University of Newcastle. Professor Rifkin has extensive experience in bringing business, government and community together in addressing key challenges and navigating change in organizations and regions. He previously ran the research portfolio at the University of Queensland Centre for Coal Seam Gas.

Dr. Anthea Bill, Lead Economist, Hunter Foundation Research Center, University of Newcastle. Dr. Bill leads the HFRC economic indicators program and is a widely cited expert in labor market analysis, housing issues, and geo-spatial disadvantage in Australian cities.

George Mason University (USA)

Professor Terry Clower, Director, Center for Regional Analysis, George Mason University (USA). Dr. Clower is an internationally recognized expert in economic development. He has studied the industrial structure of Australia's regional cities for more than 20 years.

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Pandemic Economic Risk Tool 1.0 by UCL (Levels: Extreme, High, Average, Below Average)

City	VI		City	VI
Chinchilla	232.13		**Ballina**	106.99
Karratha	230.11		**South West Rocks**	106.85
Airlie Beach - Cannonvale	167.47		**Goolwa**	106.69
Sale	161.96		**Port Augusta**	106.53
Roma	160.82		**Glen Innes**	106.53
Gladstone	144.79		**Cooma**	106.38
Byron Bay	143.74		**Echuca - Moama (Echuca Part)**	106.32
Lakes Entrance	132.20		**Brisbane**	106.11
Tannum Sands - Boyne Island	129.70		**Seymour**	105.71
Cairns	128.63		**Tamborine Mountain**	105.66
Merimbula	127.92		**Singleton**	105.08
Dunsborough	126.91		**Narrabri**	104.58
Yamba	126.31		**Moss Vale**	104.19
Ulladulla	125.22		**Hobart**	103.87
Margaret River	122.62		**Pottsville**	103.84
Moranbah	121.13		**Wangaratta**	103.66
Dalby	119.93		**Camden Haven**	103.59
Victor Harbor	118.93		**Launceston**	103.31
Nelson Bay	118.28		**Kiama**	102.83
Batemans Bay	118.07		**Highfields**	102.70
Whyalla	117.61		**Sunbury**	102.69
Gold Coast - Tweed Heads (TH Pt)	117.35		**Murwillumbah**	102.35
Nambucca Heads	117.32		**Kempsey**	101.92
Cessnock	116.78		**Lithgow**	100.79
Gold Coast-Tweed Heads (Gold Pt)	116.19		**Broken Hill**	100.74
Darwin	114.85		**Maryborough (Qld)**	100.70
Sunshine Coast	113.29		**Kurri Kurri**	100.64
Salamander Bay - Soldiers Point	112.83		**Grafton**	100.60
Lennox Head	112.72		**Nambour**	100.44
Perth (WA)	112.22		**Yeppoon**	100.35
Hervey Bay	110.41		**Mildura - Buronga (Mildura Part)**	100.24
Echuca - Moama (Moama Part)	110.32		**Nowra - Bomaderry**	100.22
Forster - Tuncurry	110.01		**Raymond Terrace**	100.16
Warrnambool	109.03		**Bowral - Mittagong**	99.97
Blue Mountains	108.91		**Adelaide**	99.83
Coffs Harbour	108.77		**Traralgon**	99.65
Sandstone Point - Ningi	108.60		**Cowra**	99.41
Busselton	108.52		**Moe - Newborough**	99.33
Bongaree - Woorim	107.73		**Lismore**	99.20
Broome	107.45		**Wollongong**	99.10
Port Macquarie	107.17		**Central Coast**	99.05
Yarrawonga - Mulwala (Yarra Pt)	107.01		**Ballarat**	98.76

City	VI		City	VI
Armidale	98.63		**Leopold**	93.97
Lara	98.61		**Inverloch**	93.93
Parkes	98.56		**Bendigo**	93.65
Newcastle	98.53		**Deniliquin**	93.61
Geelong	98.32		**Muswellbrook**	93.51
Bairnsdale	97.82		**Alice Springs**	93.51
Drysdale - Clifton Springs	97.77		**Summerland Point - Gwandalan**	93.36
Toowoomba	97.67		**Alstonville**	93.27
Crafers - Bridgewater	97.41		**Medowie**	93.25
Tamworth	97.01		**Benalla**	93.06
Mareeba	96.84		**Gympie**	92.82
Mount Gambier	96.73		**Gawler**	92.49
Devonport	96.67		**Gisborne**	92.36
Taree	96.63		**Dubbo**	92.34
Casino	96.63		**Mackay**	92.26
Wonthaggi	96.58		**Warragul**	92.24
Anna Bay - Boat Harbour	96.51		**Yass**	92.10
Corowa - Wahgunyah (Corowa Pt)	96.50		**Yanchep**	91.83
Gunnedah	96.29		**Inverell**	91.79
Morwell	96.28		**Kingaroy**	91.73
Sydney	96.23		**Rockhampton**	91.57
Bargara - Innes Park	96.00		**Warwick**	91.34
Maitland (NSW)	95.96		**Kilmore**	91.29
Albury - Wodonga (Albury Part)	95.72		**Albany**	91.05
Healesville	95.69		**Bunbury**	91.02
Melbourne	95.68		**Esperance**	90.65
Mount Barker (SA)	95.63		**Bowen**	90.53
Colac	95.59		**Geraldton**	90.47
Burnie - Somerset	95.49		**Wynyard**	90.10
Beaudesert	95.44		**Wagga Wagga**	90.08
Melton	95.43		**Ararat**	90.07
Ocean Grove - Barwon Heads	95.41		**Young**	89.94
St Georges Basin - Sanctuary Point	95.33		**Drouin**	89.90
Townsville	95.23		**Collie**	89.88
Mudgee	95.12		**Wauchope**	89.77
Goulburn	95.11		**Torquay - Jan Juc**	89.72
Bundaberg	94.86		**Murray Bridge**	89.51
Horsham	94.76		**Albury - Wodonga (Wodonga Part)**	89.38
Beerwah	94.65		**Bacchus Marsh**	89.23
Swan Hill	94.59		**Portarlington - St Leonards**	89.08
Portland (Vic.)	94.58		**Ulverstone**	88.90
Bathurst	94.41		**Port Pirie**	88.78
Maryborough (Vic.)	94.32		**Goondiwindi**	88.55
Hamilton	94.30		**Stawell**	88.36

City	VI		City	VI
Cobram	88.01		**Ayr**	83.56
Port Lincoln	87.13		**Cootamundra**	83.24
Atherton	86.71		**New Norfolk**	82.96
Nuriootpa	86.69		**Shepparton - Mooroopna**	82.88
Orange	86.43		**Leongatha**	82.66
Wallan	86.09		**Kalgoorlie - Boulder**	82.05
Canberra - Queanbeyan (Canb Pt)	85.72		**Jimboomba - West**	81.92
Strathalbyn	85.68		**Katherine**	81.74
Gracemere	85.55		**Canberra - Queanbeyan (Queanbeyan Pt)**	81.61
Castlemaine	85.16		**Gatton**	81.45
Mount Cotton	85.03		**Emerald**	81.34
Helensburgh	84.98		**Mount Isa**	81.32
Innisfail	84.85		**Forbes**	80.66
Moree	84.75		**Griffith**	79.32
Charters Towers	84.43		**Leeton**	76.31
Tumut	84.03		**Naracoorte**	74.98
Gordonvale	83.95		**Port Hedland**	72.34
Morisset - Cooranbong	83.91		**Biloela**	69.87
Northam	83.83		**Kyabram**	69.59