SUPPLEMENTARY INFORMATION

Economic damage and spill-overs from a tropical cyclone

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SI 1: Sector classification used in this study

1. Sheep
2. Grains
3. Beef cattle
4. Dairy cattle and pigs
5. Other agriculture
6. Sugar cane growing
7. Forestry and fishing
8. Coal, oil and gas
9. Non-ferrous metal ores
10. Other mining
11. Food manufacturing
12. Textiles, clothing and footwear
13. Wood and paper manufacturing
14. Chemicals, petroleum and coal products
15. Non-metallic mineral products
16. Metals, metal products
17. Machinery appliances and equipment
18. Miscellaneous manufacturing
19. Electricity supply, gas and water
20. Residential building construction
21. Other construction
22. Trade
23. Accommodation, cafes and restaurants
24. Road transport
25. Rail and pipeline transport
26. Other transport
27. Communication services
28. Finance, property and business services
29. Ownership of dwellings
30. Government administration and defence
31. Education
32. Health and community services
33. Cultural and recreational services
34. Personal and other services

SI 2: Estimation of gamma matrix for Tropical Cyclone Debbie

Table SI 2.1 Total output (million dollars) by region and sector for 2016.

	Rest of NSW	NSW-Richmond-Tweed	VIC	QLD-Brisbane	QLD-Wide Bay Burnett	QLD-Darling Downs	QLD-South West	QLD-Fitzroy	QLD-Central West	QLD-Mackay	QLD-Northern	QLD-Far North	QLD-North West	SA	WA	TAS	ACT	NT
1 Sheep	482	171	563	105	1	503	7	1	20	0	0	0	0	377	547	153	6	19
2 Grains	2117	715	1448	204	54	852	18	92	0	37	8	4	0	2265	5181	306	1	12
3 Beef cattle	1820	185	1097	1384	243	2093	35	194	134	105	73	58	69	498	584	138	85	176
4 Dairy cattle and pigs	315	356	3260	180	239	51	25	3	0	4	3	17	0	350	290	546	7	29
5 Other agriculture	1535	1877	3228	1277	456	962	102	28	32	51	102	358	158	1929	1488	866	6	649
6 Sugar cane growing	33	50	14	78	423	0	0	0	0	292	391	121	0	7	10	3	0	9
7 Forestry and fishing	1680	145	1061	241	272	18	6	21	5	27	54	116	5	724	756	558	119	132
8 Coal, oil and gas	18335	170	4862	8301	280	3289	8	3581	9	4555	406	79	8	2411	19739	120	60	422
9 Non-ferrous metal ores	3496	199	2346	356	61	10	3	77	2	13	277	557	587	2182	18678	288	250	1955
10 Other mining	2936	213	3179	1301	167	135	19	359	3	388	224	186	61	1891	37924	285	175	829
11 Food manufacturing	1568	529	3888	1316	2430	8	608	38	6	463	553	325	32	1211	753	401	6	107
12 Textiles, clothing and footwear	4100	338	4253	410	33	40	4	32	0	30	42	44	5	981	1047	217	371	232
13 Wood and paper manufacturing	6877	268	6604	1740	359	70	12	48	3	51	91	96	7	1872	1712	363	326	194
14 Chemicals, petroleum and coal products	20241	325	19650	2027	96	52	5	430	3	122	228	72	41	3340	7386	413	323	235
15 Non-metallic mineral products	4295	324	3314	744	62	15	3	261	1	50	80	71	10	1200	1972	332	529	380
16 Metals, metal products	16797	285	13849	2015	281	88	11	2312	3	98	478	207	382	4561	11543	660	308	766
17 Machinery appliances and equipment	25686	367	28242	2517	239	169	14	137	5	327	215	233	22	8067	12049	665	607	535
18 Miscellaneous manufacturing	15471	561	12013	712	42	28	3	72	5	56	57	111	15	3983	4299	413	1095	491
19 Electricity supply, gas and water	16753	350	13597	3116	840	117	20	732	8	114	267	268	38	4653	5438	901	693	442
20 Residential building construction	22870	577	21935	3195	299	120	21	285	9	271	358	492	32	4571	9272	557	981	649
21 Other construction	46476	1224	41633	6336	623	464	77	766	79	479	623	702	133	9798	26827	1171	1943	1606
22 Trade	56892	1565	44059	11426	1280	596	121	799	22	761	1166	1152	123	11817	23868	1989	2383	1380
23 Accommodation, cafes and restaurants	15824	572	9891	3102	383	138	30	305	15	345	394	575	53	3272	4231	565	783	422
24 Road transport	10102	348	8775	2279	290	183	30	232	8	198	283	274	30	2388	4457	592	457	360
25 Rail and pipeline transport	5538	127	2166	1288	52	81	12	363	27	378	227	60	53	686	1059	160	194	114
26 Other transport	20098	298	15158	2544	151	67	16	341	8	427	421	655	34	3210	7235	611	620	628
27 Communication services	30586	604	20102	2330	157	82	11	98	5	72	194	158	17	3843	4453	663	1585	538
28 Finance, property and business services	72016	1486	49595	12075	667	310	56	758	7	449	908	1087	46	11730	19781	2199	4138	1746
29 Ownership of dwellings	14352	504	8434	5890	698	294	43	267	3	219	499	458	25	2363	3758	527	618	626
30 Government administration and defence	27232	551	15664	4492	325	258	61	340	36	113	571	441	52	5382	7299	1206	8003	1639
31 Education	29546	777	21887	3110	389	210	33	388	14	184	374	439	56	6273	8724	1193	1884	829
32 Health and community services	27389	817	19248	4142	556	282	32	357	12	196	454	486	49	6227	7768	1402	1228	831
33 Cultural and recreational services	7864	413	6276	1486	81	55	8	96	9	57	138	182	16	1783	2243	236	712	375
34 Personal and other services	5358	196	3864	1543	164	90	14	144	6	101	167	198	24	1171	1494	143	292	275

Table SI 2.2 Summary of Impact information.

Aspect	Region	Sectors	Example impact	Reference
Coal exports	All QLD	Coal, oil and gas	"Queensland coal exports may have taken a $1.5 billion hit from Cyclone Debbie as more than 22 mines were forced to halt production while roads and ports were shut."	(John McCarthy and Vogler, 2017)
Coal exports	All QLD	Coal, oil and gas	"Landslides caused by Debbie have halted operations on the busiest rail line connecting coking coal mines in Queensland to ports, and rail operator Aurizon said it would take about five weeks to repair. BHP Billiton, the world's biggest shipper of coking coal, said it won't meet its export commitments from its mines in Queensland's Bowen Basin - among five miners in the region to declare force majeure, a clause typically invoked after natural disasters."	(Serapio, 2017)
Coal exports	Parts of QLD-Fitzroy, QLD-Mackay	Coal, oil and gas	Mining operator Aurizon said it expected to lose up to $115 million as a result of Cyclone Debbie influencing mines at Blackwater, Moura, Goonyella, and Newlands.	(O'Brien, 2017) (Public-Private Partnership in Infrastructure Resource Centre, 2016)
Business Flooding	NSW Richmond & Tweed	Accommodation, Cafes and Restaurants, Trade,	"This is a community of at least 50,000 people and when you go for a drive, come back and six months you'll see 50 to 80 per cent of these businesses not open."	(Gleeson, April 3, 2017 1:36pm)
Business Flooding	NSW Richmond & Tweed	Accommodation, Cafes and Restaurants, Trade,	"Half of the small businesses that make up the four streets of the Lismore central business district may have to close up shop — for good."	(Hansen, April 9, 2017 12:00am)
Tourism impacts	QLD - Mackay	Multiple	1.3 million visitors spending some $967 million (1). Debbie has been confirmed as causing 'catastrophic damage and is expected to be worse with businesses on Hamilton Island questioning whether rebuilding is the best option. Cyclone Yasi cost tourism 400 million (2) indicating $200million an approximation for Debbie.	(1) (Tourism Research Australia, 2016) (2) (Flaherty, 2017)
Sugar Cane	QLD- Mackay	Sugar cane growing	"The sugar cane industry has forecast a $150m blow, and the Bowen region's $450m-a-year horticulture industry will also suffer heavy losses that could cause the price of household staples such as tomatoes to rise later in the year."	(Robertson, 2017)
Sugar Cane	QLD- Mackay	Sugar cane growing	"Damage to Queensland's sugar industry is expected to cost A$150 million (US$114.4 million). The majority of these costs lie in Proserpine and Mackay. 35% of all sugarcane in the Proserpine region and 20% of all sugarcane in the Mackay region have been damaged, costing A$50 million and A$81 million respectively." Gross value of Sugar cane - Cut for crushing (SA4 Mackay	(The Courier Mail, 2017) (QFF, 2017)

			region): 354M (2014/15) ABS 7503.0	
Agriculture	QLD-Mackay	Other agriculture	"Canegrowers around Proserpine and Mackay, and the horticulture industry at Bowen — including tomato, capsicum and eggplant producers — have been the hardest hit."	(Donoughue, 2017)
Vegetables	QLD-Mackay	Other agriculture	"The Queensland Farmers Federation (QFF) said early figures show actual crop damage to Bowen's vegetable industry is about $100 million, accounting for about 20 per cent of the season's crop."	(Donoughue, 2017)
Vegetables	QLD-Mackay, QLD Northern	Other agriculture	"Winter crops lost in Bowen-Gumlu region $A100 million"	(Emerick, 2017)
Vegetables	QLD-Mackay	Other agriculture	"All vegetables in the ground in the Bowen and Whitsunday region have been lost. Over $100 million worth of produce has been written off." Nurseries, cut flowers or cultivated turf, Fruit and nuts (excluding grapes), Vegetables for human consumption – Total (SA4 Mackay region): 188M (2014/15) ABS 7503.0	(QFF, 2017)
Vegetables	NSW Richmond & Tweed	Other agriculture	Australian Macadamia Society chief executive Jolyon Burnett said that lost nut would have been worth about $8 million. Soybeans - "To date, $3.75 million in crops have been reported lost in the Northern Rivers, and another $445,000 of beans downgraded."	(Honan, 2017)
Agriculture, grains and sugarcane	All 19 regions	Grains, Other agriculture, Sugar cane growing	STATE RECOVERY PLAN 2017-2019 Operation Queensland Recovery - "The National Farmers' Federation has cited industry groups estimating damage to crops of up to $1 billion."	(Queensland Government, 2017)
Dairy	QLD - Brisbane	Dairy cattle and pigs	"it is anticipated that the cost to the farming industry in South East Queensland will be in excess of $6 million." "So far major damages assessed have included: more than $300,000 in losses to equipment including pumps, tractors, irrigation equipment; more than 200 hectares and 400 hectares of pasture lost; 121 km of fencing destroyed; more than 10 km of internal laneways damaged; more than 400 round bales hay lost; and the loss of 11 animals." Queensland Dairyfarmers' Organisation (QDO) report 50 dairy farms have been impacted South East QLD. Eight reported to have severe flooding through Logan and the Gold coast with some reporting 80% plus stock loss and severely damaged on farm infrastructure. Growcom have surveyed 12 farmers to date in SEQ. Several vegetable growers are reporting widespread flood damage, soil erosion, loss of irrigation equipment, some infrastructure damage and crop losses. http://www.dairypage.com.au/newsroom/2017/4/12/cyclone-debbies-6-million-impact-on-dairy	(Neville, 2017)
Urban	QLD - Central	Multiple sectors	Central Queensland: Rockhampton has started to be inundated with slow moving flood waters, the flood will peak of 9.0 meters today (06/04/2017). The slow-moving flood will effect a number of industries with Growcom and NGIQ watching the region closely. Cotton is likely to have some damage	(QFF, 2017)

			through Central Queensland as well. With Cotton Australia ensuring that damage is reported through to the Government, although with the sparsity of the damage in these western regions they are investigating Individual Disaster Declarations for effected farms.	
Infrastructure	All QLD	Multiple sectors	(1) "Queensland Premier Annastacia Palaszczuk said the cost of recovery would 'be in the billions' of dollars, with roads, bridges, crops, homes and schools all needing serious repairs." (2) Cyclone Yasi was "the cost of rebuilding public infrastructure and supporting businesses and the community following these disasters totals approximately $6.8 billion" (overlaps with other costs) and likely similar for Debbie.	(1) (Gillman, 2017) (2) (Australian Government, 2011)
Disaster assistance	QLD most regions.	Multiple sectors	Minister Ryan said counter-disaster operations assistance will be made available to the eight local government areas of Burdekin, Charters Towers, Isaac, Hinchinbrook, Mackay, Palm Island, Townsville and Whitsunday.	(Carruthers, 2017)
Insurance	National	Multiple Sectors	"Insurance losses $A306 million". Over a $1bill in insurance claims but probably includes a lot of business loss claims (eg.in Logan and Lismore). https://www.cciq.com.au/news/cyclone-debbie-overall-damage-bill-and-economic-impact	(Underwriter, 2017)
Fatalities	-	-	12 Fatalities. There are economic valuation estimates of value of life. Eg value of a statistical life $4.2 million.	(Department of the Prime Minister and Cabinet, 2014)
Evacuation costs	-	-	25,000 residents in Mackay, and 5,5000 Bowen evacuated.	(BBC News, 2017) (Killalea et al., 2017)
Schools	-	-	400 schools closed.	(Agence-France-Presse, 2017)
Airflights	-	-	Flights cancelled Townsville etc from March 27 Virgin Airlines loss in the 3 months to March $62.3 million was impacted by Cyclone Debbie	(Courier Mail, 2017)
Rail	-	-	QLD Rail suspended trains between Rocky and Townsville. North Queensland Bulk Ports closed at Mackay, Abbot Point and Hay Point.	(North Queensland Bulk Ports Corporation, 2017)
Emergency workers	-	-	1000 emergency workers deployed, 200 Energex workers.	(Cummins, 2017)
Defence forces	-	-	ADF deployed 1200 personnel.	(Young et al., 2017)

Table SI 2.3 Summary of major infrastructure damage and impacts by region

Region	Local council region	Major infrastructure (building, roads and transport) damage and impacts
QLD – Mackay	Whitsunday	• Whitsunday Coast Airport closed for six days. • Shute Harbour destroyed. • Substantial roads and bridges damaged. • Power disrupted for a number of days.
QLD – Mackay	Mackay	• Substantial roads damaged. • Iconic community assets destroyed or damaged. • Parks and places of cultural significance damaged.
QLD – Mackay	Isaac	• Substantial roads and bridges damaged. • Moranbah Airport closed for a number of days. • Power disrupted for a number of days. • Telecommunications and internet network disrupted for a significant number of days.
QLD – Fitzroy	Rockhampton	• Rockhampton Airport closed for ten days. • Rural roads damaged.
QLD – Fitzroy	Livingstone Shire	• Roads damaged.
QLD – Darling Downs	Scenic Rim	• Substantial roads and bridges damaged.
QLD – Brisbane	City of Logan	• Public transport network disrupted for five days. • Road and bridges damaged. • 46 sport and recreation facilities were impacted from weeks to months. • Five wastewater pump stations damaged. • Power disrupted for a number of days.
QLD – Brisbane	City of Gold Coast	• Substantial roads and bridges damaged.

SI 3: Employment and value added effects for a range of thresholds

The magnitude of employment and value-added losses is expressed as $\log_{10}|\Delta Q|$ and visualised as lines on a grey scale. Each line represents one of the 34 sectors in each region, in the sequence order listed in *SI 1*. The figures show that whilst only a few industries were directly affected by the initial damage from the cyclone (black stripes in Fig. 3), many more industries were affected indirectly.
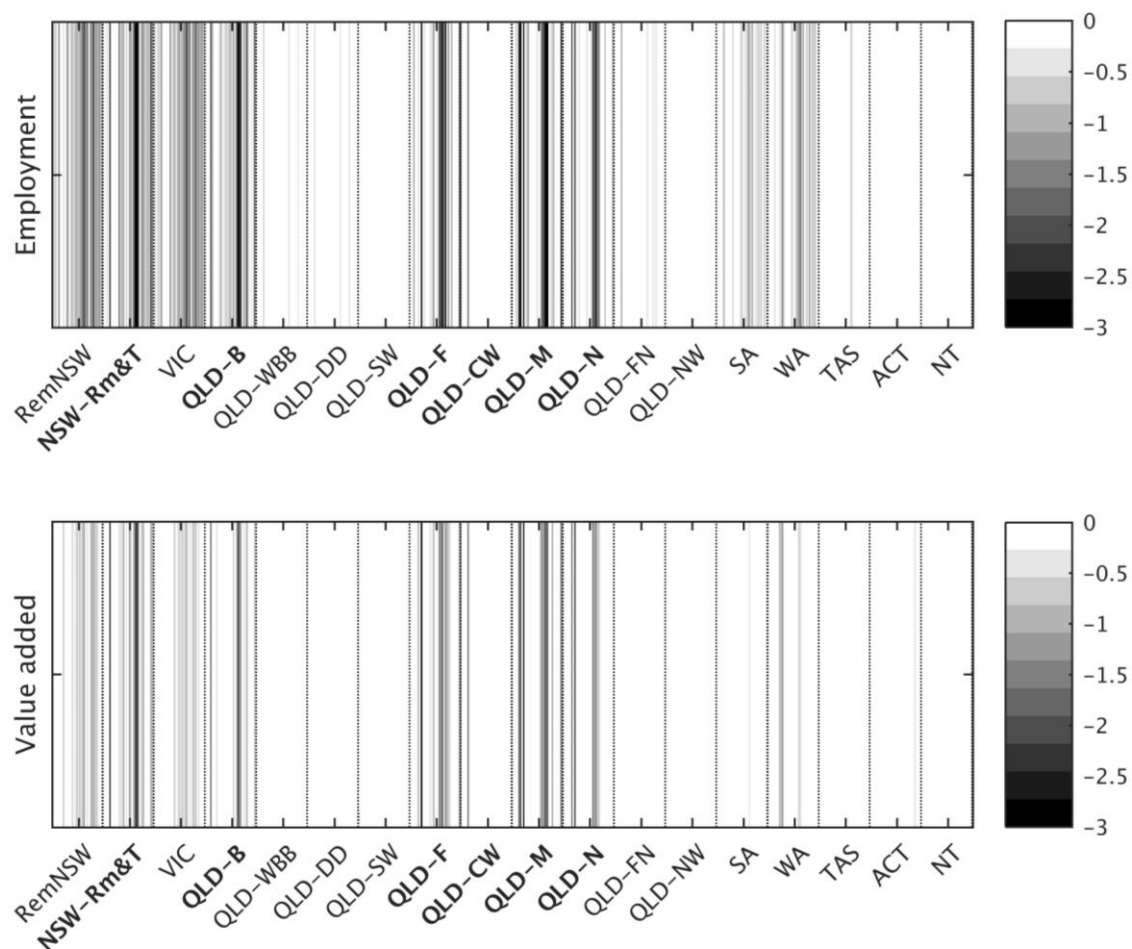
Figure SI 3.1 Employment and value added effects resulting from a tropical cyclone, modelled for threshold θ 1.000E-09 (see *SI 2*). The regions directly impacted by the cyclone are marked in bold. *Region acronyms:* RemNSW: *Rest of New South Wales (NSW);* NSW-Rm&T: *NSW Richmond & Tweed;* VIC: *Victoria;* QLD-B: *Queensland (QLD) – Brisbane;* QLD-WBB: *Wide Bay Burnett;* QLD-DD: *Darling Downs,* QL-SW: *South West;* QLD-F: *Fitzroy;* QLD-CW: *Central West;* QLD-M: *Mackay;* QLD-N: *Northern;* QLD-FN: *Far North;* QLD-NW: *North West;* SA: *South Australia;* WA: *Western Australia;* TAS: *Tasmania;* ACT: *Australian Capital Territory;* NT: *Northern Territory.*
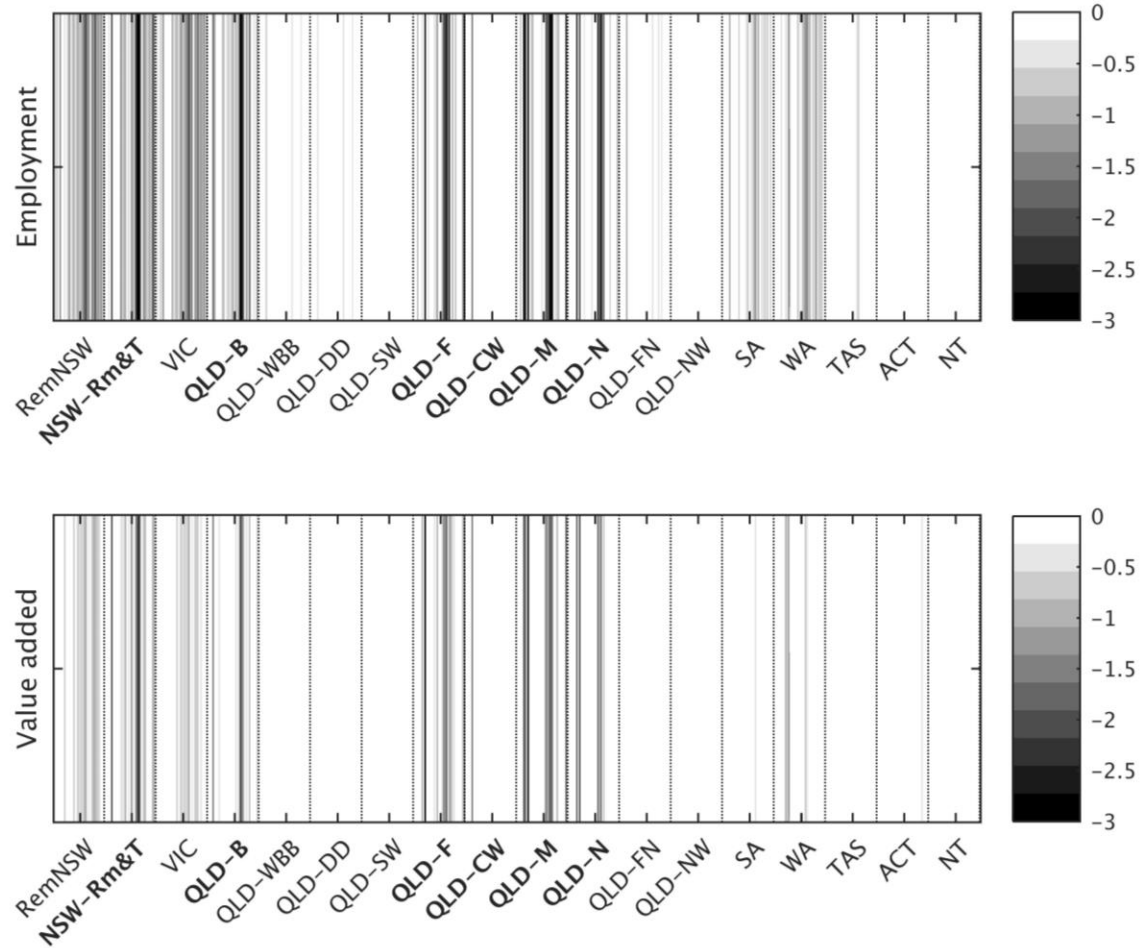
Figure SI 3.2 Employment and value added effects resulting from a tropical cyclone, modelled for threshold θ 3.981E-03 (see *SI 2*). The regions directly impacted by the cyclone are marked in bold. *Region acronyms:* RemNSW: *Rest of New South Wales (NSW);* NSW-Rm&T: *NSW Richmond & Tweed;* VIC: *Victoria;* QLD-B: *Queensland (QLD) – Brisbane;* QLD-WBB: *Wide Bay Burnett;* QLD-DD: *Darling Downs,* QL-SW: *South West;* QLD-F: *Fitzroy;* QLD-CW: *Central West;* QLD-M: *Mackay;* QLD-N: *Northern;* QLD-FN: *Far North;* QLD-NW: *North West;* SA: *South Australia;* WA: *Western Australia;* TAS: *Tasmania;* ACT: *Australian Capital Territory;* NT: *Northern Territory.*
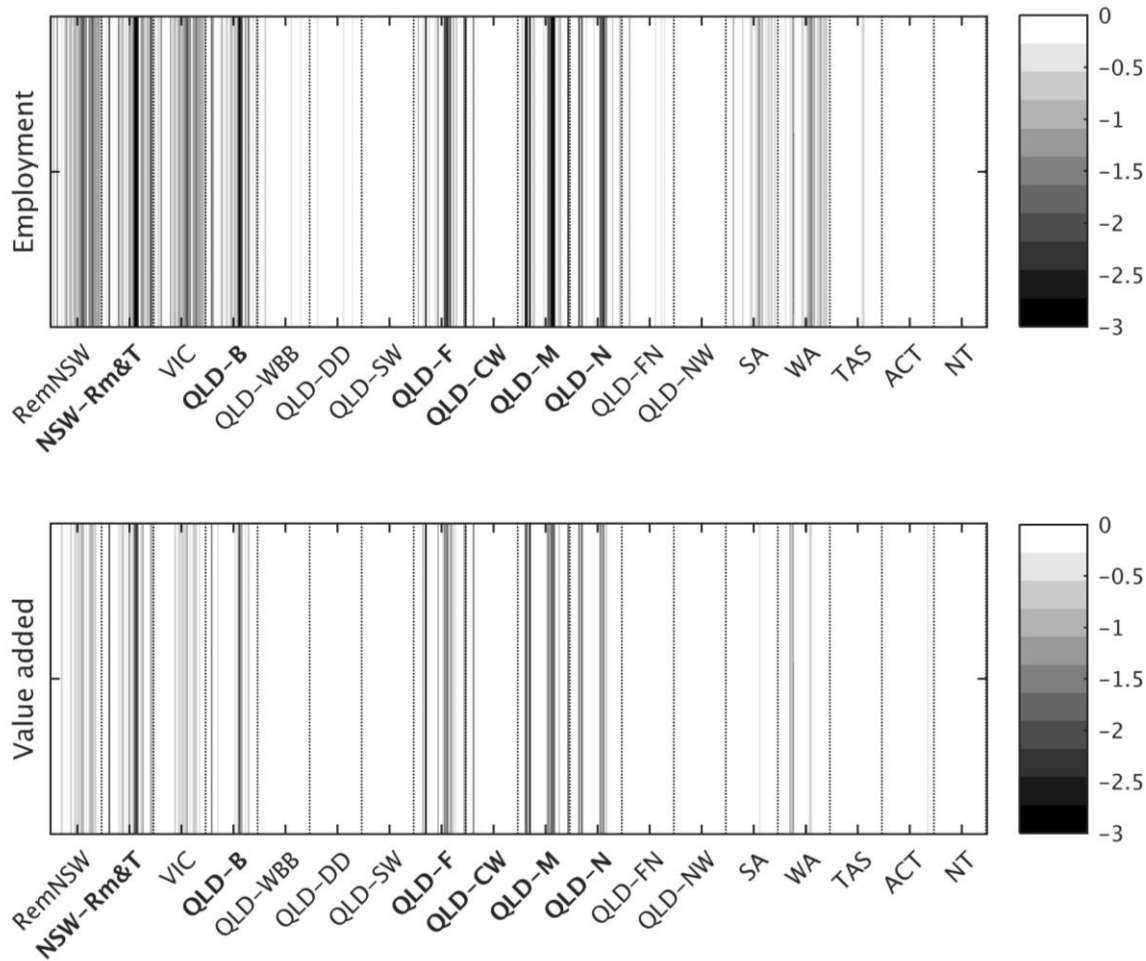
Figure SI 3.3 Employment and value added effects resulting from a tropical cyclone, modelled for threshold θ 7.079E-03 (see *SI 2*). The regions directly impacted by the cyclone are marked in bold. *Region acronyms:* RemNSW: *Rest of New South Wales (NSW);* NSW-Rm&T: *NSW Richmond & Tweed;* VIC: *Victoria;* QLD-B: *Queensland (QLD) – Brisbane;* QLD-WBB: *Wide Bay Burnett;* QLD-DD: *Darling Downs,* QL-SW: *South West;* QLD-F: *Fitzroy;* QLD-CW: *Central West;* QLD-M: *Mackay;* QLD-N: *Northern;* QLD-FN: *Far North;* QLD-NW: *North West;* SA: *South Australia;* WA: *Western Australia;* TAS: *Tasmania;* ACT: *Australian Capital Territory;* NT: *Northern Territory.*
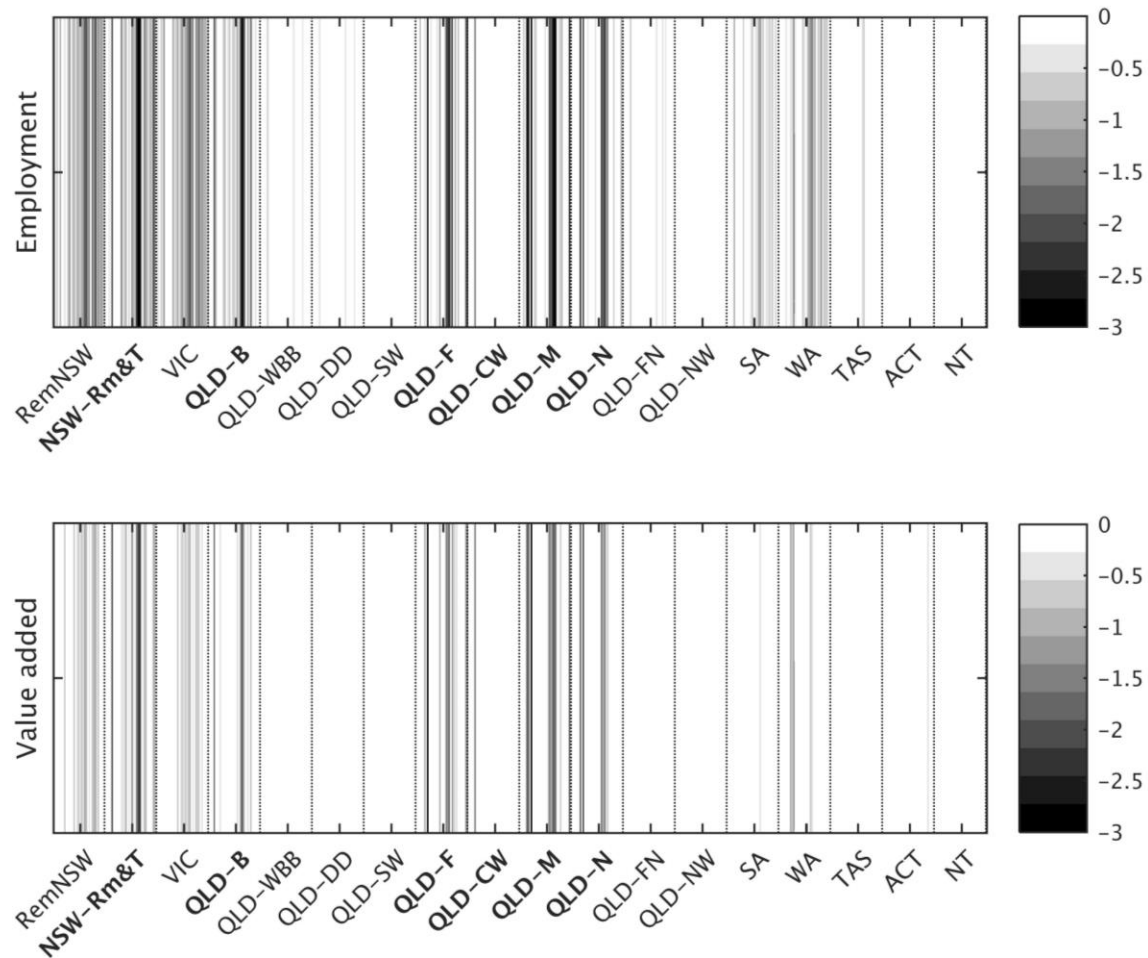
Figure SI 3.4 Employment and value added effects resulting from a tropical cyclone, modelled for threshold θ 1.047E-02 (see *SI 2*). The regions directly impacted by the cyclone are marked in bold. *Region acronyms:* RemNSW: *Rest of New South Wales (NSW);* NSW-Rm&T: *NSW Richmond & Tweed;* VIC: *Victoria;* QLD-B: *Queensland (QLD) – Brisbane;* QLD-WBB: *Wide Bay Burnett;* QLD-DD: *Darling Downs,* QL-SW: *South West;* QLD-F: *Fitzroy;* QLD-CW: *Central West;* QLD-M: *Mackay;* QLD-N: *Northern;* QLD-FN: *Far North;* QLD-NW: *North West;* SA: *South Australia;* WA: *Western Australia;* TAS: *Tasmania;* ACT: *Australian Capital Territory;* NT: *Northern Territory.*
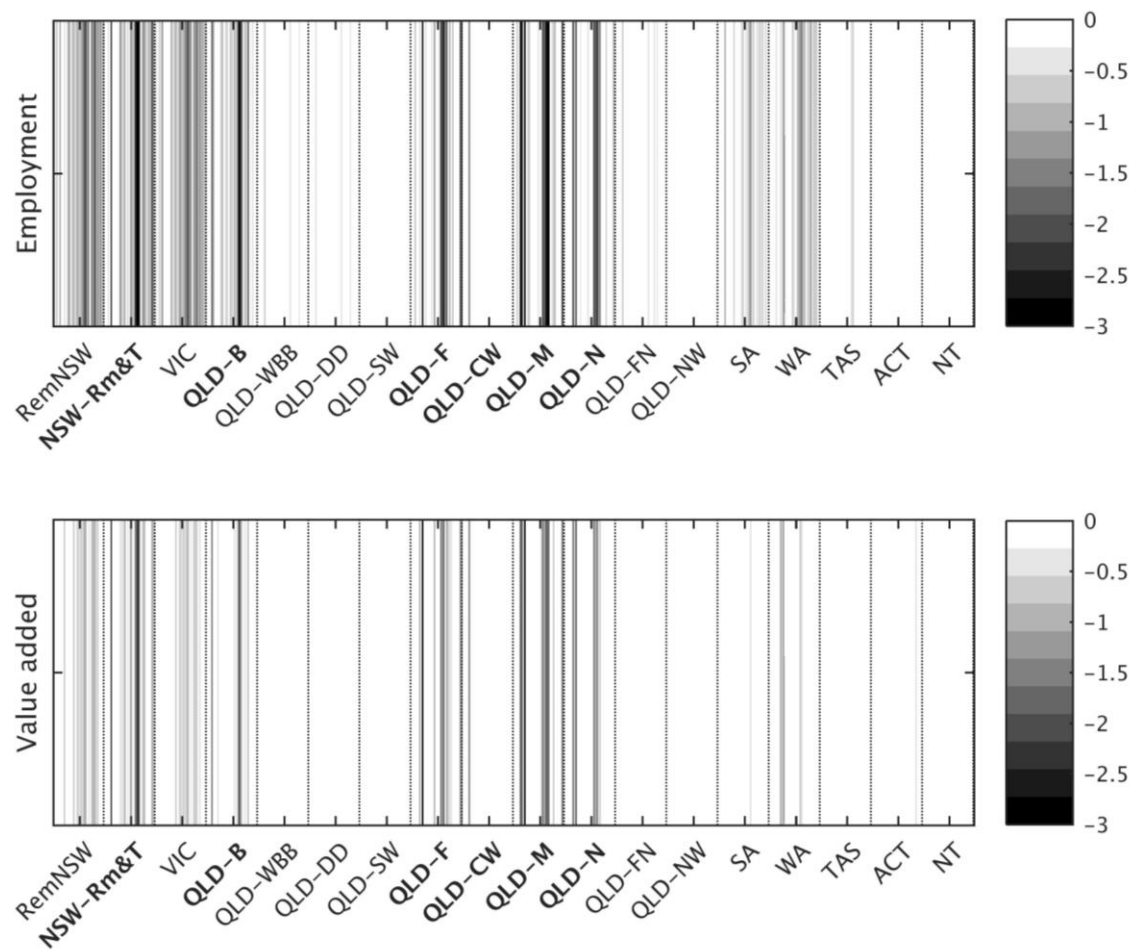
Figure SI 3.5 Employment and value added effects resulting from a tropical cyclone, modelled for threshold θ 1.259E-02 (see *SI 2*). The regions directly impacted by the cyclone are marked in bold. *Region acronyms:* RemNSW: *Rest of New South Wales (NSW);* NSW-Rm&T: *NSW Richmond & Tweed;* VIC: *Victoria;* QLD-B: *Queensland (QLD) – Brisbane;* QLD-WBB: *Wide Bay Burnett;* QLD-DD: *Darling Downs,* QL-SW: *South West;* QLD-F: *Fitzroy;* QLD-CW: *Central West;* QLD-M: *Mackay;* QLD-N: *Northern;* QLD-FN: *Far North;* QLD-NW: *North West;* SA: *South Australia;* WA: *Western Australia;* TAS: *Tasmania;* ACT: *Australian Capital Territory;* NT: *Northern Territory.*
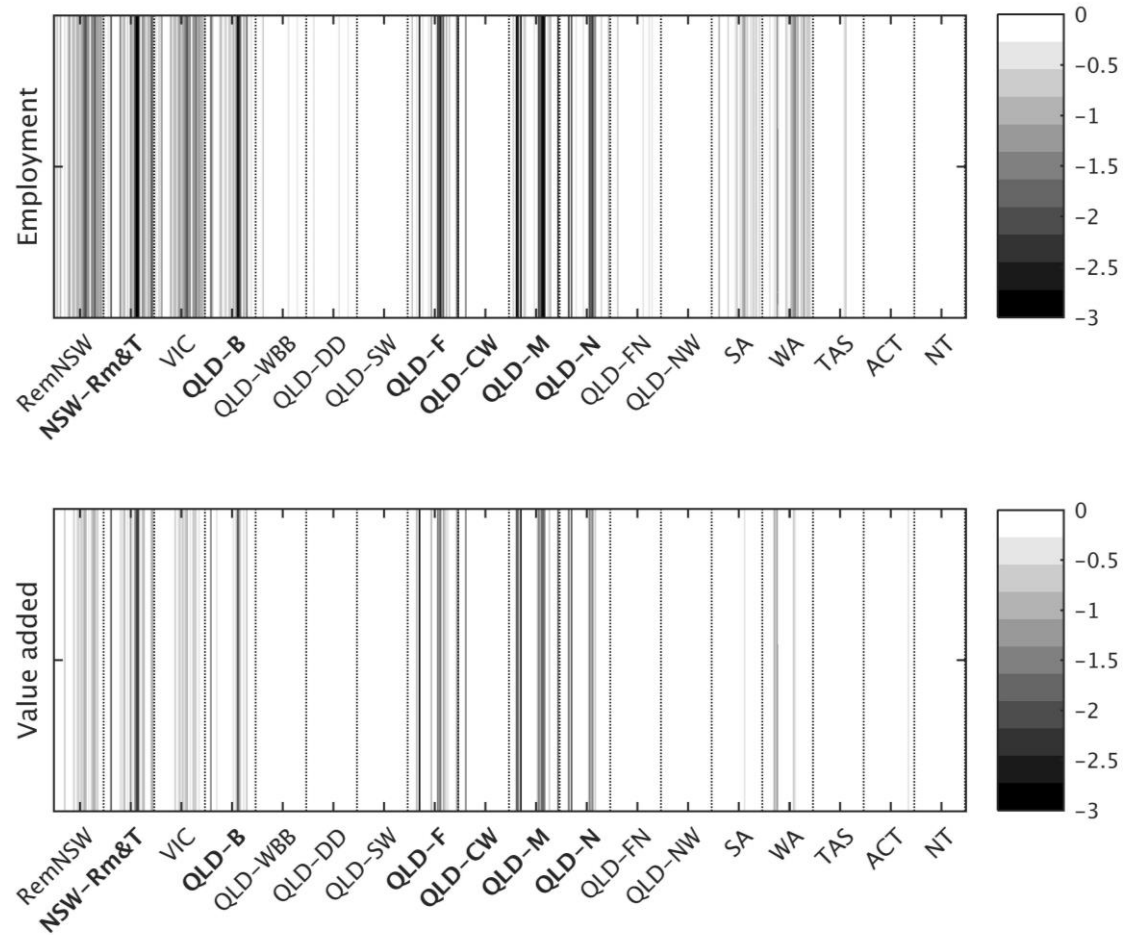
Figure SI 3.6 Employment and value added effects resulting from a tropical cyclone, modelled for threshold θ 1.413E-02 (see *SI 2*). The regions directly impacted by the cyclone are marked in bold. *Region acronyms:* RemNSW: *Rest of New South Wales (NSW);* NSW-Rm&T: *NSW Richmond & Tweed;* VIC: *Victoria;* QLD-B: *Queensland (QLD) – Brisbane;* QLD-WBB: *Wide Bay Burnett;* QLD-DD: *Darling Downs,* QL-SW: *South West;* QLD-F: *Fitzroy;* QLD-CW: *Central West;* QLD-M: *Mackay;* QLD-N: *Northern;* QLD-FN: *Far North;* QLD-NW: *North West;* SA: *South Australia;* WA: *Western Australia;* TAS: *Tasmania;* ACT: *Australian Capital Territory;* NT: *Northern Territory.*
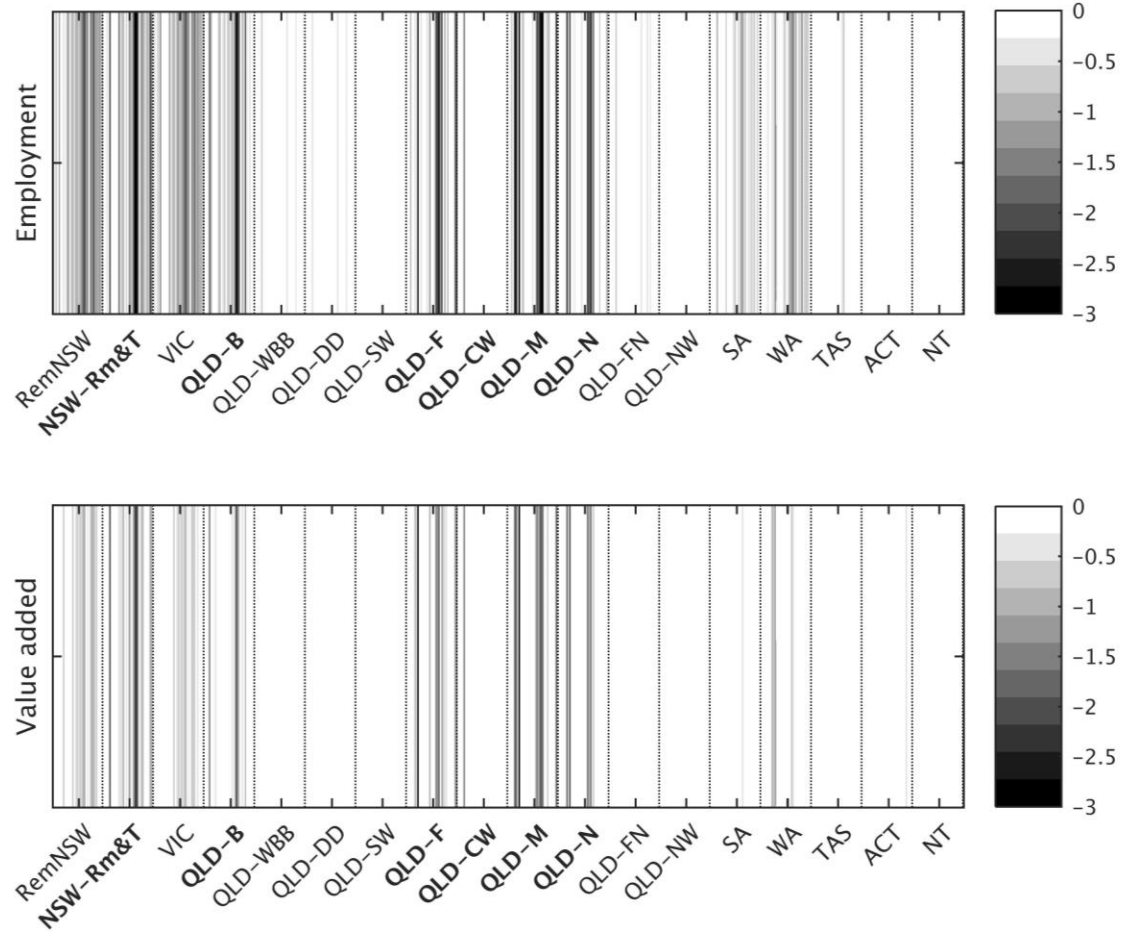
Figure SI 3.7 Employment and value added effects resulting from a tropical cyclone, modelled for threshold θ 1.445E-02 (see *SI 2*). The regions directly impacted by the cyclone are marked in bold. *Region acronyms:* RemNSW: *Rest of New South Wales (NSW);* NSW-Rm&T: *NSW Richmond & Tweed;* VIC: *Victoria;* QLD-B: *Queensland (QLD) – Brisbane;* QLD-WBB: *Wide Bay Burnett;* QLD-DD: *Darling Downs,* QL-SW: *South West;* QLD-F: *Fitzroy;* QLD-CW: *Central West;* QLD-M: *Mackay;* QLD-N: *Northern;* QLD-FN: *Far North;* QLD-NW: *North West;* SA: *South Australia;* WA: *Western Australia;* TAS: *Tasmania;* ACT: *Australian Capital Territory;* NT: *Northern Territory.*
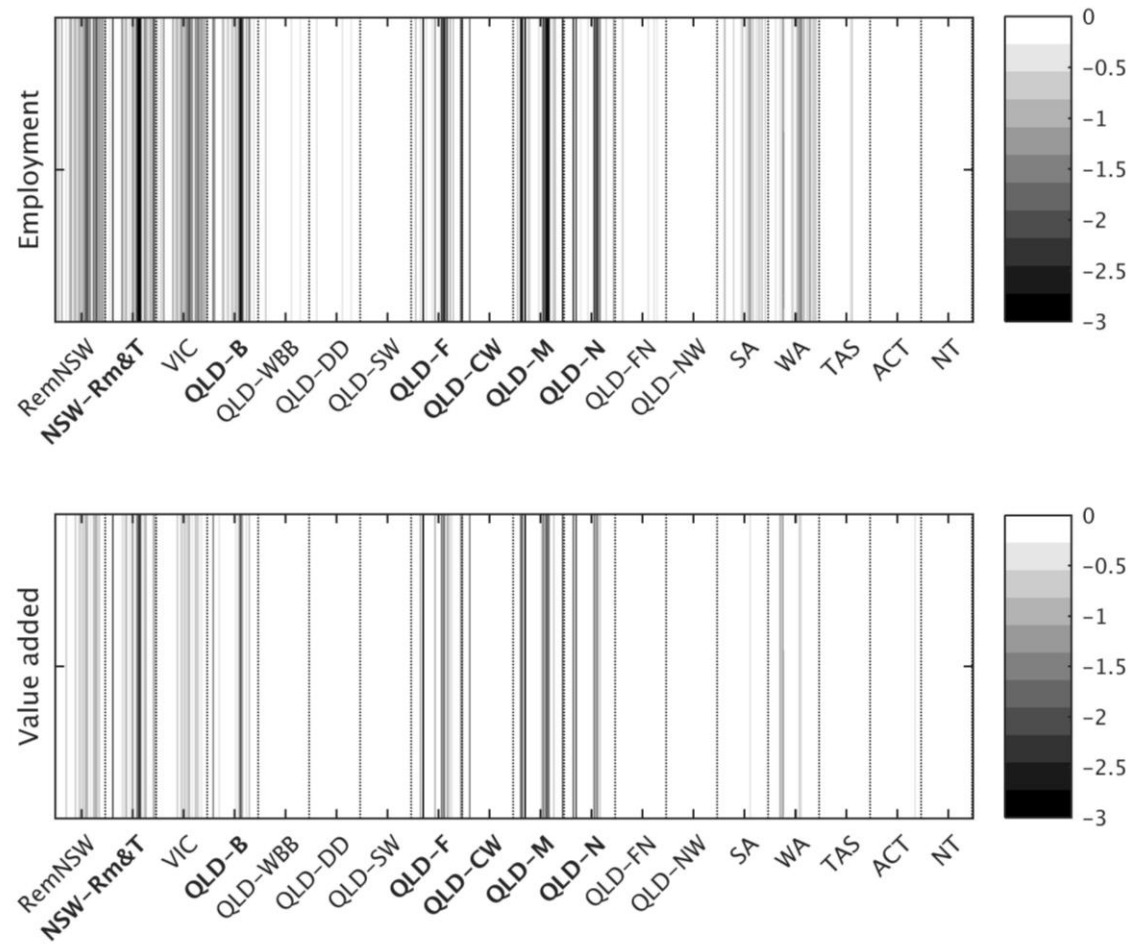
Figure SI 3.8 Employment and value added effects resulting from a tropical cyclone, modelled for threshold θ 1.585E-02 (see *SI 2*). The regions directly impacted by the cyclone are marked in bold. *Region acronyms:* RemNSW: *Rest of New South Wales (NSW);* NSW-Rm&T: *NSW Richmond & Tweed;* VIC: *Victoria;* QLD-B: *Queensland (QLD) – Brisbane;* QLD-WBB: *Wide Bay Burnett;* QLD-DD: *Darling Downs,* QL-SW: *South West;* QLD-F: *Fitzroy;* QLD-CW: *Central West;* QLD-M: *Mackay;* QLD-N: *Northern;* QLD-FN: *Far North;* QLD-NW: *North West;* SA: *South Australia;* WA: *Western Australia;* TAS: *Tasmania;* ACT: *Australian Capital Territory;* NT: *Northern Territory.*
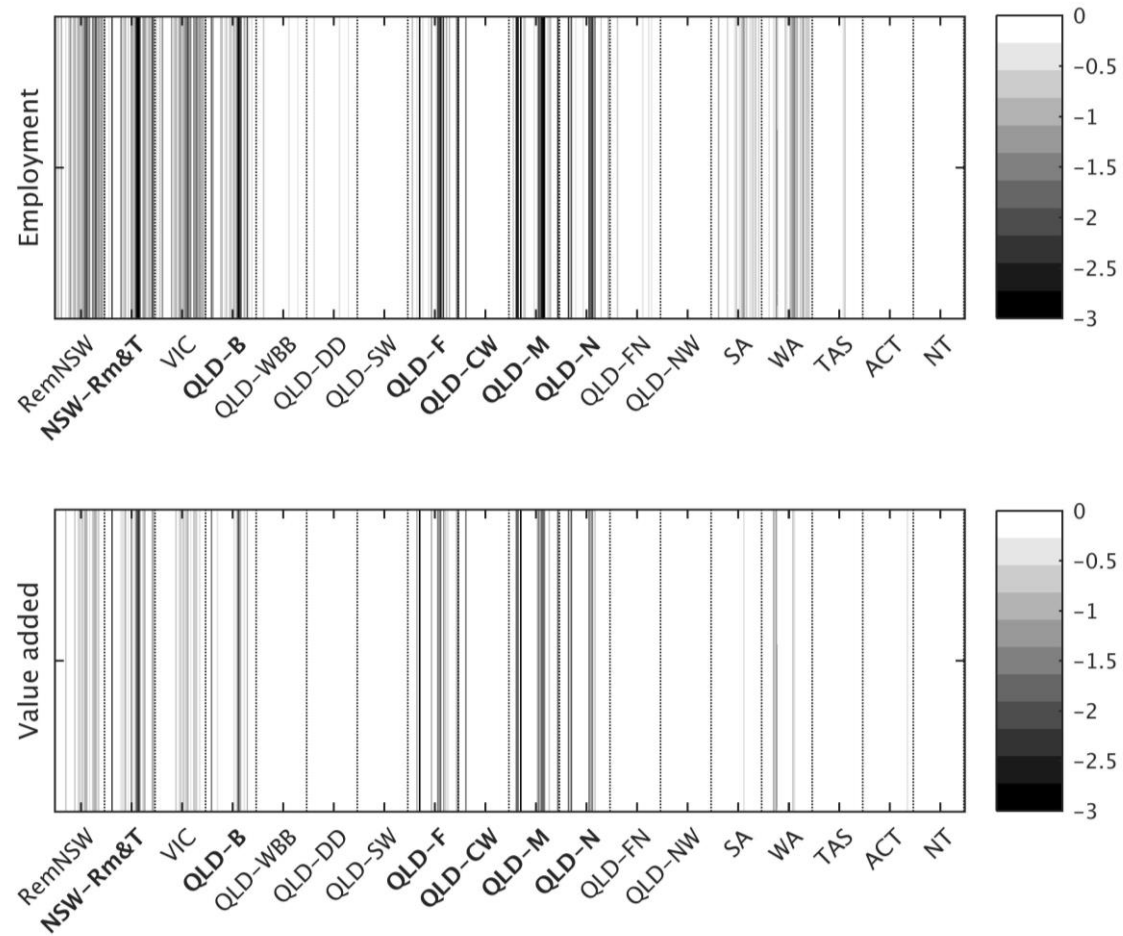
Figure SI 3.9 Employment and value added effects resulting from a tropical cyclone, modelled for threshold θ 1.995E-02 (see *SI 2*). The regions directly impacted by the cyclone are marked in bold. *Region acronyms:* RemNSW: *Rest of New South Wales (NSW);* NSW-Rm&T: *NSW Richmond & Tweed;* VIC: *Victoria;* QLD-B: *Queensland (QLD) – Brisbane;* QLD-WBB: *Wide Bay Burnett;* QLD-DD: *Darling Downs,* QL-SW: *South West;* QLD-F: *Fitzroy;* QLD-CW: *Central West;* QLD-M: *Mackay;* QLD-N: *Northern;* QLD-FN: *Far North;* QLD-NW: *North West;* SA: *South Australia;* WA: *Western Australia;* TAS: *Tasmania;* ACT: *Australian Capital Territory;* NT: *Northern Territory.*
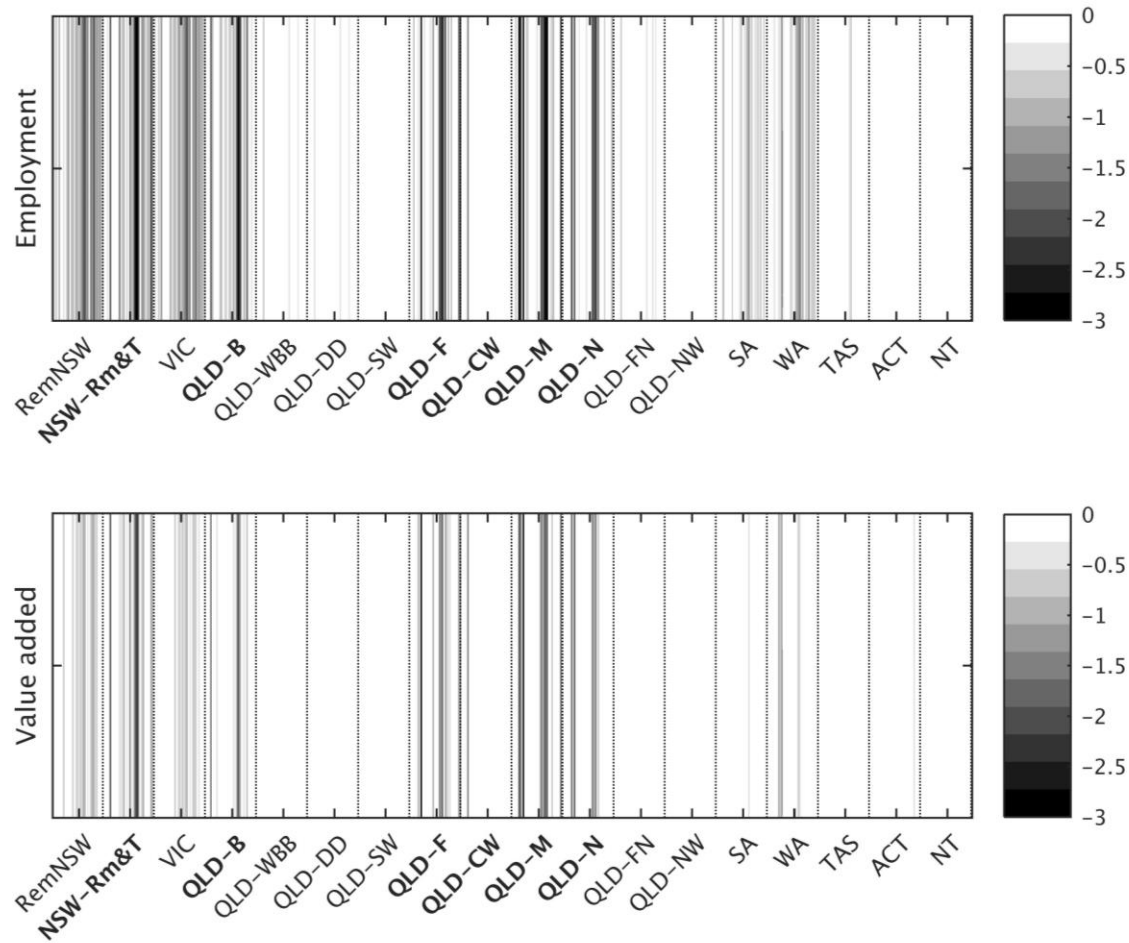
Figure SI 3.10 Employment and value added effects resulting from a tropical cyclone, modelled for threshold θ 2.884E-02 (see *SI 2*). The regions directly impacted by the cyclone are marked in bold. *Region acronyms:* RemNSW: *Rest of New South Wales (NSW);* NSW-Rm&T: *NSW Richmond & Tweed;* VIC: *Victoria;* QLD-B: *Queensland (QLD) – Brisbane;* QLD-WBB: *Wide Bay Burnett;* QLD-DD: *Darling Downs,* QL-SW: *South West;* QLD-F: *Fitzroy;* QLD-CW: *Central West;* QLD-M: *Mackay;* QLD-N: *Northern;* QLD-FN: *Far North;* QLD-NW: *North West;* SA: *South Australia;* WA: *Western Australia;* TAS: *Tasmania;* ACT: *Australian Capital Territory;* NT: *Northern Territory.*

SI 4: Raw data for production layer decomposition graphs

Table SI 4.1 Production layer decomposition for the indicator Employment (values are in Full-time Equivalent (FTE)). *Region acronyms:* RemNSW: *Rest of New South Wales (NSW)*; NSW-Rm&T: *NSW Richmond & Tweed*; VIC: *Victoria*; QLD-B: *Queensland (QLD) – Brisbane*; QLD-WBB: *Wide Bay Burnett*; QLD-DD: *Darling Downs,* QL-SW: *South West*; QLD-F: *Fitzroy*; QLD-CW: *Central West*; QLD-M: *Mackay*; QLD-N: *Northern*; QLD-FN: *Far North*; QLD-NW: *North West*; SA: *South Australia*; WA: *Western Australia*; TAS: *Tasmania*; ACT: *Australian Capital Territory*; NT: *Northern Territory.*

Production Layer	RemNSW	NSW-Rm&T	VIC	QLD-B	QLD-WBB	QLD-DD	QLD-SW	QLD-F	QLD-CW	QLD-M	QLD-N	QLD-FN	QLD-NW	SA	WA	TAS	ACT	NT
1	0.00	-2728.35	0.00	-863.25	0.00	0.00	0.00	-1032.50	-27.50	-1980.60	-459.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	-3140.35	0.00	-1524.25	0.00	0.00	0.00	-1634.81	-32.75	-3197.89	-779.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	-202.93	-3201.97	-149.64	-1631.24	-7.76	-4.91	-0.20	-1652.73	-32.79	-3217.31	-794.31	-8.29	-0.04	-35.27	-44.90	-5.80	-3.28	-2.65
4	-351.78	-3240.57	-264.67	-1720.44	-14.65	-9.64	-0.40	-1667.44	-32.85	-3230.06	-806.33	-16.32	-0.13	-64.52	-105.82	-12.29	-6.70	-6.24
5	-420.79	-3245.35	-323.32	-1736.95	-15.96	-10.54	-0.43	-1668.77	-32.88	-3231.04	-807.45	-17.55	-0.16	-75.97	-131.11	-14.16	-7.79	-7.50
6	-463.04	-3248.17	-361.01	-1745.39	-16.65	-11.09	-0.45	-1669.57	-32.90	-3231.48	-807.96	-18.10	-0.18	-82.86	-144.45	-14.80	-8.26	-7.96
7	-481.26	-3248.67	-378.32	-1748.26	-16.90	-11.27	-0.46	-1669.76	-32.90	-3231.61	-808.11	-18.29	-0.19	-85.57	-150.98	-15.09	-8.46	-8.18
8	-491.94	-3248.94	-389.15	-1749.70	-17.01	-11.35	-0.46	-1669.86	-32.91	-3231.67	-808.18	-18.37	-0.19	-87.13	-153.99	-15.22	-8.56	-8.27
9	-496.56	-3249.02	-394.04	-1750.32	-17.07	-11.39	-0.46	-1669.90	-32.91	-3231.70	-808.21	-18.41	-0.19	-87.77	-155.49	-15.28	-8.60	-8.32
10	-499.21	-3249.06	-397.03	-1750.64	-17.09	-11.40	-0.47	-1669.92	-32.91	-3231.71	-808.23	-18.43	-0.19	-88.13	-156.19	-15.31	-8.62	-8.34
11	-500.38	-3249.07	-398.38	-1750.79	-17.10	-11.41	-0.47	-1669.93	-32.91	-3231.72	-808.23	-18.44	-0.19	-88.29	-156.55	-15.32	-8.63	-8.35
12	-501.04	-3249.08	-399.20	-1750.87	-17.11	-11.42	-0.47	-1669.93	-32.91	-3231.72	-808.24	-18.44	-0.19	-88.37	-156.72	-15.33	-8.64	-8.36

Table SI 4.2 Production layer decomposition for the indicator Value-added (values are in AUD $m). *Region acronyms:* RemNSW: *Rest of New South Wales (NSW)*; NSW-Rm&T: *NSW Richmond & Tweed*; VIC: *Victoria*; QLD-B: *Queensland (QLD) – Brisbane*; QLD-WBB: *Wide Bay Burnett*; QLD-DD: *Darling Downs,* QL-SW: *South West*; QLD-F: *Fitzroy*; QLD-CW: *Central West*; QLD-M: *Mackay*; QLD-N: *Northern*; QLD-FN: *Far North*; QLD-NW: *North West*; SA: *South Australia*; WA: *Western Australia*; TAS: *Tasmania*; ACT: *Australian Capital Territory*; NT: *Northern Territory.*

Production Layer	RemNSW	NSW-Rm&T	VIC	QLD-B	QLD-WBB	QLD-DD	QLD-SW	QLD-F	QLD-CW	QLD-M	QLD-N	QLD-FN	QLD-NW	SA	WA	TAS	ACT	NT
1	0.00	-332.51	0.00	-87.97	0.00	0.00	0.00	-484.79	-24.56	-773.66	-145.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	-445.16	0.00	-155.73	0.00	0.00	0.00	-815.34	-29.25	-1300.16	-255.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	-36.38	-459.75	-23.89	-170.01	-1.99	-1.59	-0.09	-821.99	-29.29	-1306.68	-258.70	-1.28	-0.05	-7.36	-18.46	-1.07	-1.89	-0.75
4	-64.35	-468.59	-42.98	-182.67	-3.73	-3.26	-0.17	-827.72	-29.30	-1311.28	-261.16	-2.55	-0.18	-13.68	-41.73	-2.20	-3.61	-1.79
5	-76.82	-469.80	-52.32	-185.14	-4.07	-3.63	-0.18	-828.18	-29.31	-1311.58	-261.40	-2.75	-0.21	-16.05	-49.60	-2.50	-4.07	-2.14
6	-84.50	-470.46	-58.37	-186.29	-4.26	-3.84	-0.19	-828.49	-29.31	-1311.74	-261.51	-2.84	-0.24	-17.51	-53.32	-2.61	-4.30	-2.26
7	-87.79	-470.58	-61.12	-186.69	-4.32	-3.92	-0.19	-828.56	-29.31	-1311.79	-261.54	-2.87	-0.25	-18.07	-55.13	-2.66	-4.39	-2.32
8	-89.73	-470.64	-62.86	-186.89	-4.35	-3.95	-0.19	-828.60	-29.31	-1311.82	-261.55	-2.89	-0.26	-18.40	-55.96	-2.68	-4.44	-2.35
9	-90.57	-470.66	-63.65	-186.98	-4.36	-3.97	-0.19	-828.61	-29.31	-1311.83	-261.56	-2.89	-0.26	-18.54	-56.37	-2.69	-4.46	-2.36
10	-91.05	-470.67	-64.13	-187.02	-4.37	-3.97	-0.20	-828.62	-29.31	-1311.83	-261.56	-2.90	-0.26	-18.61	-56.57	-2.70	-4.47	-2.36
11	-91.26	-470.67	-64.35	-187.05	-4.37	-3.98	-0.20	-828.62	-29.31	-1311.83	-261.56	-2.90	-0.26	-18.65	-56.66	-2.70	-4.48	-2.37
12	-91.38	-470.67	-64.48	-187.06	-4.37	-3.98	-0.20	-828.62	-29.31	-1311.84	-261.57	-2.90	-0.26	-18.67	-56.71	-2.70	-4.48	-2.37

SI 5: Underlying raw data for main text's Figure 3.

Region	Sector number	Sector name	Employment Log10 (FTE)	Value added Log10(AUD$m)
Rest of NSW	1	Sheep	-0.406	0.000
Rest of NSW	2	Grains	-0.459	0.000
Rest of NSW	3	Beef cattle	-0.636	0.000
Rest of NSW	4	Dairy cattle and pigs	0.000	0.000
Rest of NSW	5	Other agriculture	-1.091	0.000
Rest of NSW	6	Sugar cane growing	0.000	0.000
Rest of NSW	7	Forestry and fishing	0.000	0.000
Rest of NSW	8	Coal, oil and gas	-0.483	-0.637
Rest of NSW	9	Non-ferrous metal ores	0.000	0.000
Rest of NSW	10	Other mining	-0.583	0.000
Rest of NSW	11	Food manufacturing	-1.161	0.000
Rest of NSW	12	Textiles, clothing and footwear	-0.197	0.000
Rest of NSW	13	Wood and paper manufacturing	-0.652	-0.087
Rest of NSW	14	Chemicals, petroleum and coal products	-0.838	-0.610
Rest of NSW	15	Non-metallic mineral products	-0.475	0.000
Rest of NSW	16	Metals, metal products	-1.026	-0.444
Rest of NSW	17	Machinery appliances and equipment	-1.053	-0.619
Rest of NSW	18	Miscellaneous manufacturing	-0.648	-0.380
Rest of NSW	19	Electricity supply, gas and water	-1.031	-0.761
Rest of NSW	20	Residential building construction	-1.257	-0.496
Rest of NSW	21	Other construction	-1.666	-0.854
Rest of NSW	22	Trade	-2.044	-1.061
Rest of NSW	23	Accommodation, cafes and restaurants	-1.225	-0.196
Rest of NSW	24	Road transport	-1.473	-0.467
Rest of NSW	25	Rail and pipeline transport	0.000	-0.177
Rest of NSW	26	Other transport	-1.368	-0.731
Rest of NSW	27	Communication services	-1.288	-0.901
Rest of NSW	28	Finance, property and business services	-1.958	-1.029
Rest of NSW	29	Ownership of dwellings	-1.073	-0.541
Rest of NSW	30	Government administration and defence	-1.315	-0.623
Rest of NSW	31	Education	-1.072	-0.268
Rest of NSW	32	Health and community services	-1.224	-0.173
Rest of NSW	33	Cultural and recreational services	-0.608	0.000
Rest of NSW	34	Personal and other services	-0.708	0.000
NSW-Rm&T	35	Sheep	0.000	0.000

NSW-Rm&T	36	Grains	0.000	-0.090
NSW-Rm&T	37	Beef cattle	-0.381	0.000
NSW-Rm&T	38	Dairy cattle and pigs	0.000	0.000
NSW-Rm&T	39	Other agriculture	-2.126	-1.969
NSW-Rm&T	40	Sugar cane growing	0.000	0.000
NSW-Rm&T	41	Forestry and fishing	0.000	0.000
NSW-Rm&T	42	Coal, oil and gas	0.000	0.000
NSW-Rm&T	43	Non-ferrous metal ores	0.000	0.000
NSW-Rm&T	44	Other mining	0.000	0.000
NSW-Rm&T	45	Food manufacturing	-1.470	-0.530
NSW-Rm&T	46	Textiles, clothing and footwear	-0.333	-0.399
NSW-Rm&T	47	Wood and paper manufacturing	-0.812	-0.443
NSW-Rm&T	48	Chemicals, petroleum and coal products	-1.068	-1.032
NSW-Rm&T	49	Non-metallic mineral products	-0.043	-0.069
NSW-Rm&T	50	Metals, metal products	-0.721	-0.333
NSW-Rm&T	51	Machinery appliances and equipment	0.000	0.000
NSW-Rm&T	52	Miscellaneous manufacturing	-1.190	-1.230
NSW-Rm&T	53	Electricity supply, gas and water	-1.001	-0.292
NSW-Rm&T	54	Residential building construction	-0.553	0.000
NSW-Rm&T	55	Other construction	-2.124	-1.250
NSW-Rm&T	56	Trade	-2.999	-2.042
NSW-Rm&T	57	Accommodation, cafes and restaurants	-3.219	-2.199
NSW-Rm&T	58	Road transport	-1.700	-0.843
NSW-Rm&T	59	Rail and pipeline transport	0.000	0.000
NSW-Rm&T	60	Other transport	-1.354	-0.757
NSW-Rm&T	61	Communication services	-1.311	-1.035
NSW-Rm&T	62	Finance, property and business services	-0.754	-0.066
NSW-Rm&T	63	Ownership of dwellings	-0.539	-0.148
NSW-Rm&T	64	Government administration and defence	-0.837	-0.174
NSW-Rm&T	65	Education	-0.626	0.000
NSW-Rm&T	66	Health and community services	-2.030	-0.953
NSW-Rm&T	67	Cultural and recreational services	-1.392	-0.908
NSW-Rm&T	68	Personal and other services	-0.197	0.000
VIC	69	Sheep	-0.348	0.000
VIC	70	Grains	-0.227	0.000
VIC	71	Beef cattle	-0.556	0.000
VIC	72	Dairy cattle and pigs	-0.526	0.000
VIC	73	Other agriculture	-1.109	-0.135
VIC	74	Sugar cane growing	0.000	0.000
VIC	75	Forestry and fishing	0.000	0.000
VIC	76	Coal, oil and gas	0.000	-0.127
VIC	77	Non-ferrous metal ores	0.000	0.000
VIC	78	Other mining	-0.219	-0.017

VIC	79	Food manufacturing	-1.242	0.000
VIC	80	Textiles, clothing and footwear	-0.340	0.000
VIC	81	Wood and paper manufacturing	-0.619	-0.028
VIC	82	Chemicals, petroleum and coal products	-0.862	-0.583
VIC	83	Non-metallic mineral products	-0.363	0.000
VIC	84	Metals, metal products	-0.933	-0.340
VIC	85	Machinery appliances and equipment	-1.194	-0.701
VIC	86	Miscellaneous manufacturing	-0.729	-0.296
VIC	87	Electricity supply, gas and water	-1.024	-0.546
VIC	88	Residential building construction	-1.207	-0.470
VIC	89	Other construction	-1.571	-0.751
VIC	90	Trade	-1.949	-0.911
VIC	91	Accommodation, cafes and restaurants	-1.114	0.000
VIC	92	Road transport	-1.384	-0.369
VIC	93	Rail and pipeline transport	0.000	0.000
VIC	94	Other transport	-1.219	-0.576
VIC	95	Communication services	-1.115	-0.678
VIC	96	Finance, property and business services	-1.747	-0.780
VIC	97	Ownership of dwellings	-0.855	-0.227
VIC	98	Government administration and defence	-1.099	-0.337
VIC	99	Education	-1.013	-0.138
VIC	100	Health and community services	-1.085	0.000
VIC	101	Cultural and recreational services	-0.646	0.000
VIC	102	Personal and other services	-0.599	0.000
QLD-B	103	Sheep	0.000	0.000
QLD-B	104	Grains	0.000	0.000
QLD-B	105	Beef cattle	0.000	0.000
QLD-B	106	Dairy cattle and pigs	-1.888	-1.416
QLD-B	107	Other agriculture	-0.818	-0.069
QLD-B	108	Sugar cane growing	0.000	0.000
QLD-B	109	Forestry and fishing	0.000	0.000
QLD-B	110	Coal, oil and gas	-0.074	-0.360
QLD-B	111	Non-ferrous metal ores	0.000	0.000
QLD-B	112	Other mining	-0.769	0.000
QLD-B	113	Food manufacturing	-0.907	0.000
QLD-B	114	Textiles, clothing and footwear	-0.020	0.000
QLD-B	115	Wood and paper manufacturing	-0.318	0.000
QLD-B	116	Chemicals, petroleum and coal products	-0.683	-0.213
QLD-B	117	Non-metallic mineral products	-0.240	0.000
QLD-B	118	Metals, metal products	-0.703	0.000
QLD-B	119	Machinery appliances and equipment	-0.811	-0.141
QLD-B	120	Miscellaneous manufacturing	-0.297	0.000
QLD-B	121	Electricity supply, gas and water	-0.849	-0.447

QLD-B	122	Residential building construction	-0.468	0.000
QLD-B	123	Other construction	-1.490	-0.635
QLD-B	124	Trade	-3.092	-2.054
QLD-B	125	Accommodation, cafes and restaurants	-2.358	-1.215
QLD-B	126	Road transport	-1.446	-0.441
QLD-B	127	Rail and pipeline transport	0.000	0.000
QLD-B	128	Other transport	-1.085	-0.356
QLD-B	129	Communication services	-0.311	0.000
QLD-B	130	Finance, property and business services	-1.936	-0.868
QLD-B	131	Ownership of dwellings	-0.298	0.000
QLD-B	132	Government administration and defence	-0.080	0.000
QLD-B	133	Education	-0.387	0.000
QLD-B	134	Health and community services	0.000	0.000
QLD-B	135	Cultural and recreational services	-0.259	0.000
QLD-B	136	Personal and other services	-0.168	0.000
QLD-WBB	137	Sheep	0.000	0.000
QLD-WBB	138	Grains	0.000	0.000
QLD-WBB	139	Beef cattle	0.000	0.000
QLD-WBB	140	Dairy cattle and pigs	0.000	0.000
QLD-WBB	141	Other agriculture	-0.801	-0.122
QLD-WBB	142	Sugar cane growing	-0.049	0.000
QLD-WBB	143	Forestry and fishing	0.000	0.000
QLD-WBB	144	Coal, oil and gas	0.000	0.000
QLD-WBB	145	Non-ferrous metal ores	0.000	0.000
QLD-WBB	146	Other mining	0.000	0.000
QLD-WBB	147	Food manufacturing	-0.041	0.000
QLD-WBB	148	Textiles, clothing and footwear	0.000	0.000
QLD-WBB	149	Wood and paper manufacturing	0.000	0.000
QLD-WBB	150	Chemicals, petroleum and coal products	0.000	0.000
QLD-WBB	151	Non-metallic mineral products	0.000	0.000
QLD-WBB	152	Metals, metal products	0.000	0.000
QLD-WBB	153	Machinery appliances and equipment	0.000	0.000
QLD-WBB	154	Miscellaneous manufacturing	0.000	0.000
QLD-WBB	155	Electricity supply, gas and water	0.000	0.000
QLD-WBB	156	Residential building construction	0.000	0.000
QLD-WBB	157	Other construction	-0.221	0.000
QLD-WBB	158	Trade	-0.515	0.000
QLD-WBB	159	Accommodation, cafes and restaurants	0.000	0.000
QLD-WBB	160	Road transport	0.000	0.000
QLD-WBB	161	Rail and pipeline transport	0.000	0.000
QLD-WBB	162	Other transport	0.000	0.000
QLD-WBB	163	Communication services	0.000	0.000
QLD-WBB	164	Finance, property and business services	-0.302	0.000

QLD-WBB	165	Ownership of dwellings	0.000	0.000
QLD-WBB	166	Government administration and defence	0.000	0.000
QLD-WBB	167	Education	0.000	0.000
QLD-WBB	168	Health and community services	0.000	0.000
QLD-WBB	169	Cultural and recreational services	0.000	0.000
QLD-WBB	170	Personal and other services	0.000	0.000
QLD-DD	171	Sheep	0.000	0.000
QLD-DD	172	Grains	0.000	0.000
QLD-DD	173	Beef cattle	-0.075	0.000
QLD-DD	174	Dairy cattle and pigs	0.000	0.000
QLD-DD	175	Other agriculture	-0.469	-0.106
QLD-DD	176	Sugar cane growing	0.000	0.000
QLD-DD	177	Forestry and fishing	0.000	0.000
QLD-DD	178	Coal, oil and gas	0.000	0.000
QLD-DD	179	Non-ferrous metal ores	0.000	0.000
QLD-DD	180	Other mining	0.000	0.000
QLD-DD	181	Food manufacturing	0.000	0.000
QLD-DD	182	Textiles, clothing and footwear	0.000	0.000
QLD-DD	183	Wood and paper manufacturing	0.000	0.000
QLD-DD	184	Chemicals, petroleum and coal products	0.000	0.000
QLD-DD	185	Non-metallic mineral products	0.000	0.000
QLD-DD	186	Metals, metal products	0.000	0.000
QLD-DD	187	Machinery appliances and equipment	0.000	0.000
QLD-DD	188	Miscellaneous manufacturing	0.000	0.000
QLD-DD	189	Electricity supply, gas and water	0.000	0.000
QLD-DD	190	Residential building construction	0.000	0.000
QLD-DD	191	Other construction	-0.182	0.000
QLD-DD	192	Trade	-0.434	0.000
QLD-DD	193	Accommodation, cafes and restaurants	0.000	0.000
QLD-DD	194	Road transport	-0.022	0.000
QLD-DD	195	Rail and pipeline transport	0.000	0.000
QLD-DD	196	Other transport	0.000	0.000
QLD-DD	197	Communication services	0.000	0.000
QLD-DD	198	Finance, property and business services	-0.303	0.000
QLD-DD	199	Ownership of dwellings	0.000	0.000
QLD-DD	200	Government administration and defence	0.000	0.000
QLD-DD	201	Education	0.000	0.000
QLD-DD	202	Health and community services	0.000	0.000
QLD-DD	203	Cultural and recreational services	0.000	0.000
QLD-DD	204	Personal and other services	0.000	0.000
QLD-SW	205	Sheep	0.000	0.000
QLD-SW	206	Grains	0.000	0.000
QLD-SW	207	Beef cattle	0.000	0.000

QLD-SW	208	Dairy cattle and pigs	0.000	0.000
QLD-SW	209	Other agriculture	0.000	0.000
QLD-SW	210	Sugar cane growing	0.000	0.000
QLD-SW	211	Forestry and fishing	0.000	0.000
QLD-SW	212	Coal, oil and gas	0.000	0.000
QLD-SW	213	Non-ferrous metal ores	0.000	0.000
QLD-SW	214	Other mining	0.000	0.000
QLD-SW	215	Food manufacturing	0.000	0.000
QLD-SW	216	Textiles, clothing and footwear	0.000	0.000
QLD-SW	217	Wood and paper manufacturing	0.000	0.000
QLD-SW	218	Chemicals, petroleum and coal products	0.000	0.000
QLD-SW	219	Non-metallic mineral products	0.000	0.000
QLD-SW	220	Metals, metal products	0.000	0.000
QLD-SW	221	Machinery appliances and equipment	0.000	0.000
QLD-SW	222	Miscellaneous manufacturing	0.000	0.000
QLD-SW	223	Electricity supply, gas and water	0.000	0.000
QLD-SW	224	Residential building construction	0.000	0.000
QLD-SW	225	Other construction	0.000	0.000
QLD-SW	226	Trade	0.000	0.000
QLD-SW	227	Accommodation, cafes and restaurants	0.000	0.000
QLD-SW	228	Road transport	0.000	0.000
QLD-SW	229	Rail and pipeline transport	0.000	0.000
QLD-SW	230	Other transport	0.000	0.000
QLD-SW	231	Communication services	0.000	0.000
QLD-SW	232	Finance, property and business services	0.000	0.000
QLD-SW	233	Ownership of dwellings	0.000	0.000
QLD-SW	234	Government administration and defence	0.000	0.000
QLD-SW	235	Education	0.000	0.000
QLD-SW	236	Health and community services	0.000	0.000
QLD-SW	237	Cultural and recreational services	0.000	0.000
QLD-SW	238	Personal and other services	0.000	0.000
QLD-F	239	Sheep	0.000	0.000
QLD-F	240	Grains	0.000	0.000
QLD-F	241	Beef cattle	-0.906	0.000
QLD-F	242	Dairy cattle and pigs	0.000	0.000
QLD-F	243	Other agriculture	0.000	0.000
QLD-F	244	Sugar cane growing	-0.452	-0.940
QLD-F	245	Forestry and fishing	0.000	0.000
QLD-F	246	Coal, oil and gas	-2.648	-2.796
QLD-F	247	Non-ferrous metal ores	0.000	0.000
QLD-F	248	Other mining	-0.455	0.000
QLD-F	249	Food manufacturing	-0.045	0.000
QLD-F	250	Textiles, clothing and footwear	0.000	0.000

QLD-F	251	Wood and paper manufacturing	0.000	0.000
QLD-F	252	Chemicals, petroleum and coal products	-0.346	-0.262
QLD-F	253	Non-metallic mineral products	-0.271	0.000
QLD-F	254	Metals, metal products	-1.131	-0.881
QLD-F	255	Machinery appliances and equipment	0.000	0.000
QLD-F	256	Miscellaneous manufacturing	0.000	0.000
QLD-F	257	Electricity supply, gas and water	-0.353	-0.223
QLD-F	258	Residential building construction	-2.064	-1.428
QLD-F	259	Other construction	-1.965	-1.178
QLD-F	260	Trade	-2.699	-1.705
QLD-F	261	Accommodation, cafes and restaurants	-1.222	-0.201
QLD-F	262	Road transport	-2.254	-1.339
QLD-F	263	Rail and pipeline transport	0.000	-0.811
QLD-F	264	Other transport	-0.986	-0.443
QLD-F	265	Communication services	-0.085	-0.410
QLD-F	266	Finance, property and business services	-0.890	0.000
QLD-F	267	Ownership of dwellings	0.000	0.000
QLD-F	268	Government administration and defence	0.000	0.000
QLD-F	269	Education	0.000	0.000
QLD-F	270	Health and community services	0.000	0.000
QLD-F	271	Cultural and recreational services	-1.621	-1.040
QLD-F	272	Personal and other services	-2.358	-1.615
QLD-CW	273	Sheep	0.000	0.000
QLD-CW	274	Grains	0.000	0.000
QLD-CW	275	Beef cattle	0.000	0.000
QLD-CW	276	Dairy cattle and pigs	0.000	0.000
QLD-CW	277	Other agriculture	-1.516	-1.467
QLD-CW	278	Sugar cane growing	0.000	0.000
QLD-CW	279	Forestry and fishing	0.000	0.000
QLD-CW	280	Coal, oil and gas	0.000	0.000
QLD-CW	281	Non-ferrous metal ores	0.000	0.000
QLD-CW	282	Other mining	0.000	0.000
QLD-CW	283	Food manufacturing	0.000	0.000
QLD-CW	284	Textiles, clothing and footwear	0.000	0.000
QLD-CW	285	Wood and paper manufacturing	0.000	0.000
QLD-CW	286	Chemicals, petroleum and coal products	0.000	0.000
QLD-CW	287	Non-metallic mineral products	0.000	0.000
QLD-CW	288	Metals, metal products	0.000	0.000
QLD-CW	289	Machinery appliances and equipment	0.000	0.000
QLD-CW	290	Miscellaneous manufacturing	0.000	0.000
QLD-CW	291	Electricity supply, gas and water	0.000	0.000
QLD-CW	292	Residential building construction	0.000	0.000
QLD-CW	293	Other construction	0.000	0.000

QLD-CW	294	Trade	0.000	0.000
QLD-CW	295	Accommodation, cafes and restaurants	0.000	0.000
QLD-CW	296	Road transport	0.000	0.000
QLD-CW	297	Rail and pipeline transport	0.000	0.000
QLD-CW	298	Other transport	0.000	0.000
QLD-CW	299	Communication services	0.000	0.000
QLD-CW	300	Finance, property and business services	0.000	0.000
QLD-CW	301	Ownership of dwellings	0.000	0.000
QLD-CW	302	Government administration and defence	0.000	0.000
QLD-CW	303	Education	0.000	0.000
QLD-CW	304	Health and community services	0.000	0.000
QLD-CW	305	Cultural and recreational services	0.000	0.000
QLD-CW	306	Personal and other services	0.000	0.000
QLD-M	307	Sheep	0.000	0.000
QLD-M	308	Grains	0.000	0.000
QLD-M	309	Beef cattle	-0.788	0.000
QLD-M	310	Dairy cattle and pigs	0.000	0.000
QLD-M	311	Other agriculture	-2.493	-1.844
QLD-M	312	Sugar cane growing	-2.603	-1.897
QLD-M	313	Forestry and fishing	0.000	0.000
QLD-M	314	Coal, oil and gas	-2.875	-2.959
QLD-M	315	Non-ferrous metal ores	0.000	0.000
QLD-M	316	Other mining	-0.590	-0.001
QLD-M	317	Food manufacturing	-0.809	0.000
QLD-M	318	Textiles, clothing and footwear	0.000	0.000
QLD-M	319	Wood and paper manufacturing	0.000	0.000
QLD-M	320	Chemicals, petroleum and coal products	0.000	0.000
QLD-M	321	Non-metallic mineral products	0.000	0.000
QLD-M	322	Metals, metal products	-0.083	0.000
QLD-M	323	Machinery appliances and equipment	-0.293	0.000
QLD-M	324	Miscellaneous manufacturing	0.000	0.000
QLD-M	325	Electricity supply, gas and water	-0.464	-0.713
QLD-M	326	Residential building construction	-2.004	-1.416
QLD-M	327	Other construction	-1.845	-0.997
QLD-M	328	Trade	-2.637	-1.667
QLD-M	329	Accommodation, cafes and restaurants	-2.767	-1.805
QLD-M	330	Road transport	-2.526	-1.532
QLD-M	331	Rail and pipeline transport	0.000	0.000
QLD-M	332	Other transport	-0.489	0.000
QLD-M	333	Communication services	-0.741	-0.798
QLD-M	334	Finance, property and business services	-0.820	0.000
QLD-M	335	Ownership of dwellings	0.000	0.000
QLD-M	336	Government administration and defence	0.000	0.000

QLD-M	337	Education	0.000	0.000
QLD-M	338	Health and community services	0.000	0.000
QLD-M	339	Cultural and recreational services	-2.323	-1.754
QLD-M	340	Personal and other services	0.000	0.000
QLD-N	341	Sheep	0.000	0.000
QLD-N	342	Grains	0.000	0.000
QLD-N	343	Beef cattle	0.000	0.000
QLD-N	344	Dairy cattle and pigs	0.000	0.000
QLD-N	345	Other agriculture	0.000	0.000
QLD-N	346	Sugar cane growing	-2.318	-1.690
QLD-N	347	Forestry and fishing	0.000	0.000
QLD-N	348	Coal, oil and gas	-1.920	-2.112
QLD-N	349	Non-ferrous metal ores	0.000	0.000
QLD-N	350	Other mining	-0.164	0.000
QLD-N	351	Food manufacturing	-0.355	0.000
QLD-N	352	Textiles, clothing and footwear	0.000	0.000
QLD-N	353	Wood and paper manufacturing	0.000	0.000
QLD-N	354	Chemicals, petroleum and coal products	0.000	0.000
QLD-N	355	Non-metallic mineral products	0.000	0.000
QLD-N	356	Metals, metal products	-0.447	0.000
QLD-N	357	Machinery appliances and equipment	0.000	0.000
QLD-N	358	Miscellaneous manufacturing	0.000	0.000
QLD-N	359	Electricity supply, gas and water	-0.037	0.000
QLD-N	360	Residential building construction	-2.044	-1.421
QLD-N	361	Other construction	-1.707	-0.870
QLD-N	362	Trade	-2.453	-1.581
QLD-N	363	Accommodation, cafes and restaurants	-1.253	-0.302
QLD-N	364	Road transport	-1.475	-0.584
QLD-N	365	Rail and pipeline transport	0.000	0.000
QLD-N	366	Other transport	-0.245	0.000
QLD-N	367	Communication services	0.000	0.000
QLD-N	368	Finance, property and business services	-0.789	0.000
QLD-N	369	Ownership of dwellings	0.000	0.000
QLD-N	370	Government administration and defence	0.000	0.000
QLD-N	371	Education	0.000	0.000
QLD-N	372	Health and community services	0.000	0.000
QLD-N	373	Cultural and recreational services	-0.868	-0.053
QLD-N	374	Personal and other services	0.000	0.000
QLD-FN	375	Sheep	0.000	0.000
QLD-FN	376	Grains	0.000	0.000
QLD-FN	377	Beef cattle	0.000	0.000
QLD-FN	378	Dairy cattle and pigs	0.000	0.000
QLD-FN	379	Other agriculture	-0.818	0.000

QLD-FN	380	Sugar cane growing	-0.074	0.000
QLD-FN	381	Forestry and fishing	0.000	0.000
QLD-FN	382	Coal, oil and gas	0.000	0.000
QLD-FN	383	Non-ferrous metal ores	0.000	0.000
QLD-FN	384	Other mining	0.000	0.000
QLD-FN	385	Food manufacturing	0.000	0.000
QLD-FN	386	Textiles, clothing and footwear	0.000	0.000
QLD-FN	387	Wood and paper manufacturing	0.000	0.000
QLD-FN	388	Chemicals, petroleum and coal products	0.000	0.000
QLD-FN	389	Non-metallic mineral products	0.000	0.000
QLD-FN	390	Metals, metal products	0.000	0.000
QLD-FN	391	Machinery appliances and equipment	0.000	0.000
QLD-FN	392	Miscellaneous manufacturing	0.000	0.000
QLD-FN	393	Electricity supply, gas and water	0.000	0.000
QLD-FN	394	Residential building construction	0.000	0.000
QLD-FN	395	Other construction	-0.154	0.000
QLD-FN	396	Trade	-0.430	0.000
QLD-FN	397	Accommodation, cafes and restaurants	0.000	0.000
QLD-FN	398	Road transport	0.000	0.000
QLD-FN	399	Rail and pipeline transport	0.000	0.000
QLD-FN	400	Other transport	-0.393	0.000
QLD-FN	401	Communication services	0.000	0.000
QLD-FN	402	Finance, property and business services	-0.468	0.000
QLD-FN	403	Ownership of dwellings	0.000	0.000
QLD-FN	404	Government administration and defence	0.000	0.000
QLD-FN	405	Education	0.000	0.000
QLD-FN	406	Health and community services	0.000	0.000
QLD-FN	407	Cultural and recreational services	0.000	0.000
QLD-FN	408	Personal and other services	0.000	0.000
QLD-NW	409	Sheep	0.000	0.000
QLD-NW	410	Grains	0.000	0.000
QLD-NW	411	Beef cattle	0.000	0.000
QLD-NW	412	Dairy cattle and pigs	0.000	0.000
QLD-NW	413	Other agriculture	0.000	0.000
QLD-NW	414	Sugar cane growing	0.000	0.000
QLD-NW	415	Forestry and fishing	0.000	0.000
QLD-NW	416	Coal, oil and gas	0.000	0.000
QLD-NW	417	Non-ferrous metal ores	0.000	0.000
QLD-NW	418	Other mining	0.000	0.000
QLD-NW	419	Food manufacturing	0.000	0.000
QLD-NW	420	Textiles, clothing and footwear	0.000	0.000
QLD-NW	421	Wood and paper manufacturing	0.000	0.000
QLD-NW	422	Chemicals, petroleum and coal products	0.000	0.000

QLD-NW	423	Non-metallic mineral products	0.000	0.000
QLD-NW	424	Metals, metal products	0.000	0.000
QLD-NW	425	Machinery appliances and equipment	0.000	0.000
QLD-NW	426	Miscellaneous manufacturing	0.000	0.000
QLD-NW	427	Electricity supply, gas and water	0.000	0.000
QLD-NW	428	Residential building construction	0.000	0.000
QLD-NW	429	Other construction	0.000	0.000
QLD-NW	430	Trade	0.000	0.000
QLD-NW	431	Accommodation, cafes and restaurants	0.000	0.000
QLD-NW	432	Road transport	0.000	0.000
QLD-NW	433	Rail and pipeline transport	0.000	0.000
QLD-NW	434	Other transport	0.000	0.000
QLD-NW	435	Communication services	0.000	0.000
QLD-NW	436	Finance, property and business services	0.000	0.000
QLD-NW	437	Ownership of dwellings	0.000	0.000
QLD-NW	438	Government administration and defence	0.000	0.000
QLD-NW	439	Education	0.000	0.000
QLD-NW	440	Health and community services	0.000	0.000
QLD-NW	441	Cultural and recreational services	0.000	0.000
QLD-NW	442	Personal and other services	0.000	0.000
SA	443	Sheep	-0.044	0.000
SA	444	Grains	-0.163	0.000
SA	445	Beef cattle	-0.126	0.000
SA	446	Dairy cattle and pigs	0.000	0.000
SA	447	Other agriculture	-1.020	-0.113
SA	448	Sugar cane growing	0.000	0.000
SA	449	Forestry and fishing	0.000	0.000
SA	450	Coal, oil and gas	0.000	0.000
SA	451	Non-ferrous metal ores	0.000	0.000
SA	452	Other mining	-0.197	0.000
SA	453	Food manufacturing	-0.692	0.000
SA	454	Textiles, clothing and footwear	0.000	0.000
SA	455	Wood and paper manufacturing	0.000	0.000
SA	456	Chemicals, petroleum and coal products	0.000	0.000
SA	457	Non-metallic mineral products	0.000	0.000
SA	458	Metals, metal products	-0.376	0.000
SA	459	Machinery appliances and equipment	-0.628	-0.189
SA	460	Miscellaneous manufacturing	0.000	0.000
SA	461	Electricity supply, gas and water	-0.395	-0.123
SA	462	Residential building construction	-0.488	0.000
SA	463	Other construction	-0.934	-0.157
SA	464	Trade	-1.215	-0.290
SA	465	Accommodation, cafes and restaurants	-0.366	0.000

SA	466	Road transport	-0.817	0.000
SA	467	Rail and pipeline transport	0.000	0.000
SA	468	Other transport	-0.308	0.000
SA	469	Communication services	-0.307	0.000
SA	470	Finance, property and business services	-0.783	0.000
SA	471	Ownership of dwellings	-0.298	0.000
SA	472	Government administration and defence	-0.589	-0.085
SA	473	Education	-0.263	0.000
SA	474	Health and community services	-0.616	0.000
SA	475	Cultural and recreational services	-0.105	0.000
SA	476	Personal and other services	0.000	0.000
WA	477	Sheep	0.000	0.000
WA	478	Grains	-0.116	0.000
WA	479	Beef cattle	-0.030	0.000
WA	480	Dairy cattle and pigs	0.000	0.000
WA	481	Other agriculture	-0.292	0.000
WA	482	Sugar cane growing	0.000	0.000
WA	483	Forestry and fishing	0.000	0.000
WA	484	Coal, oil and gas	-0.482	-0.930
WA	485	Non-ferrous metal ores	-0.490	-0.635
WA	486	Other mining	-1.399	-1.298
WA	487	Food manufacturing	-0.472	0.000
WA	488	Textiles, clothing and footwear	0.000	0.000
WA	489	Wood and paper manufacturing	0.000	0.000
WA	490	Chemicals, petroleum and coal products	-0.108	0.000
WA	491	Non-metallic mineral products	0.000	0.000
WA	492	Metals, metal products	-0.662	-0.138
WA	493	Machinery appliances and equipment	-0.482	-0.179
WA	494	Miscellaneous manufacturing	0.000	0.000
WA	495	Electricity supply, gas and water	-0.646	-0.236
WA	496	Residential building construction	-0.854	-0.247
WA	497	Other construction	-1.301	-0.618
WA	498	Trade	-1.399	-0.485
WA	499	Accommodation, cafes and restaurants	-0.773	0.000
WA	500	Road transport	-0.927	-0.018
WA	501	Rail and pipeline transport	0.000	0.000
WA	502	Other transport	-0.710	-0.169
WA	503	Communication services	-0.436	-0.048
WA	504	Finance, property and business services	-1.159	-0.229
WA	505	Ownership of dwellings	-0.495	0.000
WA	506	Government administration and defence	-0.727	-0.012
WA	507	Education	-0.668	0.000
WA	508	Health and community services	-0.647	0.000

WA	509	Cultural and recreational services	-0.255	0.000
WA	510	Personal and other services	-0.125	0.000
TAS	511	Sheep	0.000	0.000
TAS	512	Grains	0.000	0.000
TAS	513	Beef cattle	0.000	0.000
TAS	514	Dairy cattle and pigs	0.000	0.000
TAS	515	Other agriculture	-0.262	0.000
TAS	516	Sugar cane growing	0.000	0.000
TAS	517	Forestry and fishing	0.000	0.000
TAS	518	Coal, oil and gas	0.000	0.000
TAS	519	Non-ferrous metal ores	0.000	0.000
TAS	520	Other mining	0.000	0.000
TAS	521	Food manufacturing	0.000	0.000
TAS	522	Textiles, clothing and footwear	0.000	0.000
TAS	523	Wood and paper manufacturing	0.000	0.000
TAS	524	Chemicals, petroleum and coal products	0.000	0.000
TAS	525	Non-metallic mineral products	0.000	0.000
TAS	526	Metals, metal products	0.000	0.000
TAS	527	Machinery appliances and equipment	0.000	0.000
TAS	528	Miscellaneous manufacturing	0.000	0.000
TAS	529	Electricity supply, gas and water	0.000	0.000
TAS	530	Residential building construction	0.000	0.000
TAS	531	Other construction	-0.278	0.000
TAS	532	Trade	-0.610	0.000
TAS	533	Accommodation, cafes and restaurants	0.000	0.000
TAS	534	Road transport	-0.013	0.000
TAS	535	Rail and pipeline transport	0.000	0.000
TAS	536	Other transport	0.000	0.000
TAS	537	Communication services	0.000	0.000
TAS	538	Finance, property and business services	0.000	0.000
TAS	539	Ownership of dwellings	0.000	0.000
TAS	540	Government administration and defence	-0.018	0.000
TAS	541	Education	0.000	0.000
TAS	542	Health and community services	-0.183	0.000
TAS	543	Cultural and recreational services	0.000	0.000
TAS	544	Personal and other services	0.000	0.000
ACT	545	Sheep	0.000	0.000
ACT	546	Grains	0.000	0.000
ACT	547	Beef cattle	0.000	0.000
ACT	548	Dairy cattle and pigs	0.000	0.000
ACT	549	Other agriculture	0.000	0.000
ACT	550	Sugar cane growing	0.000	0.000
ACT	551	Forestry and fishing	0.000	0.000

ACT	552	Coal, oil and gas	0.000	0.000
ACT	553	Non-ferrous metal ores	0.000	0.000
ACT	554	Other mining	0.000	0.000
ACT	555	Food manufacturing	0.000	0.000
ACT	556	Textiles, clothing and footwear	0.000	0.000
ACT	557	Wood and paper manufacturing	0.000	0.000
ACT	558	Chemicals, petroleum and coal products	0.000	0.000
ACT	559	Non-metallic mineral products	0.000	0.000
ACT	560	Metals, metal products	0.000	0.000
ACT	561	Machinery appliances and equipment	0.000	0.000
ACT	562	Miscellaneous manufacturing	0.000	0.000
ACT	563	Electricity supply, gas and water	0.000	0.000
ACT	564	Residential building construction	0.000	0.000
ACT	565	Other construction	-0.124	0.000
ACT	566	Trade	-0.134	0.000
ACT	567	Accommodation, cafes and restaurants	0.000	0.000
ACT	568	Road transport	0.000	0.000
ACT	569	Rail and pipeline transport	0.000	0.000
ACT	570	Other transport	0.000	0.000
ACT	571	Communication services	0.000	0.000
ACT	572	Finance, property and business services	-0.233	0.000
ACT	573	Ownership of dwellings	0.000	0.000
ACT	574	Government administration and defence	0.000	-0.440
ACT	575	Education	0.000	0.000
ACT	576	Health and community services	0.000	0.000
ACT	577	Cultural and recreational services	0.000	0.000
ACT	578	Personal and other services	0.000	0.000
NT	579	Sheep	0.000	0.000
NT	580	Grains	0.000	0.000
NT	581	Beef cattle	0.000	0.000
NT	582	Dairy cattle and pigs	0.000	0.000
NT	583	Other agriculture	0.000	0.000
NT	584	Sugar cane growing	0.000	0.000
NT	585	Forestry and fishing	0.000	0.000
NT	586	Coal, oil and gas	0.000	0.000
NT	587	Non-ferrous metal ores	0.000	0.000
NT	588	Other mining	0.000	0.000
NT	589	Food manufacturing	0.000	0.000
NT	590	Textiles, clothing and footwear	0.000	0.000
NT	591	Wood and paper manufacturing	0.000	0.000
NT	592	Chemicals, petroleum and coal products	0.000	0.000
NT	593	Non-metallic mineral products	0.000	0.000
NT	594	Metals, metal products	0.000	0.000

NT	595	Machinery appliances and equipment	0.000	0.000
NT	596	Miscellaneous manufacturing	0.000	0.000
NT	597	Electricity supply, gas and water	0.000	0.000
NT	598	Residential building construction	0.000	0.000
NT	599	Other construction	-0.162	0.000
NT	600	Trade	-0.129	0.000
NT	601	Accommodation, cafes and restaurants	0.000	0.000
NT	602	Road transport	0.000	0.000
NT	603	Rail and pipeline transport	0.000	0.000
NT	604	Other transport	0.000	0.000
NT	605	Communication services	0.000	0.000
NT	606	Finance, property and business services	0.000	0.000
NT	607	Ownership of dwellings	0.000	0.000
NT	608	Government administration and defence	-0.137	0.000
NT	609	Education	0.000	0.000
NT	610	Health and community services	-0.031	0.000
NT	611	Cultural and recreational services	0.000	0.000
NT	612	Personal and other services	0.000	0.000
ROW	613	ROW	0.000	0.000

SI 6: References

Agence-France-Presse: Debbie's devastation: First victims of ferocious storm tell of damage. In: Agence-France-Presse, 28 March, 2017.

Australian Government: Budget Strategy and Outlook 2011-12. Canberra, 2011.

BBC News: Cyclone Debbie: Thousands evacuate in Queensland, Australia. In: BBC News, 2017.

Carruthers, P.: Eight council areas get disaster relief due to Cyclone Debbie. In: The Morning Bulletin, 2017.

Courier Mail, 2017.

Cummins, A.: Queensland cyclone Debbie prompts evacuations in Australia. In: WFMZ-TV, 2017.

Department of the Prime Minister and Cabinet: Best Practice Regulation Guidance Note Value of statistical life. Canberra, 2014.

Donoughue, P.: Cyclone Debbie nothern NSW braces for major flooding. In: ABC News, 2017.

Emerick, C.: Cyclone Debbie caused over $100m in damages for Australian growers In: Fresh Plaza, 2017.

Flaherty, J.: Cyclone Debbie – Overall Damage Bill and Economic Impact. In: CCIQ, 2017.

Gillman, O.: Debbie's disastrous aftermath: Incredible pictures show the billion-dollar clean up underway after Cyclone Debbie ravaged Australia's east coast - as devastated residents arrive home. In: Daily Mail Australia, 2017.

Cyclone Debbie aftermath: Business owners turn on Malcolm Turnbull as he tours flood ravaged Lismore, Available online: http://www.dailytelegraph.com.au/business/cyclone-debbie-aftermath-business-owners-turn-on-malcolm-turnbull-as-he-tours-flood-ravaged-lismore/news-story/b09f194fa876d0cabd623889172cedc6: http://www.dailytelegraph.com.au/business/cyclone-debbie-aftermath-business-owners-turn-on-malcolm-turnbull-as-he-tours-flood-ravaged-lismore/news-story/b09f194fa876d0cabd623889172cedc6, access: 15 June, April 3, 2017 1:36pm.

Lismore floods: Business owners without insurance hit hardest, could be forced to close forever, Available online: http://www.dailytelegraph.com.au/news/nsw/lismore-floods-business-owners-without-insurance-hit-hardest-could-be-forced-to-close-forever/news-story/51a52a4f328436cb3790defd2ce8280d: http://www.dailytelegraph.com.au/business/cyclone-debbie-aftermath-business-owners-turn-on-malcolm-turnbull-as-he-tours-flood-ravaged-lismore/news-story/b09f194fa876d0cabd623889172cedc6, access: 15 June, April 9, 2017 12:00am.

Honan, K.: Flood-affected farmers in New South Wales call for disaster funding three weeks on. In: ABC News, 2017.

John McCarthy, and Vogler, S.: Queensland. Cyclone Debbie economic impact. In: Courier Mail, 2017.

Killalea, D., Reynolds, E., and Palin, M.: Grim warning as Debbie bears down: 'This is a monster cyclone'. In: NewsComAu, 2017.

Neville, M.: Cyclone Debbie's $6 million impact on dairy. In: QDO, 12 April, 2017.

North Queensland Bulk Ports Corporation: NQBP ports prepared forTropical Cyclone Debbie, 2017.

O'Brien, C.: Cyclone Debbie recovery costs to hit Queensland budget bottom line. In: ABC News, 2017.

Public-Private Partnership in Infrastructure Resource Centre: Central Queensland Coal Network - Model Operator Access Agreement Coal, World Bank Group, 2016.

QFF: Cyclone Debbie Agricultural Impact – 6 April 2017. 2017.

Queensland Government: The State Recovery Plan 2017-2019. Operation Queensland Recovery. Working to recover, reconnect and rebuild more resilient Queensland communities following the effects of Severe Tropical Cyclone Debbie. Queensland Government, Brisbane, 2017.

Robertson, J.: Cyclone Debbie: Queensland reels at the scale of destruction In: The Guardian, Australia, 2017.

Serapio, M.: With Australia's supply disrupted by Cyclone Debbie, coal buyers race elsewhere. In: Sydney Morning Herald, 2017.

The Courier Mail: Queensland cyclone: Debbie damage to cost local sugar industry $150 million. In: Courier Mail, 2017.

Tourism Research Australia: Tourism Businesses in Australia, June 2011 to June 2015, Tourism Research Australia, Canberra, 2016.

Underwriter, C.: Insured losses from Cyclone Debbie reach AU$306 million: Insurance Council of Australia In: Canadian Underwriter, 4 April 2017.

Young, M., Chang, C., Reynolds, E., and Craw, V.: Cyclone Debbie's full wrath is revealed. In: NewsComAu, 2017.