Efficiency effects of Australian Commonwealth-State funding

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- Federal system: Vertical Fiscal Imbalance
- 23% of combined tax revenue must be transferred from the Commonwealth to the states
- This is done via horizontal fiscal equalisation

CSF allows us to account for all the major factors relevant to the efficiency effects of current funding arrangements, including:

- The mobility of factors of production
- Rents from mining
- Congestion
- State government behaviour

Use of labour and capital ($ billion)

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	total
private non-mining	137	103	58	22	31	6	2	1	**360**
State gov, discretionary	24	17	14	7	8	2	2	1	**74**
State gov, non-discretionary	3	2	2	1	1	0.3	0.4	0.1	**10**
Commonwealth government	14	10	7	3	3	1	1	9	**48**
mining	2	3	4	0.4	15	0.2	2	0.0	**27**
work-related travel	29	18	10	2	5	0.4	0.2	0.4	**66**
total	**209**	**153**	**95**	**36**	**63**	**10**	**7**	**12**	**584**

State government (i) chooses quantity of state goods and tax rates to maximize

$$\left(\frac{\text{private goods}}{\text{pop}}\right)^{\delta_{1i}} * \left(\frac{\text{leisure}}{\text{pop}}\right)^{\delta_{2i}} * \left(\frac{\text{state goods}}{\text{pop}^{\theta}}\right)^{\delta_{3gi}}$$

subject to

$$\text{exp end. on state goods} = T_i * W_i * (\text{available labour} - \text{travel} - \text{leisure}) + \text{grant}_i$$

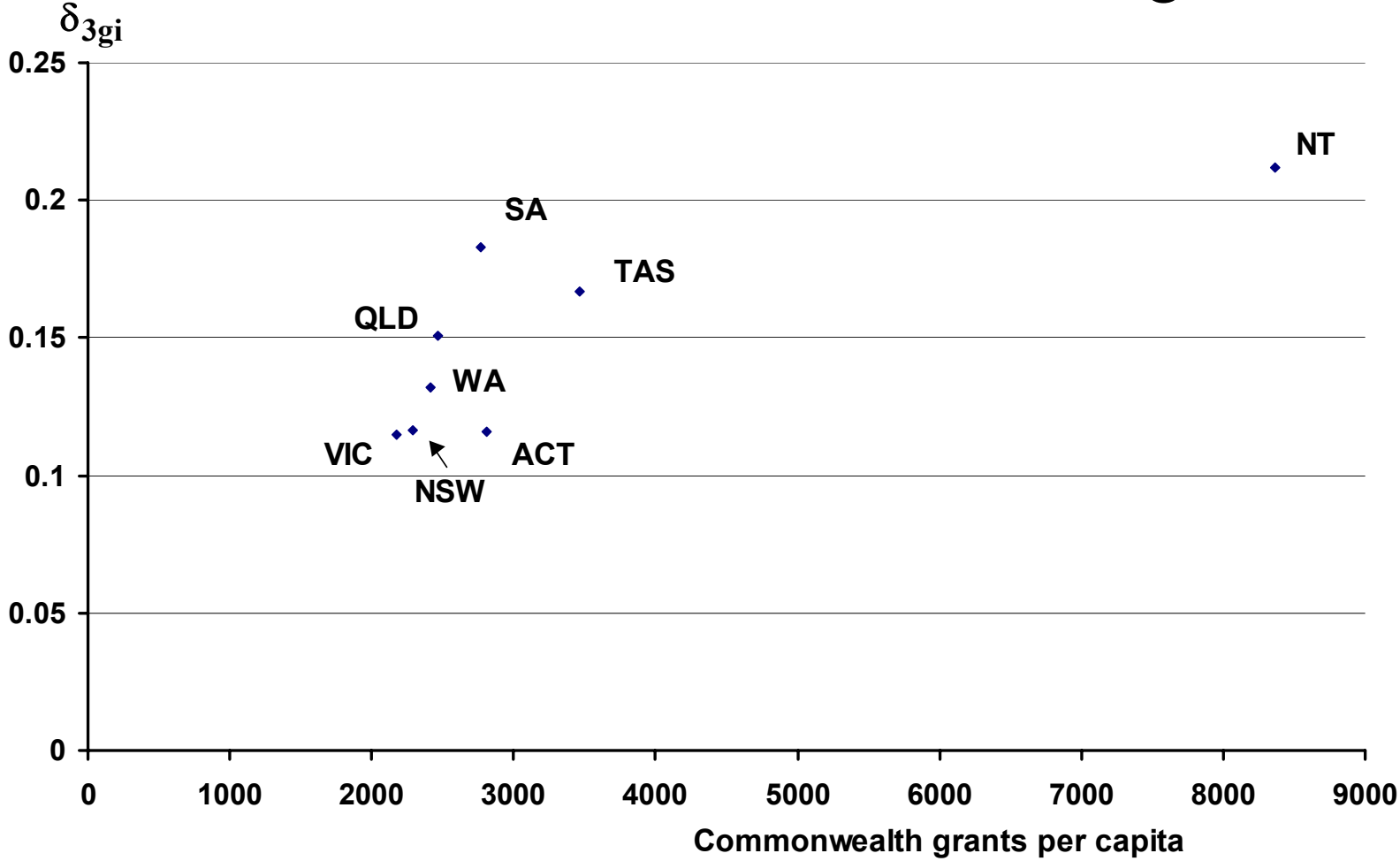
recognizing that households choose private goods and leisure

$$\text{to maximize } \left(\frac{\text{private goods}}{\text{pop}}\right)^{\delta_{1i}} \left(\frac{\text{leisure}}{\text{pop}}\right)^{\delta_{2i}} \left(\frac{\text{state goods}}{\text{pop}^{\theta}}\right)^{\delta_{3}}$$

subject to

$$\text{expenditure on private goods} = W_i * (1 - T_i - T_{iC}) * (\text{available labour} - \text{travel} - \text{leisure})$$

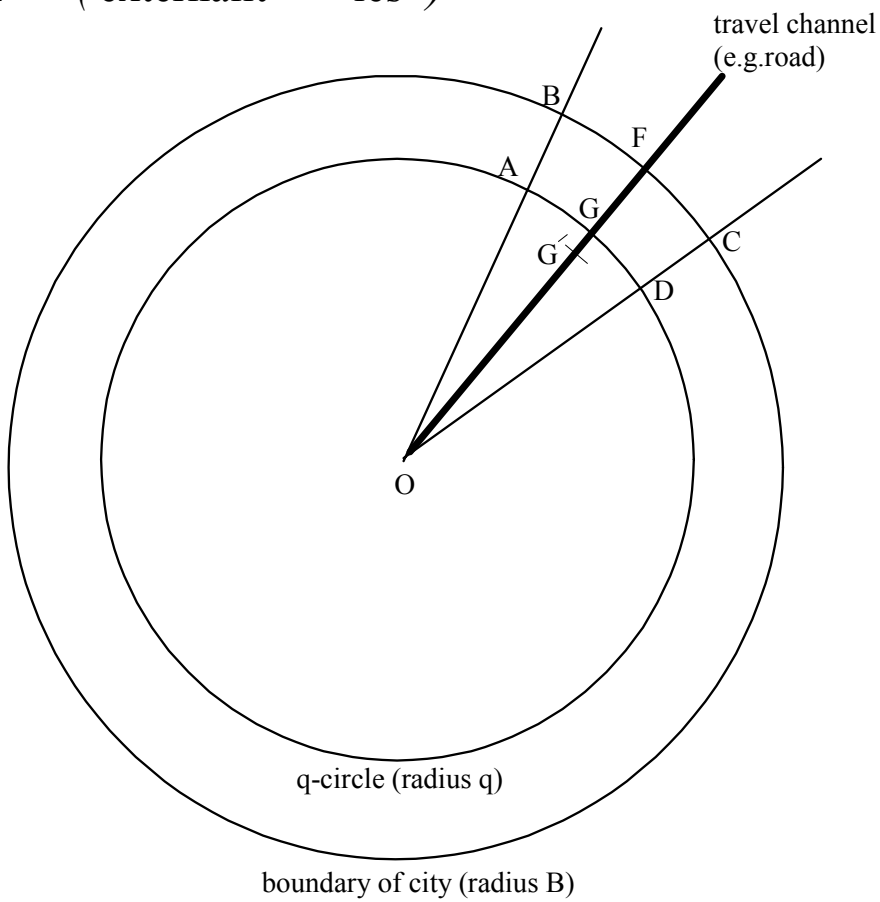
Revealed State government preference indicator (δ_{3gi})



Congestion

$$L_{6i} = A_{6i} * N_i^{\gamma}$$

$$\text{where} \quad \gamma = \begin{cases} 3/2 & (\text{no externalities}) \\ 5/2 & (\text{externalities}) \end{cases}$$



Equal per capita with default parameters

Aggregate. Welfare ($mill)	Change in	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
169	grant per capita ($)	123	198	-36	-304	43	-687	-4785	54
	welfare per capita ($)	121	196	-35	-276	41	-641	-4393	53
	population (%)	0.32	0.54	-0.12	-0.93	0.10	-2.13	-10.83	0.13

Effect on Australian welfare of changes in relative per capita grant ($ million)