

Has Australian Economic Growth Been Good for the Poor?

Francisco Azpitarte

Melbourne Institute & Brotherhood of St Laurence

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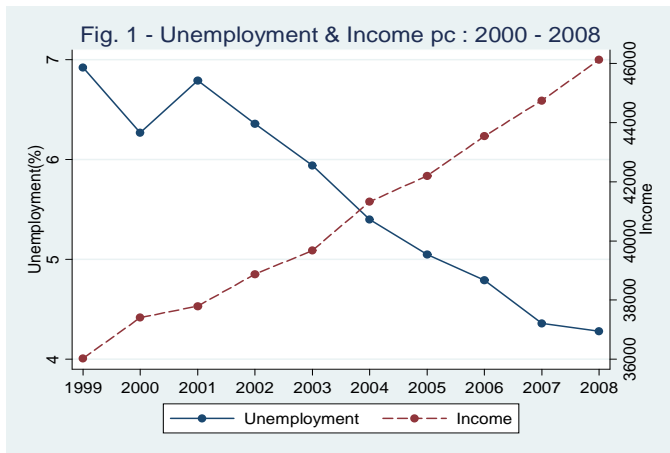
Aim of the presentation

- Investigate whether strong economic growth in Australia in the last decade was beneficial for the most disadvantaged individuals in society.
- We use different approaches and concepts proposed in the literature.
- Assess how the conclusion about the pro-poorness of economic growth depends on how we measure disadvantage and the approach to poverty considered:
 - ⇒ One-dimensional: income poverty
 - ⇒ Multidimensional: social exclusion approach

- 1 The facts
- 2 Pro-poor growth analysis
- 3 Data sources
- 4 Empirical approaches:
 - Measures and Results
- 5 Conclusions

The Facts

- We focus on the period between 2001-2008. Australia outperformed most rich economies: income grew more than 2%-\$ 1,000 per year; large unemployment decline, from 7 to about 4 per cent.



Pro-poor growth analysis

- Recent literature in economics on how to measure pro-poorness. Focus in income-poor countries and poverty reduction. Pro-poor growth analysis can provide insights also in high-income countries.
- Pro-poor growth evaluations use distribution analysis to assess the extent to which income gains benefit the poorest in society.
- Pro-poor growth measures provide valuable insights about the distributional consequences of growth that could not be obtained from standard inequality and poverty studies.
- **What is pro-poor?**

Many ways of evaluating distributional changes They agree pro-poor growth must benefit the poor...but no consensus on how large the benefit should be

Pro-poor growth analysis: Definitions

- 1 *Poverty reducing*: pro-poor iff it increases the income of the poor (Ravallion, 2004) \Rightarrow pro-poor growth is **independent** of the distribution of gains between the poor and non-poor
- 2 *Relative pro-poor*: the poor should benefit *relatively* more than the non-poor (Kakwani *et al.*, 2004) \Rightarrow **income growth rate** of the poor is larger than the average growth rate
- 3 *Absolute pro-poor*: the poor should receive in *absolute* terms more than the non-poor (Kakwani *et al.*, 2004) \Rightarrow **absolute income gain** of the poor larger than the mean increase in the population

so clearly [3] \Rightarrow [2] \Rightarrow [1]

Pro-poor growth analysis: Approaches

Two approaches:

- 1 Standard approach [Ravallion and Chen 2003; Kakwani 2003]
 - ⇒ Cross-section comparisons of marginal distributions of income: $F_{2001}(y)$ and $F_{2008}(y)$
 - ⇒ Income change of different positions within the distribution
 - ⇒ Consistent with the anonymity axiom. Economic mobility is not taken into account
- 2 Non-anonymous approach [Grimm 2007; Bourguignon 2010]
 - ⇒ Income gains experimented by those who were poor before growth
 - ⇒ Axiom is removed. Consider economic mobility as we examine the benefits of those who were *initially* most disadvantaged

- We use data from the first eight waves of the Hilda survey run by the MIAESR.
- It includes multiple information convenient for our needs:

⇒ **Anonymity** : Every wave includes income information for a sample that is representative of the Australian population, so we can infer $F_{2001}(y)$ and $F_{2008}(y)$. [Wave 1:19,000, Wave 5 and 8 >17,000]

⇒ **Non-anonymity**: Hilda includes a panel of individuals who were above 15 years old when first interviewed in 2001. We can link income changes with the initial conditions of individuals in 2001. [Panel with more than 8,700 observations]

- Unit of analysis: individual.
- Income measure: real equivalent household disposable income.

It is the sum of:

- Wages and salaries
- Business and investment income
- Private pensions
- Public transfers: government income and non-income support payments
- Taxes

- Equivalence scale: \sqrt{N} , where N is the household size

⇒ **Partial** instrument

We use the “Growth incidence curve” [Ravallion & Chen (2003)]

$$g(p) = \frac{Q_{2008}(p)}{Q_{2001}(p)} - 1,$$

where $Q(p)$ is the quantile function, s.t. $g(p)$ summarizes the change at every position - p - between two periods.

⇒ **Complete** [Ravallion & Chen (2003): Kakwani & Son (2008)]

$$PEGR = \frac{\delta_t}{\eta_t} \gamma_t \quad (\delta_t \text{ and } \eta_t; \text{ growth elasticities of poverty})$$

> 0 ⇒ *poverty reducing*

> γ ⇒ *relative pro – poor*

> $\bar{\gamma}$ ⇒ *absolute pro – poor*

Anonymity: results

Rise in all positions \Rightarrow growth was poverty reducing

Fig.2 - GIC Australia 2001 - 2008

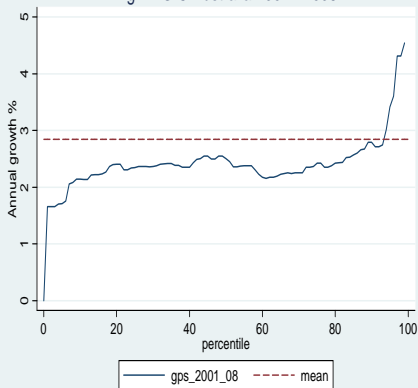
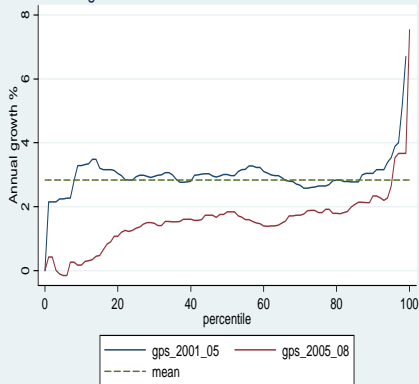


Fig.3 - GIC Australia 2001 - 05 and 2005 - 08



Anonymity: results

We know growth was *poverty reducing*...

MGRP and PEGR, Australia 2001-08 (%)				
Growth in the mean (%):	2.84			
	Index			
Line (p %)	FGT(0)	FGT(1)	FGT(2)	Watts
2.5	1.46	1.80	1.70	3.34
5	1.53	1.32	1.32	2.05
10	1.61	1.37	1.20	1.46
15	1.86	1.42	1.21	1.44

but poorer positions benefited relatively less, so growth cannot be considered pro-poor according to the more strong definitions

Anonymity: results

- Income-growth in Australia between 2001-08 can be considered pro-poor only we adopt a "weak" definition of pro-poorness.
- It cannot be considered pro-poor according to the more demanding definitions proposed by Kakwani *et al.*(2004) that require a particular distribution of benefits between the poor and the non-poor.
- The reason is that top-positions benefited more than bottom positions in both absolute and relative terms.

Non-anonymity: idea

Problem: anonymous measures do not take into account the extent to which growth benefited the initially poor

Idea: Measure the income changes of those individuals with more disadvantage in the first period: two measures of initial disadvantage

⇒ One-dimensional: income level in 2001

⇒ Multidimensional: *Brotherhood SL-MI* Social exclusion measure:

Sum-Score measure based on 21 indicators from 7 domains:

Material, Employment, Education, Health, Social,
Community, and Safety

⇒ **Partial** instrument: [Grimm (2007)]

We use the “Individual Growth incidence curve” :

$$g(p(\Omega_{2001})) = \frac{Y_{2008(p(\Omega_{2001}))}}{Y_{2001(p(\Omega_{2001}))}} - 1,$$

Now, $g(p)$ summarizes the change of individuals for every level of initial disadvantage.

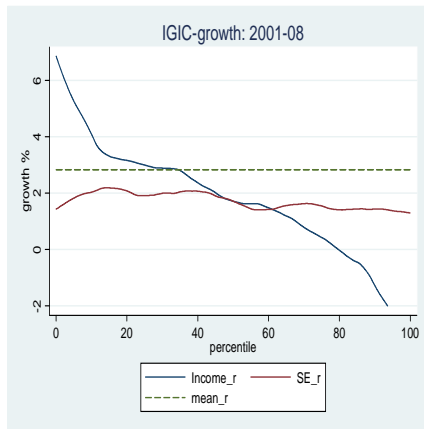
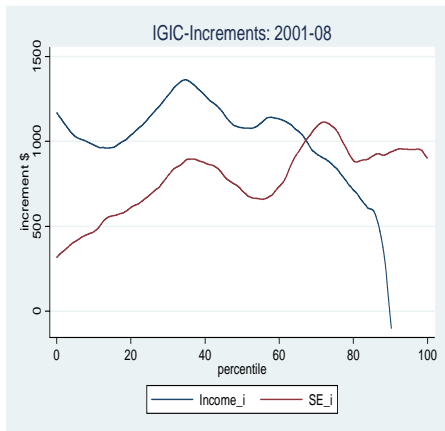
⇒ **Complete** measure: [Grimm (2007)]

Mean growth rate among the most disadvantaged p %

$$MGRIP(p) = \frac{1}{H_{t-1}} \int_0^{H_{t-1}} g_t(p(\Omega_{t-1})) dp,$$

Non-anonymity: results

- Income gains for those in low income in 2001 larger than among the most excluded



Non-anonymity: results

- Growth was pro-income poor than pro-socially excluded

Individual Rate of Pro-Poor Growth 2001-08 (%)					
Growth in the mean (%):	2.84				
	IRPPG				
	All			Age_(2001)>25	
Poverty Line (p %)	Income	SE		Income	SE
2.5	11.31	1.05		10.67	1.51
5	8.73	1.57		7.95	1.47
10	6.01	1.37		5.32	1.20
15	5.10	1.96		4.42	1.64
25	4.33	1.97		3.79	1.64

How can we explain the gap between IP and SE?

- The panel allows us to link income changes with initial characteristics ⇒ We can identify the groups that benefited most from economic growth

Low growth: Above 60, Long-term unemployed, Poor-English, Disabled and Poor Health (mental)

High growth: Age < 35, working full time, students

Comparison of IP vs SE (bottom 15%)

⇒ SE are **younger** (share of above 65 is half that of the IP)

⇒ Incidence of Disabled, Poor-English, Poor health and long term unemployed is higher among the SE

How can we explain the gap between IP and SE?

- We use counterfactual analysis: reweighting method proposed by DiNardo *et al.*(1996). We derive the distribution of growth rates of the SE assuming the characteristics of the SI

$$\frac{G_{IP}}{G_{SE}}(g) = \int_{\Omega_x} f(g|x, G_{SE}) f_x(x|G_{IP}) dx = \int_{\Omega_x} f(g|x, G_{SE}) \Psi_x(x) f_x(x|G_{SE}) dx$$

- The contribution of each covariates (or group) to the "explained" gap is estimated using the Shapley value:

$$Sh_j = \frac{\sum_{S \subset K, j \in S} \frac{(s-1)!(k-1)!}{k!} [e(S) - e(S \setminus \{j\})]}{e(K)} \quad \text{with} \quad \sum_{j=1}^k Sh_j = 1$$

How can we explain the gap between IP and SE?

COUNTERFACTUAL ANALYSIS: IP vs SE (15%)

Distribution of growth rates (all in %)

	Income poor	SE	SE ^{Coun}	Variation	Explained gap
Mean	5.10	1.96	3.22	64.02	40.09
P 10th	-1.81	-6.31	-5.20	17.59	24.67
P 20th	0.06	-3.43	-2.58	24.78	24.36
P 50th	3.32	1.76	1.88	6.82	7.69
P 80th	10.97	7.38	7.97	7.99	16.43

How can we explain the gap between IP and SE?

COUNTERFACTUAL ANALYSIS: IP VS SE (15%)

Shapley contributions: explained gap in the mean

Initial characteristics

Household

Demographic

Age, sex of head, and family type

Socioeconomic

Poor region (SEIFA index), Equ.income

Housing tenure, jobless household

Individual

Demographic

Age, Sex, Indigenous background

Labour status and skills

Labour status, years of education, English

Health and disability

General, physical, mental health,
and disabilities

How can we explain the gap between IP and SE?

COUNTERFACTUAL ANALYSIS: IP vs SE (15%)

Shapley contributions: explained gap in the mean

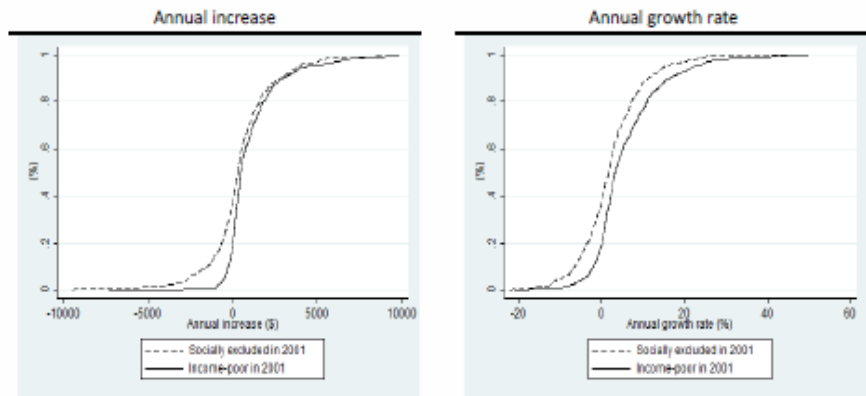
Initial characteristics	Marginal effect	Shapley (%)
Household		
Demographic	0.16	13.05
Socioeconomic	0.35	27.72
Individual		
Demographic	0.0005	0.38
Labour status and skills	0.24	18.74
Health and disability	0.50	40.06
Total		100.00

Conclusions

- We find that growth in Australia between 2001-08 can be considered **pro-poor only for the "weak" definition** of pro-poor growth. It cannot be considered pro-poor according to more demanding definitions as growth benefited relatively more top-positions than bottom positions
- Growth was **more pro-income poor than pro-socially excluded** as those who were income-poor in 2001 grew more in both relative and absolute terms than the socially excluded
- **The larger presence of poor-health individuals, disabled people, individuals with low English skills, and long-term unemployed** among the SE, helps us to understand why growth was more pro-income poor than pro-socially excluded

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Figure 3. Distribution of income gains: income-poor vs. socially excluded



Note: Annual income gains are based on the comparison of individuals' mean income in 2001-2002 and 2007-2008. Rankings for 2001 are defined using mean income and social exclusion values for 2001-2002. Income-poor and socially excluded groups defined using the 15th percentile of each distribution.

Source: Author's calculation using HILDA data.

Table 5. Income gains by population subgroups and composition of the initially most disadvantaged

Characteristics in 2001	Mean annual increase (\$)	Mean annual growth rate (%)	Composition of the:	
			Income-poor (%)	Socially Excluded (%)
Age <30	978.33	2.62	17.77	24.91
Age 30-65	827.96	2.05	49.11	58.51
Age >65	23.66	0.31	33.12	16.58
Male	773.33	1.88	37.69	42.18
Female	776.63	2.11	62.31	57.82
Working full-time	901.27	1.73	7.99	14.67
Working part-time	854.10	2.39	8.68	9.19
Unemployed	994.73	3.30	4.87	8.77
Long-term unemployed	770.65	1.98	3.30	5.39
Full time students	1,600.77	5.00	6.97	5.20
Other inactive	361.27	1.46	68.19	56.79
More than Year 12	955.42	2.11	28.66	21.99
Less than Year 12-student	1,252.59	3.86	7.23	6.68
Less than Year 12-not studying	478.02	1.45	64.10	71.33

Appendix

Non-poor English proficiency	782.07	2.02	94.28	90.05
Poor English proficiency	444.51	0.97	5.72	9.95
Good general health	809.19	2.05	70.69	56.10
Poor general health	627.49	1.79	29.31	43.90
Good physical health	842.85	2.18	67.89	63.05
Poor physical health	423.03	1.08	32.11	36.95
Good mental health	790.57	2.01	75.36	59.46
Poor mental health	714.84	1.95	24.64	40.54
Non-disabled	955.65	2.34	50.94	33.38
Disabled	327.99	1.16	49.06	66.62

Notes: i) Annual income gains are based on the comparison of individuals' mean income in 2001-2002 and 2007-2008. Rankings for 2001 are defined using mean income and social exclusion values for 2001-2002. Income-poor and socially excluded groups defined using the 15th percentile of each distribution in 2001.

ii) For the definition of the different categories, see Table A1 in the appendix.

Source: Author's calculation using HILDA data.

6.1 The social exclusion measure

The measure proposed in Scutella *et al.* (2009a, 2009b) combines information on 21 indicators from seven domains: material resources; employment; education and skills; health and disability; social; community; and personal safety. Table A.1 presents a description of the indicators included in each domain. For any individual i the measure of social exclusion, w_i^S , is defined as seven minus the weighted sum of the level of social exclusion experienced within each domain, w_{id} , where every domain is assigned equal weight:¹⁸

$$w_i^S = 7 - \sum_{d=1}^7 w_{id}.$$

The level of exclusion in any domain is given by the actual proportion of indicators within the domain in which the individual is deprived, which can be expressed as follows

$$w_{id} = \frac{\sum_{k=1}^{K_d} w_{id}^k}{K_d},$$

where w_{id}^k is a binary indicator taking value 1 when the individual is deprived in the indicator k of social exclusion included in the domain d , and K_d refers to the total number of indicators for domain d .

¹⁸The original measure is defined as the weighted sum of the level of exclusion across the seven domains. We decided to rescale the variable to ease the exposition of the paper.

Table A1. Indicators of exclusion

Domain	Indicator
Material resources	a) <i>Income poverty</i> : it takes value 1 when individual's annual equivalent Income is less than 60% of the median income.
	b) <i>Financial hardship</i> : it is present when respondents report that at least three of the following circumstances occurred along the financial year: could not pay electricity, gas or telephone bills on time; could not pay the mortgage or rent on time; pawned or sold something; went without meals; unable to heat the home; asked for financial help from friends or family; and/or asked for help from welfare or community organization.
Employment	c) <i>Long-term unemployed</i> : it activates when the individual has been unemployed for the preceding twelve months.
	d) <i>Unemployed</i> : it takes value 1 when the respondent is long-term unemployed or is not currently employed and has looked for work within the last four weeks, and was available to start work in the last week.
	e) <i>Marginally attached</i> : this indicator is present when the respondent is either long-term unemployed, unemployed, or the person is not employed and is either (i) looking for work and, while not available to start within one week, is available within four weeks; or (ii) available to start work within four weeks but is not looking for work because of the belief that he or she is unlikely to find work.
	f) <i>Underemployed</i> : this indicator is present when the person is long-term unemployed, unemployed, marginally attached or is currently employed part-time (usual weekly hours of employment in all jobs are less than 35) and hours per week usually worked in all jobs are less than the hours the individual would like to work, having regard to the effect this would have on income.
	g) <i>Household joblessness</i> : it takes value 1 when a person resides in a household where no member is in paid employment and at least one member is of 'working age' (defined to be 15-64 years).
Education and skills	h) <i>Poor English proficiency</i> : this is defined to be present if the individual speaks a language other than English at home and reports that he or she does not speak English well or does not speak English at all.
	i) <i>Low level of formal education</i> : this indicator activates in a situation in which an individual is not currently studying full-time and has a highest educational qualification of less than high school completion.
	j) <i>Little or no work experience</i> : a person is defined to have low work experience if he or she has spent fewer than three years in paid employment.

Table A1. Indicators of exclusion (Continued)

Health and disability	a) <i>Poor general health</i> : based on the 0-100 general health index derived from the SF-36 Health Survey included in HILDA. This indicator activates when the index for the person is below 50. ¹
	b) <i>Poor physical health</i> : based on the 0-100 physical health index derived from the SF-36 Health Survey included in HILDA. This indicator activates when the index for the person is below 50.
	c) <i>Poor mental health</i> : based on the 0-100 mental health index derived from the SF-36 Health Survey included in HILDA. This indicator activates when the index for the person is below 50.
	d) <i>Has a long term health condition or disability</i> : this indicator takes value 1 when an individual reports a long-term health condition, impairment or disability that restricts everyday activities, and has lasted or is likely to last for six months or more.
	e) <i>Household has a disabled child</i> : this indicator activates if any children under 15 years of age in the household have a disability.
Social	f) <i>Lack of social support</i> : it is present when an index of social support derived using information reported in HILDA is below 30. The index builds on ten questions on how much support individuals receive from other people, and it ranges from 0 to 70, where 70 indicates the highest level of support. ²
Community	g) <i>Neighborhood quality is poor</i> : it is present when the reported satisfaction with the neighborhood is below 5 on a 0-10 scale, where 0 indicates the largest level of dissatisfaction.
	h) <i>Not feeling part of the community</i> : it takes value 1 when the respondent's satisfaction with 'feeling part of the community' is below 5 on a 0-10 scale where 0 indicates the lowest level of satisfaction.
	i) <i>Low civic participation</i> : it is present when the individual is not a member of any sporting, hobby, or community- based club or association.
	j) <i>Not voluntary activity</i> : it equals 1 when the individual spends no time on volunteer or charity work in a typical week and is not in paid employment or studying (full-time or part-time).
Personal safety	k) <i>Low personal safety</i> : this indicator activates when the reported level of satisfaction with 'how safe you feel' is below 5 on a 0-10 scale, where 0 means completely dissatisfied.

Notes: 1) For more information on the general, physical and mental health indices see Ware et al. (2000). 2) See Scutella et al. (2009b).

Source: Author's description based on the information provided in Scutella et al. (2009a, 2009b).