Chapter 7a: Revising the Estimates of Economic Welfare

Just as Chapter 6a was designed to extend the conceptual discussion of Chapter 6, so too this "chapterette" is intended to extend the discussion of the previous chapter by putting some quantities to the revisions suggested there. As with the estimates in Chapter 6a, the aim is not to produce robust, final figures, but rather to consider the magnitude of the suggested changes and their impact on the ISEW/GPIs.

I argued in the previous chapter that, despite the inclusion of non-market goods and services in the indexes, the ISEW/GPIs were largely gender blind. I suggested that, at a minimum, the inequality indexes within the GPIs needed to be revised to include gender inequality alongside the mono-dimensional income stratification figures. However, I also argued that the recognition of different welfare outcomes of economic activities evident in the green notion of defensive expenditures did not go far enough. The analysis needed to be extended by incorporating into the accounting the notion of exchange expenditures. In this chapter then, I want to make both those revisions to the Australian GPI.

Gendered Inequality Adjustments

The first adjustment which I have suggested to the existing ISEW/GPI is to factor in an accounting for gender inequality. I noted in Chapter 7 that, with a few exceptions, the existing economic welfare measures were based on private household consumption and that inequality was measured as inequality between households. The Australian estimate was an exception being based on individual rather than household income, but Hamilton's discussion of the data still carried the problematic assumption of altruistic sharing households. I also argued that, of all the measures, the Austrian ISEW was not just the only one to specifically include a consideration of gender, but that its methodology based on measuring lines of structural inequality (between employers and employees, women and men, and the employed and unemployed) provided a better foundation than the more mono-dimensional liberal notions of the other ISEW/GPIs.

However, replicating the three sub-indexes of the Austrian ISEW is a more statistically complicated exercise than I wish to attempt here. Moreover, the accounting for inequality

between employed and unemployed workers may double up on the accounting for the costs of unemployment already in Hamilton's Australian GPI. Thus, rather than replicating the Austrian inequality index, I wish simply to supplement Hamilton's existing inequality measure with a measure of gender inequality.

As Hamilton's inequality index is about market income, the starting point I am suggesting for adjusting for gender inequality is the gender wage gap - the difference between the average wages or earnings of men and women. Sylvia Walby has argued that this earnings differential is a manifestation of patriarchal relations in paid work - relations which are one of six "structures of patriarchy". [1] But even without such a structured formulation it is clear that the gender wage gap is an important aspect of gender inequality and has ramifications for women's standard of living, life choices, power and status in society. Clearly too, as Jennings argues,[2] money matters and so the gender wage gap has a direct connection to equality of distribution of consumption and economic welfare in society.

Equally clearly however, the gender wage gap is not a complete index of gender inequality or even of gendered *economic* inequality. It measures differences in payment for work, not the different/sexualised production relations which Adkins and Beasley note govern women's work.[3] Nor does it measure gendered differences in job security where women have traditionally been clustered in casualised and marginalised work areas. And nor does it measure women's greater vulnerability to exploitation through unpaid overtime or 'flexible' hours which can accompany weak labour market positions. Similarly, as a proxy for consumption inequality, it does not account for where and on whom that money is spent, and the freedom or otherwise a woman in a (patriarchal) family has to spend it on herself.

Thus the gender wage gap is a very limited measure of gendered economic inequality, but it is nonetheless *an* indication and one which is quantifiable for accounting purposes. As with many of the components of the economic welfare measures where the accounting may be incomplete and/or involve heroic assumptions, the justification of the measure lies in the

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[1] Sylvia Walby (1989) "Theorising Patriarchy" *Sociology*, Vol 23, No. 2, pp 213 - 234.
[2] A L Jennings (1994) "Toward a Feminist Expansion of Macroeconomics: Money Matters" *Journal of Economic Issues*, Vol 28, No. 2, pp 555 - 565.
[3] Chris Beasley (1994) *Sexual Economyths: Conceiving a Feminist Economics*, Sydney: Allen & Unwin; Lisa Adkins (1995) *Gendered Work: Sexuality, Family and the Labour Market*, Buckingham: Open University Press.

pragmatic argument that it is better than simply ignoring the issue. Incorporating an adjustment for the gender wage gap in revising the Australian GPI may be far from a complete strategy for dealing with gender issues, but it does provide some accounting for gender inequality.

There are two basic methods which have been used in various indexes to account for the gender wage gap and for gendered economic inequality. The simplest is that adopted by the United Nations Development Program in adjusting its Human Development Index (HDI). Recall that the HDI consists of three components (life expectancy, education and income). To produce their Gender-related Development Index, (GDI) the UNDP adjusted each of these components by multiplying the HDI by the simple average of women's share of those components. Ignoring the life expectancy and education components for the purposes of illustration here: if women earned on average 75% as much as men in a particular country, then the HDI would be multiplied by 0.75. The UNDP later modified this method to account for overall achievement as well as inequality.[4] However, either of these methods for adjusting for gender inequality would be problematic in the ISEW/GPIs because the sheer magnitude of the adjustment (historically up to almost 40% reduction in weighted consumption) would overwhelm the indexes. (See Appendix 2).

A better method is that utilised in the Austrian ISEW. Following the GDI, women's wages were compared to average earnings (rather than male earnings) and then weighted by population share. This figure was compared to a base year - the initial year of the survey (1955). Thus the gender wage gap was in 1955 was given an index of 1 and only *changes* in the gap were accounted for. Thus a 3% increase in women's earnings relative to the average would result in a multiplication of the ISEW by 1.03 (subject to variation by the other parts of their inequality index and a stable population share).

There may be a reservation here that simply measuring changes does not set the political goal at gender equality (only improvement), and that if there was no change the revised ISEW/GPI

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[4]   UNDP (1995) *Human Development Report*, United Nations Development Program. The UNDP found its original method was problematic because perfect gender equality in literacy, achieved at an overall literacy level of say 30%, was compared favourably to a situation where the literacy rates were 90% for men and 80% for women. In the 1995 GDI a more sophisticated formulation was used which assigned a weighting between inequality and overall achievement which expressed "a moderate aversion to inequality". p 73.

would effectively not register what may be a huge gender earnings gap. These are valid concerns, but given the absence of a practical alternative, and given the fact that the structure of the index sets the right direction (ie. increased equality leads to an increase in measured economic welfare), there remains some political incentive for progressive change. The problem here is then outweighed by the advantages of incorporating the gender wage gap into the index.

Of greater concern is the fact that these gender earning gap figures refer only to market income. As I argued in Chapter 7 proper, if we take seriously the view that household production adds to welfare, then the ISEW/GPIs should adjust for inequality in this sphere as they do for inequality in paid income. Furthermore, I suggested that issues of gender inequality might also apply to other categories in the GPI like the cost of overwork or unemployment. The Austrian ISEW goes some way toward this by accounting for gender difference in work effort (as between paid and unpaid work), and by applying the inequality adjustment to the whole ISEW (not just the GDP personal consumption base). However, as noted in the previous chapter, the first adjustment made little difference in practice, and Cobb and Cobb have criticised the application of the inequality adjustment to the whole index arguing that,

> There is no reason to believe that the effects of income distribution have any bearing on the distribution of the effects of pollution, accidents, resource depletion, or most of the columns of the ISEW.[5]

I am not entirely convinced by this argument. Those with money can often buy their way out of dealing with, say, environmental problems. The impact of those problems *is* unequal. However, it seems to me that this inequality is not always or best seen as gendered. For instance, it seems to me to be pointless to argue over the unequal distribution (gendered or otherwise) of the loss of old growth forests. Thus, in principle, I agree with Clive Hamilton that if we are to consider the inequality of impact of all the components of the ISEW/GPI, then the particular inequality of each component should be measured separately rather than applying the inequality index to the whole GPI.[6] However this creates enormous statistical

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[5]   Clifford Cobb and John B Cobb (1994) *The Green National Product: A Proposed Index of Sustainable Economic Welfare*, Maryland: University Press of America. p 255.
[6]   Clive Hamilton (1999) "Measuring Well-being: Responses to Some Criticisms of the Index of Sustainable Economic Welfare." Seminar to the Deaprtment of Geography and Environment, London School of Economics and Political Science, (Unpublished), p 14.

problems. Even considering the conceptually easier example of household work/consumption, the figures are hard to find - impossible if the goal is to cover the whole period of the ISEW/GPIs. Thus while it would be desirable in fully revising the GPI to adjust for inequality within the household and in other categories, in the adjustments to the Australian GPI here I will simply follow Hamilton's practice of applying the distributional adjustment only to the GDP consumption base.

Given all of the above, what I am suggesting is that the existing distributional inequality adjustments in the Australian GPI should be revised for gendered economic inequality by adding a calculation of the gender wage gap. Comparability with the existing inequality index suggests following the Austrian example and indexing the gender wage gap to a base year. However I will ignore the Austrian weighting of the various components of the inequality index for relative population share. This weighting is of little relevance given the approximately equal numbers of men and women in the population. Certainly women form a much lower percentage of the workforce than men, but we should not weight the inequality index on that basis because such a weighting would mean that one aspect of gender inequality (workforce participation) would hide, or at least minimise, the recording of another aspect of inequality - the gender wage gap.

In revising Hamilton's GPI, I also differ from the Austrian ISEW in not measuring the inequality relative to an average earning figure, ie. women's earnings as a percent of average weekly earnings. The "average weekly earnings" here again suggests some ungendered individual (average). This clearly runs contrary to the analysis of the gendered embodiment of labour in Chapter 4. Work and consumption are indeed (inherently) gendered, and if the inequality is between men and women, so it is the gap between men's and women's earnings which should be measured - not a gap between women and an average.

The figures used for the gender wage gap are those for Average Total Earnings of Full-Time Workers. These figures give a better reflection of gender pay inequality than figures for award rates which do not capture gendered differences in access to paid overtime and other over-

award payments.[7] In principle I would argue for using the figures for average weekly earnings of *all* (paid) workers, not the more usual *full-time employees*' earnings figures. The former give some reflection of women's more marginal position in the labour force - their predominance in part-time and casual work. Unfortunately the unavailability of reliable statistics for total earnings for all employees before 1981 makes the use of these statistics a less practical option than the use of figures for full-time employees. (See Appendix 2)

Estimates and Results

The data source for measuring the gender wage gap, and further detail on the derivation gender inequality index, are outlined more fully in Appendix 2. Table 7a.1 below gives the basic figures which make up the Gender Inequality Index, showing movements in the gender wage gap for full-time workers indexed to the base year 1962 (the first year for which the gender wage statistics are available).

The table and chart following Table 7a.1 show what happens to the Australian GPI when the Gender Inequality Index is incorporated into the Distributional Inequality adjustment in Hamilton's index. So as not to distort the index by multiplying twice for inequality - once for inequality of income and once for gendered inequality - the revised Weighted Consumption figures are the result of using a simple average of the two inequality indexes (again, explained more fully in the Appendix 2).

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[7] That these payments are important is clear in the figures cited by Mumford, where even when female award rates were over 90% of male awards during the 1980s, average earnings for full-time female employees were only just over 80% that of full-time male employees, and around 66% of all men's total earnings. Karen Mumford (1989) *Working Women: Economics and Reality*, Sydney: Allen & Unwin. p 33.

Table 7a.1 The Gender Inequality Index

| Year	ABS Av. MALE F/T Total Weekly Earnings $	ABS Av. FEMALE F/T Total Weekly Earnings $	Female percent of Male F/T Earnings	F/T Workers Gender Inequality Index
1962	49.44	30.00	60.7%	**100.0**
1963	51.23	30.54	59.6%	**99.0**
1964	55.18	32.55	59.0%	**98.4**
1965	57.90		*58.4%*	*97.8*
1966	61.20	35.40	57.8%	**97.3**
1967	64.60	37.60	58.2%	**97.6**
1968	69.00	39.30	57.0%	**96.4**
1969	74.00	43.20	58.4%	**97.8**
1970	80.00	47.30	59.1%	**98.5**
1971	89.60	54.40	60.7%	**100.1**
1972	96.20	61.90	64.3%	**103.8**
1973	113.10	74.50	65.9%	**105.3**
1974	145.50	103.20	70.9%	**110.3**
1975	161.60	122.50	*74.0%*	*113.5*
1976	183.30	141.40	77.1%	**116.6**
1977	202.50	155.10	76.6%	**116.0**
1978	218.30	165.00	75.6%	**115.0**
1979	241.10	178.70	74.1%	**113.5**
1980	270.60	203.40	75.2%	**114.6**
1981	307.30	231.40	75.3%	**114.7**
1981	306.80	236.70	77.2%	**114.7**
1982	347.00	263.50	75.9%	**113.5**
1983	375.00	288.20	76.9%	**114.4**
1984	415.70	324.20	78.0%	**115.6**
1985	435.50	343.10	78.8%	**116.4**
1986	465.90	356.40	76.5%	**114.1**
1987	497.40	393.10	79.0%	**116.6**
1988	532.40	419.50	78.8%	**116.4**
1989	576.60	453.80	78.7%	**116.3**
1990	613.30	483.00	78.8%	**116.3**
1991	632.70	512.40	81.0%	**118.6**
1992	665.50	531.20	79.8%	**117.4**
1993	679.60	545.60	80.3%	**117.9**
1994	705.90	566.70	80.3%	**117.9**
1995	743.00	589.80	79.4%	**117.0**
1996	774.20	607.90	78.5%	**116.1**

Source: ABS - Various publications: see Appendix 2
Note: The double line and two values for the year 1981 represents the change in data set. See Appendix 2 for elaboration.

Table 7a.2 GPI Revised for Gender Inequality (1989 Dollars)

Year	Personal Consump-tion	Weighted Consump-tion: Hamilton (1962)*	Gender Revised Weighted Consump-tion	Rest of GPI Adjust-ments: Columns D-Y: $b	Weighted GPI - Hamilton (1962)*	Gender Revised Weighted GPI	**Weighted GPI per capita - Hamilton(1962)***	**Gender Revised Weighted GPI per capita**	GPI per capita un-weighted
	$b	$b	$b		$b	$b	$	$	$
1962	72.91	72.91	72.91	34.44	107.35	107.35	**10,031**	**10,031**	10,032
1963	77.38	78.91	77.77	34.31	113.22	112.08	**10,380**	**10,276**	10,242
1964	82.33	85.67	83.35	34.33	120.00	117.68	**10,790**	**10,580**	10,489
1965	86.15	91.19	87.74	35.56	126.75	123.30	**11,177**	**10,872**	10,732
1966	88.77	95.69	91.02	36.01	131.70	127.03	**11,355**	**10,951**	10,759
1967	93.13	98.90	94.91	38.52	137.42	133.43	**11,647**	**11,309**	11,157
1968	98.26	102.55	98.63	36.87	139.42	135.50	**11,609**	**11,282**	11,251
1969	103.41	105.61	103.37	38.89	144.50	142.26	**11,784**	**11,601**	11,604
1970	109.55	109.32	108.64	40.44	149.76	149.08	**11,974**	**11,920**	11,992
1971	114.12	117.92	116.10	46.69	164.61	162.79	**12,597**	**12,457**	12,308
1972	118.79	125.86	124.56	45.01	170.87	169.57	**12,843**	**12,746**	12,313
1973	125.42	135.74	133.90	45.24	180.98	179.14	**13,402**	**13,265**	12,637
1974	132.25	154.12	150.03	42.43	196.55	192.46	**14,323**	**14,024**	12,729
1975	136.92	171.15	163.25	32.54	203.69	195.79	**14,661**	**14,092**	12,198
1976	141.45	181.40	173.14	29.91	211.31	203.05	**15,058**	**14,469**	12,211
1977	144.98	194.80	181.50	27.83	222.63	209.33	**15,687**	**14,750**	12,176
1978	147.55	206.88	188.28	20.30	227.18	208.58	**15,821**	**14,526**	11,690
1979	152.76	212.96	193.20	19.10	232.06	212.30	**15,986**	**14,625**	11,840
1980	156.87	216.14	197.94	22.89	239.03	220.83	**16,266**	**15,028**	12,232
1981	163.28	221.55	204.44	25.25	246.80	229.69	**16,538**	**15,391**	12,633
1982	170.00	223.74	208.35	20.50	244.24	228.85	**16,085**	**15,072**	12,546
1983	172.12	220.06	208.50	15.44	235.50	223.94	**15,298**	**14,548**	12,184
1984	176.50	219.88	211.92	14.44	234.32	226.36	**15,041**	**14,530**	12,256
1985	182.75	222.53	217.58	14.07	236.60	231.65	**14,986**	**14,673**	12,466
1986	189.59	224.15	220.21	14.93	239.08	235.14	**14,926**	**14,680**	12,769
1987	191.19	219.51	221.22	13.26	232.77	234.48	**14,311**	**14,417**	12,570
1988	199.02	224.53	228.06	14.36	238.89	242.42	**14,451**	**14,664**	12,908
1989	207.90	232.76	237.25	25.43	258.19	262.68	**15,356**	**15,622**	13,878
1990	216.80	242.25	247.22	32.43	274.68	279.65	**16,096**	**16,387**	14,604
1991	218.74	245.19	252.26	28.18	273.37	280.44	**15,816**	**16,226**	14,286
1992	224.98	255.98	260.04	21.65	277.63	281.69	**15,874**	**16,106**	14,101
1993	231.87	265.35	269.31	14.42	279.77	283.73	**15,845**	**16,069**	13,950
1994	238.90	273.85	277.70	10.09	283.94	287.79	**15,918**	**16,133**	13,958
1995	250.19	288.94	290.77	5.77	294.71	296.54	**16,324**	**16,425**	14,177
1996	260.90	299.77	301.33	8.36	308.13	309.69	**16,848**	**16,933**	14,723

* The Weighted Consumption and GPI figures here are not the same as in Hamilton's original GPI because I have re-indexed his Distributional Inequality Index to a 1962 base year.

Figure 7a.1 Gender Revised GPI per capita

Revised GPI Per Capita
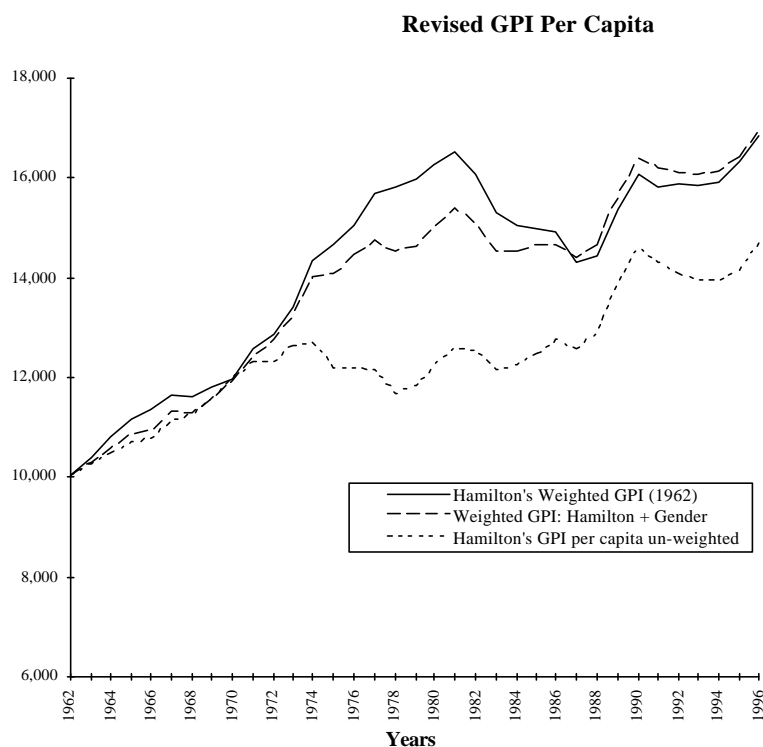
As is evident from the above table and graph, GPI growth in the first years of the revised GPI is little altered by the gender inequality index. However the story changes from the 1970s. Hamilton has argued that economic welfare would have stagnated through the 1970s had it not been for the socio-economic policies which improved equality (as evident in the Unweighted GPI [dotted line in Figure 7a.1]).[8] But the inclusion of the gender wage gap in the inequality index slows the rate of growth of the weighted GPI through the 1970s. While the gender wage gap closed considerably during this period, the increasing gender equality here did not match the rate of growth of the income share of the bottom 20% of income earners (Hamilton's distribution index). Thus the overall rate of increase in distributional equality is reduced compared to Hamilton's index.

Conversely, when the bottom 20% of income earners begin to lose their share of national income (which began in 1978), the incorporation of gender considerations in the index slows the rate of decline of the GPI. (See tables in Appendix 2 for the figures) Indeed, while Hamilton's GPI declined from 1981 to 1988, the gender revised GPI basically held steady

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[8]   See also Hamilton, *op.cit.*, p 44.

after an initial decline. This reflects the fact that although the closing of the gender wage gap slowed and basically stopped in the 1980s with the female share of male full-time earnings hovering around 80%, this gender inequality was at least not going backwards in the way that the bottom 20% of income earners were relative to other income earners. The rapid decline in the share of national income of the bottom income earners in the 1980s stabilised during the 1990s, but around 25 percentage points lower than in the 1980s, whereas the gender wage gap in the 1990s basically remained around its peak level in the GPI.

The result of these movements in measured inequality is that the gender wage gap revised GPI is higher in the 1990s than in the 1970s, while Hamilton's GPI is generally lower than its peak in the early 1980s (only surpassing the 1981 peak in 1996). Put somewhat more generally (admittedly too generally/simplistically), without considering gender, Australian society is better off now than in the late 1980s, but not very much better than we were in the late 1970s. By contrast, the inclusion of gender in the analysis suggests that in terms of measurable economic welfare we are clearly better off now than in the 1970s and 1980s. Or put another way: *the inclusion of gender in the analysis changes the perception of economic welfare since the 1970s and suggests that decreases in the gender wage gap mean that society as a whole is better off than it would otherwise have been.*

As noted in Chapter 7, this clearly has important political implications as it emphasises the need to decrease the gender wage gap as a project benefiting the whole community. Of course the 'community' who would be better off here is clearly a social construction - a discursive trick if you like as the 'community' is clearly divided by class, race, gender, etc, and with no necessary common interest or status - economic or otherwise. Any such category or grouping, in this case a national 'community' - has to be built politically - theoretically and practically. Yet I have argued that this is exactly what orthodox national accounts (among other things) do by constructing a "national economy" with a singular aggregate measure. This is part of the nature of the exercise of national accounting, an example of theory in part creating the objects of its own investigation. We are unavoidably on the same terrain here with the revised GPI, but the "national economic welfare" here explicitly includes women, or at least a measure of gender difference as a constituent part of the constructed unity.

Importantly though, the implications of the inclusion of the gender wage gap are wider than a (liberal) justice perspective of "adding women into" the definition and measure, or even the

political imperative which follows from the figures highlighting of the benefits of greater gender wage equality. Just as the original GPI's incorporation of inequality and sustainability changes the way we see/record development and economic history over the last thirty years - decline or stagnation rather than the triumphal march of GDP progress - so too a gender analysis changes the way we look at that economic history and development. It hasn't all been stagnation and increasing social and environment problems since 1970. If we incorporate gender in our purview, then 'we' might in fact be better off than we were thirty years ago - despite the problems identified by the GPI. More than simply adding women into the analysis, this inclusion changes - as it should - our view of malestream economic categories like growth, progress, welfare, and inequality.

Other Structural Adjustments

While these results give rise to significant reinterpretations of the trend of economic welfare, the revisions and figures above are by no means final or complete. I noted in the last chapter that while gender is a particular and important line of structural inequality, it is not the only structural inequality. Equally valid arguments could also be made to adjust the inequality index for other structural inequalities, most notably for class and race inequality. To some extent Hamilton's figures based on income tax differentials might reflect class differences, but this is a one-dimensional stratification model of class, not a more Marxian inspired notion of structurally antagonistic classes.

The point here is not to do the figures to incorporate measures of other structural inequality, but rather to point out that any such further consideration of structural inequality is not simply an addition to the suggested gender adjustments. For instance, a consideration of the wages share of GDP as a proxy for Marxian class inequality (as per the Austrian ISEW) would actually change the outcomes discussed above. The lesser magnitude of the changes in wages share of GDP relative to the other inequality indexes would flatten the overall inequality index,[9] and it is unclear how race or other structural inequalities might be incorporated. With more elements incorporated it would also be necessary to weight each element of the index by

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[9]   Since 1962 (ie. the period covered by the gender revised Australian GPI) the gender index ranged over 25 percentage points while a similar index constructed from the wages share of GDP only moves 9.44 percentage points. Thus for instance, even where, the wages share of GDP was at its highest point (1975), the simple average of it plus the gender inequality index would be much less that the gender inequality figure by itself. Australian Bureau of Statistics *Australian National Accounts: National Income, Expenditure and Production*, Cat No. 5206.0. Canberra: ABS.

each particular group's population share - again, as per the GDI and the Austrian ISEW. [10] This clearly complicates the calculation of the inequality index, and again is beyond the scope of this thesis. The more immediate point is that the inclusion of other structural inequality into the GPI would also affect the gendered adjustment of Hamilton's inequality index and the GPI.

Clearly then the gender revised figures above are neither complete nor final. They are incomplete in that they do not account for other structures of inequality, or for gendered inequality in other spheres - notably in non-market production/consumption. And they are not final, in that the figures themselves would be changed by a more thorough analysis of other structural inequalities. And finally, the figures are neither complete nor final because there has been no attempt to adjust or reconfigure other categories to reflect a thorough-going gender analysis. Most notably I let stand Hamilton's devaluation of household labour, even though I suspect a case could made that activities which Hamilton excluded (like garden and home maintenance) do add to welfare. A further case might also be made that, if we are talking about welfare not prices of production, then all household labour should be revalued at average wages, or even the average male wage rather than the already devalued household replacement cost method - but again, for the sake of convenience I have simply followed Hamilton here.

Nonetheless, the gender adjustments made to Hamilton's GPI are sufficient to present some consideration of the potential impact of gender issues on the GPI and to draw some tentative political conclusions from the data, as I have done above. The calculation of a more inclusive and better weighted indexes must wait for another day.

Exchange Costs Adjustments

However, the inequality adjustments are not the only revisions to the existing ISEW/GPIs suggested in Chapter 7. I argued that the existing ISEW/GPI measures are flawed both in terms of recognising different types of labour and as indexes of measurable economic welfare,

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[10]   The population share weighting is necessary to avoid an (arguably) distorting picture of inequality
          where a simple averaging of the indexes would suggest that a movement of 1 percentage point in the
          wages share of GDP is of equivalent importance to a closing of the gender wage gap by 1 percentage
          point (or a 1 percent point change in the share of national income of the bottom 20% of income
          earners).

because they do not take account of exchange as a conceptually separate and different economic activity. Because exchange activity is about the ownership and transfer of ownership of existing goods and services, it can not add to the total economic welfare of society (as opposed to that of particular individuals). Therefore it should not be included as a positive contribution to consumption in the economic welfare measures.

To revise the existing ISEW/GPIs for exchange is at one level conceptually simple, although in practice it is a complicated statistical enterprise needing a major research project in its own right. As noted in Chapter 6, at the conceptual level what is required is to identify the industries and occupations which represent "exchange activities" and deduct the value of the output of those activities - in this case from the consumption base of the GPI. This is similar to the calculations used in accounting for some of the restricted definitions of production, but it also mirrors the accounting used for defensive expenditures in the economic welfare measures.

In Chapter 6a I have already produced estimates of production based on a restricted definition of production. These could be seen to imply an estimate of exchange activity in Australia. However, the methodology applied in measuring production is inappropriate for a measure of exchange costs in an economic welfare framework. The production figures represent the value-added (or product), not the total output, of particular industries. Thus, in the value-added framework, the national accounts' production figures for "exchange industries" do not account for the output of the production sectors which is used in producing the final product of exchange industries. Alternatively, when GDP production is measured by final expenditure, the production figures do not account for the output of exchange industries which go as intermediate inputs into production industries.[11]

The issue here parallels the different approaches taken by the Marxian and transaction cost estimates discussed in Chapter 6. In Shaikh and Tonak's Marxian measures, the output of the production sectors which finds its way into exchange activities is counted as part of the final

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[11] The national accounts use three ways of measuring GDP: by summing the value added at each stage (in each industry) in production; by summing the incomes received by producers; and by summing final expenditures on goods and services. In theory all should give and equivalent measure of GDP, although in practice there is a large statistical discrepancy. The value added approach is usually applied to industry measurements. Australian Bureau of Statistics (1990) *Australian National Accounts: Concepts, Sources and Methods*, Cat No. 5216.0. Canberra: ABS.

product of the production industries (and the economy), because what is being measured is the production of goods and services in the economy. Similarly, the output of exchange industries absorbed by production sectors (and indeed the unproductive labour in the production sectors) in the Marxian analysis is seen as part of production (albeit as a claim on surplus). However, this means that the Marxian final product contains much production which does not add to welfare - because the purpose of that production is ultimately exchange (ie. not welfare enhancing production/consumption).

By contrast, the transaction cost measures (and, as noted in Chapter 1, the Smithian and Soviet measures to some extent) measure the whole cost of the exchange activity - both production used in exchange activities and exchange activities in production sectors - as a transaction cost. Thus for instance, the value of the pens, paper, computers, and the like consumed by the finance sector would appear in the Marxian accounts as part of total production (the product of the manufacturing sectors), while the labour in the finance sector would not add to production. However, in the transaction cost approach the whole output of the finance sector (including the value of the pens, paper, computers used for "finance") would be deducted in an estimate of national production (ie. transformation services).

The end result of these differences is that, despite the similarities in definitions of exchange activities between the Marxian and transaction cost analyses, the bottom line of their calculations is very different. Shaikh and Tonak's Gross Final Product is on average 15% lower than official GDP,[12] while Wallis and North estimated transaction costs in 1970 (the final year of their survey) as being over half of GDP.[13] Given the size of this difference in the bottom line, the choice of methodology is clearly important.

While in Chapter 6a I used the Marxian approach to measure the (market) value of *production*, in the context of a revision of the GPI then the logic of the transaction cost is clearly preferable. If the purpose is to measure production/consumption which contributes to welfare, and if by definition exchange activities do not contribute to economic welfare, then the total value of those activities should be deducted from the GPI. This deduction includes

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[12]   Anwar Shaikh and E. Ahmet Tonak (1994) *Measuring the Wealth of Nations: The Political Economy of National Accounts*, New York: Cambridge University Press. p 221.

both the value of those commodities consumed in the process of producing those exchange activities, and the exchange activities contributing to production industries. This approach is consistent with the ISEW/GPI treatment of defensive expenditures (eg. deducting for advertising because a proportion of the final consumption was for defensive purposes). It recognises that, while the value of production might be $X, if half that production goes to activities which do not directly enhance welfare, then only one-half of that production actually increases economic welfare. Again, production and welfare are different and require different measures.

One practical result of this is that the national accounts production figures are not very useful. If we are using the methodology of the transaction cost approach to calculate the GPI deduction for exchange activities, then we are concerned not with the ABS defined *production* of exchange sectors, but with their *gross output* (ie. their production [value added] plus the intermediate consumption of goods and services used up by those exchange sectors).[14] Statistics for gross output of particular industries are contained in the Input-Output tables published by the ABS, although the historical coverage of these accounts is not as comprehensive as the production accounts. Experimental Input-Output accounts were produced for 1958/59, but there have only been 14 accounts over the 34 years of the Revised GPI.

Despite these historical gaps, the Input-Output accounts are particularly useful for our purposes because they give not only gross output figures, but also the amount of this output which is consumed as intermediate input into other industries. This allows for the avoidance of a considerable amount of double-counting where the output of a particular industry deemed to be an exchange activity is an input into another exchange industry, or an input into industries whose production/consumption has already been deducted from the GPI as defensive expenditure (eg. defence, education). Thus, for instance, if finance and real estate are exchange activities, then in counting the gross output of the finance industry we need to deduct the value of financial services consumed in real estate activity as the value of these particular finance activities would already be accounted for as part of the gross output of real

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13   John Joseph Wallis and Douglas C North (1986) "Measuring the Transaction Sector in the American Economy, 1870-1970" in Stanley L Engerman and Robert E Gallman (ed), *Long Term Factors in American Economic Growth*, Chicago: University of Chicago Press. p 120.

14   Definition from ABS, (1990) *op.cit.*, p 7.

estate. Similarly, because 75% of the value of expenditure on defence is deducted from Hamilton's GPI, then 75% of financial services used in the defence sector should also not be counted in the finance sector's gross output, less its value be deducted twice from the GPI.

Thus the figures used here to calculate the GPI deduction for exchange activities are the Input-Output tables totals for designated industries' Final Consumption Expenditure (Private and Government) plus Intermediate Usage (ie. values which enter Consumption Expenditure by being part of the value of the product of other industries), less the values for Intermediate Usage deducted elsewhere in the GPI (ie. in other exchange or defensive expenditure deductions). The classification of industries as "exchange" is the same here as that outlined in Chapter 6a, namely (FIRE [including Business Services], and 1/2 Wholesale and Retail). However in using Input-Output accounts rather than production accounts, there are extra problems in that there is no continuous time series calculated by the ABS, and any calculation straight from the I-O tables is complicated (again) by changes in the ABS system of industry classification. (See Appendix 2 on Classification Changes). The result is (again) that the estimates produced here are by no means final or complete.

The estimates are still less complete because, apart from the need in a more sophisticated accounting to go below the broad level of industry group aggregation used here, they deal only with the output of *industries* deemed to be exchange industries. They do not account for exchange activities by employees of firms whose primary activity is in a production industry. Again for instance, the value of wages of a salesperson employed by a metal manufacturer remain a part of the welfare enhancing consumption of the product of the metal manufacturing sector, whereas, if the same company outsourced its sales effort to a marketing firm, then the value of that sales function would be deducted.

In principle the value of the wages of exchange activity workers in production sectors should be added to the estimate of exchange activity. However, as noted in Chapter 6a, the ABS does not publish the statistics necessary for this. As with the earlier estimates of production (narrowly defined), I propose here to simply ignore the value of exchange labour within the production sectors. This is not ideal both in terms of the magnitude of the estimate of exchange activities or the measurement of changes over time. As in the above example of the sales of metal manufacturers, any growth in the proportion of exchange industries in the economy might represent, not a growth in sales activity, but simply a change in its location

from (an invisible place) within the manufacturing sector to an industry accounted for as an exchange industry.

This is problematic, but not fatal to the current exercise. Partly the concern here is limited because, as I have noted repeatedly, my aim is to provide ball-park figures for the GPI revisions I suggest, not to provide final estimates. But the evidence from the United States also suggests that, despite the problem noted above, any exaggeration of the growth of exchange activities due to outsourcing of 'non-core' functions of production enterprises to exchange industries is dwarfed by the continued growth of those activities within the production sectors. Shaikh and Tonak calculate that these 'unproductive' workers constituted 17.7% of workers' wages in the production sectors in 1950. By 1989 they constituted 37.4%.[15] Similarly Wallis and North found that for the period up until 1970 the greatest growth in transaction service workers was within the production/transformation sectors.[16]

Thus I suggest that, if the trend in Australia is anywhere near the US experience, the estimates of exchange activities given in this thesis underestimate both the magnitude and the growth of exchange activities because they ignore exchange workers employed in production industries. If the figures were available to do this calculation then the revised GPI would not only be smaller, but there would be an even greater slowing of the rate of growth of GPI arising from the inclusion of exchange activity. However, as the appropriate figures are not available, and the calculation in any case is mind-bogglingly complex, we are left with a calculation of exchange activities which is necessarily conservative. Nonetheless, if my argument as to the need to incorporate an analysis of exchange activity in the GPI holds, then *some* accounting for such exchange activities is clearly warranted. The figures given below provide a relatively consistent, if not complete and final accounting for exchange activity in Australia.

Estimates and Results

The methodology outlined above to generate these exchange activity costings can be summarised as follows. The output of certain industry groups (Finance, Insurance, Real Estate and Business Services, and 1/2 of Wholesaling and Retailing) is designated as exchange expenditure. The value of their output is derived from the Input-Output tables by adding the

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[15]   Shaikh and Tonak, *op.cit.* Figures adapted from Table F1, p 298.
[16]   Wallis and North, *op.cit.*, p 107.

figures for Intermediate Usage and Private and Government Final Consumption Expenditure for those industries, and then deducting the value of Intermediate Usage which is accounted for elsewhere in the GPI (either as exchange or GPI defensive expenditure). This gives a value for consumption expenditure on exchange industries in current dollars for each year of the I-O accounts (Column 2 of Table 7a.3). This is then translated into Constant 1989 dollars to fit Hamilton's GPI and the blank years are then filled in by a simple linear extrapolation, as per Table 7a.3 below. The raw I-O figures and further details of the calculation of actual expenditure are contained in Appendix 2.

Clearly from the right hand column of this table, exchange activities have become increasingly important in Australia. This is not surprising given the previous discussion of exchange expenditures in reference to the production estimates (Chapter 6a). As noted in that discussion, what this suggests on the ground is that, as the economy becomes more 'sophisticated', more and more resources and money go into organising the ownership and exchange of existing goods and services rather than into the production of commodities. In the logic of the GPI (paralleling the argument about defensive expenditures) the economy has to run faster to stand still: that is, more output is required to produce the same amount of welfare for consumers.

Not surprisingly then, as evident in Table 7a.4 below, the revised GPI deductions for exchange expenditures not only decrease the magnitude of the GPI, but also represent a slowing of GPI growth over the period. Hamilton's GPI per capita grew by 60.6% from 1962 to 1995, while the Final* Revised GPI grew by only 29.6% over the same period.[17] That is, the analysis that exchange activities are different from production activities and do not increase aggregate welfare, suggests that around half of the measured economic progress over the last thirty years has not in fact been of net benefit to the community.

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[17] The asterix in Final* Revised GPI indicates that the figures are final in terms of this thesis, but as noted earlier, they are by no means final and complete estimates of exchange activities or of the revisions to the GPI.

Table 7a.3 Exchange Expenditures

| Year	Exchange Expenditure (Actual $m)	GDP(E) Implicit Price Deflator	Exchange Expenditure at Constant Prices (1989$m)	Extrapolated Estimates of Exchange Expenditure (1989$m)	Exchange as % of GPI
1962				13,075.3	12.8%
1963	2,033.7	13.3	15,290.6	15,290.6	14.2%
1964				17,505.9	15.3%
1965				19,721.2	16.3%
1966				21,936.5	17.5%
1967				24,151.8	18.5%
1968				26,367.1	19.9%
1969	4,601.8	16.1	28,582.5	28,582.5	20.8%
1970				30,333.4	21.4%
1971				32,084.4	20.5%
1972				33,835.4	20.8%
1973				35,586.4	20.7%
1974				37,337.4	19.9%
1975	11,062.0	28.3	39,088.3	39,088.3	20.1%
1976				39,225.2	19.5%
1977				39,362.1	18.5%
1978	15,365.1	38.9	39,498.9	39,498.9	18.2%
1979				40,090.1	18.1%
1980	18,916.8	46.5	40,681.2	40,681.2	17.8%
1981	22,753.5	51.3	44,353.8	44,353.8	18.8%
1982	25,913.8	56.6	45,784.0	45,784.0	19.7%
1983	28,863.2	62.5	46,181.1	46,181.1	20.7%
1984	31,560.7	66.8	47,246.6	47,246.6	21.3%
1985				50,111.7	22.4%
1986				52,976.8	23.5%
1987	45,064.4	80.7	55,841.9	55,841.9	25.5%
1988				59,191.6	26.3%
1989				62,541.4	25.7%
1990	65,891.2	100	65,891.2	65,891.2	25.4%
1991				69,575.1	27.0%
1992				73,259.0	28.0%
1993	81,867.2	106.4	76,942.9	76,942.9	29.2%
1994	84,748.0	107.6	78,762.1	78,762.1	29.5%
1995	98,935.7	109.6	90,269.8	90,269.8	32.6%

Table 7a.4 Exchange Expenditure and GPI

Year	Hamilton's Weighted GPI (1962) ($b)	Gender Revised GPI ($b)	Final Revised GPI: (Gender + Exchange) ($b)	Hamilton's Weighted GPI *per capita* (1962) ($)	Gender Revised GPI *per capita* ($)	Final* Revised GPI *per capita* ($)
1962	107.4	107.4	**94.3**	10,031	10,031	**8,810**
1963	113.2	112.1	**96.8**	10,380	10,276	**8,874**
1964	120.0	117.7	**100.2**	10,790	10,580	**9,006**
1965	126.8	123.3	**103.6**	11,177	10,872	**9,133**
1966	131.7	127.0	**105.1**	11,355	10,951	**9,060**
1967	137.4	133.4	**109.3**	11,647	11,309	**9,262**
1968	139.4	135.5	**109.1**	11,609	11,282	**9,087**
1969	144.5	142.3	**113.7**	11,784	11,601	**9,270**
1970	149.8	149.1	**118.7**	11,974	11,920	**9,494**
1971	164.6	162.8	**130.7**	12,597	12,457	**10,002**
1972	170.9	169.6	**135.7**	12,843	12,746	**10,202**
1973	181.0	179.1	**143.6**	13,402	13,265	**10,630**
1974	196.6	192.5	**155.1**	14,323	14,024	**11,304**
1975	203.7	195.8	**156.7**	14,661	14,092	**11,279**
1976	211.3	203.0	**163.8**	15,058	14,469	**11,674**
1977	222.6	209.3	**170.0**	15,687	14,750	**11,976**
1978	227.2	208.6	**169.1**	15,821	14,526	**11,775**
1979	232.1	212.3	**172.2**	15,986	14,625	**11,863**
1980	239.0	220.8	**180.2**	16,266	15,028	**12,259**
1981	246.8	229.7	**185.3**	16,538	15,391	**12,419**
1982	244.2	228.8	**183.1**	16,085	15,072	**12,056**
1983	235.5	223.9	**177.8**	15,298	14,548	**11,548**
1984	234.3	226.4	**179.1**	15,041	14,530	**11,497**
1985	236.6	231.7	**181.5**	14,986	14,673	**11,499**
1986	239.1	235.1	**182.2**	14,926	14,680	**11,372**
1987	232.8	234.5	**178.6**	14,312	14,417	**10,983**
1988	238.9	242.4	**183.2**	14,451	14,664	**11,083**
1989	258.2	262.7	**200.1**	15,356	15,622	**11,903**
1990	274.7	279.7	**213.8**	16,096	16,387	**12,526**
1991	273.4	280.4	**210.9**	15,816	16,226	**12,200**
1992	277.6	281.7	**208.4**	15,874	16,106	**11,918**
1993	279.8	283.7	**206.8**	15,845	16,069	**11,712**
1994	283.9	287.8	**209.0**	15,918	16,133	**11,718**
1995	294.7	296.5	**206.3**	16,324	16,425	**11,425**
1996	308.1	309.7		16,848	16,933	

However, as Figure 7a.2 below highlights, the impact of the exchange expenditure deductions is not simply a slowing of GPI growth. Just as the Gender Revised GPI per capita changes the perception of economic welfare and development, so too the inclusion of exchange expenditures now questions the growth in economic welfare evident in the Gender Revised GPI. Recall that the gender revisions presented a much more optimistic picture of economic

progress than did Hamilton's original GPI. The gender revised measure was much higher in the 1990s than in all earlier periods. Because of the growth of exchange activities, the Final* Revised GPI follows a trend closer to Hamilton's original, although of course the result would be different again (with much lower economic welfare) if the gender revisions were not included in the exchange activity adjusted index.

Figure 7a.2 Exchange Expenditure and GPI per capita
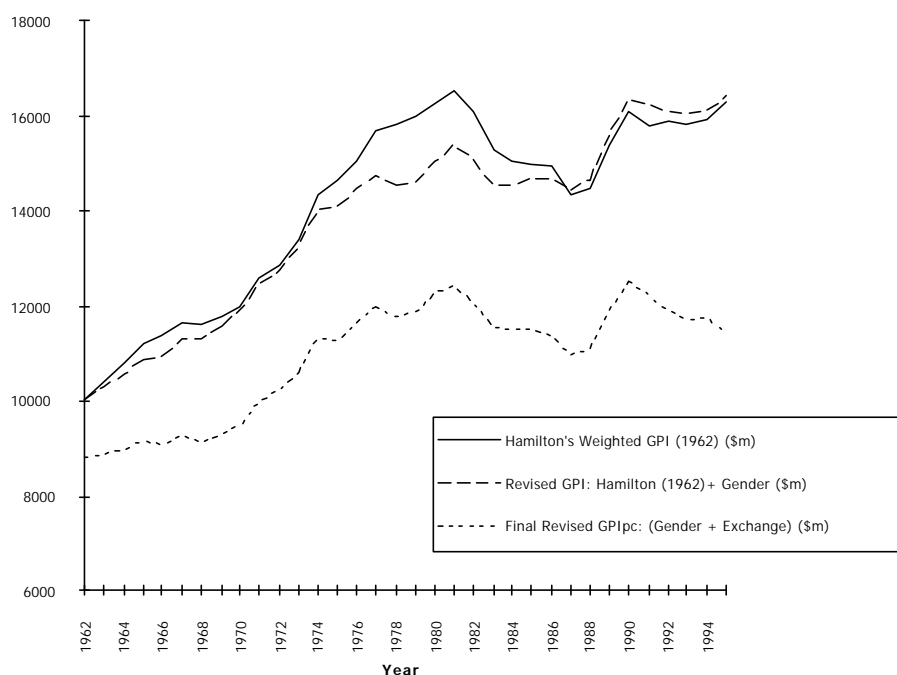
The 1990s seem particularly significant to the different readings of economic welfare here. While all three per capita indexes peaked (again) in 1990, the subsequent decline in Hamilton's original and the Gender Revised GPI was minor. By the end of the period the GPI had recovered and was reaching new levels. By contrast, the growth of exchange activities meant that through the first half of the 1990s the Final* Revised GPI declined. There may be some suspicion of this result as the calculation of exchange expenditures does jump somewhat in the first set of figures under the new classification system (from 25.4% of GDP in 1989/90 to 29.2% in 1992/93). However, the figure continues to rise for 1994/95 under the same classification system, so even if the new system does exaggerate the jump a little, there is no doubting the trend.

The decline of the Final* Revised GPI through the 1990s has a major impact on the overall reading of the GPI. Like Hamilton's GPI (but unlike the Gender Revised GPI figures), the exchange adjusted GPI at the end of the period is again less than it was during the 1970s. And unlike Hamilton's original figures, there seems little prospect of improvement in economic welfare as measured by the Final* Revised GPI. In turn this has important political implications. Just as the original GPI measures for Australia and elsewhere suggested fundamental problems in the direction of public policy and the economy, so the inclusion of exchange activities in the index adds to this critique. The finding that around one half of the growth in GPI did not actually add to net economic welfare further supports the critique of economic growth made in the GPI and (some) green literature. GDP growth has been even less beneficial than the GPI analysis suggested.

Again, the Final* Revised GPI forces political economy to ask not simply, "is it (the economy) growing?", but "what sort of growth is it?". Is it a growth which will make 'us' better off? As I have argued throughout this thesis, these are questions which can not be asked within neoclassical and Keynesian economics and accounting. Yet they are crucial. If, as the GPI suggests, the economy is going nowhere or in fact making us worse off, then this needs to be highlighted so it can be addressed at the political level, not hidden by the one-dimensional statistics of market growth.

Obviously such findings lend support to calls for policies which directly enhance elements of economic welfare (eg. fairer distribution of income, pollution control) and challenge the faith in the market based economic growth solutions which have dominated public policy over the last two decades. But again, the incorporation of exchange activity (and gender inequality) into the GPI does so in a more systemic way. The results suggest not simply that the market needs to be regulated and supplemented to stop the negative impacts of growth overwhelming the economy, but rather that the very nature of the organisation of much of society around private ownership and competitive exchange is *increasingly* hindering the advance of economic welfare. We are increasingly being held back, or indeed being made worse off, by the growth of capitalist market institutions in the economy.

Of itself this is not a new revelation. It has been a mainstay of radical political economy from Marx's immiseration of the proletariat, Baran and Sweezy's growth of economic surplus, Bookchin's post-scarcity anarchism, to the more recent insights of ecofeminism and deep

ecology.[18] But what the revised GPI analysis adds to this is some quantitative (gu)estimate of the extent of the problem. More importantly than simply the figures though, is that the revised GPI makes the argument in the language and currency of market economics. While the market values employed might limit the GPI's radical potential, they enable the GPI to say that, when all the costs and benefits of the system are taken into account, then, judged on its own terms - dollar values in the market - the current system(s) are increasingly failing to deliver. And they are failing because of the nature of that/those system(s).

Again though, as argued in the main Chapter 7, these finding must be kept in the context of the economy as hologram: they are insights opened up by one particular view of "the economy". Nevertheless, the empirical data in this chapter does support the conceptual argument of the previous chapter. Despite the heavy qualifications necessitated by lack of data and the roughness of the orders of magnitude, there is clearly political importance and potential in revising green economic welfare measures to extend the recognition of different types of economic activities and to incorporate a more structural political economic analysis.

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[18] See for instance, Paul Baran and Paul Sweezy (1967) *Monopoly Capital: As Essay on the American Economic and Social Order*, New York: Monthly Review Press.; Murray Bookchin (1971) *Post-Scarcity Anarchism*, Berkeley: Ramparts Press.; Ariel Salleh (1997) *Ecofeminism as Politics: Nature, Marx and the Postmodern*, London: Zed Books.