The Factor Shares Debate: An Update

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Abstract

The division of the national product between capital and labour is an old topic in economic theory but since the ending of New Zealand's old system of national accounts which were prepared on an income basis, it has been harder to track the trends in factor shares in New Zealand. The paper assembles figures to see whether there is any sign that the change in political conjuncture (and hence potentially the balance of power in the labour market) in the mid-1980s had any effect on factor shares in the product. The hypothesis is that the 1984 election marked the end of a long period of relative gains for labour at the expense of capital, and was followed in the following two decades by a trend in the other direction, to which the Employment Contracts Act might have contributed. As usual the numbers speak only softly and have to be interpreted with the greatest caution.

1. Introduction: The Real Wage Debate in New Zealand

At the end of the 1970s two papers appeared arguing that a rising wage share had put pressure on the profit rate in New Zealand, and that this helped to account for the rise in unemployment which was a major new phenomenon at that time[1]. This triggered a considerable debate among New Zealand economists during the 1980s over the relationship between the real wage, labour productivity, unemployment, and economic growth. Most of that debate was concerned with the relationship between the real wage and unemployment in the short-to-medium term, rather than with capital accumulation and long-run growth performance. McDonald (1978), however, quoted extensively and approvingly from a Swedish study which had argued for incomes policy to keep the wage/profit distribution within a target "corridor" over time, given that that[2]

> a shift in the distribution in favour of wage earners at the expense of business firms … has an effect in the first instance on the capacity of enterprises to finance investment for increased productivity and the expansion of capacity. … [The equity-debt ratio and profitability] limit the extent to which the distribution of income can be shifted in favour of wage earners without leading to consequences which in the long run also operate adversely for wage earners, in the form of a lower rate of economic growth…

McDonald's central distributional claim was that the profit share of net output had fallen from 36% in the early 1960s to only 29% by the second half of the 1970s, while

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1 McDonald (1978); Rosenberg (1980). Discussion of the significance of these papers, together with a survey of the subsequent "real wage debate" up to the early 1990s, is in Chapple (1993) Chapter 8 pp.170-189. Easton (1990) also provides a survey.

2 Edgren et al (1973) quoted in McDonald (1978) pp.6-7.

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the wages and salaries share had risen from 47% to 56% over the same period[3]. He acknowledged[4] that a rising tax wedge on labour meant that "the increase in Salaries and Wages After Tax was much slower … and was in line with GDP/NDP growth rates in the 1970s", but for the purposes of his main argument he relied on the increasing share of pre-tax wages and salaries as evidence of a squeeze on profits.

The relative roles of the real income wage (that is, the after-tax wage rate deflated by the CPI), and the incidence of income tax on wage costs, in raising the cost of labour to employers in the 1970s was explored further by Bertram and Wells (1983), Easton (1983), and Bertram (1985). The data appeared to show that in after-tax terms the wage/salary share of NDP had risen by about five percentage points during the tight labour market of the 1950s but thereafter had stabilised at around 50%; some upward trend had appeared in the Old National Accounts series which were discontinued after 1978, but was absent in the new SNA accounts that appeared in 1978 and were soon backdated to 1962. Both Easton (1983) and Bertram (1985) noted that while the after-tax labour share appeared constant, the pre-tax share did not, which raised interesting questions about whether "Bowley's Law" of constant factor shares based on the technical parameters of the aggregate production function could be applied to New Zealand[5].

The perception among policymakers in both Australia and New Zealand that some sort of "profit squeeze" had occurred in the 1970s, echoing similar concerns in the UK[6], led to a perceptible change in the political climate in the 1980s. Thatcher's frontal assault on the trade unions in Britain had a somewhat muted echo in New Zealand, especially while Labour was in power between 1984-90, but organised labour nevertheless was pushed increasingly onto the defensive, while policymakers focused openly on measures aimed to improve profitability. The Employment Contracts Act 1991 marked the high tide of a sustained ideological and political offensive by employers against the unions; but the turning of the tide that led to the ECA has to be dated much earlier, in the early and mid 1980s when Thatcherite views became widespread among New Zealand business and policy elites.

One of the econometric surprises of the 1990s has been the lack of clear evidence that the ECA itself actually affected labour market outcomes – either real wages or unemployment – in any very dramatic way.[7] The hypothesis with which I embarked on a new exploration of the factor-shares data was that economy-wide sea changes in the balance of social forces take place over longer time frames than five years or so, and that the ECA was only part of a longer swing in that balance in New Zealand. Hence I set out to look for signs of a turning of the tide in the early 1980s.

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3 McDonald (1978) p.17 and p.24.

4 McDonald (1978) p.9.

5 Rima (1996) p.310 argues, using US data 1929-1990, that "when institutional changes are taken into account, the wage share remains constant in the range of 73 to 76.8 percent". The data are for wage costs faced by employers, inclusive of tax and social security.

6 Cf Rowthorn (1980).

7 See for example Maloney (1994), (1998); Maloney and Savage (1996). The empirical findings amounted to potential corroboration for Bowley's Law – the "surprise" referred to was among those who believed that labour organisation could affect the distribution of factor incomes. Rima (1996) p.310 says bluntly that "there is no evidence, either historically or at present, that collective bargaining has raised the wage share" (in the USA).

Implicit in my approach to the topic is provisional acceptance of the Ricardian hypothesis that in a growing economy not settled into a stationary state there is a degree of indeterminacy in the relative shares of labour and capital in the product, over a range bounded by the "subsistence wage rate" and the zero-investment threshold rate of return.[8]

A second possible hypothesis which I failed to frame at the outset was implicit in our 1983 discussion of a hypothetical profit squeeze[9]:

> A rise in the real wage which increases the labour share of the social product may squeeze the profit share, and thereby force down the rate of profit. [One of] the conditions for this to occur [is] … that the squeeze affects profits rather than the shares of the State or foreigners…

The reference to "foreigners" indicates that when referring to "profits" we were thinking of the profits secured by domestically-resident capitalists, as distinct from capitalists in general. However it is clear from the context of the passage just quoted that the profitability of domestic capital can potentially be squeezed from three directions, not just by wage push. An increasing tax wedge had clearly been a feature of the 1970s and contributed to the passionate business advocacy of tax cuts in the 1980s. A rising share of profits captured by foreign interests could also squeeze the economic surplus accruing to domestic owners and hence make economic growth increasingly dependent upon the willingness of foreign interests to plow profits back into New Zealand in preference to alternative opportunities elsewhere in the global economy. This, as will be seen, turns out to be an important, albeit unplanned, conclusion of this study.

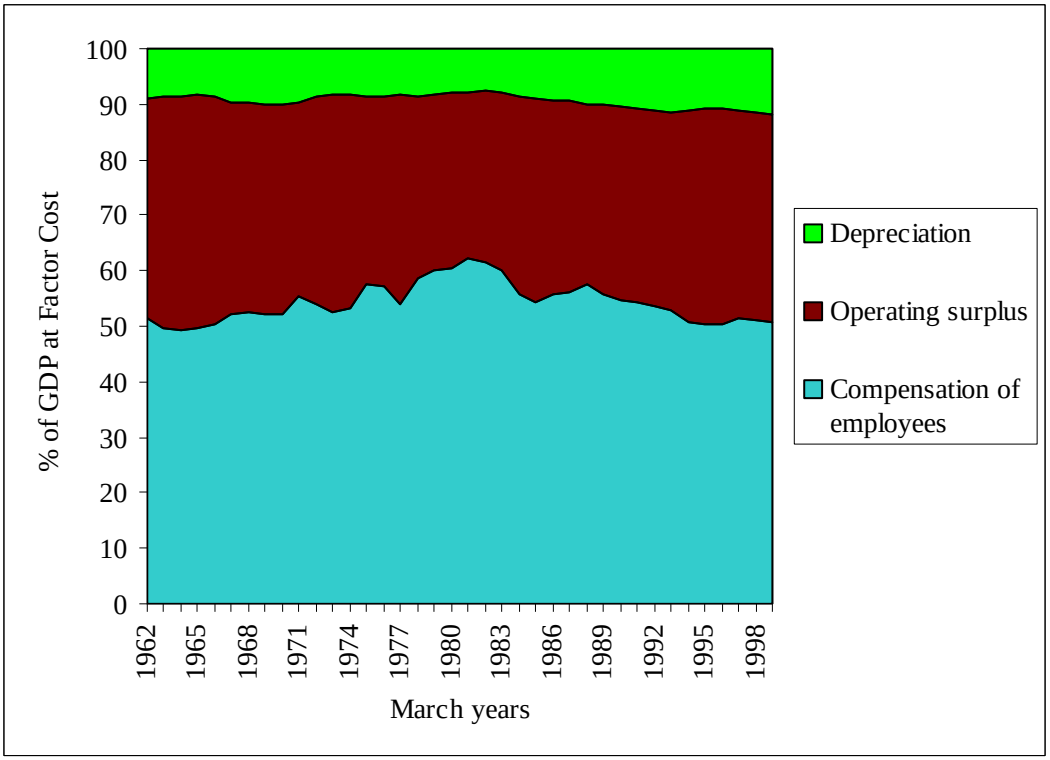
2. Some Numbers

We begin by disaggregating total factor payments (GDP at factor cost) among the three familiar national-accounts aggregates "compensation of employees" (that is, wages and salaries), "depreciation", and the residual "operating surplus" which is as close as the current SNA national accounts take us to a profit share. The data are in Table 1, and Figure 1 below shows the picture.

[8] See Appendix 4 for further discussion of the Ricardo model.

[9] Bertram and Wells (1983) p.85.

Figure 1
Pre-Direct-Tax Shares of GDP at Factor Cost

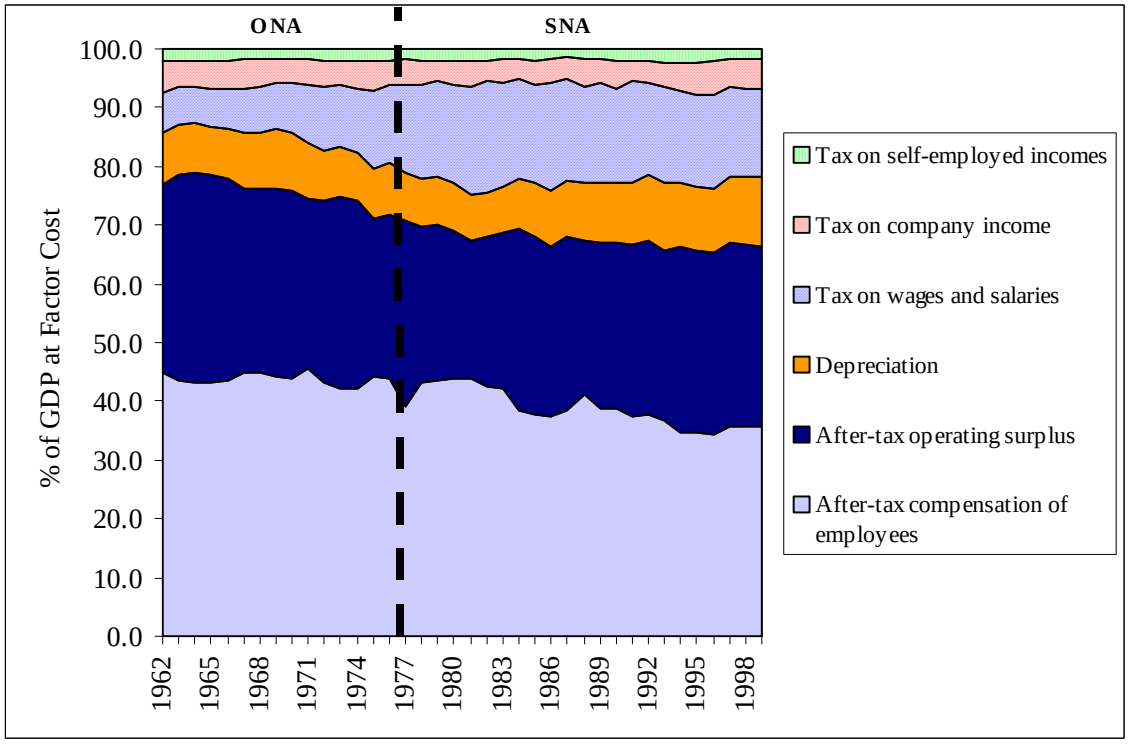


The motivation for my initial hypothesis is immediately evident from this chart. The pre-tax data for wages and surplus (which includes profits, rents, and other components such as self-employed incomes and imputed rents of owner-occupied housing) reflect, as McDonald had argued, an apparent wages-led squeeze on profits in the 1970s reversed by a swing in the other direction after 1982. The wages share began the 1960s at 50%, rose to 62% by 1982, and had been driven back down to 54% by the end of the 1990s. There is no break in the trend at the time of the ECA.

Old hands will immediately know, however, not to trust these high-level SNA aggregates, especially considering the mixed bag of income claims that go into "operating surplus". It is essential to disaggregate the data further.

A first step in this direction is to separate out the growing wedge of direct taxation on both capital and labour. This changes the picture to that in Figure 2 (for data see Table 2):

Figure 2
After-Tax Shares of GDP at Factor Cost



Note: the dotted line marks the transition from ONA data, which is used up to and including 1977, to SNA data from 1978 on.

In after-tax (income) terms, in the two decades before 1982 the labour share more or less held its own, but with no upward trend to match that of the pre-tax (product) wage seen in Figure 1. The after-tax wage share was 44.7% in 1962, 43.2% in 1972, and 44.0% in 1981 prior to the Freeze. Thereafter the after-tax wage and salary share came under sustained downward pressure, falling to 34.4% by 1996, after which it stabilised at the new lower level. There is no break in trend corresponding to passage of the ECA.

Table 1
First Stage of Disaggregation of GDP at Factor Cost

	Compensation of employees $ million		Operating surplus $ million		Depreciation $ million		GDP at factor cost $ million		Comp. of empl-oyees %	Oper-ating surplus %	Deprec-iation %
1962	1,339		1,038		231		2,608		51	40	9
1963	1,419		1,183		249		2,851		50	41	9
1964	1,525		1,313		265		3,103		49	42	9
1965	1,689		1,426		287		3,402		50	42	8
1966	1,854		1,509		317		3,680		50	41	9
1967	2,003		1,465		373		3,841		52	38	10
1968	2,088		1,510		390		3,988		52	38	10
1969	2,200		1,595		426		4,221		52	38	10
1970	2,444		1,768		466		4,678		52	38	10
1971	2,945		1,846		523		5,314		55	35	10
1972	3,401		2,368		549		6,317		54	37	9
1973	3,825		2,828		609		7,262		53	39	8
1974	4,511		3,295		689		8,494		53	39	8
1975	5,434		3,194		799		9,428		58	34	8
1976	6,273		3,786		943		11,000		57	34	9
1977	7,066		4,962		1,077		13,105		54	38	8
1978	8,101	8,102	5,051	4,509	1,168	1,167	14,319	13,778	59	33	8
1979		9,415		4,948		1,297		15,661	60	32	8
1980		10,977		5,704		1,468		18,149	60	31	8
1981		13,066		6,257		1,672		20,996	62	30	8
1982		15,754		7,876		1,926		25,556	62	31	8
1983		17,248		9,231		2,247		28,725	60	32	8
1984		17,589		11,347		2,689		31,625	56	36	9
1985		19,250		12,929		3,241		35,420	54	37	9
1986		22,675		14,289		3,826		40,790	56	35	9
1987		27,095		16,695		4,492		48,282	56	35	9
1988		30,458		17,144		5,230		52,831	58	32	10
1989		31,869		19,603		5,764		57,236	56	34	10
1990		32,959		21,004		6,168		60,131	55	35	10
1991		33,368		21,425		6,525		61,318	54	35	11
1992		33,001		21,795		6,884		61,681	54	35	11
1993		33,785		22,815		7,403		64,003	53	36	12
1994		35,263		26,757		7,700		69,720	51	38	11
1995		37,523		28,997		8,185		74,705	50	39	11
1996		39,753		30,550		8,661		78,964	50	39	11
1997		41,979		30,690		9,214		81,883	51	37	11
1998		43,323		31,689		9,702		84,714	51	37	11
1999		43,388		32,076		10,125		85,588	51	37	12

Source: Appendix 1.

Note: in calculating percentage shares the old national accounts have been used to 1977 and the new SNA accounts from 1978 on. The dual entries for 1978 reflect the switchover.

Table 2
Shares of After-Tax Wages and Surplus in GDP: % of GDP at Factor Cost

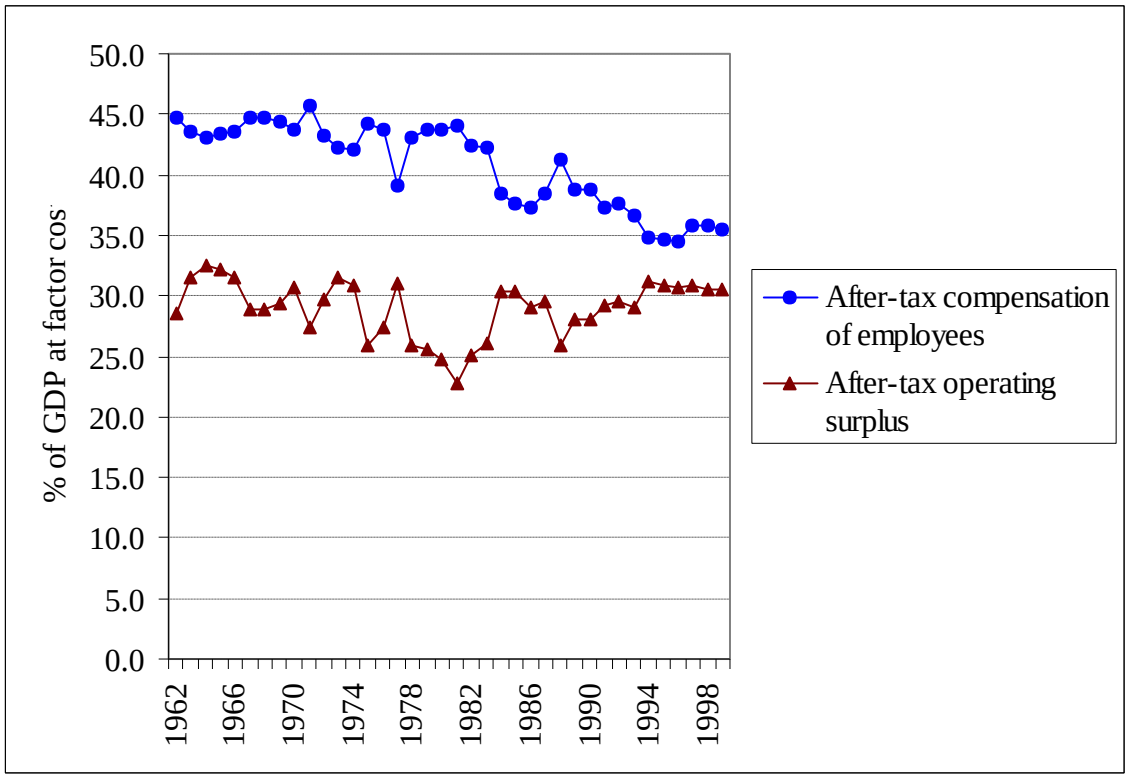
	After-tax compens-ation of employees	After-tax operating surplus	Depreciat-ion	Total after-tax factor claims	Tax on wages and salaries	Tax on company income	Tax on self-employed incomes
1962	44.7	32.3	8.9	85.9	6.6	5.3	2.2
1963	43.5	34.9	8.7	87.2	6.3	4.6	2.0
1964	43.1	35.8	8.5	87.4	6.1	4.6	2.0
1965	43.3	35.1	8.4	86.8	6.3	4.9	2.0
1966	43.6	34.2	8.6	86.4	6.7	4.9	1.9
1967	44.8	31.4	9.7	85.9	7.4	5.0	1.8
1968	44.7	31.3	9.8	85.8	7.6	4.8	1.7
1969	44.4	31.9	10.1	86.4	7.7	4.3	1.6
1970	43.8	32.0	10.0	85.7	8.4	4.2	1.6
1971	45.7	28.6	9.8	84.2	9.7	4.4	1.7
1972	43.2	30.8	8.7	82.7	10.7	4.8	1.9
1973	42.3	32.7	8.4	83.4	10.4	4.2	2.1
1974	42.1	32.0	8.1	82.2	11.0	4.6	2.2
1975	44.3	26.9	8.5	79.6	13.4	4.9	2.1
1976	43.7	28.2	8.6	80.5	13.3	4.3	1.9
1977	39.2	31.7	8.2	79.1	14.7	4.4	1.8
1978	43.1	26.5	8.5	78.1	15.7	4.3	1.9
1979	43.7	26.3	8.3	78.3	16.4	3.4	1.9
1980	43.8	25.4	8.1	77.3	16.7	4.1	2.0
1981	44.0	23.2	8.0	75.2	18.2	4.6	1.9
1982	42.5	25.5	7.5	75.5	19.2	3.3	1.9
1983	42.2	26.5	7.8	76.5	17.8	3.8	1.9
1984	38.5	30.7	8.5	77.7	17.1	3.4	1.7
1985	37.6	30.4	9.2	77.1	16.7	4.2	1.9
1986	37.3	29.1	9.4	75.8	18.3	4.2	1.7
1987	38.5	29.6	9.3	77.4	17.7	3.5	1.5
1988	41.2	26.1	9.9	77.2	16.4	4.8	1.6
1989	38.8	28.3	10.1	77.1	16.9	4.2	1.7
1990	38.7	28.2	10.3	77.2	16.1	4.8	2.0
1991	37.3	29.4	10.6	77.4	17.1	3.5	2.0
1992	37.6	29.7	11.2	78.5	15.9	3.5	2.1
1993	36.6	29.2	11.6	77.3	16.2	4.1	2.3
1994	34.8	31.4	11.0	77.2	15.8	4.7	2.3
1995	34.6	31.1	11.0	76.6	15.6	5.5	2.2
1996	34.4	30.9	11.0	76.3	15.9	5.8	1.9
1997	35.8	31.1	11.3	78.1	15.5	4.8	1.6
1998	35.9	30.8	11.5	78.1	15.3	5.1	1.5
1999	35.6	30.7	11.8	78.1	15.1	5.2	1.6

Source: Appendix 1.

After-tax operating surplus was clearly squeezed (by the State rather than organised labour[10]) during the two decades prior to 1982. The surplus share fell from a peak of 32.6 in 1962 to a trough of 22.7% in 1981, following which it rebounded back to 31% by 1994 and has stabilised at that level since.

In summary, the combined after-tax share of direct factor claims as represented by the two major national-accounts aggregates dropped from about 83% to 75% by the early 1980s as the tax wedge widened, then stabilised and picked up slightly to about 77-78% by the end of the 1990s. The squeeze went first onto operating surplus in the 1970s, then was progressively transferred to after-tax wages and salaries from the early-mid 1980s. Figure 3 shows the trends in the two shares.

Figure 3
Shares of After-Tax Compensation of Employees and After-Tax Operating Surplus in GDP



Here again there is some support for the hypothesis of a change in conjuncture adversely affecting the wage share from the early-mid 1980s through the 1990s, with a loss of about 10% of GDP to the other claimants contained within the national accounts aggregates "depreciation" and "operating surplus".

To say anything satisfactory about the profit share, we have to break down the undifferentiated residual called "operating surplus". Included in this component are

[10] This obviously has to be qualified by the observation that labour was able to pass through a rising tax rate entirely to the purchasers of labour, which implies either a subsistence floor to the income wage rate, or costless migration to an external labour market which determined the New Zealand income wage rate, or the exercise of some degree of market power by labour.

self-employed income, imputed rents on owner-occupied housing, profits earned by overseas owners of New Zealand firms, errors and omissions, and residual profits and rents flowing to domestic capitalists. Table 3 presents a provisional decomposition, with errors and omissions still remaining hidden inside the after-tax surplus accruing to domestic capitalists. Figure 4 plots the results and draws attention immediately to the expansion of overseas profits and owner-occupied housing relative to the other components of Operating Surplus.

Figure 4
Decomposition of Operating Surplus: $ million

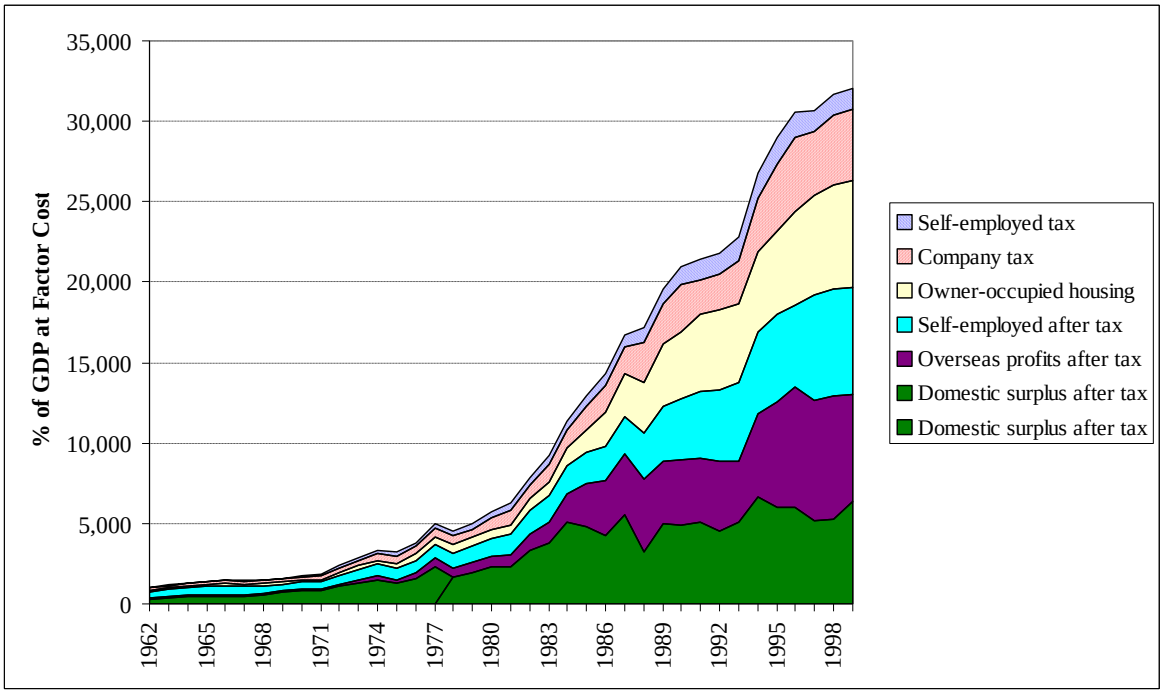


Table 4 then shows the components of gross surplus as percentages of GDP at Factor Cost and the results are plotted in Figure 5. The recovery of gross surplus from 38% of GDP in 1981 to 49% by 1994 is immediately apparent.

In Figure 5 it is apparent that the three growing shares within operating surplus were depreciation, owner-occupied housing, and foreign profits. Depreciation is appropriately netted out before looking seriously at factor shares; I have left it in up to this point only because the national-accounts estimate for depreciation is notional only, and for some purposes it is better to look at the gross surplus given that this is the primary source of finance for gross investment. We have, however, no way of decomposing depreciation between domestic and foreign owned assets and in Table 5 and Figure 6 it is taken out to leave shares of NDP at factor cost.

The imputed rentals on owner-occupied housing represent not actual production in each period, but simply a proxy for the welfare gained by home owners in the sense of not having to pay house rent out of their actual factor income receipts. Its increase from 2.8% of NDP in 1981 to 8.5% by 1999 reflects the rise in house prices and

market rents relative to other prices in the economy, rather than an increase in its share of the annual flow of real resources and product. Its inclusion in operating surplus potentially distorts the picture, since our interest is primarily in the share of net profit accruing to capitalists engaged in market production using wage labour. Therefore in Table 6 and Figure 7 owner-occupied housing has been taken out, leaving the profits of capitalists and the business incomes of the self-employed.

In a final step, the self-employed are excluded for Figure 8, which shows the profits share as usually understood in classical growth theory. We now find that there was no squeeze on profits in this sense during the 1960s and 1970s according to these figures; on the contrary, the pre-tax profit share rose from 20.3% in 1960 to over 25% for much of the 1970s, before falling to 21% in 1981. Much of this apparent fall reflects the change in statistical procedure when SNA accounts began in 1978, so one should not read anything too dramatic into the period around 1980.

Clearly since the early 1980s the profit share has held steady but has exhibited pro-cyclical fluctuations, rising in booms and falling in recessions. Two features stand out starkly from Figure 8, however:

- The structural reforms which began in the mid-1980s had no apparent effect on the aggregate profit share over the long haul. Insofar as the profit-squeeze diagnosis of slow economic growth had any force in the early 1980s, there has been no redistribution towards capital since then, which might suggest that one of the necessary conditions for reviving capitalist growth – a rising share of net profit - has been missing in New Zealand. This is all the more intriguing given the apparently sustained political offensive against wages and salaries throughout the period, seen earlier in Figure 3. It now emerges that the apparent gains to "surplus" in Figure 3 were due to rising house prices, not improving real profitability in production.

- The second major stylised fact to emerge from Figure 8 is the near-euthanasia of domestic capital, as the deregulation of capital markets and privatisation of state assets have shifted large swathes of the economy into foreign ownership. The after-tax profit share of overseas owners overtook the share of domestic capital decisively in 1995 and is currently running at 9-10% of NDP excluding owner-occupied housing, compared with 7-8% for domestic capital, which had had a 21% share in the 1970s. For those reared on the notion that national capital has some special role in a development and growth process, this trend would be cause for consternation. Even in an era of globalisation, the question naturally arises whether there is any behavioural difference between foreigners and local capitalists in the ways they allocate their locally-captured profits. Clearly the immediate future of economic growth in New Zealand now lies in the hands of foreign investors to an extent that would have been unthinkable twenty years ago.

The rising share of profits to overseas owners in Figure 8 is, of course, simply the story of the balance of payments current account in the 1990s – indeed, our estimate of that share was obtained using the balance of payments series for "property and entrepreneurial income to rest of world". There is a whole story to be told about the relationship between the accrual of those profits in the balance of payments statistics,

and their actual disposition between repatriation and acquisition of New Zealand dollar-denominated assets. That, however, is the subject for another paper.

3. Conclusions

- The share of wages and salaries has unequivocally fallen through the period of free-market reforms, but the Employment Contracts Act looks to have been simply a symptom of the general trend, not a significant event in its own right.

- The profit share, in the sense of company profits accruing to domestic and foreign owners of corporate enterprises, has barely changed over the past half-century (allowing for the one-off statistical shift in 1978 when the national accounts methodology changed). The profit share moves pro-cyclically, and the past twenty years have witnessed a massive transfer of the economy's profits flow out of the hands of local owners and into foreign hands, to the point where domestic capitalists are now minority participants in the aggregate profit share.

- Self-employed income suffered a massive squeeze from the early 1960s to the late 1970s (down from 19% to 7% of NDP excluding owner-occupied housing, in after-tax terms – see Table 6) and has rebounded only slightly in the 1990s (back to 9%).

- Most of the apparent rise in the share of operating surplus is attributable to rising house prices and a corresponding increase in the share of imputed rents.

- Consequently, reclassification of self-employed business income and owners-occupied housing can quite radically change the picture of the distribution of the total net product among the four claimants Labour, the State, Foreign Capital, and Domestic Capital. See Figures 9-11.

The implications of changing factor shares for economic growth remain an intriguing topic for further investigation. The era of a falling wage share from 1982 on corresponded to a period of rising unemployment and slow growth. However, the failure of the profit share to rise as the labour share fell may help to explain why the squeeze on labour incomes had such a poor payoff in terms of capitalist rejuvenation. In addition, the era of radical attempts to wither the State left the tax wedge on factor incomes in general virtually unchanged.

Table 3
Estimated Breakdown of Operating Surplus Plus Depreciation: $ million

March years	Estimated self-empl-oyed after-tax income	Imputed rent on owner-occupied housing	After-tax profits earned by overseas owners	After-tax net surplus to domestic owners (residual)		Tax on company income	Tax on self-employed income (estimate)	Total operating surplus		Depreciation	
				ONA basis	SNA basis			ONA basis	SNA basis	ONA basis	SNA basis
	$ million										
1962	442	60	33	306		138	*58*	1,038		231	
1963	474	81	46	396		130	57	1,183		249	
1964	513	86	47	464		142	*62*	1,313		265	
1965	537	96	61	500		166	67	1,426		287	
1966	563	109	85	501		182	70	1,509		317	
1967	506	114	93	492		191	69	1,465		373	
1968	451	124	84	590		192	*69*	1,510		390	
1969	395	130	118	703		180	69	1,595		426	
1970	422	140	139	795		197	75	1,768		466	
1971	437	156	126	803		234	89	1,846		523	
1972	540	198	128	1,082		300	*120*	2,368		549	
1973	644	221	188	1,319		306	150	2,828		609	
1974	724	264	226	1,504		394	183	3,295		689	
1975	743	312	219	1,259		463	*199*	3,194		799	
1976	761	423	333	1,585		470	214	3,786		943	
1977	815	466	526	2,344		572	*240*	4,962		1,077	
1978	869	541	571	2,215	1,673	590	265	5,051	4,509	1,168	1,167
1979	1,004	509	676		1,929	529	301		4,948		1,297
1980	1,171	522	636		2,281	736	358		5,704		1,468
1981	1,264	558	758		2,292	976	408		6,257		1,672
1982	1,456	728	1,038		3,301	856	497		7,876		1,926
1983	1,619	897	1,292		3,799	1,087	538		9,231		2,247
1984	1,747	1,100	1,809		5,065	1,075	551		11,347		2,689
1985	1,927	1,383	2,627		4,825	1,490	677		12,929		3,241
1986	2,129	2,116	3,380		4,262	1,698	703		14,289		3,826
1987	2,331	2,668	3,726		5,573	1,667	730		16,695		4,492
1988	2,842	3,188	4,515		3,226	2,519	854		17,144		5,230
1989	3,372	3,937	3,935		4,962	2,418	979		19,603		5,764
1990	3,709	4,218	4,071		4,932	2,891	1,183		21,004		6,168
1991	4,142	4,788	4,037		5,039	2,168	*1,250*		21,425		6,525
1992	4,443	4,979	4,370		4,521	2,164	1,318		21,795		6,884
1993	4,910	4,904	3,788		5,082	2,642	1,490		22,815		7,403
1994	5,126	4,967	5,161		6,614	3,307	1,582		26,757		7,700
1995	5,390	5,219	6,579		6,025	4,120	1,665		28,997		8,185
1996	5,080	5,878	7,463		5,980	4,615	1,534		30,550		8,661
1997	6,516	6,226	7,528		5,155	3,943	1,322		30,690		9,214
1998	6,703	6,470	7,616		5,276	4,315	1,310		31,689		9,702
1999	6,650	6,673	6,626		6,353	4,424	*1,350*		32,076		10,125

Table 4
Estimated Breakdown of Operating Surplus Plus Depreciation: % of GDP

March years	Estimated self-empl-oyed after-tax income		Imputed rent on owner-occupied housing		After-tax profits earned by overseas owners		After-tax net surplus to domestic owners (residual)		Tax on company income	Tax on self-employed income (estimate)	Total operating surplus		Depreciation	
							ONA basis	SNA basis			ONA basis	SNA basis	ONA basis	SNA basis
	% of GDP at Factor Cost													
1962	17.0		2.3		1.3		11.7		5.3	2.2	39.8		8.9	
1963	16.6		2.8		1.6		13.9		4.6	2.0	41.5		8.7	
1964	16.5		2.8		1.5		15.0		4.6	2.0	42.3		8.5	
1965	15.8		2.8		1.8		14.7		4.9	2.0	41.9		8.4	
1966	15.3		3.0		2.3		13.6		4.9	1.9	41.0		8.6	
1967	13.2		3.0		2.4		12.8		5.0	1.8	38.1		9.7	
1968	11.3		3.1		2.1		14.8		4.8	1.7	37.9		9.8	
1969	9.4		3.1		2.8		16.6		4.3	1.6	37.8		10.1	
1970	9.0		3.0		3.0		17.0		4.2	1.6	37.8		10.0	
1971	8.2		2.9		2.4		15.1		4.4	1.7	34.7		9.8	
1972	8.6		3.1		2.0		17.1		4.8	1.9	37.5		8.7	
1973	8.9		3.0		2.6		18.2		4.2	2.1	38.9		8.4	
1974	8.5		3.1		2.7		17.7		4.6	2.2	38.8		8.1	
1975	7.9		3.3		2.3		13.4		4.9	2.1	33.9		8.5	
1976	6.9		3.8		3.0		14.4		4.3	1.9	34.4		8.6	
1977	6.2		3.6		4.0		17.9		4.4	1.8	37.9		8.2	
1978	6.1	6.3	3.8	3.9	4.0	4.1	15.5	12.1	4.1	4.3	1.8	1.9	35.3	32.7	8.2	8.5
1979		6.4		3.3		4.3		12.3		3.4		1.9		31.6		8.3
1980		6.5		2.9		3.5		12.6		4.1		2.0		31.4		8.1
1981		6.0		2.7		3.6		10.9		4.6		1.9		29.8		8.0
1982		5.7		2.8		4.1		12.9		3.3		1.9		30.8		7.5
1983		5.6		3.1		4.5		13.2		3.8		1.9		32.1		7.8
1984		5.5		3.5		5.7		16.0		3.4		1.7		35.9		8.5
1985		5.4		3.9		7.4		13.6		4.2		1.9		36.5		9.2
1986		5.2		5.2		8.3		10.4		4.2		1.7		35.0		9.4
1987		4.8		5.5		7.7		11.5		3.5		1.5		34.6		9.3
1988		5.4		6.0		8.5		6.1		4.8		1.6		32.5		9.9
1989		5.9		6.9		6.9		8.7		4.2		1.7		34.2		10.1
1990		6.2		7.0		6.8		8.2		4.8		2.0		34.9		10.3
1991		6.8		7.8		6.6		8.2		3.5		2.0		34.9		10.6
1992		7.2		8.1		7.1		7.3		3.5		2.1		35.3		11.2
1993		7.7		7.7		5.9		7.9		4.1		2.3		35.6		11.6
1994		7.4		7.1		7.4		9.5		4.7		2.3		38.4		11.0
1995		7.2		7.0		8.8		8.1		5.5		2.2		38.8		11.0
1996		6.4		7.4		9.5		7.6		5.8		1.9		38.7		11.0
1997		8.0		7.6		9.2		6.3		4.8		1.6		37.5		11.3
1998		7.9		7.6		9.0		6.2		5.1		1.5		37.4		11.5
1999		7.8		7.8		7.7		7.4		5.2		1.6		37.5		11.8

Figure 5
Decomposition of Gross Surplus (Operating Surplus Plus Depreciation)

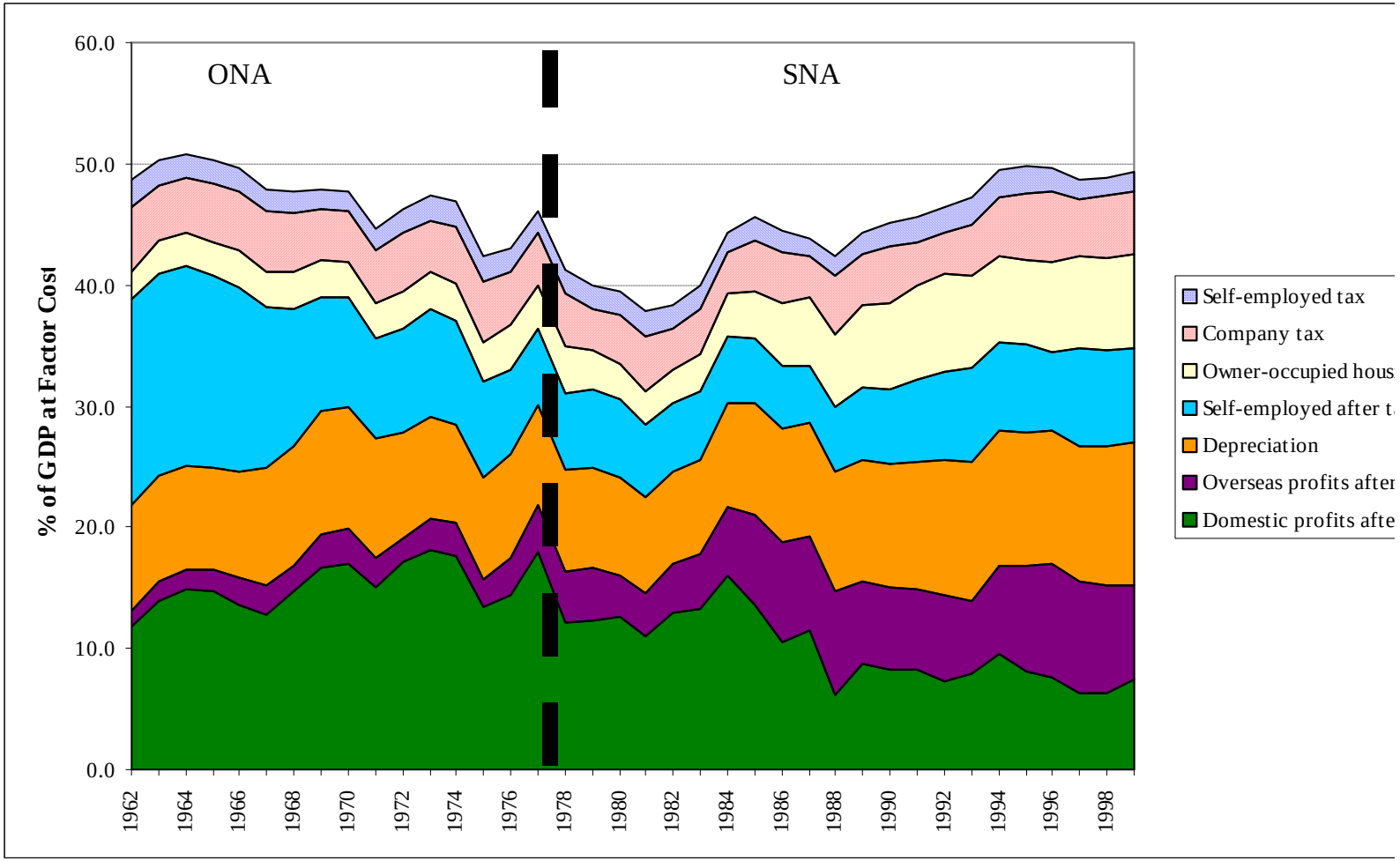


Table 5
Operating SurplusComponents as % of NDP

March years	Estimated self-employed after-tax income	Imputed rent on owner-occupied housing	After-tax profits earned by overseas owners	After-tax net surplus to domestic owners (residual)		Tax on company income	Tax on self-employed income (estimate)	Total operating surplus	
				ONA basis	SNA basis			ONA basis	SNA basis
	% of NDP at Factor Cost								
1962	18.4	2.5	1.4	12.7		5.7	2.4	43.1	
1963	18.1	3.1	1.8	15.1		5.0	2.2	45.2	
1964	17.9	3.0	1.6	16.2		5.0	2.1	45.8	
1965	17.1	3.1	1.9	15.9		5.3	2.1	45.3	
1966	16.7	3.2	2.5	14.8		5.4	2.1	44.7	
1967	14.7	3.3	2.7	14.3		5.6	2.0	42.5	
1968	12.5	3.4	2.3	16.4		5.4	1.9	42.0	
1969	10.4	3.4	3.1	18.5		4.7	1.8	42.1	
1970	10.0	3.3	3.3	18.9		4.7	1.8	42.1	
1971	9.1	3.3	2.6	16.8		4.9	1.9	38.6	
1972	9.4	3.4	2.2	18.7		5.2	2.1	41.0	
1973	9.7	3.3	2.8	19.8		4.6	2.3	42.4	
1974	9.3	3.4	2.9	19.3		5.0	2.4	42.2	
1975	8.7	3.7	2.6	14.8		5.4	2.3	37.5	
1976	7.7	4.3	3.4	16.1		4.8	2.2	38.5	
1977	6.8	3.9	4.4	19.5		4.8	2.0	41.3	
1978	6.6	6.9	4.1	4.3	4.3	4.5	16.8	13.2	4.5	4.7	2.0	2.1	38.3	35.7
1979		7.0		3.5		4.7		13.4		3.7		2.1		34.4
1980		6.9		3.1		3.8		13.5		4.4		2.1		33.8
1981		6.4		2.8		3.9		11.7		5.0		2.1		31.8
1982		6.1		3.0		4.3		13.7		3.6		2.1		32.8
1983		6.0		3.3		4.8		14.1		4.0		2.0		34.3
1984		5.9		3.7		6.1		17.2		3.6		1.9		38.5
1985		6.9		4.2		8.0		14.7		4.5		1.0		39.3
1986		6.1		5.6		9.0		11.3		4.5		1.4		38.0
1987		5.1		5.8		8.1		12.2		3.6		1.6		36.5
1988		5.6		6.2		8.8		6.3		4.9		1.7		33.5
1989		6.1		7.2		7.2		9.0		4.4		1.8		35.7
1990		6.3		7.2		7.0		8.4		4.9		2.0		35.9
1991		7.0		8.1		6.8		8.5		3.7		2.1		36.2
1992		7.6		8.5		7.5		7.7		3.7		2.3		37.3
1993		8.2		8.2		6.3		8.5		4.4		2.5		38.2
1994		7.8		7.6		7.9		10.1		5.1		2.4		40.9
1995		7.7		7.4		9.4		8.6		5.9		2.4		41.3
1996		6.9		7.9		10.1		8.1		6.2		2.1		41.2
1997		8.5		8.1		9.8		6.7		5.2		1.7		40.1
1998		8.5		8.2		9.7		6.7		5.5		1.7		40.3
1999		8.5		8.5		8.4		8.1		5.6		1.7		40.8

Figure 6
Operating Surplus Components as % of NDP

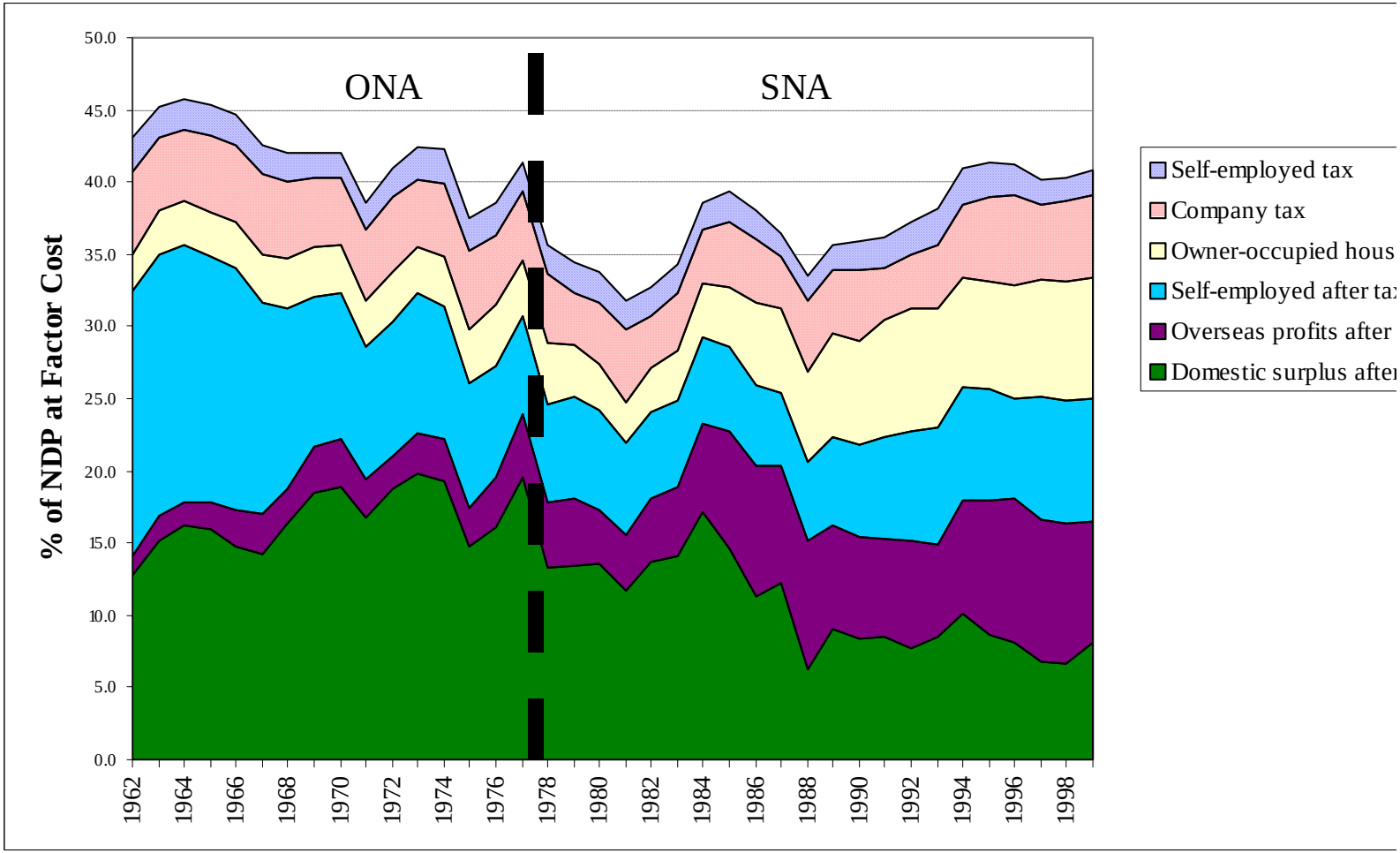


Table 6
Operating Surplus Components: % of NDP Excluding Owner-Occupied Housing

March years	Estimated self-employed after-tax income	Imputed rent on owner-occupied housing	After-tax profits earned by overseas owners	After-tax net surplus to domestic owners (residual)		Tax on company income	Tax on self-employed income (estimate)	Total operating surplus excl owner-occupied housing		After-tax operating surplus excl owner-occupied housing	
				ONA basis	SNA basis			ONA basis	SNA basis	ONA basis	SNA basis
	% of NDP at Factor Cost Excluding Owner-Occupied Housing										
1962	18.8		1.4	13.0		5.9	2.5	41.6		33.3	
1963	18.7		1.8	15.6		5.1	2.2	43.5		36.1	
1964	18.4		1.7	16.7		5.1	2.2	44.1		36.8	
1965	17.6		2.0	16.4		5.4	2.2	43.6		36.0	
1966	17.2		2.6	15.3		5.6	2.1	42.8		35.1	
1967	15.2		2.8	14.8		5.7	2.1	40.6		32.8	
1968	13.0		2.4	17.0		5.5	2.0	39.9		32.4	
1969	10.8		3.2	19.2		4.9	1.9	40.0		33.2	
1970	10.4		3.4	19.6		4.9	1.8	40.1		33.4	
1971	9.4		2.7	17.4		5.1	1.9	36.5		29.5	
1972	9.7		2.3	19.4		5.4	2.1	38.9		31.4	
1973	10.0		2.9	20.5		4.7	2.3	40.4		33.4	
1974	9.6		3.0	20.0		5.2	2.4	40.2		32.6	
1975	9.1		2.7	15.4		5.6	2.4	35.2		27.1	
1976	8.1		3.5	16.9		5.0	2.3	35.8		28.5	
1977	7.1		4.6	20.3		5.0	2.1	39.0		31.9	
1978	6.9	7.2	4.5	4.7	17.5	13.8	4.7	4.9	2.1	2.2	35.7	32.8	28.9	25.7
1979		7.2		4.9		13.9		3.8		2.2		32.0		26.0
1980		7.2		3.9		14.0		4.5		2.2		31.7		25.0
1981		6.6		4.0		12.0		5.1		2.1		29.9		22.6
1982		6.2		4.5		14.2		3.7		2.1		30.7		24.9
1983		6.2		5.0		14.6		4.2		2.1		32.0		25.8
1984		6.2		6.4		17.9		3.8		1.9		36.1		30.4
1985		7.2		8.3		15.3		4.7		1.1		36.7		31.9
1986		6.5		9.5		12.0		4.8		1.5		34.3		28.5
1987		5.4		8.7		12.9		3.9		1.7		32.6		27.0
1988		5.9		9.4		6.7		5.2		1.8		29.1		22.1
1989		6.6		7.7		9.7		4.7		1.9		30.7		24.1
1990		6.8		7.5		9.1		5.3		2.2		31.0		23.4
1991		7.6		7.4		9.3		4.0		2.3		30.6		24.3
1992		8.3		8.2		8.4		4.0		2.5		31.4		24.9
1993		8.9		6.9		9.3		4.8		2.7		32.6		25.1
1994		8.5		8.5		10.9		5.5		2.6		36.0		28.0
1995		8.3		10.1		9.3		6.3		2.6		36.6		27.7
1996		7.4		10.9		8.8		6.8		2.2		36.1		27.1
1997		9.3		10.7		7.3		5.6		1.9		34.8		27.3
1998		9.3		10.6		7.3		6.0		1.8		35.0		27.2
1999		9.2		9.2		8.8		6.1		1.9		35.3		27.3

Figure 7
Operating Surplus Components Excluding owner-Occupied Housing

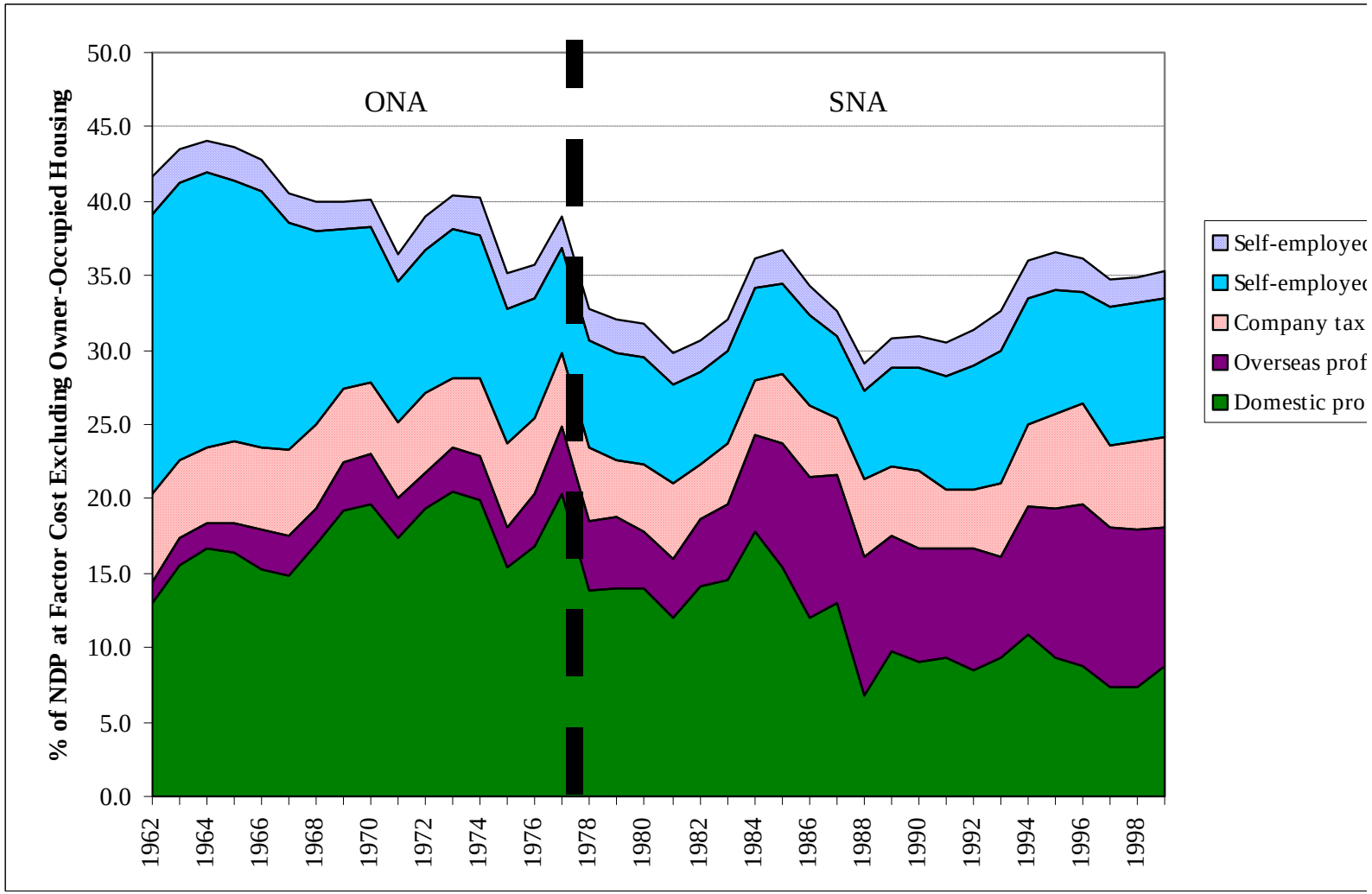


Figure 8
The Changing Shares of the Net Profit Share

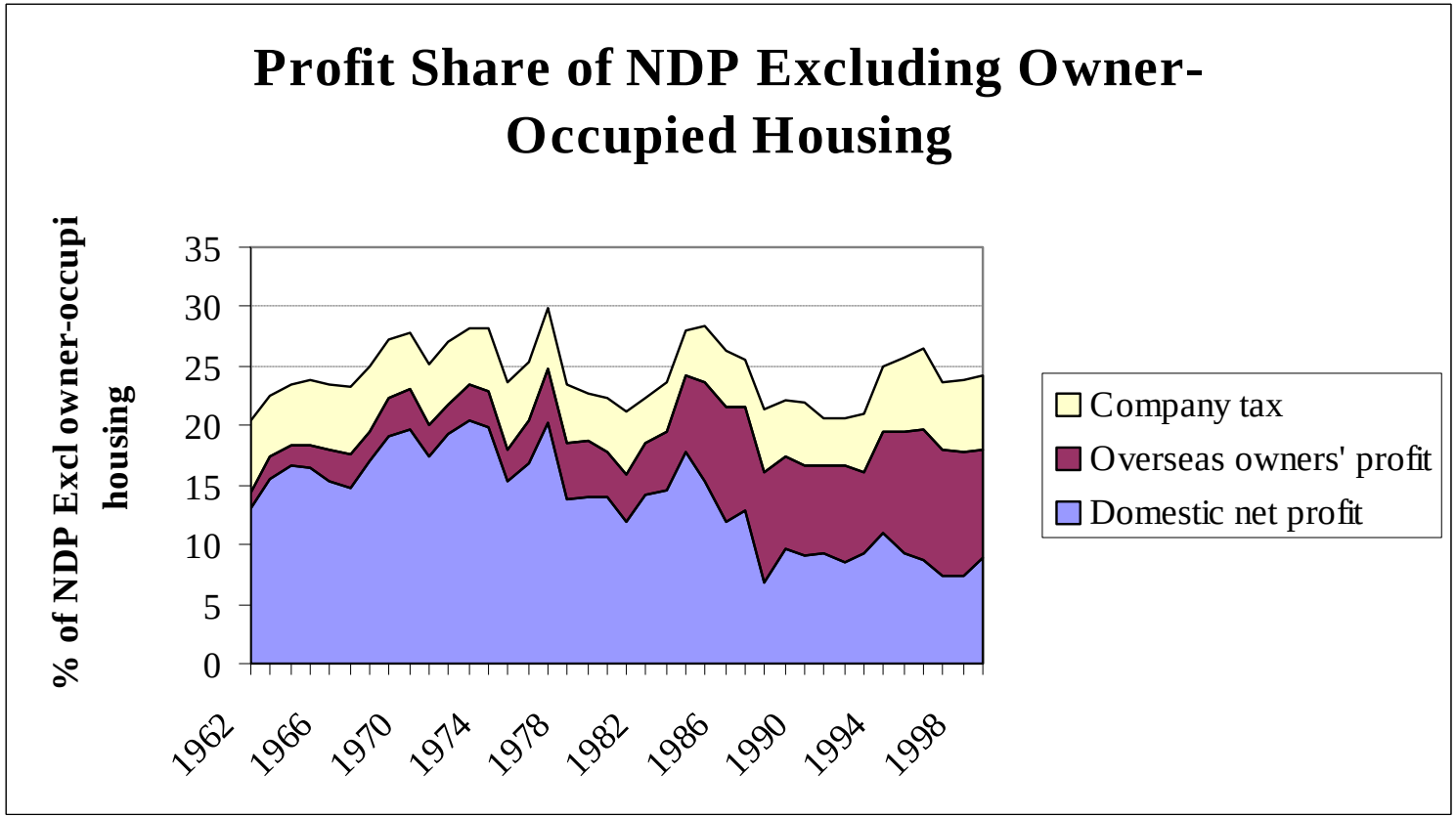


Figure 9
The Four Claimants with Self-Employed Treated as "Labour"

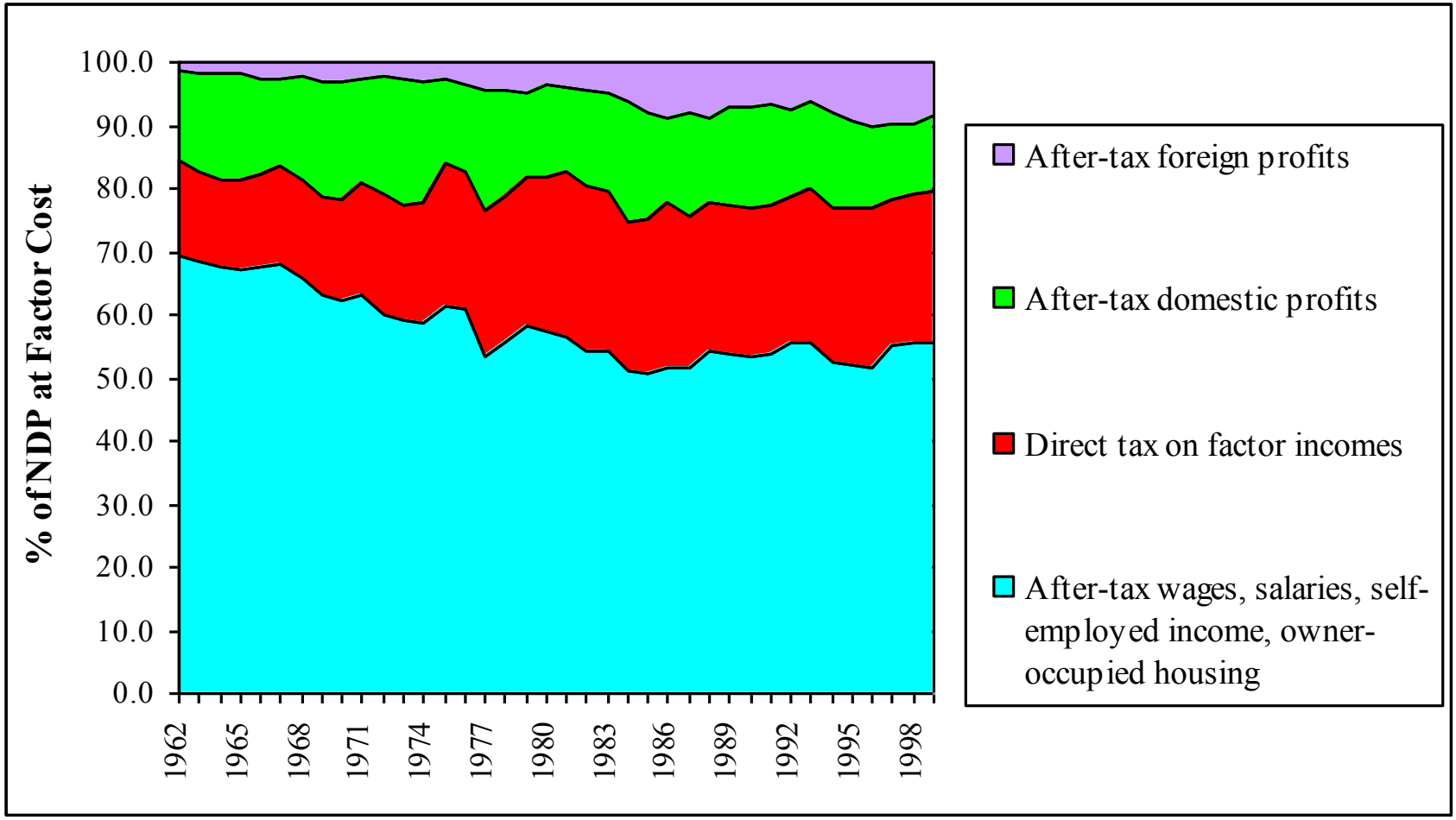


Figure 10
The Four Claimants with Self-Employed Treated as "Capitalists"

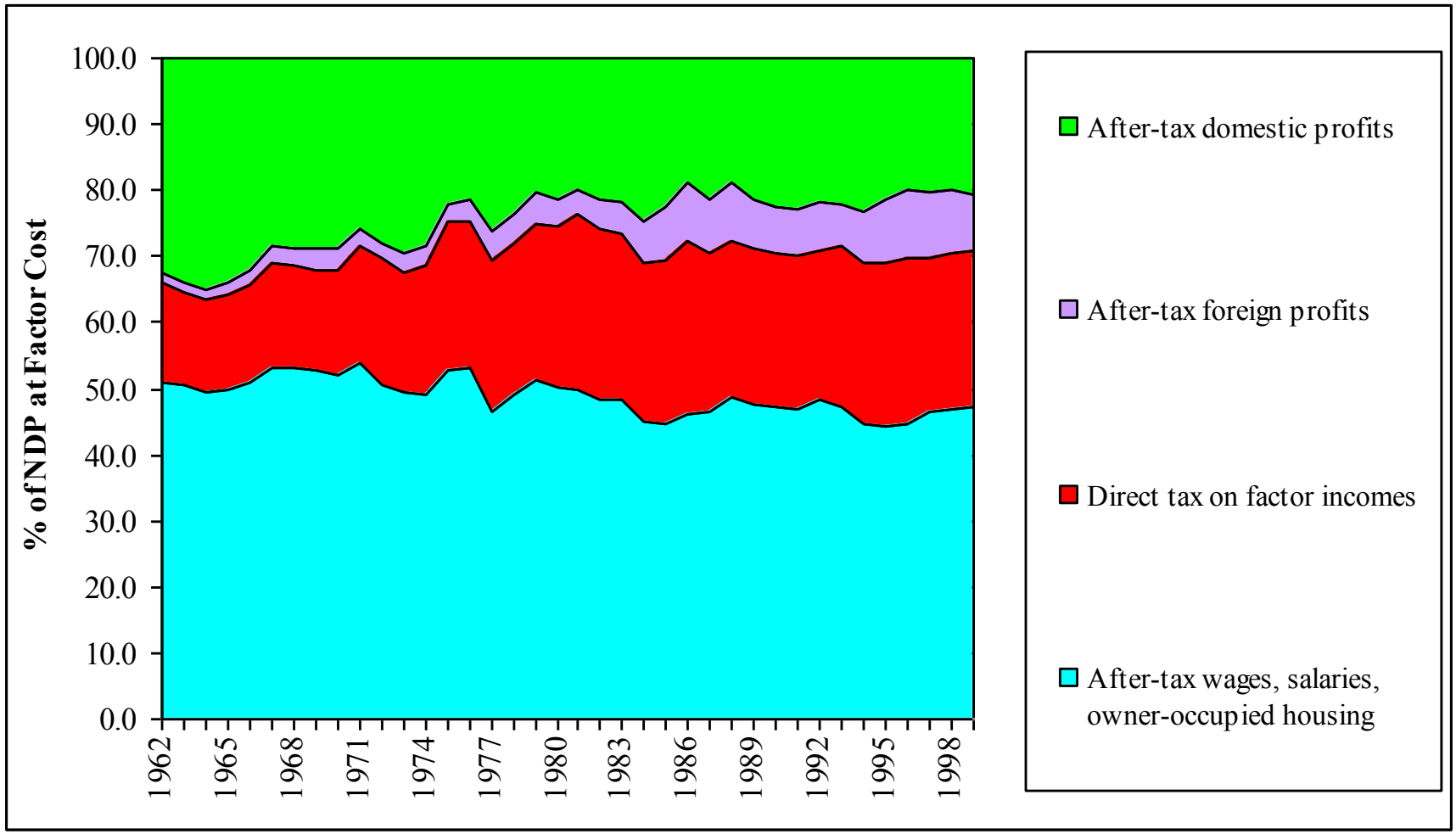
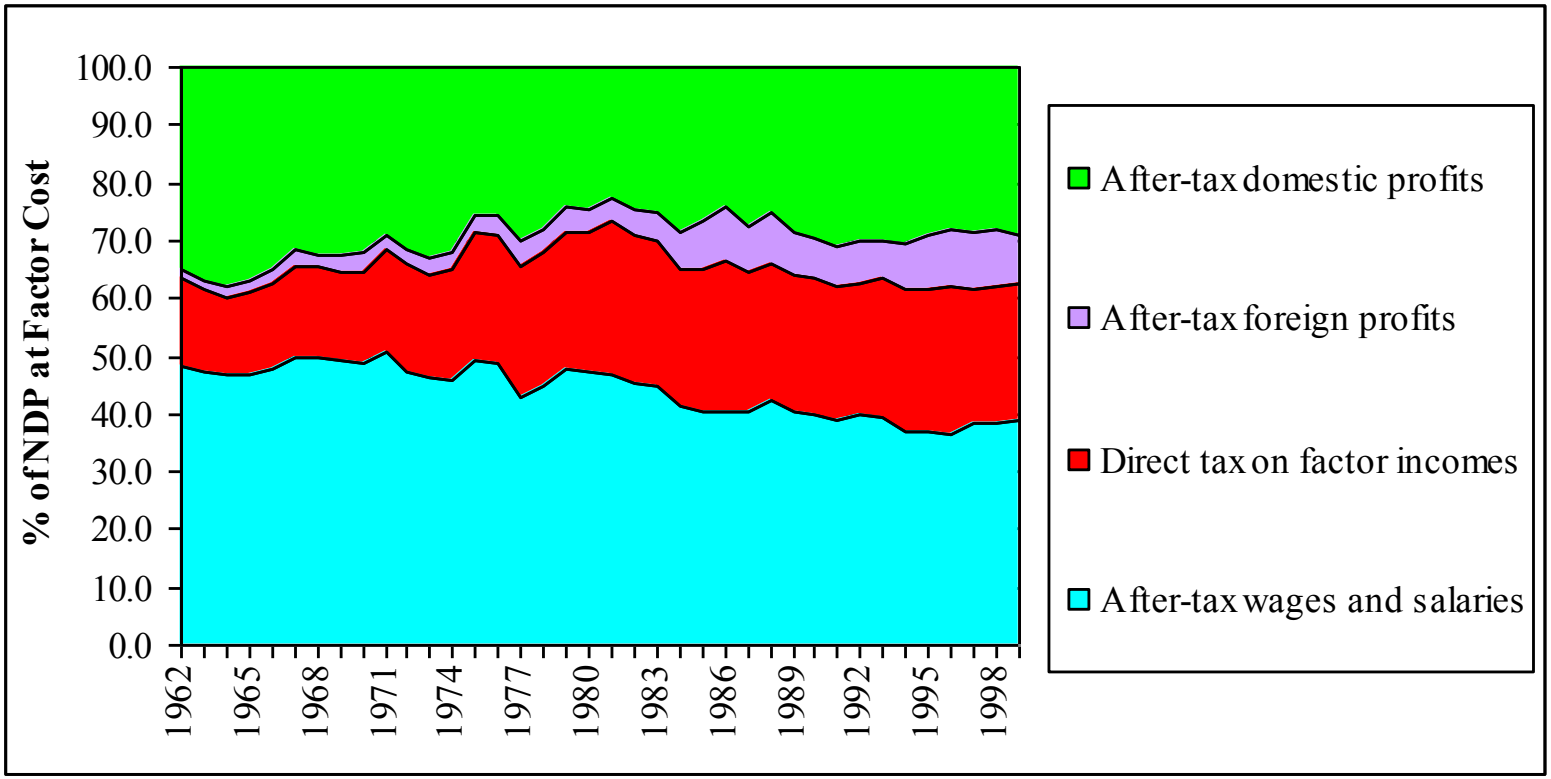


Figure 11
The Four Claimants with Self-Employed and House Owners Treated as "Capitalists"



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Appendix 1: Basic Data

Table A1.1: Derivation of GDP and NDP at Factor Cost: $ million

March years	GDP at market price		Depreciation		Indirect taxes		Subsidies		NDP at market price $m		GDP at Factor Cost		NDP at Factor Cost	
Infos:	SNAA.SH9	SNBA.SB9	SNAA.SHC	SNBA.SBC	SNAA.SHD	SNBA.SBC	SNAA.SHE	SNBA.SBE						
1962	2,872		231		293		29		2,641		2,608		2,410	
1963	3,114		249		293		30		2,865		2,851		2,616	
1964	3,397		265		324		30		3,132		3,103		2,867	
1965	3,721		287		355		36		3,434		3,402		3,147	
1966	4,012		317		371		39		3,695		3,680		3,378	
1967	4,190		373		389		40		3,817		3,841		3,444	
1968	4,375		390		408		21		3,985		3,988		3,595	
1969	4,642		426		441		20		4,216		4,221		3,790	
1970	5,133		466		482		27		4,667		4,678		4,201	
1971	5,832		523		577		59		5,309		5,314		4,786	
1972	6,871		549		662		108		6,322		6,317		5,773	
1973	7,887		609		754		129		7,278		7,262		6,669	
1974	9,181		689		850		163		8,492		8,494		7,803	
1975	10,107		799		917		238		9,308		9,428		8,509	
1976	11,712		943		1,103		391		10,769		11,000		9,826	
1977	14,162		1,077		1,300		243		13,085		13,105		12,008	
1978	15,511	14,970	1,168	1,167	1,469	1,469	277	277	14,343	13,803	14,319	13,778	13,175	12,636
1979		16,958		1,297		1,725		428		15,661		15,661		14,364
1980		19,795		1,468		1,998		352		18,327		18,149		16,859
1981		22,992		1,672		2,344		348		21,320		20,996		19,648
1982		27,891		1,926		2,913		578		25,965		25,556		24,039
1983		31,409		2,247		3,440		756		29,162		28,725		26,915
1984		34,839		2,689		3,874		660		32,150		31,625		29,461
1985		39,346		3,241		4,524		598		36,105		35,420		32,864
1986		45,282		3,826		4,854		362		41,456		40,790		37,630
1987		54,725		4,492		6,735		292		50,233		48,282		45,741
1988		61,641		5,230		9,081		271		56,411		52,831		51,181
1989		66,454		5,764		9,398		180		60,690		57,236		54,926
1990		70,773		6,168		10,848		206		64,605		60,131		58,437
1991		72,248		6,525		11,135		205		65,723		61,318		59,198
1992		72,277		6,884		10,837		241		65,393		61,681		58,509
1993		74,578		7,403		10,888		313		67,175		64,003		59,772
1994		80,824		7,700		11,408		304		73,124		69,720		65,424
1995		86,556		8,185		12,170		319		78,371		74,705		70,186
1996		91,461		8,661		12,810		313		82,800		78,964		74,139
1997		94,940		9,214		13,371		314		85,726		81,883		76,512
1998		98,025		9,702		13,623		312		88,323		84,714		78,621
1999		98,913		10,125		13,627		302		88,788		85,588		78,663

Table A1.2: After-Tax Compensation of Employees and Operating Surplus

	Compensation of Employees		Tax on wages and salaries	After-tax Compensation of Employees		Operating Surplus		Tax on company incomes	Tax on self-employed	After-tax Operating Surplus	
Infos:	SNAA.SIA	SNBA.SBA	TAXQ.SA, TAXQ.SD, & TAXQ.SE			SNAA.SHB	SNBA.SBB	TAXQ.SB	est		
1962	1,339		172	1,167		1,038		138	*58*	842	
1963	1,419		179	1,240		1,183		130	57	996	
1964	1,525		188	1,337		1,313		142	*62*	1,109	
1965	1,689		215	1,474		1,426		166	67	1,194	
1966	1,854		248	1,606		1,509		182	70	1,258	
1967	2,003		282	1,721		1,465		191	69	1,205	
1968	2,088		304	1,784		1,510		192	*69*	1,248	
1969	2,200		327	1,873		1,595		180	69	1,346	
1970	2,444		395	2,049		1,768		197	75	1,496	
1971	2,945		517	2,428		1,846		234	89	1,522	
1972	3,401		673	2,728		2,368		300	*120*	1,948	
1973	3,825		753	3,072		2,828		306	150	2,372	
1974	4,511		938	3,573		3,295		394	183	2,718	
1975	5,434		1,261	4,173		3,194		463	*199*	2,532	
1976	6,273		1,462	4,811		3,786		470	214	3,102	
1977	7,066		1,931	5,135		4,962		572	*240*	4,151	
1978	8,101	8,102	2,169	5,932	5,933	5,051	4,509	590	265	4,196	3,654
1979		9,415	2,575		6,840		4,948	529	301		4,118
1980		10,977	3,034		7,943		5,704	736	358		4,610
1981		13,066	3,830		9,236		6,257	976	408		4,873
1982		15,754	4,895		10,859		7,876	856	497		6,523
1983		17,248	5,119		12,129		9,231	1,087	538		7,606
1984		17,589	5,413		12,176		11,347	1,075	677		9,721
1985		19,250	5,930		13,320		12,929	1,490	703		11,439
1986		22,675	7,479		15,196		14,289	1,698	*365*		12,226
1987		27,095	8,522		18,573		16,695	1,667	730		14,298
1988		30,458	8,681		21,777		17,144	2,519	*854*		13,771
1989		31,869	9,683		24,568		19,603	2,418	979		16,206
1990		32,959	9,664		23,295		21,004	2,891	1,183		16,930
1991		33,368	10,469		22,899		21,425	2,168	*1,250*		18,007
1992		33,001	9,793		23,208		21,795	2,164	1,318		18,314
1993		33,785	10,366		23,419		22,815	2,642	1,490		18,683
1994		35,263	11,000		24,263		26,757	3,307	1,582		21,868
1995		37,523	11,683		25,840		28,997	4,120	1,665		23,212
1996		39,753	12,569		27,184		30,550	4,615	1,534		24,401
1997		41,979	12,675		29,304		30,690	3,943	1,322		25,425
1998		43,323	12,940		30,383		31,689	4,315	1,310		26,064
1999		43,388	12,953		30,435		32,076	4,424	*1,350*		26,302

Appendix 2
Disaggregating Operating Surplus

This appendix divides operating surplus up between an estimate of self-employed incomes (other than wages and salaries) and a residual comprising company profits, rents, and other types of income.

The basic data used for this purpose are the annual statistics on "incomes of persons", calculated by Statistics New Zealand from a 2% sample of wage and salary earners and a 10% sample of self-employed[11], drawn from the population of those filing tax returns.

Table A2.2 arrays the data, which has had to be extracted from a variety of sources in which the statistics have appeared over the years. The detailed presentation of the statistics has varied over time but the basic sample of taxpayers has remained reasonably consistent, and the categories into which income has been classified have also remained unchanged over recent decades. The main difference between the 1980s and the 1990s statistics has been the separate recording of a class of taxpayers whose income is derived principally from welfare benefits. Up until 1986 this group did not appear explicitly in the statistics (being mainly included among recipients of "investment income")[12] but from 1987 forward they appear as a separate group.

The taxable income of persons is made up of both factor incomes and transfer payments, and it is necessary to make some assumptions in order to extract figures for factor earnings only. Table A2.1 below lists the income categories shown in the income statistics and classifies them as factor payments or transfers for the purposes of the present exercise. The two categories which clearly are part of the economy's operating surplus – "assessable profits", and "net rents and royalties" – are available from disaggregated tables for only some of the years. As can be seen from Table A2.2, however, the aggregated category "business income" is so dominated by assessable profits that it seems reasonable to use the aggregate throughout the analysis as a proxy for non-corporate profits. Net rents and royalties presents more of a problem, since it is concealed within the aggregate "investment income", the greater part of which is transfers rather than factor payments.

[11] The self-employed sample was previously 12% in the 1980s.

[12] Cf *Hot off the Press* 87-88/183 p.1.

Table A2.1
Classification of Income Categories in "Incomes of Persons" Statistics

	Provisional classifications		
	Compensation of employees	Operating surplus	Transfers & other
Wages and salaries:			
Salary and wages	x		
Salary - shareholder employee	x		
Business income:			
Assessable profits		x	
Withholding payments less expenses			x
Investment income:			
Interest less exempt interest			x
Net rents and royalties		x	
Net dividends			x
Government transfers:			
Unemployment benefit			x
National superannuation			x
Current and previous losses			x
Other income:			
Estate and other income			x
Earnings related ACC			x
Pension, superannuation or annuity			x

Table A2.2
Data on Incomes of Persons: $million

March years	Wages and salaries	Assessable profits	Business Income	Net rents and royalties	Investment Income	Total taxable income	Total assessed tax
Panel 1							
Wage and salary earners, including welfare beneficiaries 1987 on							
1960	1,124		10			342	172
1961	1,245		10			328	174
1962							
1963	1,418		12			469	190
1964							
1965	1,682		11			583	238
1966	1,851		12			683	272
1967	2,005		11			779	301
1968							
1969	2,275	11	11	7	57	925	347
1970	2,507	13	13	7	58	1,929	387
1971	2,984	15	15	9	69	2,365	532
1972							
1973	3,981	21	21	12	67	3,377	769
1974	4,802	26	26	14	77	4,197	995
1975							
1976	6,404	32	35	21	103	6,235	1,497
1977							
1978	7,987	35	40	25	122	7,892	2,059
1979	9,182	40	43	29	138	9,084	2,342
1980	10,613	45	49	31	177	10,479	2,744
1981	12,187	54	59	32	214	12,104	3,329
1982	14,663	78	92	33	252	14,611	4,202
1983	16,363	81	93	41	301	16,382	4,612
1984	16,425	95	110	46	330	16,439	4,269
1985	17,733	96				18,493	4,763
1986						21,235	
1987	23,465		159		561	24,640	6,644
1988							
1989	25,594	226	237	114	1,284	30,649	7,513
1990	26,706	262	265	116	1,531	32,505	8,246
1991							
1992	27,325		550		1,489	32,330	8,291
1993	29,241		478		1,346	35,506	9,119
1994	28,676		498		1,075	35,895	9,228
1995	30,378		527		1,173	37,892	8,255
1996	32,553		521		1,374	40,208	10,430
1997	44,566		604		1,724	55,014	11,279
1998	45,488		649		1,631	56,412	11,416
1999							
2000							

Table A2.2 continued…

March years	Wages and salaries	Assessable profits	Business Income	Net rents and royalties	Investment Income	Total taxable income	Total assessed tax	Estimated tax on self-employed
			Panel 2 Self Employed					
1960	9		372			235	88	62
1961	11		386			215	85	59
1962								*58*
1963	10		393			216	81	57
1964								*62*
1965	13		442			265	97	67
1966	15		448			276	272	70
1967	13		439			268	98	69
1968								*69*
1969	15	420	420	3	17	264	99	69
1970	19	449	449	3	18	380	107	75
1971	16	472	472	3	19	400	120	89
1972								*120*
1973	25	726	726	4	26	680	204	150
1974	31	829	829	5	30	798	247	183
1975								*199*
1976	31	833	869	7	34	889	283	214
1977								*240*
1978	38	933	993	7	40	1,029	334	265
1979	42	1,079	1,145	8	46	1,187	379	301
1980	47	1,271	1,344	9	63	1,415	455	358
1981	55	1,367	1,462	11	75	1,550	491	408
1982	67	1,570	1,686	11	86	1,790	573	497
1983	78	1,736	1,857	15	100	1,967	611	538
1984	97	1,897	2,020	16	111	2,128	632	551
1985	105	2,211				2,576	741	677
1986						2,538		*703*
1987	146		2,498		171	2,736	808	730
1988								*854*
1989	198	3,551	3,646	26	236	4,028	1,084	979
1990	239	4,248	4,274	31	304	4,756	1,278	1,183
1991								*1,250*
1992	314		4,715		277	5,155	1,389	1,318
1993	327		5,465		266	5,894	1,591	1,490
1994	338		5,815		238	6,169	1,675	1,582
1995	355		6,112		271	6,550	1,784	1,665
1996	343		5,568		286	5,977	1,629	1,534
1997	394		6,572		393	6,998	1,466	1,322
1998	398		6,691		404	7,143	1,468	1,310
1999								
2000								

Note: tax on self-employed is estimated as total tax on households multiplied by the share of "business income" in total household incomes.

Table A2.2 continued…

Panel 3
Investment Income recipients, including welfare beneficiaries to 1986

March years	Wages and salaries	Assessable profits	Business Income	Net rents and royalties	Investment Income	Total taxable income	Total assessed tax
1960	3		2			34	11
1961	4		3			38	13
1962							
1963	5		3			47	14
1964							
1965	9		4			64	19
1966	9		4			71	21
1967	10		4			78	23
1968							
1969	15	5	5	19	111	100	29
1970	16	5	5	20	118	161	31
1971	18	6	6	22	132	180	37
1972							
1973	23	7	7	24	145	222	48
1974	25	7	7	27	162	241	54
1975							
1976	27	8	9	35	212	346	78
1977							
1978	57	15	17	53	350	831	189
1979	72	19	20	60	413	1,057	228
1980	83	22	24	71	510	1,328	284
1981	93	29	32	76	638	1,590	346
1982	117	38	41	91	787	2,008	449
1983	134	43	46	104	963	2,625	626
1984	172	56	59	46	1,115	2,951	726
1985	182	65				3,292	811
1986						4,213	
1987	275		83		1,933	5,101	1,198
1988							
1989	148	65	68	261	1,660	2,500	642
1990	243	88	89	116	2,129	3,111	825
1991							
1992	228		89		2,307	3,254	880
1993	245		86		2,092	2,954	811
1994	216		79		1,845	2,493	693
1995	232		86		1,850	2,604	720
1996	292		117		2,424	3,323	930
1997	357		148		3,028	4,102	-91
1998	377		151		3,177	4,265	-146
1999							
2000							

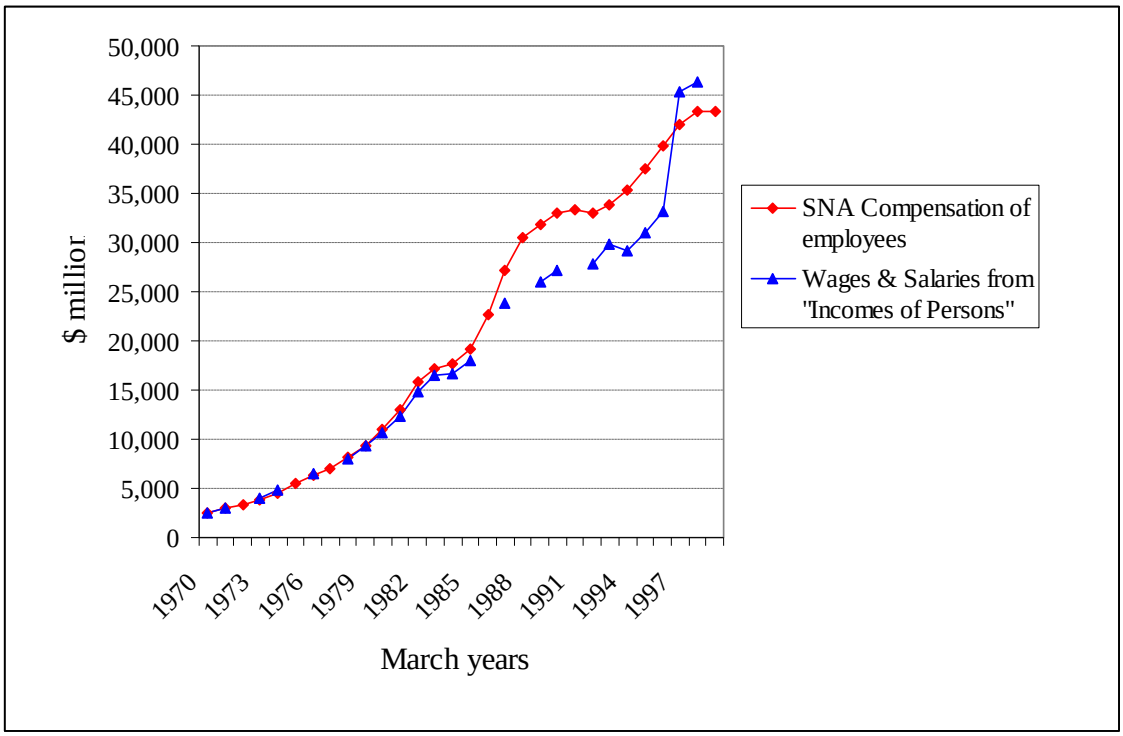
Table A2.2 continued…

March years	Wages and salaries	Assessable profits	Business Income	Net rents and royalties	Investment Income	Total taxable income	Total assessed tax
			Panel 4				
			Total Persons				
1960	1,135		384			611	271
1961	1,260		399			581	272
1962	0						
1963	1,434		510			732	286
1964	0		554				
1965	1,704		458			912	354
1966	1,875		612			1,030	564
1967	2,028		554		139	1,126	422
1968							
1969	2,305	436	436	28	186	1,290	475
1970	2,542	466	466	30	195	2,470	524
1971	3,018	492	493	34	221	2,945	689
1972							
1973	4,029	754	754	40	238	4,279	1,022
1974	4,858	862	862	46	269	5,236	1,296
1975							
1976	6,462	874	913	63	349	7,470	1,857
1977							
1978	8,082	983	1,049	85	512	9,751	2,583
1979	9,296	1,137	1,207	97	598	11,329	2,949
1980	10,743	1,338	1,417	112	750	13,221	3,483
1981	12,334	1,450	1,554	119	927	15,244	4,165
1982	14,847	1,686	1,818	135	1,125	18,409	5,223
1983	16,575	1,861	1,997	160	1,364	20,974	5,848
1984	16,694	2,049	2,189	109	1,555	21,519	5,626
1985	18,019	2,372				24,361	6,315
1986						27,987	
1987	23,886		2,741		2,666	32,477	8,649
1988							
1989	25,941	3,841	3,950	401	3,181	37,176	9,239
1990	27,187	4,599	4,628	264	3,964	40,371	10,349
1991							
1992	27,867		5,354		4,073	40,739	10,559
1993	29,812		6,029		3,704	44,353	11,521
1994	29,230		6,392		3,158	44,557	11,596
1995	30,965		6,725		3,294	47,046	10,759
1996	33,188		6,206		4,084	49,508	12,989
1997	45,317		7,324		5,145	66,114	12,654
1998	46,263		7,491		5,212	67,820	12,738
1999							
2000							

Sources: Assembled from various Statistics New Zealand publications including "Incomes of Persons", "Incomes and Income Tax", and "Hot off the Press".

As a first step in evaluating the usefulness of the "incomes of persons' data series I plotted the total wages and salaries series from Table A2.2 against the SNA "compensation of employees" for the period 1970-1999. The result is shown in Figure A2.1. The two sources are in close agreement up until 1984; thereafter they diverge. For the period 1987-1996, the "incomes of persons" data fall behind the SNA series. Then in 1998 an abrupt over-correction takes place, leaving the tax-data-based series higher then its SNA counterpart.

Figure A2.1
Wages and Salaries of Taxpayers Compared with Compensation of Employees



Next I assemble an estimate for the pre-tax operating surplus accruing directly to households from profits and rent. For this purpose I take "business income" as the best proxy for assessable profits, given the close relationship between the two in Table A2.2, and I estimate rents and royalties as 10% of total "investment income" from 1991 on. (For the 1960s the estimated ratio is 15%, and for the mid-late 1980s 12 %.) Years for which data is missing prior to 1989 are interpolated. The results are in Table A2.3.

The other category of operating surplus which accrues directly to households is the imputed value of owner-occupied housing. Table A2.4 shows figures for this component of GDP.

Table A2.3
Estimated Operating Surplus Accruing Directly to Households: $ million

March years	Assessable profits	Business Income	Net rents and royalties	Investment Income	Estimated self-employed operating surplus
1962					
1963		**510**	*20*		530
1964		**554**	*20*		574
1965		*583*	*20*		603
1966		**612**	*20*		632
1967		**554**	*21*	**139**	575
1968		*495*	*24*	*162*	520
1969		**436**	**28**	**186**	465
1970	**466**	**466**	**30**	**195**	497
1971	**492**	**493**	**34**	**221**	526
1972		*623*	*37*	*229*	660
1973	**754**	**754**	**40**	**238**	794
1974	**862**	**862**	**46**	**269**	907
1975		*887*	*54*	*309*	941
1976	**874**	**913**	**63**	**349**	976
1977		*981*	*74*	*430*	1,055
1978	**983**	**1,049**	**85**	**512**	1,134
1979	**1,137**	**1,207**	**97**	**598**	1,304
1980	**1,338**	**1,417**	**112**	**750**	1,529
1981	**1,450**	**1,554**	**119**	**927**	1,673
1982	**1,686**	**1,818**	**135**	**1,125**	1,953
1983	**1,861**	**1,997**	**160**	**1,364**	2,157
1984	**2,049**	**2,189**	**109**	**1,555**	2,298
1985	**2,372**	*2,373*	*231*	*1,925*	2,604
1986		*2,557*	*275*	*2,296*	2,832
1987		2,741	*320*	2,666	3,061
1988		*3,345*	*351*	*2,923*	3,696
1989	**3,841**	**3,950**	**401**	**3,181**	4,350
1990	**4,599**	**4,628**	**264**	**3,964**	4,892
1991		*4,991*	*402*	*4,019*	5,393
1992		5,354	*407*	**4,073**	5,761
1993		**6,029**	*370*	**3,704**	6,399
1994		**6,392**	*316*	**3,158**	6,708
1995		**6,725**	*329*	**3,294**	7,054
1996		**6,206**	*408*	**4,084**	6,614
1997		**7,324**	*515*	**5,145**	7,839
1998		**7,491**	*521*	**5,212**	8,012
1999					
2000					

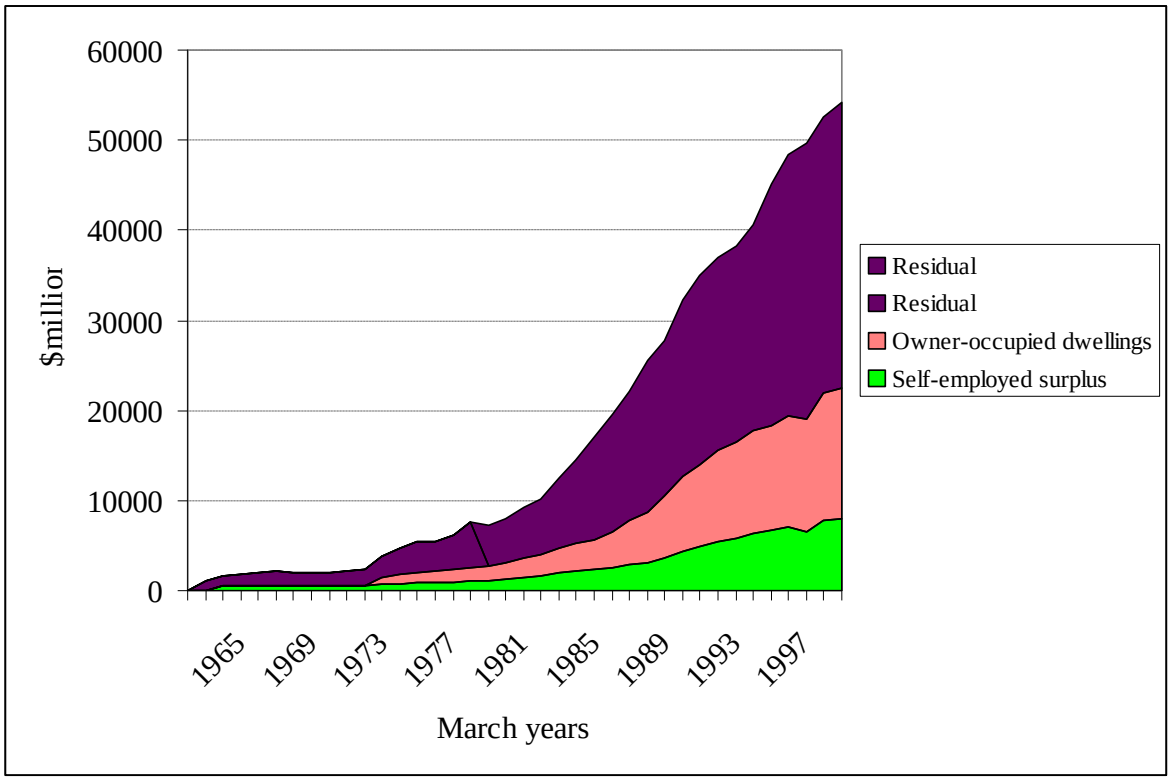
Note: figures in bold are from Statistics New Zealand publications. Figures in italics are interpolated or estimated.

Table A2.4
Division of Operating Surplus Between Households and Other
$ million

March years	Estimated self-employed operating surplus	Owner-occupied dwellings INFOS SNBA.S1BB	Total direct to households	Residual	Residual	Total operating surplus INFOS SNAA.SHB	Total operating surplus INFOS SNBA.SBB
1962	500			538		1,038	
1963	530			653		1,183	
1964	574			739		1,313	
1965	603			823		1,426	
1966	632			877		1,509	
1967	575			890		1,465	
1968	520			990		1,510	
1969	465			1,130		1,595	
1970	497			1,271		1,768	
1971	526			1,320		1,846	
1972	660	198	858	1,708		2,368	
1973	794	221	1,015	2,034		2,828	
1974	907	264	1,171	2,388		3,295	
1975	941	312	1,253	2,253		3,194	
1976	976	423	1,399	2,810		3,786	
1977	1,055	466	1,521	3,907		4,962	
1978	1,134	541	1,675	3,917	2,834	5,051	4,509
1979	1,304	509	1,813		3,135		4,948
1980	1,529	522	2,051		3,653		5,704
1981	1,673	558	2,231		4,026		6,257
1982	1,953	728	2,681		5,195		7,876
1983	2,157	897	3,054		6,177		9,231
1984	2,298	1,100	3,398		7,949		11,347
1985	2,604	1,383	3,987		8,942		12,929
1986	2,832	2,116	4,948		9,341		14,289
1987	3,061	2,668	5,729		10,966		16,695
1988	3,696	3,188	6,884		10,260		17,144
1989	4,350	3,937	8,287		11,316		19,603
1990	4,892	4,218	9,110		11,894		21,004
1991	5,393	4,788	10,181		11,244		21,425
1992	5,761	4,979	10,740		11,055		21,795
1993	6,399	4,904	11,303		11,512		22,815
1994	6,708	4,967	11,675		15,082		26,757
1995	7,054	5,219	12,273		16,724		28,997
1996	6,614	5,878	12,492		18,058		30,550
1997	7,839	6,226	14,065		16,626		30,690
1998	8,012	6,470	14,482		17,207		31,689
1999		6,673					32,076
2000							

Figure A2.2 now shows the division of pre-tax operating surplus among household self-employed operating surplus, owner-occupied dwellings, and the residual which provides an estimate for corporate profits net of the SNA estimate of depreciation.

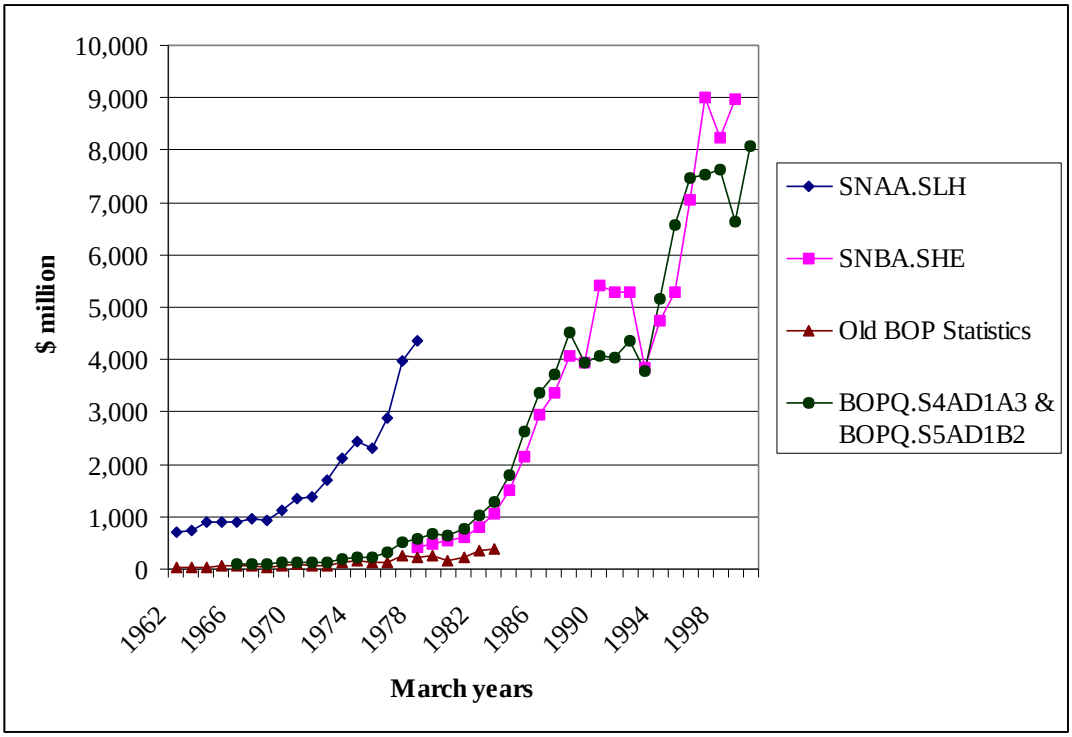
Figure A2.2
Composition of Gross Operating Surplus



Appendix 3
Profits and Rents Paid to Overseas Owners

Three sources of data were compared: the INFOS SNA series, the INFOS BOP series, and the income from private overseas direct investments in New Zealand, taken from the old balance of payments statistics[13]. The figures are in Table A3.1. They are graphed in Figure A3.1. The "income from direct investment" series from the old balance-of-payments tables is somewhat narrower in scope than "property and entrepreneurial income" in the newer BOP INFOS series, and I assume that all such income is appropriately viewed as a claim on the current flow of factor incomes year by year.[14]

Figure A3.1
Various Estimates of Overseas Capitalists' After-Tax Claim on GDP



Reviewing the various series, it is clear that the INFOS SNA-coded data prior to 1978 are incorrect and we discard them. It is also apparent that the item "Income from Private Overseas Investment in New Zealand" as recorded in the old Balance of Payments Statistics up to the early 1980s was too low, presumably because it excluded "property income" which used to be aggregated into the aggregated item "Miscellaneous Income" in the balance of payments tables. The INFOS BOP series seem likely to be reasonably consistent from 1966 – 2000 (the period covered by these data). For 1962-65 I have used the old Balance of Payments series. The discrepancy between the INFOS BOP data and the SNA series for the years 1990-1992 and 1997-1999 is unexplained at this stage.

[13] Department of Statistics, *Balance of Payments*

[14] Note that retained earnings of overseas owned companies are included in the figures.

Table A3.1
Various Estimates of Overseas Capitalists' After-Tax Claim on GDP
$ million

March years	INFOS series SNAA.SLH "Property & entrepren-eurial income to rest of world"	INFOS series SNBA.SHE "Property & entrepren-eurial income to rest of world"	Old Balance of Payments Statistics "Income from Private Overseas Direct Investment in New Zealand"	INFOS series BOPQ.S4AD1A3	INFOS series BOPQ.S5AD1B2
1962	691		33.3		
1963	726		46		
1964	893		46.8		
1965	903		60.7		
1966	913		55	85	
1967	970		61.9	93	
1968	918		39.4	84	
1969	1,137		72.6	118	
1970	1,335		88.8	139	
1971	1,383		70.2	126	
1972	1,683		78.4	128	
1973	2,108		116.7	188	
1974	2,443		165.1	226	
1975	2,314		115.9	219	
1976	2,884		135.6	333	
1977	3,977		258.4	526	
1978	4,375	423	226	571	
1979		492	261	676	
1980		539	170	636	
1981		604	225	758	
1982		803	357	1,038	
1983		1,068	401	1,292	
1984		1,513		1,809	
1985		2,152		2,627	
1986		2,938		3,380	
1987		3,375		3,726	
1988		4,058		4,515	4,515
1989		3,929		3,935	3,935
1990		5,414		4,071	4,071
1991		5,276		4,037	4,037
1992		5,277		4,370	4,370
1993		3,859		3,788	3,788
1994		4,735		5,161	5,161
1995		5,298		6,579	6,579
1996		7,060		7,463	7,463
1997		9,009		7,528	7,528
1998		8,244		7,616	7,616
1999		8,971		6,626	6,626
2000				8,069	8,069

Appendix 4
Ricardo on the Wage/Profit Distribution

In Ricardo's basic growth model[15], three key assumptions anchor his story. First, all profits secured by capitalists are invested so that the rate of profit is linked directly to the rate of growth of the capital stock[16] through time. Second, there is no technological progress, so that the growth of output is tied directly to the growth of the capital stock. Third, the real wage rate and the rate of population growth are mutually related: there exists a real wage rate at which population remains stationary, so that in a growing economy the wage must rise above this subsistence level to secure a growing supply of labour, but in a stationary economy the real wage will be pushed down to the subsistence level by competition among workers for work.

These three assumptions led inexorably to Ricardo's theoretical prediction that in a world of fixed natural resources and diminishing returns, the rate of profit, and hence the rate of growth, must eventually fall to the point where growth ceases and the economy enters a stationary state.

Most growth theory since Ricardo has been concerned with the consequences of relaxing one or more of Ricardo's assumptions, thereby transforming his determinate story into a situation where ongoing economic growth goes hand in hand with some indeterminacy in the distribution of the product. Solow and Denison showed that much of modern observed growth is attributable to technological progress and hence requires explanations from outside Ricardo's framework – the central theme of the "new growth economics" of the past decade. Meantime since the time of Malthus and Ricardo workers have gained control of their own reproduction rates so that population growth has been outstripped by the growth of capital and output. Combined with technological progress, this has broken Ricardo's iron law of wages and enabled living standards to rise over the past two centuries in the now-developed countries.

Technological progress frees the profit rate from diminishing returns and hence gives capital room to exercise bargaining power. At the same time the breaking of the Malthusian link between wage rate and labour force gives labour also some market power and the space to exercise it. Over some range (see below) the balance of bargaining power may shift, and with it the distribution of the product.

Modern new-Keynesian macroeconomics, with its models of imperfect competition and wage bargaining, fit with this side of Ricardo's work.[17] The modern equivalent of Ricardo's search for a determinate outcome is the debate over whether a unique stable NAIRU exists which anchors the distribution of the product between wages and profit, or whether the NAIRU (and hence the sustainable distribution) is time-varying and affected by changes in the political conjuncture[18].

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15 See Ricardo (1815), Eltis (1984), Blaug (1997) Chapter 4.

16 Ricardo, however, has no stock of fixed capital in his model – simply a rising "wages fund", which means that capital-and-labour are variable inputs to each period's production.

17 See Carlin and Soskice (1990) Chapters 6, 8 and 17; Hargreaves Heap (1992) Chapter 7; Maloney (1996).

18 See the new OECD study by Richardson et al (2000).

Ricardo's model thus does not stand or fall on the three particular assumptions required to produce the stationary state. Stripped of the second two - the iron law of wages and zero technological progress - the model tells a story of a growing economy in which the share of the product paid to labour (and hence its mirror-image, the capitalists' share) is indeterminate over the range bounded below by the subsistence wage rate and above by the critical-minimum[19] rate of profit (which limits the extent to which labour's exercise of market power in wage bargaining can increase the total wages fund). In this free-ranging version of Ricardo's model the indeterminacy of the distribution of the product (within the feasible range just noted) goes together with an inverse relationship between the wage share and the growth rate, *ceteris paribus*. That is, a successful wages offensive by labour, which cuts the profit share (and hence the profit rate and the volume of investment), is predicted by Ricardians to reduce the rate of growth relative to what it would have been with a larger profit share[20].

[19] The mechanism here is that below some critical threshold rate of profit, net investment ceases and hence the total output ceases to grow. Thereafter workers can raise their living standards only by restricting their own numbers – not by raising the total wage bill.

[20] The underlying assumption here is that all wages are consumed and all profits are saved.