

Thin Subsidies and Fat Taxes:  
Economic Instruments for addressing Food  
Inadequacy and Nutrition Issues

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**Abstract:** Should subsidies and/or taxes on foodstuffs be used as instruments for achieving desirable social and health outcomes? The question was one of those considered as part of the ENHANCE project (enhancing food adequacy and value) research commissioned in 2008 by the Health Research Council and the Ministry of Health. Two interventions in particular were examined the removal of GST on foodstuffs, and the use of a Smart Card for providing designated consumers with discounts on goods and foods. This paper reports on a review of the literature on the topics, interviews of key informants, and the conclusions reached. There is little to be said for the GST removal proposal, but a good deal more for the idea of discounts on selected foodstuffs, whether by a Smart Card, or stamps or vouchers.

**Authors:** Des O’Dea, Delvina Gorton, Cliona Ni Mhurchu  
The first author is employed at the Department of Public Health, University of Otago, Wellington. [Des.odea@otago.ac.nz](mailto:Des.odea@otago.ac.nz) The second and third co-authors are employed at the Clinical Trials Research Unit, University of Auckland.

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## **Problem Definition**

A proportion of households suffer ‘food insecurity’. That is they are not always able to buy the amount and quality of food desired. Possible contributory causes include –

- Insufficient household income
- High prices of food

Food insecurity has consequences for nutrition and health. Foods consumed in a food-insecure household may be of high calorie content but low in other key nutrients. This can lead to poor health of household members, and inappropriate consumption patterns can also cause overweight and obesity with long-term adverse health outcomes. Measures that reduce food insecurity can therefore reduce health-care costs and improve health outcomes. Such measures are potentially cost-effective.

Two possible economic tools for dealing with the problem of food insecurity are –

- Subsidising food prices
- Increasing household incomes. For example by reducing taxes or increasing cash or ‘in-kind’ benefits.

Two proposals on these lines emerged from the ENHANCE workshop in September 2008 as appearing worthy of future research. These were:-

□ Removing Goods and Services Tax (GST) from healthy basic foods.

This particular intervention has been proposed and discussed a number of times in the past (refer NZ Nurses Organisation debate).

□ Provision of a Smart Card or loyalty card, providing discounts on healthy nutritious food. Note that it is not clear what was meant in discussion by a

‘loyalty card’ in this context, so the assumption made here is that the term was used simply as a synonym for a ‘Smart Card’; that is an electronically coded card providing discounts on specified foods. Also it is assumed here that the proposal for a smart card does not rule out, as either an alternative or a supplement, the use of paper ‘vouchers’. Such a scheme applied for many years in the United States, in

the form of Food Stamps, provided to families meeting certain criteria. More recently the provision of these in the United States has been made largely electronic – in the form of EBT – Electronic Benefits Transfer. (Federal Reserve Bank of Philadelphia. 2005.)

There are significant differences between these two proposed interventions. The ‘GST removal’ intervention proposes a tax reduction of a specified amount. Also it would apply to all purchasers of those foods exempted from GST, regardless of the income or other characteristics of the purchasing household.

The ‘Smart Card’ proposal is more flexible in these respects. The subsidy rate for specified foods can be varied as policy-makers think fit. Also the intervention can be targeted to provide benefits to only those households with given characteristics. In this sense the ‘Smart Card’ intervention can be regarded as more of an ‘income change’ intervention; and the ‘GST removal’ intervention as more of a ‘price change’ intervention.

There are similarities also between the two proposals. Much the same data – principally from the Household Economic Survey (HES) – is necessary for analysing the practicability of both. The impact of both will be dependent on the same economic parameters, namely price and income elasticities of demand for foodstuffs, and the price elasticity of supply. Elasticities are discussed further below.

### **Which foodstuffs are ‘healthy and nutritious’?**

The workshop recommendations were couched in terms of ‘healthy basic foods’ and ‘healthy nutritious food’. Not all foodstuffs are of high nutritional quality – for instance many takeaway meals, carbonated drinks, potato crisps, and others. It would seem desirable that an intervention aimed at reducing food insecurity should also, to the extent possible, aim at improving the nutritional value of household food intake. ‘Fat taxes’ and the like are a potential instrument for improving diets in general, but would be of little use in addressing food insecurity, and are not evaluated in this report.

An intervention seeking to improve nutritional value alongside food security might identify food categories which are seen in general as ‘nutritious’ – such as ‘Fruit and Vegetables’, and target these commodity groups. Alternatively it might try to identify more precisely at possibly quite a detailed level individual foodstuffs, the increased consumption of which should be encouraged.

It is tempting to target Fruit and Vegetables, because of widespread public and industry acceptance of this category of foods as healthy, but it is questionable how much impact increased consumption from this sub-group alone would have on household food security as it is the least consumed food group in food-insecure households. The alternative would be to also include such foods as, for example, milk, bread, breakfast cereals, and meat, on the grounds that food insecurity commonly includes shortfalls in consumption of these staple items, as well as reliance on items with poor nutritional quality. Also many of the items in these groupings, though not all<sup>1</sup>, are also of good nutritional quality.

In New Zealand, the University of Otago estimated family food costs survey basket could be used as a starting point for an appropriate ‘basket’ of foodstuffs (<http://nutrition.otago.ac.nz/consultancy/foodcostssurvey>).

Going a step further, an accepted nutrient profiling scheme could be applied to determine eligibility of foods for smart card discounts. Arguably, the most acceptable one would be the proposed FSANZ (Food Standards Australia and New Zealand) health claims standard. The FSANZ calculator would also be available publicly for manufacturers and retailers to assess whether a specific food met the necessary criteria.

This last variation does bring in added complexity, and would be more difficult to implement in places such as weekend markets. The technology of ‘smart cards’ does, however, seem to have advanced far enough to be able to cope with most such problems, with perhaps a fall-back allowed to simpler criteria, such as fruit and

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<sup>1</sup> Examples of foods in these categories of lesser nutritional value include white bread (half of all bread sold), sugary breakfast cereals, and fatty meats.

vegetables and bread, in environments where the technology would be too difficult or expensive to apply.

### **Relevant economic background and parameters**

The Goods and Services Tax (GST) is a tax on value-added goods<sup>2</sup>, introduced in New Zealand in the late 1980s. In New Zealand it is applied at a standard rate for virtually all goods and services, the rate being 12.5 percent since 1989. In this respect New Zealand differs from virtually all other countries with value-added taxes. Other countries have lower or zero rates for commodity groups such as food, children's clothing, health-care, and books and newspapers. The rationale has generally been to make the tax less regressive.

The effectiveness of the proposed interventions will depend on certain economic parameters. Namely –

- The **income elasticity** of food consumption – how responsive food consumption is to changes in income
- The **price elasticity** of food consumption – how responsive food consumption is to changes in food prices relative to prices of other commodities.

Elasticities are much used in economics. They are numerical measures of 'responsiveness'. If some economic variable of interest changes by  $y\%$  in response to a change of  $x\%$  in some other 'causative' variable, then the elasticity is  $y/x$ . For example, suppose food prices rise by 10 percent relative to all other commodities, and the quantity of food purchased falls in response by 5 percent. Then we say that the price elasticity of demand for food is  $-0.5$ <sup>3</sup>. In this case the magnitude of the elasticity is less than unity and we say that demand is price-inelastic. A consequence of price-inelasticity is that when prices fall, total expenditure also falls, because quantities increase by a lesser percentage amount than the percentage by which prices fall.

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<sup>2</sup> Hence the same as the Value-Added Tax (VAT) applying in many countries.

<sup>3</sup> It is customary to ignore the negative sign for price elasticities. The negative is because the quantity change is in the opposite direction to the price change. Income elasticities, on the other hand, are almost always positive, with quantity demanded increasing as income increases.

It is generally believed, with support from empirical evidence, that demand elasticities for food – both income and price elasticities – are relatively low in magnitude. That is demand for food is both income and price **inelastic** (evidence for this is discussed below). A 10 percent change in either income or prices will generate a less than 10 percent change in the quantity of food purchased.

Another relevant elasticity is

- The **supply price elasticity** of food. That is the responsiveness in terms of quantities marketed by producers to a change in price paid to producers. This elasticity helps determine how much of any change in food subsidy or tax is passed on to consumers. The higher the price elasticity of supply is, the more of any subsidy or tax change is passed on to consumers.

Supply elasticities will vary with the type of food. It seems *a priori* likely that the more processed a food item is, the higher the supply elasticity is. This is because such foods will be supplied by large manufacturers with minimal change in unit costs when output quantities vary<sup>4</sup>. Assuming reasonably competitive markets, an increase in profit margin will lead to a substantial increase in quantities supplied; and a fall in margin to a substantial decrease. On the other hand, the less processed the food is, the lower the supply elasticity is likely to be. This would apply in particular to fresh fruit and vegetables, with suppliers constrained by seasonal factors and unable to respond quickly to changes in demand caused by changes in price or income. In such case the supplier is likely to gain a substantial proportion of any increase in subsidy, or bear a substantial proportion of any increase in tax. However in the longer term suppliers are likely to adjust capacity to meet a price- or income-induced change in demand. That is the long-run supply elasticity might be expected to be higher – i.e. more ‘elastic’ - than the short-run elasticity. And a larger proportion of subsidy or tax changes therefore passed on to consumers than in the short-term.

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<sup>4</sup> It seems reasonable to expect the same to hold for retailers in general.

### **Empirical values of New Zealand elasticities.**

Important work in this area was reported by Michelini in 1999<sup>5</sup>. He used data from Statistics New Zealand's Household Expenditure and Income Survey<sup>6</sup> for years 1983-84 to 1991-92. The key values, from Table 2 in his paper, are given below, with standard errors of estimate in brackets.

**Table 1 Quantities Elasticities for New Zealand.**  
**As estimated by Michelini, 1999.**

<b>Commodities</b>	<b>Own-Price</b>	<b>Total Expenditure</b>	<b>Household Size</b>
Food	-.168 (.1952)	.558 (.0129)	.381 (.0122)
Household operations	-.250 (.3142)	.747 (.0199)	-.006 (.0188)
Apparel:- Clothing & footwear	-2.095 (.9605)	1.110 (.0364)	.167 (.0322)
Transport	-.661 (.1433)	1.276 (.0299)	-.219 (.0217)
Other Goods	-.747 (.5620)	1.095 (.0255)	-.014 (.0235)
Other Services	-.466 (.2109)	1.321 (.0275)	-.207 (.026)

Source: Table 2. Quantities Elasticities for the Fully Constrained Model.  
From Michelini 1999.

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<sup>5</sup> Claudio Michelini. 1999. 'New Zealand Household Consumption Patterns 1983-1992: An Application of the Almost-Ideal-Demand-System.' *New Zealand Economic Papers*. Vol. 33(2), December 1999.

Total Expenditure can be regarded as a near-equivalent to Income. The Household Size variable is an additional determinant to price and income. The standard errors are large for Own Price, perhaps because data constraints forced Michelini to work with grouped data, and also in terms of the fairly broad commodity groups given in the table. Own Price and Total Expenditure elasticities are of the expected sign – negative for price and positive for expenditure. For the Food group both ‘price’ and ‘income’ elasticities are of magnitude less than one, that is ‘inelastic’. Indeed the Own Price elasticity of  $-0.168$  is notably inelastic (and in fact not significantly different from zero).

In all Michelini’s results confirm expectations that the demand for Food is both price and income-inelastic<sup>7</sup>. It should be noted, however, that his results are for the Food group as a whole. International data suggest that demand for specified sub-groups, such as Fruit and Vegetables, might be somewhat more price-elastic.

Further research by Khaled et al (2004), on broadly the same data-sets, though with somewhat different modelling and estimation techniques, in general corroborated Michelini’s results. Their estimate of the own-price elasticity for Food was  $-0.089$ ; and the expenditure elasticity  $0.577$ . Elasticities, including cross-price elasticities, were also calculated for Food subgroups. Thus for Fruit and vegetables the own-price elasticity was  $-0.253$  and the expenditure elasticity  $0.366$  (Table 8; Op cit.)

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<sup>6</sup> Now known as the Household Economic Survey.

<sup>7</sup> Khaled et al (2005), using a Rotterdam demand system model, get very similar results from New Zealand data – an own Frisch-price elasticity of  $-0.101$ , and an expenditure elasticity of  $0.440$ . The US Department of Agriculture’s Economic Research Service has a model providing estimates for many countries. ([www.ers.usda.gov/Data/InternationalFoodDemand](http://www.ers.usda.gov/Data/InternationalFoodDemand) - last updated October 2003). For New Zealand the price elasticity for Food, beverages and tobacco was estimated at  $-0.291$ ; and the income elasticity  $0.394$ . Price and income elasticities are also given for food sub-groups. In making comparisons note that Michelini’s Food group excludes alcohol and tobacco products.

### Overseas estimates of elasticities

Estimated elasticities in overseas research show a quite wide range in values, in part presumably because of differences in data-set quality and in the mathematical models used. Some specimen results are –

- Schroeter et al (2008. USA). A Fruit and Vegetables ‘own-price’ elasticity of -0.98, a relatively high value.
- Jones (2006) found high price-elasticity values also, ranging up to -3.0 for citrus fruit in low-income areas, from data on Ohio supermarket sales in high- and low-income areas. His results were for quite specific products, as for example citrus fruit, salad vegetables, etc., which would be expected to be more price-elastic than for Fruit and Vegetables in aggregate, because e.g. of competition between citrus fruit and bananas. That is, the availability of substitutes increases price elasticities. Perhaps his most important result was the finding of higher price elasticities for low-income stores than for high-income stores, a result certainly reasonable *a priori*, but nice to find in actuality.
- Jensen and Smed (2007) refer to price elasticity estimates from Scandinavian data for fruit & vegetables as being in the range -0.6 to -0.9 for Norway, and -0.77 for Denmark.
- Gustavsen and Rickertsen (2002) find for Norway high own-price elasticities – absolute values exceeding unity – for traditional vegetables (-1.13) and industrially processed (frozen, dried, canned, etc.) vegetables (-1.62), especially for households with children. For salad vegetables, however, the own-price elasticity was inelastic at -0.38. Expenditure elasticities were mostly above unity.
- The same authors quote lower estimates in a 2006 paper, less than one in magnitude for both own-price and total expenditure. They model two hypothetical public policies. First removing current VAT of 11% on vegetables. Because of the low expenditure elasticity this would have minimal effect in increasing vegetable consumption. Second a general income increase of 10%. This, however, is found not to increase vegetable purchases by low-consuming households.

- Lechene (2000. UK) provides estimates, based on National Food Survey data for periods up to 2000, for a quite wide range of different foodstuffs. The 'own price' values are without exception price-inelastic, but almost all significantly different from zero at the 90% confidence level. Income elasticities are also inelastic, markedly so for most commodities, with an 'All Foods' income elasticity of 0.20.

Some of these papers also include estimates of cross-price elasticities – measuring the effects of changes in the price of one food on quantity demanded of another. Data difficulties – prices of different foodstuffs often moving fairly much in parallel – lead to such estimates often having large standard deviations. There is interesting discussion on this in some of the papers (Davis, 2008. USA), and also on differences at different levels of household income, and household deprivation (Bertail 2008. France). These matters are not pursued further here, but would require investigation as part of any implementation.

In all these overseas estimates tend to confirm Michelini's results, namely that food demand is both price- and income-inelastic, and also suggest that this conclusion applies to most individual foodstuffs as well as to aggregates such as All Food, or Fruit and Vegetables. This should not be taken as meaning that a policy of subsidising food prices is futile. Inelasticity is not the same as zero elasticity – a price reduction will still result in some increase in quantity purchased, and the more the policy is focused on fairly tightly defined food sub-groups, the more likely the increase will be reasonably substantial. There is some evidence also in the literature of higher price elasticities for low-income households. The 'income effect' of a subsidy, however, will generally be insignificant, because both of low income elasticities and the small size of any subsidy amount relative to total household income. However, for very low-income households, 'beneficiary households', the effect will be a bit more noticeable.

## **Methods**

The information included in this paper is from three sources; these being an examination of household expenditure and income data published by Statistics New Zealand, a literature scan, and interviews with government policy analysts and others knowledgeable in this field. The literature scan was largely undertaken in late 2008.

Five interviews were conducted with policy analysts and others. The interviews were conducted from February to May 2009. Interview participants included policy advisors and administrators from government departments and social scientists with expertise in the policy area.

## **Results**

### *Official Statistics*

The major source of household expenditure and income data is the Household Economic Survey (HES), run every third year by Statistics New Zealand. The survey covers of the order of 3,000 households. The latest survey is that for 2006/07.

However this latest survey lacks, at least in the published material, the detailed data on incomes available in earlier surveys. For illustrative purposes, therefore, most of the numbers cited here are from the 2003/04 survey.

The following table gives average household expenditures in 2003/04 and 2006/07, for Fruit and Vegetables, for All Food, and for All goods and services. Note that these numbers are prior to the substantial price increases relative to prices in general seen for some food items in 2008.

**Table 2 Household Expenditure on Food. 2003/04 and 2006/07**  
**Average for all households. GST included.**

<b>Expenditure Group</b>	<b>Average weekly Household expenditure</b>	<b>Expenditure as a percentage of total Net expenditure</b>
	<b>\$</b>	<b>%</b>
<b>2003/04</b>		
Fruit and Vegetables	19.40	2.2
All Food	142.50	16.0
Total net expenditure	888.40	100.0
<b>2006/07</b>		
Fruit and Vegetables	18.40	1.9
All Food	155.60	16.3
Total net expenditure	956.20	100.0

Source: Household Economic Survey. Years ended June. 2003/04 and 2006/07. Statistics NZ.

The Food category includes, in addition to Fruit and Vegetables, Non-alcoholic beverages, and Restaurant meals and ready-to-eat food, as well as Meat, poultry and fish, and Grocery food. Sampling errors (presumably 95% confidence interval half-widths) are around 5% for fruit and vegetables, 4% for Food, and 3% for total expenditure. The apparent fall in fruit and vegetables expenditure from 2003/04 to 2006/07 may simply reflect sampling error.

In both years expenditure on food amounted on average to around 16 percent of total net expenditure, a little less than one-sixth of the total. Average household weekly spending on food was of the order of \$150, and on fruit and vegetables of the order of \$20 per week.

## **Proposed intervention one: Removal of GST on Food, or on Fruit and Vegetables**

### **Effect of removal of GST on the ‘average’ household**

GST has been set at 12.5% - one eighth – for the past twenty years. Or in terms of the selling price, GST makes up one ninth (  $12.5 / 112.5$  ) of the total price. Thus removing GST might be expected to reduce prices by one-ninth or 11.1 percent. For household weekly spending of approximately \$150 on Food, expenditure might be expected then to be reduced by \$16.67 per week; and that on fruit and vegetables by \$2.22.

These calculations are too simplistic, though serving to give orders of magnitude. A first caveat is that the amount of a price reduction can be affected by whether the good is made ‘exempt’ or ‘zero-rated’. For the former retailers would not be able to claim back GST on their own purchases, and the price reduction would be expected to be less. Secondly the price reduction would lead to some increase in the quantity of food purchased, depending on the price elasticity of demand. The overall reduction in household expenditure would therefore be less<sup>8</sup> than the calculations in the previous paragraph suggest. For an elasticity of 0.50 the expenditure reduction would be half the number in the previous paragraph.

Third, the full amount of any tax reduction will not necessarily be passed on in price reductions to consumers, particularly in the short-term. If supply is at all price-inelastic, some of the subsidy will be recouped by suppliers rather than consumers. This is particularly likely to apply to Fruit and Vegetables, often subject to seasonal supply constraints. It is less likely to apply to ‘processed’ foods such as Grocery items, Beverages, and Restaurant meals and ready-to-eat foods. That is, the removal of GST on foods is likely to result in larger price reductions for the more processed foods and lesser reductions for Fruit and Vegetables – though frozen and canned vegetables would be less supply-constrained. In the longer term, however, some increase in supply of Fruit and Vegetables might be expected to be generated by a reduction in GST, and more of the tax reduction passed on as price reductions.

### **The effect of removal of GST on Food on government revenues**

The removal of GST on food would have implications for government revenues. The number of private permanent households is given in the 2006/07 Household Economic Survey as 1,565,000<sup>9</sup>. The GST content of each household's expenditure on food is estimated above at roughly \$16.67 per week. The immediate impact on revenue would therefore be a reduction of –

$$1,565,000 \times 16.67 \times 52 = \$1,357 \text{ millions. Or } \$1.4 \text{ billions.}$$

This is a substantial amount<sup>10</sup>. Again this estimated revenue reduction should be regarded as a rough and ready 'first order' estimate. In reality the GST reduction would result in increased expenditure<sup>11</sup> on non-food commodities as well as on food. The reduction would therefore in part be offset by increased GST revenues on non-food items; and also increased income tax revenues would be generated from increased supplier incomes for both foods and non-foods. Full exploration of such consequences requires a general equilibrium analysis, well beyond the scope of this paper. There would be however, it can be assumed, a substantial reduction in government tax revenues.

If the removal of GST applied only to Fruit and Vegetables the revenue consequences would of course be less significant. From the approximate numbers given earlier (average All Foods household expenditure of \$150; average Fruit and Vegetables expenditure of \$20), a rough estimate would be 2/15 of the total revenue loss above. That is \$181 million.

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<sup>8</sup> Assuming the demand for food is price-inelastic – if it were instead price-elastic expenditure would increase.

<sup>9</sup> It is of interest that surveyed households were asked about the 'Adequacy of income to meet everyday needs'. Those households who it is estimated would have replied 'Not enough' numbered 254,100 or 16 percent of all households. Another 518,100 or 33 percent would have replied 'Just enough'. The households in these two categories tend to be those with lower household incomes, but they are found across the whole range of household income.

<sup>10</sup> Larger for example than revenues of about \$1 billion annually from tobacco taxation (O'Dea 2007). One of the 'key informants interviewed referred to a change in revenue of \$1 billion as approximately equivalent to a change of one percent in overall tax-rates.

<sup>11</sup> From the 'income effect' of the presumed fall in expenditure on foodstuffs.

In passing, it has been proposed in some of the literature that revenue from a ‘fat tax’ could be used to compensate for the lost revenue from a ‘thin subsidy’ with respect to efforts to improve population diets in general, although not specifically in relation to food security.

### The Distribution of Household Food expenditure by Household income

The following table shows for 2003/04 average Food, and Fruit and Vegetables, expenditure by household income decile<sup>12</sup>.

**Table 3 The Distribution of Household Food expenditure by Household income**

Average Weekly Expenditure <sup>(1)</sup> 2003/04											
By income group of household											
\$											
Annual Household Income <sup>(2)</sup>											
	Under \$15,900 <sup>(3)</sup>	\$15,900 to \$22,999	\$23,000 to \$28,799	\$28,800 to \$37,899	\$37,900 to \$47,299	\$47,300 to \$58,899	\$58,900 to \$71,299	\$71,300 to \$87,599	\$87,600 to \$119,999	\$120,000 and Over	All Income Groups
<b>Food Group</b>	69.80	70.10	96.20	109.40	127.40	133.50	166.70	180.50	203.00	267.60	142.50
Fruit and Vegetables	12.00	11.80	15.60	15.10	17.40	17.20	20.80	24.90	27.40	31.70	19.40
<b>Total Net Expenditure</b>	429.00	393.90	511.20	609.20	754.90	849.80	1,006.30	1,075.70	1,380.60	1,866.70	888.40

  

Average Weekly Expenditure <sup>(1)</sup> as % of Total Net Expenditure 2003/04											
<b>Food Group</b>	16.3	17.8	18.8	18.0	16.9	15.7	16.6	16.8	14.7	14.3	16.0
Fruit and Vegetables	2.8	3.0	3.1	2.5	2.3	2.0	2.1	2.3	2.0	1.7	2.2

(1) All expenditure is net of refunds, sales and trade-ins and includes GST.

(2) Income is before tax, from regular and recurring sources only.

Income groups are deciles (to the nearest hundred dollars) of household income.

(3) Including loss from self-employment, and no income.

It can be seen that expenditure on food, and on the Fruit and Vegetables sub-group, increases with income of household. However the proportions of total expenditure are relatively stable, though falling off somewhat in the higher income deciles.

<sup>12</sup> The data are not ‘equivalised’. That is household incomes have not been adjusted for numbers of persons in the household, nor relative numbers of adults and children.

The implication is that any gain from GST removal is not particularly strongly focused towards lower-income households. It is these households which are the most likely to suffer from food insecurity.

### **Relevant current New Zealand research**

From the discussion above, we have a general theory-based idea of how consumers are likely to respond to the removal of GST on food purchases. It would be very useful to have, in addition, some empirical data on their responses in a real life situation. Information on these lines is expected later this year from the Supermarket Healthy Options Project (SHOP) trial. The Health Research Council of New Zealand funded this project in 2006.

SHOP is a large, randomised, controlled trial of the effect of tailored nutrition education and price discounts on supermarket food purchases. The trial was conducted in eight supermarkets in the Lower North Island (Wellington, Wanganui and New Plymouth). Of the 1,104 SHOP trial participants, 248 (23 percent) were Maori and 101 (9 percent) were Pacific. The price discount intervention in the trial consisted of an automatic 12.5% price reduction (equivalent to having GST removed) on all eligible healthier food products, which were classified using an accepted nutrient profiling system. Discounts were implemented when randomised participants scanned their personalised card at the checkout during the study intervention period. 1,104 supermarket customers were randomised to one of four intervention arms: (1) tailored nutrition education, (2) price discounts, (3) a combination of discounts and education, or (4) a control group (no intervention). To our knowledge this is the only trial to date to evaluate the effects of removal of GST on consumer shopping behaviour in a real-life setting. The trial was completed in February 2009 and data analysis is currently underway. Results are expected later this year. (Ni Mhurchu et al. 2007; and 2009 (pending)).

Whilst SHOP examines strategies to improve population diet in general and saturated fat in particular, findings in relation to the impact of the price discount intervention on consumer purchasing behaviour will nonetheless be informative regarding the potential effectiveness of economic instruments to address food insecurity.

## **Proposed Intervention Two: Smart Card discounts on Food purchases.**

The implication of the above discussion is that the proposed removal of GST on Food, or on ‘healthy nutritious foods’, such as Fruit and Vegetables, has significant problems in terms of tax revenue losses, and in not directing resources to those households most likely to be affected by Food Insecurity.

Can the second proposed intervention do better on these criteria? The key magnitudes are the size of the proposed discount, and the size of the ‘target population’ who would be eligible for the proposed Smart card.

We pose below a set of questions about the coverage and targeting of a ‘Smart Card’, giving what seem plausible answers. More detailed research would be required should the proposed intervention be taken further.

### Question 1. What foodstuffs should be covered?

Answer: On nutritional and distributional grounds, not all foodstuffs and non-alcoholic beverages should be covered. It would seem undesirable to subsidise restaurant meals and ready-to-eat foods, and non-milk beverages. Nor would it seem desirable to subsidise all meats, or grocery items in general. One possible conclusion is that any subsidy should be confined to the Fruit and Vegetables sub-group, including frozen or dried fruits and vegetables, and also canned and bottled vegetables and fruits. It would be generally well understood, by stores and the public, which items are Fruits and Vegetables<sup>13</sup>. Possible queries would be whether canned and bottled fruits should be included, whether ‘raw’ nuts should be added though not strictly part of the Fruit and Vegetables sub-group, and whether it is desirable to include ‘starchy’ root crops such as potatoes, kumara, taro and yams. It seems simplest, administratively, to include all these.

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<sup>13</sup> However the SHOP research team have found it not quite so simple. A number of items were difficult to classify, such as stir fry vegetable with sauces, strawberries with chocolate dips, fruit juice with less than 100% juice, etc. This was a major reason for the decision to use a nutrient profiling system in the trial.

Another option is to include other food items, such as milk, and cereals. Some overseas programmes include such items. For instance the Healthy Start programme in the UK provides low income pregnant women or women with children under four with vouchers of GBP3.00 per week for purchase of milk, fresh fruit, fresh vegetables and infant formula milk. As discussed earlier in this chapter, a good part of ‘food insecurity’ relates to consumption of ‘staples’ such as milk and cereals

As noted earlier, average weekly household expenditure on fruit and vegetables in 2006/07 amounted to \$18.40. Average weekly household expenditures in that year on selected other products were –

Fresh Milk	\$4.60
Bread	\$5.50
Breakfast cereals	\$1.90
Grains	\$0.60

Such items could clearly be included in the coverage of a Smart Card or voucher program, though probably with some difficulties in deciding which cereals and cereal products should qualify<sup>14</sup>.

A third option, as discussed earlier in this chapter, would be to include all items passing a ‘nutritional quality’ test. For example the proposed nutritional profiling scheme proposed by FSANZ to determine the eligibility of foods to carry health claims.

Question 2. Should the subsidy apply to all food purchases by any person?

Answer: No. The reasons for this answer are the same as those given above for not removing GST from Fruit and Vegetables. Namely the fiscal cost, and the inadequacy of a general subsidy in targeting assistance at those households most likely to be suffering Food Insecurity.

Question 3. Who then should receive the discounts?

Answer: There are several possibilities. They include the following

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<sup>14</sup> Again an argument for a ‘nutrient profiling’ approach.

- Beneficiary households, excluding pensioner households. That is households receiving one of the ‘main benefits’ – unemployment, domestic purposes, sickness, and invalid’s benefits, and some others less important. The number of working-aged (18-64) individuals receiving such benefits totalled 286,176 in December 2008 (Ministry of Social Development web-site). The number of children dependent on working aged recipients of a main benefit was 205,324 in June 2007<sup>15</sup>. A possibility here would be trading off a reduction in the benefit cash payment for an increase in the discount made available. Arguments against using beneficiary status as the criterion for eligibility are that it is ‘stigmatising’, and that while some households suffering ‘food insecurity’ will certainly be beneficiary households, it is equally certainly not the case that all households suffering ‘food insecurity’ are beneficiary households.
- Community Services Card (CSC) holders, excluding pensioners. Cards are issued to adults who are members of families with family income below a specified level. They have in the past mainly served to qualify holders for primary health-care subsidies, covering perhaps up to 40 percent of the population. CSC-holders numbered 924,092 at end-June 2007. Deducting NZ Superannuation recipients (i.e. ‘pensioners’) numbering 272,171 gives a remainder of 651,921. Arguments against CSC-holding as the eligibility criterion are that ‘take-up’ of the card is thought to be poor for some groups, the more so in recent years as primary health-care has become more heavily subsidised and the advantages from card-holding less.
- Households with dependent children. These numbered in HES 2006/07, in thousands

Couple with one dependent child	130.3
Couple with two dependent children	149.0
Couple with three or more dependent children	76.9
One parent with dependent child(ren) only	90.3

The total is 446,500 plus in addition some more complex households with dependent children. An approximate estimate suggests the above households would have about 870 thousand dependent children. Checking with HES 2003/04, the number of children under 15 in that year was 880 thousand, to which should be added

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<sup>15</sup> Ministry of Social Development. 2007 Statistical Report. Table 2.18, page 31.

dependent children aged 15-17. For illustrative calculations here we take 500,000 as being the number of households with dependent children, and the number of dependent children as 1 million.

There are advantages in targeting any subsidy at this group of households, and advantages also in making the amount of subsidy proportional to the number of dependent children. A good part of the concern about 'food insecurity' is concern about food-adequacy for children in such households. Also an eligibility criterion based on the presence of children is administratively simple and is not stigmatising. An argument against is that it would require the setting up of a dispensing system additional to that already existing for the Community Services Card. Also food-insecure households without children would not qualify. It has been claimed that increasing numbers of single people are using Food Bank services (Wynd. 2005).

The strongest arguments against targeting food subsidies at children in general are that a 'universal' benefit' is more expensive (unless total expenditure is spread more thinly), and that most of those receiving the benefit would not be in food-insecure households. In particular, 'couple with children' households are generally in the upper part of the household income distribution. However were household incomes adjusted ( 'equivalised' ), to allow for the number of persons in the household, and one-person and two-person 'pensioner households' set aside, this approach can be seen to be rather better targeted. Also any tax increase to fund the scheme would tend to fall rather more on better-off households. At a later stage in the discussion in this chapter we discuss in more detail the issue of 'equity', in terms of household income (equivalised) and ethnicity, and of the extent to which payments based on number of children are successful in targeting lower income and Maori or Pacific peoples households. .

Question 5. Should the amount of any benefit be capped?

Answer: Yes. Once only part of the population is eligible, a failure to cap the amount, for a given time-period, would lead easily to trading for profit with the non-

eligible, discrediting the whole scheme<sup>16</sup>. Any capping would most easily be achieved by providing a given dollar quantum at, say, weekly or 2-weekly or 4-weekly intervals<sup>17</sup>, which could be credited immediately in total against qualifying purchases, rather than a given percentage discount allowed to cumulate up to the cap amount.

Question 6. What is a reasonable amount of benefit?

Answer: For an approximate 1 million dependent children, a weekly amount of \$5 per child (or \$260 per year) would provide a useful supplement<sup>18</sup> to household income, particularly for low-income households more likely to be affected by Food Insecurity. The annual cost would be about \$260 million. This fiscal cost is not negligible, but could be justified in terms of tackling food insecurity, helping low-income families financially, and encouraging better nutrition and improving food security through increased purchases of nutritious foods by families with children.

Question 7. Are there any problems with inelastic price and income elasticities of demand?

Answer: The proposed scheme is in effect an increase in income, though an increase which has to be spent on selected foodstuffs. There would certainly be some increase in consumption of the qualifying foodstuffs, though not necessarily very much. Some of the savings from the scheme would be spent not on the selected foodstuffs, but on other goods and services, including other foods.

Question 8. What ‘unintended consequences’ might there be?

Answer: Increased demand for the selected foodstuffs would drive up their prices, though perhaps by not very much given the generally low price and income elasticities for foodstuffs. Persons not qualifying would pay relatively more, and their purchases of these foodstuffs would fall. There is a possible issue here for pensioner households, although the evidence (1997 Nutrition Survey, 1999. Table D.8) is that

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<sup>16</sup> One key informant mentioned anecdotal accounts of holders of the SuperGold card, which provides free public transport outside rush hours for those aged 65 plus, lending their card to friends aged under 65.

<sup>17</sup> The more frequent the issue, the less the problem of expenditure being high in the first part of the period and inadequate towards the end.

<sup>18</sup> Particularly for family incomes less than \$500 per week, which could be expected to be the case for many ‘food-insecure’ families. The amount of \$5 per week per child is a convenient number for calculation purposes. Also it is not so large as to be fiscally improbable, nor lead to wide-scale trading of the subsidy.

food insecurity is a problem for only a small proportion – one or two percent – of those aged 65 and over. Over the longer term market supply of the selected foodstuffs could be expected to increase, moderating initial price increases.

## **Equity Implications of the Proposed interventions**

### **Intervention One: Removal of GST**

Removing GST on foodstuffs, or on a specific category such as Food and Vegetables, in effect subsidises purchases for the whole community. As discussed earlier this means that much of the subsidy goes to high-income households. The proposed intervention may reduce both ‘income inadequacy’ and ‘food insecurity’ rather more at the bottom end of the income distribution, but does not do much at all for equity overall.

### **Intervention Two: Smart Card, or Vouchers**

A ‘Smart Card’ scheme would provide qualifying households with discounts on qualifying foodstuffs. It has possibilities for both reducing food insecurity and improving the nutrient quality of purchases.

Three different possibilities were proposed earlier in this chapter for defining the ‘eligible’ population<sup>19</sup>. The first was that they should comprise ‘beneficiary’ households. This would certainly have positive equity consequences, but the problem is that non-beneficiary ‘food-insecure’ households are not covered. A second possibility was that it should cover all households with income below a specified ceiling. An obvious candidate would be to make the eligibility criteria identical to those for a Community Services Card<sup>20</sup>. Those qualifying for the CSC include, as well as Main benefit recipient households and most NZ Superannuation recipients, Low-income earners and Family Tax Credit recipients (known as Family Support until 2005). The CSC criteria certainly appear to cover most households likely to be

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<sup>19</sup> A fourth possibility is making the eligible population those households who apply for the Temporary Additional Benefit (see chapter on Full Benefit Entitlements). It seems unlikely this would be a satisfactory approach, because of ‘take-up’ problems with that benefit, because the problem is often not ‘temporary’, and because food insecurity is a problem for a proportion of non-beneficiary households as well.

<sup>20</sup> Cards are issued to adults in family units. Their primary use has been to obtain higher subsidies on doctors’ fees and prescriptions, but the progressive roll-out in recent years of PHO (Primary Healthcare Organisation) funding in recent years has much diminished their value for this purpose, and they could be phased out soon as a means of obtaining primary health service subsidies. (MSD Statistical Report for year ending June 2007. Pp 161+).

food-insecure, even excluding NZ Superannuation recipients as in general not troubled by food insecurity. Almost by definition households of low socio-economic status would generally qualify, and probably most households with persons of Maori or Pacific ethnicities.

A third possibility is that a ‘Smart Card’ scheme should be available to all households with dependent children, providing a given quantum at frequent intervals per dependent child. A ‘dependent child’ is any child aged under 18 and not in employment or on a special benefit. In effect this means virtually every person aged less than 18.

This third option is a ‘universal’ rather than ‘targeted’ benefit (apart from being targeted at households with children, and targeted also in the sense of encouraging consumption of specific foodstuffs), and has of course similarities to the universal Family Benefit of decades gone by. One advantage is its simplicity. A disadvantage is the exclusion of low-income households without children. Its equity implications are worth exploring further.

The following table shows the implications in terms of the distribution of the benefit by household income. The five quintiles (in terms of household income before tax) are from the 2006/07 Household Economic Survey. The focus here is on specified household types, with dependent children. Namely ‘couple’ households with one, two, or three children; and one parent households with a dependent child or children<sup>21</sup>.

It can be seen that the ‘couple plus children’ households are very much concentrated in the three upper quintiles. One-parent households are strongly concentrated in the bottom two quintiles, but overall the largest number of households with dependent children are to be found in the top three quintiles.

This particular approach does provide assistance to one-parent households, and presumably some of these households do suffer from income inadequacy and food insecurity. Much of the benefit, however, goes to two-parent households in the upper

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<sup>21</sup> These household types do not include all dependent children, but do cover most.

income brackets. So a proposed Smart Card for families with dependent children does target ‘benefit’ rather better to low-income households than would GST removal, probably including most households with ‘food insecurity’ problems, but also directs a lot of the extra funding to higher-income households with children.

From the ‘equity’ viewpoint then, a Smart Card for which eligibility is based solely on the presence of children appears a rather scattershot intervention.

**Table 4. Distribution of household types by income quintile**

	Annual household income <sup>(1)</sup>					Number All Quintiles
	Quintile Boundaries					
	Under \$25,800	\$25,800 to \$44,899	\$44,900 to \$67,999	\$68,000 to \$98,799	\$98,000 and over	
	Percent of households in quintile					
Couple with -						
- one dependent child	7.4	14.7	26.5	25.3	26.3	130,300
- two dependent children	5.2	6.1	27.6	28.3	31.9	149,000
- three+ dependent children	4.3	18.1	32.4	26.1	18.6	76,900
One parent with dependent child(ren) only						
	30.6	45.7	17.7	2.3	0.0	90,300
Total Number of households in above categories	48,200	83,400	116,500	97,300	96,200	446,500
All Households Number	314,800	313,500	313,200	314,500	313,300	1,569,200

Source: HES 2006/07 tables. Table 7. Statistics NZ

(1) Income is before tax, from regular and recurring sources only. Income groups are quintiles (aggregated from Stats NZ deciles)

However, something we have not yet taken account of is the measuring of income ‘relative to needs’. A household might be middle- or high-income in terms of pre-tax income, but, if there are several children to care for, might well feel under financial pressure. A household with children needs a higher income on average than a household with the same number of adults but without children to have the same overall ‘standard of living’.

In income distribution analyses this general point is taken into account by applying an ‘equivalence scale’ to (or ‘equivalising’) household income. The procedure takes account of the number of persons in the household and also, in many cases<sup>22</sup>, the relative numbers of children and adults. Thus a household with a number of children will be lower in the distribution of ‘equivalised’ household income than in the original distribution of ‘un-equivalised’ household income<sup>23</sup>.

An intervention based on number of dependent children might well appear, therefore, more equitable when looked at in terms of ‘equivalised’ rather than ‘un-equivalised’ income. We check this now, using 2006/07 analyses from Perry’s Ministry of Social Development report (2008). Note that the household income measure in the Perry report is disposable after-tax income, rather than pre-tax gross income as in the table above. Perry also provides additional analyses for household incomes after deduction of housing costs as well as after deduction of estimated taxes but the results given below are for household income data before deducting housing costs.

The following Table B.5 from Perry is the relevant table in terms of equivalised disposable household income quintiles, before deduction of housing costs.

From the table it can be seen that now almost half of children under 18 are found in the two bottom quintiles. Also over half of single parent households with dependent children are found in the bottom quintile. Two-parent households with dependent children are relatively evenly distributed, with some concentration though in the lower to middle-income range. By ethnicity 61 percent of Maori are in the two bottom

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<sup>22</sup> There are quite a number of different equivalence scales in use. For discussion see Perry, 2008. Perry’s report uses the Revised Jensen scale as its standard scale, in part because of its use in previous NZ income distribution reports, and results quoted here are accordingly based on that scale.

<sup>23</sup> Note that this is in part a ‘lifecycle stage’ effect. The equivalised income of a household with dependent children might be low at that stage of the ‘family life-cycle’, but much higher before and after. Aid to families with dependent children can be seen for many families as being a redistribution of income from earlier or later periods of higher equivalised income. Assuming a progressive tax structure there will be in addition some redistribution from high ‘lifetime income’ households to low ‘lifetime income’ households.

quintiles, and 52 percent of Pacific peoples, whereas 40 percent would be around the expected proportion<sup>24</sup> for a fully equitable distribution by ethnicity.

Table H.5 in Perry (not given here) shows, for 2006/07, 15 percent of children to be living in workless households, and 21 percent in households with no full-time worker (including the 'workless' category). An intervention such as an increase in minimum wage would provide little assistance to such households.

Overall, a Smart Card or voucher scheme, applying universally to all dependent children, does provide significant increased purchasing power to many lower income households, and to Maori and Pacific people in lower income households. These are significant equity gains. Offsetting this are the gains accruing to higher-income households with children, though these become less significant relative to 'equivalised' household incomes.

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<sup>24</sup> There would be some variation caused by 'lifecycle stage' differences, and difference in reproduction rates.

**Table B.5**  
**Distribution of individuals across income quintiles (BHC)**  
**by various household and individual characteristics (%)**

(sum to 100% across rows)

HES 2007	Equivalentised disposable household income					All individuals (000s)
	Q1	Q2	Q3	Q4	Q5	
<b>Age</b>						
0-17	21	27	25	17	11	1087
18-24	18	16	20	25	22	392
25-44	13	19	22	23	24	1168
45-64	17	13	17	23	30	1000
65+	43	25	13	9	10	487
All	20	20	20	20	20	4134
<b>Household type</b>						
One person 65+	58	21	8	6	6	148
Couple 65+	39	22	14	11	15	306
One person under 65	30	14	14	22	20	196
Couple under 65	11	8	14	28	39	520
SP with dependent children	55	23	13	7	2	286
2P with dependent children	12	27	27	20	15	1599
Other family HHs with dependent children	23	25	28	18	5	336
Family HHs with no dependent children	10	10	12	28	40	511
Non-family HHs	13	14	24	21	29	231
All	20	20	20	20	20	4134
<b>Ethnicity</b>						
European/Pākehā	16	19	20	22	24	2793
NZ Māori	35	26	20	12	9	611
Pacific	23	29	17	23	9	242
Other	22	18	23	19	19	529
All	20	20	20	20	20	4134
<b>Main source of income</b>						
Market	9	19	23	24	25	-
Government transfer	67	26	5	2	1	-
All	20	20	20	20	20	-
<b>Children by household type</b>						
Children in SP HHs	58	23	12	5	2	171
Children in 2P HHs	12	28	27	19	14	750
Children in other family HHs	25	26	29	16	4	144
All children	21	27	25	17	11	1066

Notes:

- 1 See note on page 29 for the need for caution in interpreting results for smaller sub-groups
- 2 The HES is known to underestimate beneficiary numbers by around a third so population estimates are not given for the 'main source of income' panel.

Source: Bryan Perry. June 2008. *Household incomes in New Zealand: trends in indicators of inequality and hardship. 1982 to 2007*. Ministry of Social Development, Wellington.

## ***Literature Scan***

A literature search was carried out by one of the authors of this paper (D. Gorton). Her search strategy used the following phrases, databases, and other likely sources. The search generated approximately 190 items, and a few additional papers came from various other sources.

### GST search

1. “value added tax” or VAT.mp
2. “goods and services tax” or GST.mp
3. tax.mp
4. food price policy.mp
5. 1 or 2 or 3 or 4
6. food or fat or health.mp
7. 5 and 6
8. limit 7 to English language and humans
9. cigarette or tobacco or smoking or insurance.mp
10. 8 not 9
11. limit 10 to yr=”1992 to 2009”

### Smart card search

1. Coupon OR voucher OR incentive OR subsidy
2. Electronic benefit transfer OR smart card
3. 1 or 2
4. Food OR nutrition OR fruit OR vegetable OR fat
5. Food stamps.ti OR food assistance.ti
6. Price discount\$ OR price reduction\$ OR price elasticity OR price responsiveness
7. 3 and 4
8. 6 and 4
9. 4 and 5
10. 7 or 8 or 9
11. Limit 10 to English language and humans and yr=”1992 to 2009”

Databases:

Medline  
CINAHL  
EBM Reviews (All)  
Embase  
PsycINFO  
International Bibliography of the Social Science  
Scopus  
EconLit  
EconPapers  
Expanded Academic  
ABI/INFORM  
Current Contents  
Dissertations & Theses  
ProQuest Central  
ProQuest Social Science

Limits could not be applied to all databases

Google search of relevant websites and keywords

NBER, NZIER, FOE, Brookings, USDA

## **Discussion of selected papers found in literature search**

A selection only of the 200-odd papers located is discussed here.

The topics focused on included

- price and income elasticities. This material is discussed earlier in this chapter when discussing relevant factors in the economic environment.
- The use of economic instruments, or modelling of the use of such instruments
- The practicability of Smart Card schemes, or Electronic Benefit Transfer (EBT)

### **Modelling the use of economic instruments for Food and Nutrition policy**

A WHO Europe paper (2006) reviewed the “effectiveness of economic instruments”, but mainly from the viewpoint of preventing and treating obesity. It is a cautiously worded document. It does say, however, that

“A small body of evidence indicates that reducing the price of fruits, vegetables and other healthy snacks at the point of purchase (vending machines, cafeterias) increases their consumption.”

A New Zealand review (Wall et al. 2006) of four RCTs found that

“All four trials demonstrated a positive effect of monetary incentives on food purchases, food consumption, or weight loss. However, the trials had some methodological limitations including small sample sizes and short durations.”

Such limitations are often inescapable in the case of population health interventions.

The authors went on to say

“Monetary incentives are a promising strategy to modify dietary behaviour, but more research is needed to address the gaps in evidence.”

Attempts to model the use of economic instruments must build on such data as are available. An interesting example is the paper by Cash, Sunding, and Zilberman (2004), modelling the possible effects of “thin subsidies”, consumption subsidies for healthier foods. They carried out empirical simulations calculating the potential health benefits of subsidies on certain classes of fruits and vegetables. They used US Department of Agriculture elasticity estimates, as follows (over all income levels) –

- Fruit            -0.72
- Vegetables   -0.72
- Juice            -1.01

(These elasticities are relatively high, and it would be desirable to repeat the work with lower values.)

Deaths from heart disease and stroke were predicted for changes in fruit and vegetable consumption. The cost of a subsidy per life saved was then calculated for various options. It is not made clear what discount rate was applied. But the present value of cost per life saved for a subsidy covering both fruit and vegetables was US\$1.29 million. This compares favourably with US labor market estimates of the value of a statistical life, typically ranging from US\$4 to US\$9 million. That is, the cost/benefit ratio looks very favourable.

This sort of investigation would be well worth replicating in New Zealand<sup>25</sup>, with variations in elasticity parameters, discount rates, and costs. The current estimated value of a ‘statistical life’ in New Zealand is about NZ\$3 million.

**Practicability of a Smart Card system.**

Such a system is already in operation, in the United States. An official (GSA) report of 2004 states that the ‘technology is no longer experimental’. A US Department of Agriculture report to Congress in 2003 says that more than 95% of Food Stamp Program (FSP) benefits were being handled through EBT (Electronic Benefits Transfer). The report discusses how in the case of ‘farmers’ markets’ benefits can be exchanged for scrip (i.e. cashable paper coupons) at a central point in the market.

Smart Card use is not restricted to Food Stamps. Other welfare benefits can also be loaded, and now commonly are. It is possible at state level to build in higher discounts for favoured foods.

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<sup>25</sup> A similar investigation was carried out by the lead author for Pharmac in January 2004, investigating the expected reduction in cardio-vascular mortality resulting from the Green Prescription programme, although measuring outcomes in terms of QALYs rather than statistical lives saved. (O’Dea. 2004)

In effect the Smart Card is a ‘debit card’, allowing payments out up to the amount loaded on the card. It is the practice, at least in California, to allow unused benefits to be carried over into succeeding time periods. (California Food Stamps Guide. 2004).

## **Key Informant Interviews**

### Proposed Intervention I.      Removal of GST on Food, or on ‘good’ food.

None of the five informants supported this proposal when it was raised with them, and three were particularly strongly opposed.

One of those interviewed remarked that the ‘Swinburn criteria’ (the sub-headings below), were defective in failing to include ‘Effectiveness’ and ‘Cost-effectiveness’.

#### *Feasibility.*

The proposal is of course feasible, in that other countries do it. A principal objection cited by informants was that New Zealand has the simplest GST system in the world, widely admired, and sometimes quoted overseas as the “New Zealand model”. Its simplicity leads to lower administration and compliance costs than in other countries. One claim was that our costs were 1/3<sup>rd</sup> of those of other countries per \$ of revenue. (Much of this material came up at the recent international GST conference sponsored by the Institute of Chartered Accountants and held in Wellington.)

A technical issue would be what form the exemption should take – goods classed as ‘Exempt’ or as ‘Zero-rated’ (as for exports)? For the former, supermarkets would not be able to claim back GST on inputs. Problems then emerge with apportioning costs to non-GST or GST turnover. One informant thought that zero-rating, claiming back GST on inputs, and not charging on sales, was the better option. Cleaner, from the business viewpoint. More costly for government.

Another feasibility issue raised, by an informant who had worked on the topic at WHO, was the difficulty in setting the boundary between ‘good’ foods and other

foods. “Where would you draw the line?”. Fish, chicken, wine all ‘good’? Also might ‘purported’ foods be made, e.g. cosmetics with oil.

#### *Sustainability.*

One problem foreseen was that once exemption was gained for food, there would be pressures to do the same for other commodity groups, such as books, clothing, health-care, and medicines. “A slippery slope – start exemptions, end up with the same messy porridge as every other country.” The loss of revenue also would have to be made up somewhere. A general increase in non-food GST rates would eliminate much of the gain for low-income households from lower food prices.

#### *Effect on Equity*

A very blunt instrument it was thought. A very limited impact on equity, especially if revenue neutrality maintained. In fact, likely to be subsidising the “well-off”. “Regressive as ‘all get-up’” said one informant.

#### *Potential side-effects.*

A concern was expressed by some of the informants that the food subsidy would be used for the usual food purchases and extra income redirected to harmful non-food items, such as alcohol.

#### *Acceptability to stakeholders.*

Definitely not acceptable to policy makers in general. It would be a total break with the “broad base low rate” mantra, favoured by many politicians, and policy people in the ‘revenue’ policy and collection agencies. Comment by one person “GST reduction a very bad idea”.

#### Proposed Intervention II. Smart Card policy

Informants were less negative to this idea than to that of removing GST. Although not that positive either! One prediction was that “design issues” would kill the implementation of this proposal. At least, it was emphasised, these would have to be got right, in readiness for the likely storm of media and political criticism.

It should be added that the detail earlier in this chapter about how a Smart Card scheme might be designed was not available to informants at the time of interview. Thus some of the objections raised in the interviews might well be met by proposed features such as a fixed quantum of subsidy per time-period, relatively low amounts, and so little incentive for trading subsidy access to those not eligible

One of those interviewed was unwilling to comment in detail, regarding the proposal as outside the ambit of her department. She made the general comment that the tax system is “about collecting tax”. A good general rule when governments were asked to provide concessions was that they should be kept out of the tax system, as that made the concessions “more transparent”, and also made it easier to target them. She referred to ‘Working for Families’ as a scheme which had brought people back into the tax system, and had brought back some complexity. She added that this did not mean she would criticise Working for Families as a policy.

Some of the doubts raised were identical to those raised also about the proposed removal of GST. For instance –

- The difficulties in defining ‘good’ and ‘bad’ foods.
- A lack of clarity about objectives. Health or Equity?
- The possibility of savings on food purchases being put to ‘bad’ use. For instance spent on booze or drugs. Another interviewee put it as “Broccoli cheaper – more KFC?”.

This last point can be seen as a particular (though more pungently put) expression of a general concern touched on by more than one informant, namely that the proposed intervention might fail to address the specific problem of food insecurity, but instead have other less desirable outcomes. This could indeed apply to some food-insecure households, though surely not all. An issue here, as pointed out by one interviewee, is that the cause of food insecurity is not solely ‘income inadequacy’. Another cause is ‘poor decision-making capability’ (for at least some households), and this is a problem better addressed by other means (e.g. budget advisory services) than, or concurrently with, consumption subsidies.

Additional points were –

- The importance of getting “design issues” right. As just one example the definition of “dependent children”.
- The need to keep in mind the “non-card” market. For example the kid wanting to buy an apple on the way home from school.
- Who should qualify for; and/or ‘hold’ the Smart Card?
  
- Increases in Effective Marginal Tax rates (EMTRs) were seen by one interviewee as a potential problem (in the case of the subsidy applying to only part of the population). On reflection though he thought this was not likely to be too serious a problem, with currently a fairly large ‘non-abatement zone’ for family income up to round about \$35,000.

A point made strongly by one informant was that the whole approach “Needs to be tested with people from the likely target group.” For example, using focus groups. The overall aim should be seen as “equalising nutrition or health”. Income inequality was a factor in food insecurity, but focusing on it alone was going “off target”.

## **Conclusions**

### **Proposed Intervention I: Removing Goods and Services Tax (GST) from healthy basic foods.**

There are substantial objections to this proposed intervention.

- The simplicity of the current GST revenue system would be impaired, and compliance and administration costs increased.
- It would generate pressures to extend concessions to other ‘worthy’ commodities such as books and clothing.
- For ‘revenue neutrality’ to be maintained, GST on other commodities, or other taxes, would have to be increased. This would likely have a negative impact on the very individuals such a strategy purports to help.
- Most importantly, it would be a very blunt instrument for addressing food insecurity issues. All purchasers of ‘Food’, or of ‘healthier Food’, right across the income spectrum would benefit.

**Conclusion I: That the removal of GST from Food in general, or from ‘healthy basic foods’, not be endorsed as an intervention for reducing food insecurity.**

### **Proposed Intervention II: Provision of a Smart Card, providing discounts on healthy nutritious food.**

Note that this is taken to not rule out the use of physical ‘vouchers’ or ‘scrip’ in situations where an Electronic Smart Card might not be practicable, for instance weekend markets or roadside stalls.

#### **Key Points:**

- The use of a Smart Card is practicable. It is now used nearly universally in the United States for the issuance of ‘Food Stamps’ to families below the poverty

line, and also for other benefit transactions. The acronym is EBT – Electronic Benefit Transactions. Commonly a given amount is credited to cards at 4-weekly or monthly intervals. The cards can then be used as in effect ‘Debit Cards’ from which the purchase of qualifying items is deducted.

- Entitlement to such a benefit, and the nature and amount of the payment could take a number of forms. Alternatives are discussed earlier in this chapter. The two principal issues to resolve are

**A: Choice of foodstuffs to be subsidised**

Three possible options are

- Fruit and Vegetables
- A ‘basket’ of specified ‘staple’ foodstuffs, such as fruit and vegetables, milk, cereals and cereal products, fish, meats.
- Food items identified as being of good nutritional quality by an agency such as FSANZ (Food Standards Australia and New Zealand)

Food insecurity is a matter of inadequate intake of a number of foodstuffs, not just fruit and vegetables. The second option is therefore preferable to the first. Not all ‘staple’ foodstuffs, however, are of good nutritional content, and it is desirable that the scheme should if practicable encourage the consumption of foods of high nutrient quality. The third option is therefore the best.

**B: Eligibility for a Smart Card**

It is envisaged that there would be one card per family unit, and that the amount loaded on the card would be of the order of \$5 per dependent child<sup>26</sup> per week, or a similar amount for an eligible household comprising adults only.

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<sup>26</sup> The amount of \$5 is used here for illustrative purposes. As discussed earlier it is also an amount which is fiscally ‘possible’, which makes a reasonable income contribution to low-income families, and which is not so large as to encourage trading of subsidy entitlement.

There are several possibilities for determining eligibility. One is that eligibility should be restricted to only those households whose principal income source is one of the main income-tested benefits. This, however, does not address the problem of food insecurity in those low-income families not receiving an income-tested benefit

Better options are either –

- Income tested eligibility. Coverage would include, in addition to families relying on income-tested benefits, low-income households in general, apart from those whose major income source is NZ Superannuation (food insecurity does not appear to be a significant problem in the pensioner age-group). It would be similar in coverage to the current Community Services Card (and could in fact replace that card), taking in for example all families qualifying for the Family Tax Credit (formerly Family Support).

or -

- Universal eligibility, for all households. All families with dependent children, regardless of income, should be entitled to the Card.

The advantages of the ‘Universal’ option are its simplicity – the amount could be tax-free and there would be no ‘abatement’ or ‘incentive’ problems – and that it overcomes stigmatization issues. The disadvantages are that it is expensive, of the order of \$260 million per year on the calculations above, and that much of this expenditure is directed to relatively well-off family households. The ‘Income-tested’ option, on the other hand, could carry ‘stigma’, but is better-targeted to those lower-income households more likely to be facing food insecurity problems. These include many Maori and Pacific people households. It would also be less expensive (assuming the same amount per dependent child for instance), of the order of perhaps around half of the ‘universal’ option.

On balance ‘income-tested’ entitlement appears preferable to ‘universal’ entitlement.

**Conclusion II: The concept of a Smart Card for subsidising food costs and thereby reducing food insecurity has attractive features and should therefore receive further detailed investigation.**

Such further investigation would include discussion on which foodstuffs should be covered; who should be entitled and to how much; discussion in focus groups and elsewhere of the proposal including with Māori, Pacific and low-income peoples; further investigation of experience elsewhere of such proposals, cost-benefit modelling of the likely costs and health gains in New Zealand; and eventually small-scale trialling and evaluation of how the approach would work in New Zealand.

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